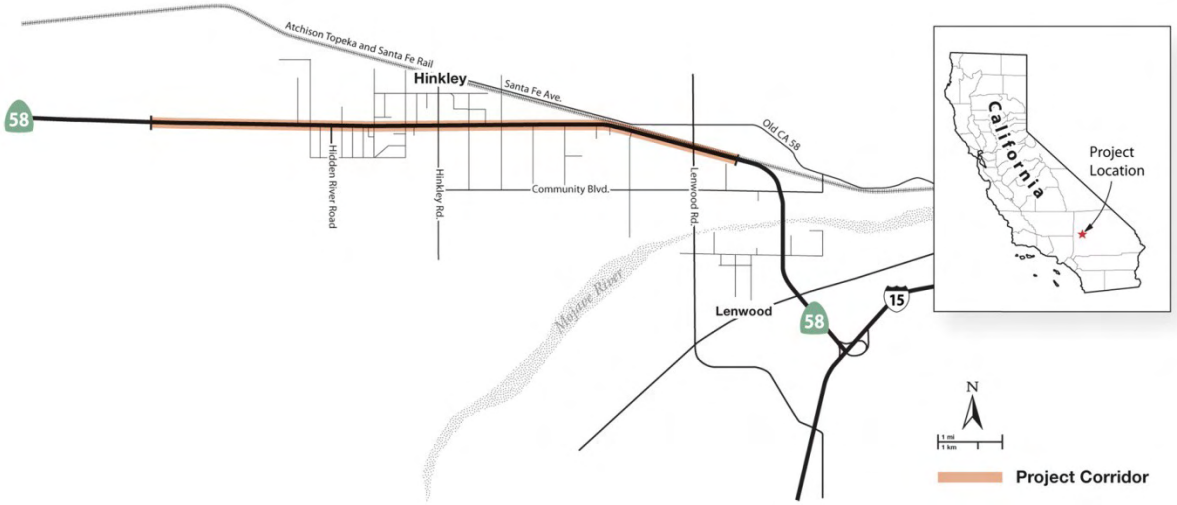
State Route 58 (SR-58) Hinkley Expressway Project

SAN BERNARDINO COUNTY, CALIFORNIA
DISTRICT 8 – SBD – SR-58 (PM 22.2/31.1)
EA 08-043510
PN 0800000010

Draft
Environmental Impact Report/ Environmental Impact Statement



Prepared by the
California Department of Transportation

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

DECEMBER 2012

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General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this Environmental Impact Report/Environmental Impact Statement (EIR/EIS), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in San Bernardino County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and under the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read the document.
- Additional copies of this Draft Environmental Impact Report/Environmental Impact Statement (DEIR/EIS), as well as of the technical studies we relied upon in preparing it, are available for review at:

Barstow Branch Library	Caltrans District 8 Office
304 E. Buena Vista Street	464 West 4th Street
Barstow, CA 92311-2806	San Bernardino, CA 92401

Additionally, this document may be downloaded at the following website:
www.dot.ca.gov/dist8/projects/san_bernardino/sr58/hinkley/index.htm

- Attend the public hearing planned for Thursday, January 23, 2013 from 6-9pm at the Hinkley Elementary School.
- We'd like to hear what you think. If you have any comments regarding the proposed project, please attend the public hearing and/or send your written comments to Caltrans by the deadline.

  Submit comments via postal mail to:
  James Shankel
  Senior Environmental Planner
  California Department of Transportation
  Division of Environmental Planning
  464 W. 4th Street, 6th Floor MS 827
  San Bernardino, California 92401-1400

Submit comments via email to: SR58Hinkley@dot.ca.gov

- Be sure to submit comments by the deadline: Tuesday, February 19, 2013

What happens next:
After comments are received from the public and reviewing agencies, Caltrans, as assigned by FHWA, may: (1) give environmental approval to the proposed project, (2) do additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to James Shankel, Senior Environmental Planner, California Department of Transportation, District 8 Division of Environmental Planning, California Department of Transportation, 464 West 4th Street, 6th Floor MS-827, San Bernardino, CA 92401-1400; (909) 383-6379, or use the California Relay Service 1-800-735-2929 (TTY to Voice), 1-800-735-2922 (Voice to TTY), 1-800-854-7784 (From or to Speech to Speech), or dial 711.

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SCH #2007051067
08-SBD-58-Post Mile (PM) 22.2/ 31.1
EA 08-043510
Project ID 0800000010

Grade separate, widen, and realign State Route 58 (SR-58) from PM 22.2 to 31.1, through the community of Hinkley, in San Bernardino County.

DRAFT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT

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

THE STATE OF CALIFORNIA
Department of Transportation

Cooperating Agencies:

U.S. Bureau of Land Management (BLM)
U.S. Army Corps of Engineers (USACE)

Responsible Agencies:

California Regional Water Quality Control Board
County of San Bernardino
California Public Utilities Commission

12/18/2012
Date of Approval

David Bricker
Deputy District Director
District 8 Division of Environmental Planning
California Department of Transportation
CEQA Lead Agency
NEPA Lead Agency

The following person(s) may be contacted for additional information concerning this document:
James Shankel, Senior Environmental Planner
California Department of Transportation
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Abstract: The proposed State Route 58 (SR-58) Hinkley Expressway Project would widen and realign an existing 8.9-mile segment of SR-58, near the community of Hinkley in western San Bernardino County. The purpose of this project is to (1) maintain route continuity by upgrading the facility to a controlled access four-lane expressway, which would match existing sections of SR-58, east and west of the proposed project area; (2) to relieve congestion by providing a Level Of Service which is consistent with what is listed in the SR-58 Route Concept Report; (3) upgrade the pavement and roadway cross-section, grade separate, meet current standards to better accommodate truckloads, reduce roadway damage and maintenance costs associated with the high volume of truck traffic carrying goods on this route; and (4) improve safety and operations within the project limits. Environmental effects on biological resources, community cohesion/character, relocation impacts and aesthetics are anticipated. Comments on this document are due by Tuesday, February 19, 2013, and should be sent to James Shankel at the above address.

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Summary

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Summary

Overview of Project Area

Caltrans proposes to widen State Route 58 (SR-58) from a two-lane conventional highway to a four-lane expressway near the unincorporated community of Hinkley, from Post Mile (PM) 22.2 to PM 31.1. The total length of the project is 8.9 miles, from 2.8 miles west of Hidden River Road to 0.7 miles east of Lenwood Road. The proposed project area is approximately five miles west of the city of Barstow, within the Mojave Desert region of San Bernardino County, California. (See Figure 1.1 Project Vicinity Map and Figure 1.2 Project Location Map in Chapter 1 of this document).

The proposed Project is fully funded and is in the SCAG Final programmed financially constraint 2011 Federal Transportation Improvement Program (FTIP) Amendment #24 to 31 (Project Number 4351), which was found to conform by FHWA on June 4, 2012.[1] Also, the proposed Project is included among the listing of the modeled projects in the SCAG 2012 RTP (Project Number 4351). Analysis concludes that the Project's operational emissions (which include the ozone precursors reactive organic gases [ROG] and NO_X) meet the transportation conformity requirements imposed by the EPA and MDAQMD. Please see copies of the FTIP listing and the RTP listing in Appendix I of this document.

Purpose and Need

Project Purpose

The purpose of the proposed SR-58 Hinkley Expressway Project:

- To relieve traffic congestion by providing an acceptable Level of Service, which is consistent with the State Route 58 Route Concept Report;
- To improve operational efficiency and enhance safety conditions by upgrading the facility to a controlled access, four-lane expressway that matches the sections on the east and west of the proposed project area on this high emphasis route;
- To correct structural deficiencies, by upgrading the pavement structural section to meet current standards to better accommodate truckloads, reducing roadway damage and maintenance costs associated with the high volume of truck traffic utilizing this route; and
- To meet the needs for regional transportation in accordance with regional plans such as the RTP and FTIP, while minimizing right-of-way, community, and environmental impacts.

Project Need

SR-58 is a Significant Transportation Corridor extending a total of 240 miles, from United States 101 (U.S.-101) near San Luis Obispo, to the west, to Interstate 15 (I-15) in Barstow, to the east. SR-58 crosses three major north-south routes: I-5, SR-99, and U.S. 395. SR-58 also serves as the major connection point between I-5 in Bakersfield and I-15 and I-40 in Barstow. SR-58 is also

[1] Project described in Final 2011 FTIP as "SR58 Expressway-realign and widen from 2-4 lane expressway. New interchanges at Lenwood Rd and Hinkley Rd 2.8 miles west of Hidden River Rd. to 0.7 miles east of Lenwood Road -- realign and widen to 4 lane expressway (2-4 lanes) (phase 2).

the only east-west corridor for interregional travelers in the area. The nearest east-west alternate is Interstate 210 (I-210), located 60 miles to the south; therefore, there are no other viable alternatives for travel. Traffic on SR-58 includes a high volume of interstate trucks that transport agricultural and commercial commodities.

Capacity, Transportation Demand, and Safety

Existing Capacity and Level of Service (LOS)

Currently, existing SR-58 operates at LOS E through the proposed project area. This is an unacceptable LOS. By 2040, if no improvements are made to SR-58, the LOS is projected to deteriorate to LOS F. LOS is a qualitative measure that describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. LOS conditions are designated as "A," indicating best free-flow conditions, through "F," indicating worst-case, congested conditions. (See Figure 1.3 Highway Levels of Service Definitions).

Regional Population/Traffic Forecasts

A regional population forecast is provided in the 2008 SCAG Regional Transportation Plan (RTP) Programmatic Environmental Impact Report (PEIR). The 2008 SCAG RTP PEIR provides a projection of regional population up to forecast year 2035. For San Bernardino County, the 2008 baseline population was 2,097,756. The 2035 regional population forecast estimates a planned population of 2,957,370. Based upon these forecasts, a nearly 41% increase in regional population is projected between 2008 and 2035.[2] Regional traffic is predicted to increase with the projected growth in population.

Projected Capacity Needs

Average daily traffic (ADT) is forecast to nearly double, from 12,100 vehicles in 2011 to 24,100 vehicles in2040. If no improvements are made, this highway segment is projected to deteriorate from LOS E to LOS F by 2040, with heavy traffic congestion and great variations in speed.[3] With respect to the traffic forecasts for the design horizon year for this project (2040), Alternative 1 (the No-Build Alternative) is based on the existing two lane conventional highway structure. The Build Alternatives 2, 3, and 4 are based on the construction of a four lane expressway. The LOS under Alternatives 2, 3, and 4 would improve to LOS B in the opening year and LOS C in 2040.

Existing Accident Rates

Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) shows that there were 45 accidents from 05-01-2007 to 04-30-2010, on eastbound and westbound SR-58, between PM 22.2 to PM 31.1. The project area experienced lower total accident rates than those for a similar highway. However, fatality rates were slightly higher than those expected for a similar facility. (See Table 1-2).

[2] Southern California Association of Governments. 2008. *2008 Southern California Association of Governments Regional Transportation Plan Programmatic Environmental Impact Report*. Available: <http://www.scag.ca.gov/RTPpeir2008/pdfs/draft/2008Draft_RTPpeir_complete.pdf>. Tables 2-1 and 3.11-2.
[3] Transportation Research Board. 2000. *Highway Capacity Manual*.

Roadway Deficiencies

Operational Deficiencies

Driveways and Intersections: The existing two-lane highway has numerous driveways and intersecting cross-streets, which present conflict points that affect the operation of the highway. Vehicles enter and exit the highway to access businesses, services, and residences along SR-58. There are numerous crossings (both paved and unpaved) where these turning movements occur.

Route Continuity between Existing Four-lane Expressways: Route Continuity is defined as the provision of a directional path along and throughout the length of a designated route. The goal of route continuity is to ease the driving task by reducing the need to change lanes and search for directional signing. At the project location, SR-58 is a two-lane facility; however, immediately east and west of the proposed project, SR-58 is a four-lane facility. The narrower highway section within the project area creates a bottleneck between the existing four-lane highway sections and decreases route continuity.

Structural Section Limitations

The existing pavement structural section of SR-58 was not designed to accommodate the designation pertaining to the national network for Surface Transportation Assistance Act of 1982 (STAA) trucks. This has resulted in a higher pavement maintenance costs.

Proposed Action

The proposed project would realign (under Alternatives 2 and 4) and widen (under all Build Alternatives) SR-58 from a two-lane conventional highway to a four-lane expressway with full access control, near the unincorporated community of Hinkley, within San Bernardino County, California. The physical improvements for the proposed project would extend from PM 22.2 to PM 31.1; however, in order to account for signage during construction the total project limits would extend from PM 21.7 to PM 31.6 (See Figure 1.1 and Figure 1.2). The alternatives are:

- Alternative 1 – No-Build: SR-58 would remain as is without any improvements.
- Alternative 2 – Southerly Alignment: A new alignment would diverge from the existing alignment approximately two miles west of Valley View Road in a southeasterly direction to Valley View Road just south of Frontier Road, continuing along a gentle curve easterly from Valley View Road until it rejoins the existing alignment approximately 0.75 mile east of Lenwood Road. The alignment would run approximately 0.5 mile south of the existing SR-58 alignment. The estimated cost for this alignment is $159,895,000.
- Alternative 3 – Existing Alignment: A new facility would run along the existing SR-58 alignment. The new alignment would diverge from the existing alignment just west of Mountain View Road along a gentle curve southeasterly to Lenwood Road, for approximately 3 miles. At the easterly end of the project limits, the alignment would be adjusted to avoid encroachment on the BNSF railroad. The estimated cost for this alignment is $179,801,110.
- Alternative 4 – Northerly Alignment: The realignment and widening of SR-58 would occur slightly north of the existing SR-58. The new alignment would diverge from the existing alignment about 0.75 miles east of Frontier Road, running parallel to and approximately 0.5

miles north of the existing SR-58 alignment, and would converge with existing SR-58 0.75 miles east of Lenwood Road. The estimated cost for this alignment is $192,668,340.

Identification of Preferred Alternative

Full consideration was given to the technical studies prepared for the proposed alternatives, and data was carefully analyzed for all alternatives on an equal basis. After comparing and weighing the benefits and impacts of all of the feasible alternatives, at a Project Development Team (PDT) meeting on December 6, 2012, the PDT identified Alternative 2 as the preferred alternative, subject to public review. Final identification of a preferred alternative will occur after the public review and comment period. Figures showing Alternative 2 are in Chapter 2 of this document.

Alternative 2 achieves the purpose and need of the proposed project, and provides the same level of operational improvement as the other two build alternatives (Alternative 3 and Alternative 4); however, Alternative 2 is expected to cost substantially less, currently approximately $20 million less.

Alternative 2 is expected to result in substantially fewer parcels needing to be acquired, and more specifically, is also expected to result in substantially fewer displacements of homes, businesses, as well as community facilities. In addition, Alternative 3 and 4 bisect and pass through the center of the Hinkley community, and therefore have greater community character and cohesion impacts than Alternative 2 (which skirts the southern fringe of the community).

For the community of Hinkley, hazardous waste and the groundwater plume is a major issue, and impacts to hazardous materials and the mitigation systems which others have installed are a major consideration. Alternative 2 is expected to result in substantially fewer Pacific Gas and Electric (PG&E) wells in the project area being impacted, and would specifically avoid any impacts to any PG&E extraction wells and USGS wells.

Regarding biological resources, it is currently expected that Alternative 2 would impact more acres than Alternative 3 or Alternative 4, however, the ability to mitigate impacts to biological resources versus the ability to mitigate impacts to existing residences and businesses located in the project area, as well as the ability to minimize impacts to existing PG&E wells in the project area, is a major factor considered by the PDT in conjunction with identifying Alternative 2 as the Preferred Alternative, along with factoring in the substantial difference in total estimated cost to construct the project with Alternative 2, combined with Alternative 2 providing the same level of operational improvement in achieving the purpose and need for the proposed project.

Table S-2: Summary of Potential Impacts & Proposed Measures by Alternative, included below, provides additional information about the differing potential impacts between the alternatives, and Section 2.2.2 in Chapter 2 of this document provides further discussion regarding identification of Alternative 2 as the Preferred Alternative.

Joint CEQA/NEPA Document

The proposed project is a joint project by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Caltrans is the lead agency under NEPA. Caltrans is also the lead agency under CEQA. In addition, FHWA's responsibility for environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 United States Code (USC) 327.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, it is quite often the case that a "lower level" document is prepared for NEPA. One of the most commonly seen joint document types is an Environmental Impact Report/Environmental Assessment (EIR/EA).

Following receipt of comments from the public and reviewing agencies, a Final EIR/EIS will be prepared. Caltrans may undertake additional environmental and/or engineering studies to address comments. The Final EIR/EIS will include responses to comments received on the Draft EIR/EIS and will include final identification of the preferred alternative for the project. Following circulation of the Final EIR/EIS, if the decision is made to approve the project, a Notice of Determination will be published for compliance with CEQA, and a Record of Decision will be published for compliance with NEPA.

Potential Environmental Consequences and Avoidance, Minimization, and/or Mitigation Measures

Table S-2 summarizes the potential impacts under CEQA and NEPA of the proposed alternatives and the proposed avoidance/minimization measures. Details for each environmental category are presented in Chapters 3 and 4 of this document.

Coordination with Public and Other Agencies

As part of the NEPA and CEQA process, a scoping meeting is required as part of the preparation of an EIR and EIS. In May 2007, a Notice of Intent (NOI) to prepare an EIS and a Notice of Preparation (NOP) of an EIR were advertised to the public and mailed to elected officials and local, state, and federal agencies having jurisdiction or discretionary approval within the project corridor. The NOI was published in the Federal Register on May 10, 2007, and the NOP was received and accepted by the State Clearinghouse on May 11, 2007. The public scoping meeting was held in June 2007.

Various agencies were invited to participate in the project as cooperating, participating, and/or responsible agencies, as applicable. Per responses to the invitation letters, interagency review roles were established, and a summary of consultation and coordination is provided in Chapter 5. All agencies on this list have been requested to comment on key components of the

environmental document prior to public circulation. A cooperating/participating agency scoping meeting was held in January 2008.

Public outreach efforts include public information meetings held in July 2008, October 2008, and September 2010.

Table S-1: Permits and Approvals Needed

Agency	Permit/Approval	Status
County of San Bernardino	Freeway agreement	Pending final design/construction needed for (1) local roads that will be closed, (2) construction of the new interchanges, and, as applicable (3) relinquishment of the existing SR-58 to the County.
County of San Bernardino	Temporary construction permits	Pending final design/construction Required for construction affecting local road systems
BNSF	Encroachment permit	Pending final design/construction Required for work performed within railroad right-of-way
Bureau of Land Management (BLM)	Right-of-Way Grant	Under review by BLM Needed because of involvement of parcels owned by BLM
California Public Utilities Commission	Service contract and construction/maintenance agreements	Application would occur during final design Needed for construction of grade separated structure over BNSF rail line
California State Water Resources Control Board	Coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity (Construction General Permit, 99-08-DWQ)	Pending final design
California Regional Water Quality Control Board	Waste discharge permit/401	Pending final design
California Department of Fish and Game	1600/1602 Permit	Permit application will occur following approval of the final environmental document. Pending final design Needed for activities within ephemeral dry washes.
California Department of Fish and Game	2081 Incidental Take Permit	Permit coordination in progress Needed for Desert Tortoise/Loss Desert Tortoise Habitat Needed for Mohave Ground Squirrel
U.S. Fish and Wildlife Service	Section 7 consultation for threatened and endangered species	Section 7 coordination in progress Needed for Desert Tortoise

Table S-2: Summary of Potential Impacts & Proposed Measures by Alternative

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
Cost	No impact, but this does not preclude costs in necessary maintenance	$159,895,000	$179,801,110	$192,668,340	N/A
Land Use: Existing & Future Land Use – Permanent Impacts	No impact	Acquisitions required; inconsistencies would result with existing land uses; potentially substantial impacts	Acquisitions required; inconsistencies would result with existing land uses; potentially substantial impacts	Acquisitions required; inconsistencies would result with existing land uses; potentially substantial impacts	Amendments to the zoning and land use designations for parcels affected by the proposed project will be required.
Land Use: Consistency with State, Regional, and Local Plans – Permanent Impacts	Inconsistent	Consistent	Consistent	Consistent	None required
Farmlands/ Timberlands: Permanent Impacts	No impact	61 acres (0.47%) of County farmland would be converted by this alternative. Farmland Impact Conversion Rating <160; Williamson Act land converted <100 acres. 26 acres (5.53%) of Williamson Act farmland within the project area (470 acres) to nonagricultural use, and 0.57% of existing Williamson Act farmland within San Bernardino County (4,541 acres).	69 acres (0.53%) of County farmland would be converted by this alternative. Farmland Impact Conversion Rating <160; Williamson Act land converted <100 acres. 31 acres (6.60%) of Williamson Act farmland within the project area (470 acres) to nonagricultural use, and 0.68% of existing Williamson Act farmland within San Bernardino County (4,541 acres).	61 acres (0.47%) of County farmland would be converted by this alternative. Farmland Impact Conversion Rating <160; Williamson Act land converted <100 acres. . 30.4 acres (6.47%) of Williamson Act farmland within the project area to nonagricultural use, and 0.67% of existing Williamson Act farmland within San Bernardino County (4,541 acres).	FA-2: Caltrans shall consult with the County and NRCS to determine if an alternative compensation ratio or measure is deemed appropriate for impacted farmland. Mitigation may include agricultural conservation easement of comparative quantity and quality to the farmland converted within the project limits.

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
Farmland/ Timberlands: Temporary Impacts	No impact	Truck traffic, dust potentially interfering with agricultural operations	Truck traffic, dust potentially interfering with agricultural operations	Truck traffic, dust potentially interfering with agricultural operations	FA-1: The implementation of a TMP (refer to Section 3.6, Traffic and Transportation/ Pedestrian and Bicycle Facilities) and dust control measures (refer to Section 3.14, Air Quality) would minimize construction impacts. FA-3: Caltrans will minimize disruption to farm operations to properties impacted by closure of current direct access to SR-58. Alternative access would be provided to all properties affected by the project; access would be maintained to all farmland adjacent to the project.
Community Impacts	No impact	Acquisitions/ Displacements: • 10 full acquisitions • 96 partial acquisitions • 13 residential units • 2 businesses Access: Changes in access, with longer travel distances. Cohesion/character: potentially substantial impacts (addition of a major facility to a rural landscape)	Acquisitions/ Displacements: • 69 full acquisitions • 164 partial acquisitions • 26 owner-occupied single-family residential units • 12 tenant-occupied single-family residential units • 5 owner-occupied mobile homes • 2 tenant-occupied mobile homes • 4 multi-family residential units • 5 commercial businesses • 1 church • partial displacement of	Acquisitions/ Displacements: • 62 full acquisitions • 136 partial acquisitions • 19 owner-occupied single-family residential units • 10 tenant-occupied single-family residential units • 2 owner-occupied mobile homes • 21 tenant-occupied mobile homes • 4 multi-family residential units • 4 commercial businesses • partial displacement of 1 dairy	CI-1: A Construction Management Plan and a Transportation Management Plan would be prepared for the project and include coordination efforts that would inform the community about project construction activities, maintain access to and from the project area during construction, minimize construction-period traffic, control glare, dust, and noise (see Section 3.6, Traffic and Transportation/Pedestrian and Bicycle Facilities, Section 3.7, Visual/Aesthetics, Section 3.14, Air Quality, and Section 3.15, Noise and Vibration). Measures to minimize construction impacts in these sections, also apply to minimizing permanent community cohesion/

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
			1 dairy Access: Changes in access, with longer travel distances. Cohesion/character: potentially substantial impacts (acquisitions and bisecting cluster of residences)	Access: Changes in access, with longer travel distances. Cohesion/character: potentially substantial impacts (acquisitions)	character impacts. CI-2: Pedestrian design features shall be incorporated wherever feasible on the existing SR-58 and/or the proposed frontage roads, including providing sidewalks along the proposed Lenwood and Hinkley overcrossings, striping all crosswalks, and constructing curb ramps at all new intersections. CI-3: To address bypass impacts, during Final Design, Caltrans will coordinate with the community and County regarding the possibility of placing a Welcome sign at both ends of the proposed expressway with brief information encouraging visitors to visit services offered in Hinkley. CI-4: During Final Design and Construction, every effort will be made to further minimize the amount of right-of-way needed for the facility, and to further minimize community and environmental impacts in accordance with Directors Policy Number DP-22: Context Sensitive Solutions. CI-5: All relocation activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. A business survey

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
					will be conducted to assist with the relocation of any businesses that are displaced. Relocation resources will be available to all displaces without discrimination. CI-6: For impacts to agricultural business and dairies, every effort will be made during Final Design and Construction to minimize impacts to these, in an effort to allow them to continue operation with as little disruption as possible.
Visual/Aesthetics – Permanent & Temporary	No impact	Key views of distant ridgelines largely unchanged. Impacts moderate to no-impact based on the respective distances from the proposed alignment of key viewers.	Key views of distant ridgelines largely unchanged. Impact to viewer groups would be potentially substantial because of the respectively high and moderate level of sensitivity of these viewers. The residents, local businesses, and community facilities would experience a substantial deterioration of foreground and mid-ground views from the current view to the addition of proposed interchange, roadbed, and detention basins Commuting and local travelers would experience an adverse change in views, because of the respectively moderate and high level of sensitivity of	Key views of distant ridgelines largely unchanged. Residents, local businesses, and community facilities would experience a substantial deterioration of the foreground and mid-ground view. Motorists would experience a high impact due to the reduction of existing views and local travelers would experience the highest level of impacts because of their high level of visual sensitivity.	AES-1: All lighting used for the project will be directional, directing light to the highway facility and away from homes and habitats to minimize glare impacts to the night sky, and to avoid affecting background sky views. Glare shields would be used where feasible or appropriate. AES-2: Detention basins and bioswales will be designed and addressed as visually integrated elements of the landscape planting. Contour grading of basins will minimize the visual impact by blending with the surrounding natural landscape features. AES-3: Bridge structures shall be pigmented an earth tone that is compatible with the native soil color within the project limits. AES-4: Native plantings shall

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
			these groups.		be used to minimize the visual impact of the highway and associated detention basins. Please see Section 3.7 in Chapter 3 for specifics about proposed landscaping and erosion control. AES-8: To address impacts relating to cohesion/rural character, and the bisecting of the community by the facility, design efforts will be made to provide linkage across the facility, such as sidewalks on the interchanges, to encourage pedestrians, and bicyclists in the community to cross the facility.
Cultural Resources	No impacts.	One, unevaluated property lies within the alternative footprint and would be impacted. Once a Preferred Alternative is identified, Caltrans will perform the Section 106 ("eligible for the National Register of Historic Places (NRHP) and/or the California Register of Historical Resources (CRHR)" evaluations on any archeological sites located within that alternative's alignment to determine the properties' historical significance and fulfill Caltrans' responsibilities under Section 106. By limiting subsurface testing	Eight, unevaluated properties lie within the alternative footprint and would be impacted. Once a Preferred Alternative is identified, Caltrans will perform the Section 106 ("eligible for the National Register of Historic Places (NRHP) and/or the California Register of Historical Resources (CRHR)" evaluations on any archeological sites located within that alternative's alignment to determine the properties' historical significance and fulfill Caltrans' responsibilities under Section 106. By limiting subsurface testing	Nine, unevaluated properties lie within the alternative footprint and would be impacted. Once a Preferred Alternative is identified, Caltrans will perform the Section 106 ("eligible for the National Register of Historic Places (NRHP) and/or the California Register of Historical Resources (CRHR)" evaluations on any archeological sites located within that alternative's alignment to determine the properties' historical significance and fulfill Caltrans' responsibilities under Section 106. By limiting subsurface testing	CR-1: If cultural materials are discovered during construction, all earthmoving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. CR-2: If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the county coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, which

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
		and additional study to those sites within the Preferred Alternative, Caltrans will avoid unnecessary impacts to sites on the other, unselected, alternatives.	and additional study to those sites within the Preferred Alternative, Caltrans will avoid unnecessary impacts to sites on the other, unselected, alternatives.	and additional study to those sites within the Preferred Alternative, Caltrans will avoid unnecessary impacts to sites on the other, unselected, alternatives.	will then notify the MLD. Further provisions of PRC Section 5097.98 are to be followed as applicable. Note: If there are unevaluated sites that could become Historic Properties, additional avoidance, minimization, and compensation measures will also be required.
Water Quality and Stormwater Runoff – Permanent	No impacts	Increased amount of impervious surface area by 107 acres, increasing stormwater runoff, but not substantially enough to affect groundwater levels. Altered drainage patterns, but not substantial enough to adversely affect water quality. Impacts to PG&E's monitoring well network; impacts to pipelines for clean and contaminated water traversing expressway route.	Increased amount of impervious surface area by 149 acres, increasing stormwater runoff, but not substantially enough to affect groundwater levels. Altered drainage patterns, but not substantial enough to adversely affect water quality. Impacts to PG&E's monitoring well network; impacts to pipelines for clean and contaminated water traversing expressway route.	Increased amount of impervious surface area by 142 acres, increasing stormwater runoff, but not substantially enough to affect groundwater levels. Altered drainage patterns, but not substantial enough to adversely affect water quality. Impacts to PG&E's monitoring well network; impacts to pipelines for clean and contaminated water traversing expressway route.	WQ-1: The project will comply with the provisions of Statewide NPDES permit. BMPs will be evaluated, once a preferred alternative is identified, and incorporated into the project's engineering plans and specifications. For details on measures WQ-1 through WQ-4, please see Section 3.10 in Chapter 3. WQ-5: Coordination with the Water Board and PG&E will be needed to minimize impacts to the groundwater remediation efforts after a preferred alternative has been identified.
Water Quality and Stormwater Runoff – Temporary/Construction Impacts	No impacts	Disturb 742 acres of soil, potentially causing erosion and sediment control issues; construction would involve possible water contaminants.	Disturb 757 acres of soil, potentially causing erosion and sediment control issues; construction would involve possible water contaminants.	Disturb 728 acres of soil, potentially causing erosion and sediment control issues; construction would involve possible water contaminants.	See text above regarding WQ-1 through WQ-5.
Paleontology	No impacts	Areas of high sensitivity for paleontological resources, and therefore, could result in permanent impacts to	Areas of high sensitivity for paleontological resources, and therefore, could result in permanent impacts to	Areas of high sensitivity for paleontological resources, and therefore, could result in permanent impacts to	PA-1: Grading, excavation and other surface and subsurface excavation in the Resource Study Area (RSA) have potential to impact

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
		paleontological resources. Existing fossil localities in nearby similar rock units have produced substantial vertebrate paleontological resources, so high sensitivity for resources, especially near west end of project area and between Valley Wells Rd. and Summerset Rd.	paleontological resources. Existing fossil localities in nearby similar rock units have produced substantial vertebrate paleontological resources, so high sensitivity for resources, especially near west end of project area and between Valley Wells Rd. and Summerset Rd.	paleontological resources. Existing fossil localities in nearby similar rock units have produced substantial vertebrate paleontological resources, so high sensitivity for resources, especially near west end of project area and between Valley Wells Rd. and Summerset Rd.	significant nonrenewable fossil resources of Pleistocene age. A Paleontological Mitigation Plan (PMP) shall be prepared, during final project design, by a qualified paleontologist. The PMP will detail avoidance, minimization, and mitigation measures to be implemented in the event of paleontological discoveries. For details related to PMP requirements, please see Section 3.12 in Chapter 3.
Hazardous Waste/ Materials	No impacts	There are a number of PG&E wells that may be impacted by this alignment. The number and type are as follows: • Supply (active) – 7 • Supply (inactive) – 2 • Monitoring (active) – 4 There are known or suspected hazardous material sources, such as USTs, ASTs, contaminated soil, and groundwater within the proposed Alternative 2 alignment. There are electrical transformers that will require soil testing for presence of PCB's; Agricultural land that will be tested for pesticides, herbicides, chromium and ADL; one construction	There are a number of PG&E wells that may be impacted by this alignment. The number and type are as follows: • Supply (active) – 21 • Supply (inactive) – 13 • Monitoring (active) – 11 • Extraction (active) – 1 • Extraction (inactive) – 1 Surface soils may also be contaminated with chromium as a result of the historic irrigation of agricultural land with groundwater pumped from the PG&E hexavalent chromium plume. There are known or suspected hazardous material sources, such as USTs, ASTs, contaminated	There are a number of PG&E wells that may be impacted by this alignment. The number and type are as follows: • Supply (active) – 14 • Supply (inactive) – 14 • Monitoring (active) – 19 • Extraction (active) – 1 • Extraction (inactive) – 1 Alternative 4 may also impact 2 USGS wells. Surface soils may also be contaminated with chromium as a result of the historic irrigation of agricultural land with groundwater pumped from the PG&E chromium plume. There are known or	HAZ-1: Proper removal and disposal of all stained pole-mounted transformers and evaluation of all soil beneath the cracked/stained units prior to highway development will be conducted. HAZ-2: All soil excavations conducted on-site will be monitored by the construction contractor for visible soil staining, odor, and the possible presence of unknown hazardous-material sources, such as buried 55-gallon drums and underground tanks. HAZ-3: For structures within the proposed right-of-way that require demolition, an Asbestos Pre-Demolition Survey will be completed prior to the disturbance of building materials to determine the asbestos

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
		business and one dairy farm that will require a site investigation for presence of UST's and AST's and hazardous materials associated with the use of the property. Approximately 13 residences located within the Alternative 2 right-of-way would likely require demolition. These residences are expected to have a propane AST, water storage AST, water supply well, and a septic tank system. A site investigation will be performed at each property to determine if hazardous waste/materials are present. In addition, given the pre-1978 construction, ACMs and lead-based paint should be anticipated during demolition.	soil, and groundwater within the proposed Alternative 3 alignment. There are electrical transformers that will require soil testing for presence of PCB's; Agricultural land that will be tested for pesticides, herbicides, chromium and ADL; two dairy farms that will require a site investigation for presence of UST's and AST's and hazardous materials associated with the use of the property. Approximately 42 residences, a mobile home park, and Lucie's Market are located within the Alternative 3 right-of-way and would likely require demolition. These residences are expected to have a propane AST, water storage AST, water supply well, and a septic tank system. A site investigation will be performed at each property to determine if hazardous waste/materials are present. In addition, given the pre-1978 construction, ACMs and lead-based paint should be anticipated during demolition.	suspected hazardous material sources, such as USTs, ASTs, contaminated soil, and groundwater within the proposed Alternative 4 alignment. There are electrical transformers that will require soil testing for presence of PCB's; Agricultural land that will be tested for pesticides, herbicides, chromium, and ADL; three dairy farms that will require a site investigation for presence of UST's and AST's and hazardous materials associated with the use of the property. Approximately 33 residences, a mobile home park, a bar, and Lucie's Market are located within the Alternative 4 right-of-way and would likely require demolition. These residences are expected to have a propane AST, water storage AST, water supply well, and a septic tank system. A site investigation will be performed at each property to determine if hazardous waste/materials are present. In addition, given the pre-1978 construction, ACMs and lead-based paint should be anticipated	content. A certified asbestos contractor will be retained to abate any identified ACM in accordance with all applicable laws, including OSHA guidelines. HAZ-4: In the event that ACM not identified in the asbestos study are uncovered during demolition/renovation activities, the contractor must stop work and have these materials tested for asbestos content. For specific requirements related to demolitions or renovations see Section 3.13 in Chapter 3. HAZ-5: Prior to demolition, a geophysical survey of affected properties will be conducted in order to investigate the potential for underground features and hazardous materials storage. HAZ-6: Shallow soil sampling for petroleum, VOCs, metals, and PCBs will be conducted near identified drum storage and debris covered areas within the environmental footprint to determine if the need for special handling and disposal of soil is needed. HAZ-7: Soil sampling for chromium will be conducted within the identified alternative right-of-way to determine if the need for special handling and disposal of soil is needed.

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
				during demolition.	For further measures HAZ-8 through HAZ-16, please see Section 3.13 in Chapter 3.
Air Quality – Permanent	No impacts	Would not result in higher CO concentrations than those existing within the region. Would not be considered a Project of Air Quality Concern; unlikely that project would generate new air quality violations, worsen existing violations, or delay attainment of national ambient air quality standards for PM10 and PM2.5. On a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be substantially lower than today.	Would not result in higher CO concentrations than those existing within the region. Would not be considered a Project of Air Quality Concern; unlikely that project would generate new air quality violations, worsen existing violations, or delay attainment of national ambient air quality standards for PM10 and PM2.5. On a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be substantially lower than today.	Would not result in higher CO concentrations than those existing within the region. Would not be considered a Project of Air Quality Concern; unlikely that project would generate new air quality violations, worsen existing violations, or delay attainment of national ambient air quality standards for PM10 and PM2.5. On a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be substantially lower than today.	AQ-1: Caltrans will require implementation of effective and comprehensive avoidance and minimization measures, as detailed in Caltrans' Standard Specifications, Section 7-1.01F (Air Pollution Control), Measures to reduce exhaust emissions specified in Section 7-1.01F (Air Pollution Control) are fully described in Chapter 3 as are measures to reduce exhaust emissions specified in MDAQMD Rule 403.2 (Fugitive Dust Control).
Air Quality – Temporary/Construction Impacts	No impacts	Construction-related emissions would result from earthmoving activities and use of heavy equipment.	Construction-related emissions would result from earthmoving activities and use of heavy equipment.	Construction-related emissions would result from earthmoving activities and use of heavy equipment.	Measures are detailed in Chapter 3.
Noise and Vibration – Permanent	No impacts	20 representative receivers would experience substantial noise increases (12-27 dBA), but would not approach or exceed the NAC of 67 dBA Leq(h). Barriers would be feasible, but not reasonable; no barriers are proposed.	7 representative receivers would experience substantial noise increases (12-27 dBA), but would not approach or exceed the NAC of 67 dBA Leq(h). Barriers locations M-17-18 Segment 3 ROW and M-21 Segment 3 ROW would be feasible, but not	6 representative receivers would experience substantial noise increases (15-27 dBA), but would not approach or exceed the NAC of 67 dBA Leq(h). Barriers would be feasible. One noise barrier would be reasonable, based on Caltrans criteria (M-13	NOI-2: If Alternative 4 is identified as the Preferred Alternative, Noise Barrier M-13 Segment 3 would be installed. Details related to this noise barrier would be determined during Final Design of the project.

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
			reasonable; no barriers are proposed. For 3 sensitive receivers (Alt3-M-19, Alt3-M-24, and Alt3-M-48), barriers would not be feasible due to access constraints and inability to achieve 5 dBA reduction.	Segment 3). Other barriers would not be reasonable; no barriers are proposed at the other locations.	
Noise and Vibration – Temporary/ Construction Impacts	No impacts	Noise from construction activities may intermittently dominate the noise environment in the immediate area of construction; no adverse noise impacts from construction are anticipated.	Noise from construction activities may intermittently dominate the noise environment in the immediate area of construction; no adverse noise impacts from construction are anticipated.	Noise from construction activities may intermittently dominate the noise environment in the immediate area of construction; no adverse noise impacts from construction are anticipated.	NOI-1: To reduce noise levels from construction to the extent that is technically feasible and avoid unnecessary annoyance from construction noise, construction noise control measures as detailed in Section 3.15 of Chapter 3 will be implemented.
Wetlands and Other Waters	No impacts	2.815 acres of CDFG jurisdictional waters potentially affected (not considered to constitute waters of the United States due to their lack of connectivity with Traditional Navigable Waters).	0.625 acre of CDFG jurisdictional waters potentially affected (not considered to constitute waters of the United States due to their lack of connectivity with Traditional Navigable Waters).	0.707 acre of CDFG jurisdictional waters potentially affected (not considered to constitute waters of the United States due to their lack of connectivity with Traditional Navigable Waters).	W-1: Avoidance and minimization efforts to be utilized in order to protect aquatic resources during the course of the project. See Chapter 3 for detailed measure W-1 on Wetlands. W-2: An Environmentally Sensitive Area (ESA) fence will be installed along washes within the right-of-way that will not be directly affected by the project. W-3: A biological monitor will coordinate with the RE to ensure that construction activities will not have an impact on washes limited by the ESA fencing. W-4: Project impacts to the California Department of Fish and Game

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
					(CDFG) jurisdictional waters will be mitigated at a minimum 2:1 ratio, either through onsite restoration and/or offsite acquisition.
Plant Species	No impacts	A total of 549.75 vegetation acres (ac) impacted. • 265.66 ac of Atriplex Scrub • 184.98 ac of Creosote Bush Scrub • 99.11 ac of Disturbed Atriplex Scrub. Species affected: crowned muilla (3 individuals) and Mojave spineflower (10.9 ac).	A total of 409.62 vegetation acres (ac) impacted. • 264.17 acres of Atriplex Scrub • 12.26 ac of Creosote Bush Scrub • 133.19 ac of Disturbed Atriplex Scrub. Species affected: crowned muilla (1 individual) and Mojave spineflower (51.4 ac).	A total of 427.31 vegetation acres (ac) impacted. • 279.23 ac of Atriplex Scrub • 0.30 ac of Creosote Bush Scrub • 147.78 ac of Disturbed Atriplex Scrub. Species affected: crowned muilla (2 individuals) and Mojave spineflower (42.1 ac).	BIO-1: Pre-construction surveys for rare plants will be conducted to determine where rare plants and sensitive species that are to be protected in place as determined by the biologist.BIO-2 through BIO-5 (see Chapter 3) will establish monitor and ESA protection. BIO-4: A qualified biologist will monitor construction activities to ensure that no impacts would occur to the populations within the ESA.
Animal Species	No impacts	A total of 740.81 habitat acres (ac) impacted. • Burrowing owl: 740.81 • American badger: 549.75 • Prairie falcon: 549.75 • Le Conte's thrasher: 549.75 • Loggerhead shrike: 549.75 • White-tailed kite: 549.75 • Cooper's hawk: 549.75	A total of 666.91 habitat acres (ac) impacted. • Burrowing owl: 666.91 • American badger: 409.62 • Prairie falcon: 409.62 • Le Conte's thrasher: 409.62 • Loggerhead shrike: 409.62 • White-tailed kite: 409.62 • Cooper's hawk: 409.62	A total of 686.33 habitat acres (ac) impacted. • Burrowing owl: 686.33 • American badger: 427.31 • Prairie falcon: 427.31 • Le Conte's thrasher: 427.31 • Loggerhead shrike: 427.31 • White-tailed kite: 427.31 • Cooper's hawk: 427.31	BIO-6: A biological monitor will monitor all construction activities to ensure that no harm to American badger will take place. All monitoring activities will be consistent with the monitoring measures listed in the avoidance and minimization measures for desert tortoise and Mohave ground squirrel. BIO-7: All temporary, construction staging areas, storage areas, and access roads involved with this project will occur within the permanent impact area. Access to the project site will be gained from the existing

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
					SR-58. No new access roads will be built as part of this project. BIO-8: All measures will be taken to minimize impacts on nesting birds. A pre-construction sweep for nesting birds would be conducted prior to construction activities outside of the nesting season as well. BIO-9: A preconstruction survey of the project site for burrowing owl and other bird species protected by the MBTA will occur 30 days prior to commencing construction activities. For more details see Section 3.20 in Chapter 3. BIO-10: If burrowing owls are found on site during the pre-construction sweep specific procedures must be followed as detailed in Section 3.20 of Chapter 3.
Threatened and Endangered Species – Permanent	No impacts	A total of 549.71 habitat acres impacted. Listed below the total acres impacted by species: Desert tortoise: 549.71 Mohave ground squirrel: 549.71	A total of 409.62 habitat acres impacted. Listed below the total acres impacted by species: Desert tortoise: 409.62 Mohave ground squirrel: 409.62	A total of 427.31 habitat acres impacted. Listed below the total acres impacted by species: Desert tortoise: 427.31 Mohave ground squirrel: 427.31	BIO-11: Replacement habitat for burrowing owl will be provided according to the ratios listed below and can be combined with the mitigation ratios required for other species, unless the land purchase under that mitigation does not comply with the conditions listed: Replacement of occupied habitat with occupied habitat at 1.5 times per 6.5 acres (9.95) per pair or single bird, or
Threatened and Endangered Species – Temporary	No impacts	Temporary disturbance of habitats	Temporary disturbance of habitats	Temporary disturbance of habitats	

Affected Resources	Alternative 1 No-Build Alternative	Alternative 2 Southerly Alignment	Alternative 3 Existing Alignment	Alternative 4 Northerly Alignment	Avoidance, Minimization and Compensation Measures
					Replacement of occupied habitat with habitat contiguous with occupied habitat 2 times per 6.5 acres per pair or single bird (13), or Replacement of occupied habitat with suitable unoccupied habitat, as required by the mitigation plan, at 3 times per 6.5 acres (19.5) per pair or single bird. See Chapter 3 for details of Desert tortoise and MGS measures BIO-12 through BIO-30. BIO-31: Mitigation for loss of desert tortoise habitat will be accomplished based on the quality of habitat affected according to the following ratios: • 5:1 ratio for impacts west of Hinkley Road; and • 3:1 ratio for impacts east of Hinkley Road. BIO-32: Mitigation for loss of MGS habitat will be accomplished based on the quality of habitat affected according to the following ratios: • 5:1 ratio for impacts west of Hinkley Road; and • 3:1 ratio for impacts east of Hinkley Road.

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Chapter 1. **Proposed Project**

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Chapter 1. **Proposed Project**

1.1 Introduction

Caltrans is the lead agency under NEPA and CEQA.

Caltrans proposes to realign (under Alternatives 2 and 4) and widen (under all Build Alternatives) SR-58 from a two-lane conventional highway to a four-lane expressway from Post Mile (PM) 22.2 to PM 31.1. The physical improvements for the proposed project would extend from PM 22.2 to PM 31.1; however, in order to account for signage during construction, the total project limits would extend from PM 21.7 to PM 31.6. The total length of the project is 8.9 miles, starting 2.8 miles west of Hidden River Road to 0.7 miles East of Lenwood Road. The proposed project area is approximately five miles west of the city of Barstow, within the Mojave Desert region of San Bernardino County, California. The existing facility exhibits highway operating friction due to uncontrolled access from multiple driveways and unimproved roadways. SR-58 is a route for recreational, interregional, and commercial travelers (See Figures 1.1 and 1.2).

The proposed project is funded in the amount of $22.9 million in the FY 2013-2014 of the 2010 State Transportation Program (STIP) under the 20.20.025.700 Program for new highways. The total cost including right of way ranges from $159.4 to $192.6 million.

The proposed Project is fully funded and is in the SCAG Final programmed financially constrained 2011 Federal Transportation Improvement Program (FTIP) Amendment #24 to 31 (Project Number 4351), which was found to conform by FHWA on June 4, 2012[4]. Also, the proposed Project is included among the listing of the modeled projects in the SCAG 2012 RTP (Project Number 4351). Please see copies of the FTIP listing and the RTP listing in Appendix I of this document.

1.2 Purpose and Need

1.2.1 Project Purpose

The purpose of the proposed SR-58 Hinkley Project is:

- To relieve traffic congestion by providing an acceptable Level of Service (LOS), which is consistent with the SR-58 Route Concept Report;
- To improve operational efficiency and enhance safety conditions by maintaining route continuity, upgrading the facility to a controlled access, four-lane expressway that matches the sections on the east and west of the proposed project area;
- To correct structural deficiencies, by upgrading the pavement structural section to meet current standards to better accommodate truckloads, reducing roadway damage and maintenance costs associated with the high volume of truck traffic utilizing this route; and
- To meet the needs for regional transportation in accordance with regional plans such as the RTIP and FTIP, while minimizing right of way, community, and environmental impacts.

[4] Project described in Final 2011 FTIP as “SR58 Expressway-realign and widen from 2-4 lane expressway. New interchanges at Lenwood Rd and Hinkley Rd 2.8 miles west of Hidden River Rd. to 0.7 miles east of Lenwood Road -- realign and widen to 4 lane expressway (2-4 lanes) (phase 2).

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Figure 1.1: Project Vicinity Map

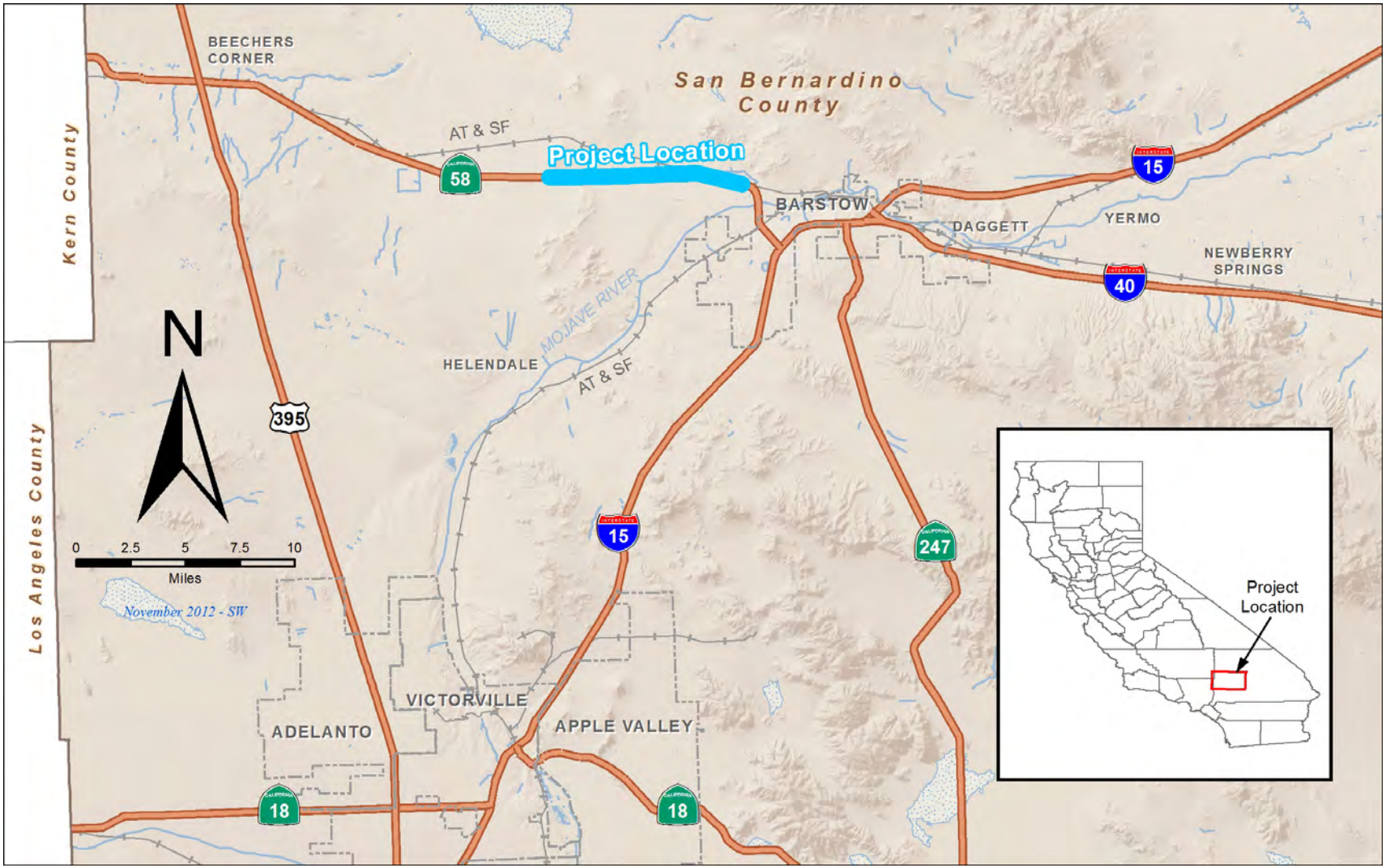

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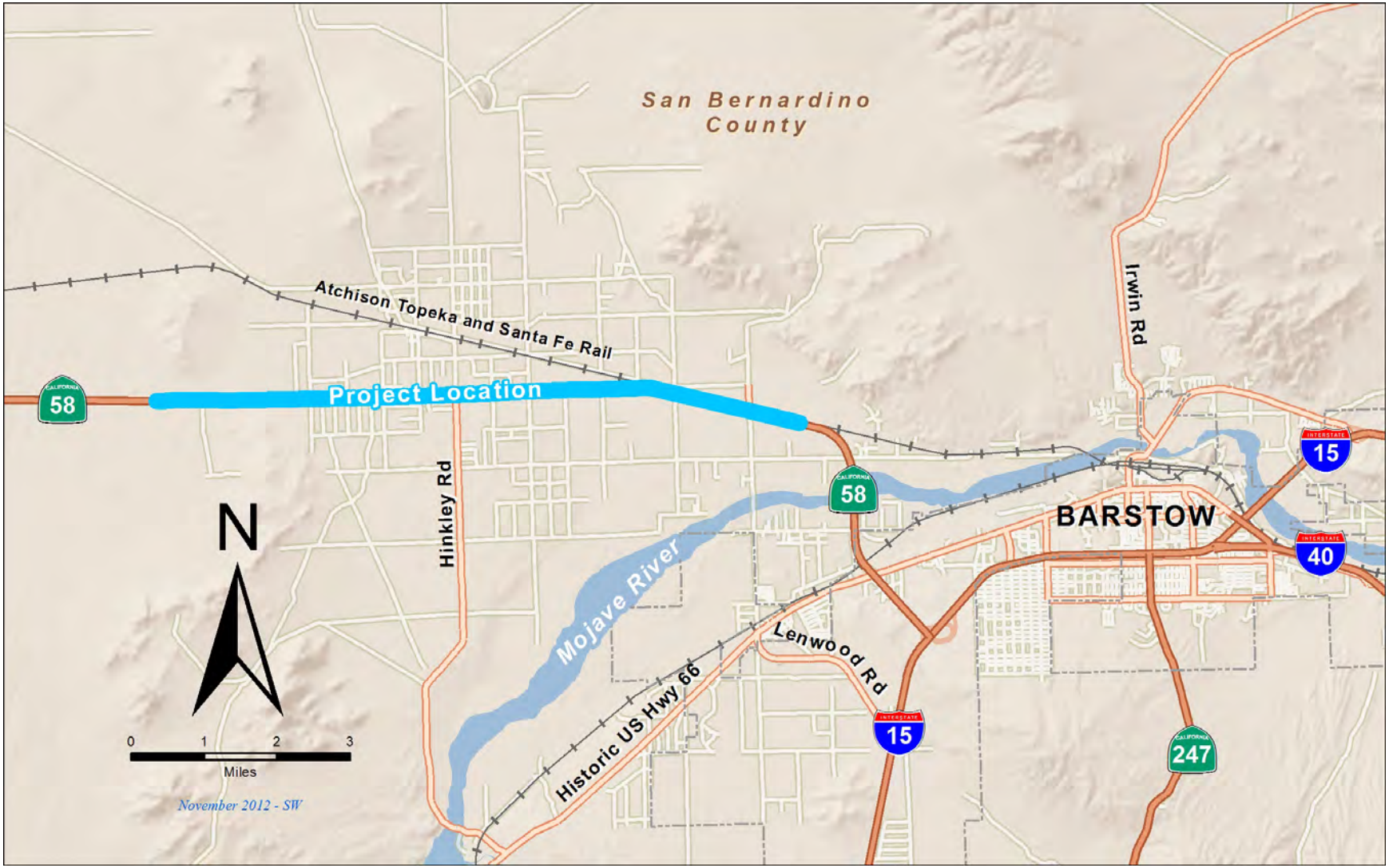
Figure 1.2: Project Location Map



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1.2.2 Project Need

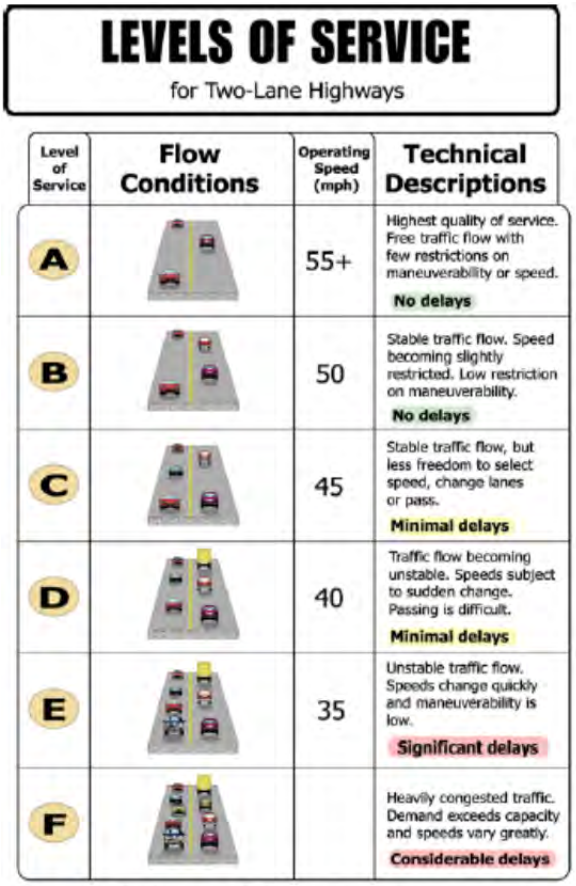
1.2.2.1 Capacity, Transportation Demand, and Safety

Existing Capacity and Level of Service

The ability of a highway to accommodate traffic is typically measured in terms of LOS. LOS is a qualitative measure that describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. LOS conditions are designated as "A," indicating best free-flow conditions, through "F," indicating worst-case, congested conditions.

These volumes are used to estimate the extent to which peak-hour traffic volumes equal or exceed the maximum desirable capacity of a roadway. Roadway capacity is generally determined by the number of vehicles that can reasonably pass over a given section of roadway in a given period of time. The *Highway Capacity Manual*, prepared by the National Transportation Research Board, identifies travel speed, freedom to maneuver, and proximity to other vehicles as important factors in determining the LOS on a roadway. LOS definitions for two-lane highways and multi-lane highways are shown in Figure 1.3 Highway Levels of Service Definitions.

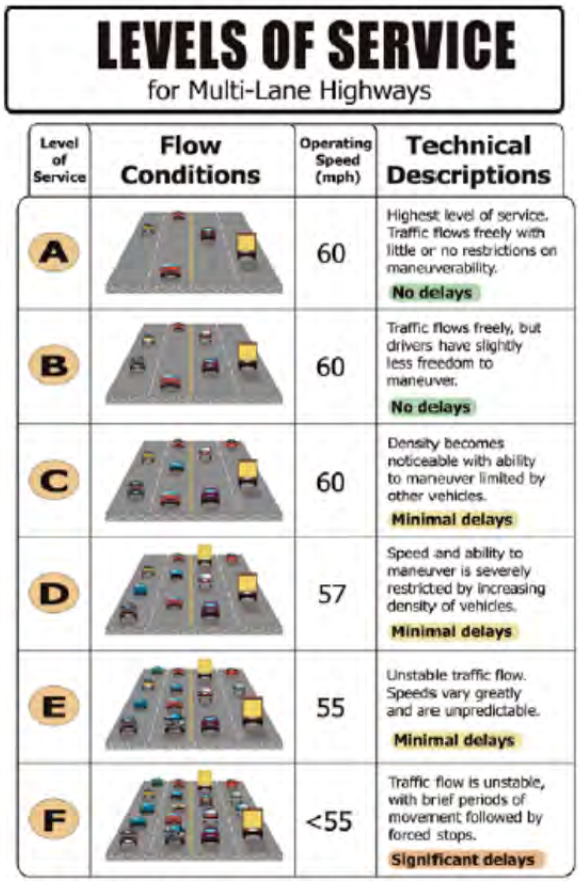
Figure 1.3: Highway Levels of Service Definitions



LEVELS OF SERVICE
for Two-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		55+	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. **No delays**
B		50	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. **No delays**
C		45	Stable traffic flow, but less freedom to select speed, change lanes or pass. **Minimal delays**
D		40	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. **Minimal delays**
E		35	Unstable traffic flow. Speeds change quickly and maneuverability is low. **Significant delays**
F			Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. **Considerable delays**

Source: 2000 HCM, Exhibit 20-2, LOS Criteria for Two-Lane Highways in Class 1



LEVELS OF SERVICE
for Multi-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		60	Highest level of service. Traffic flows freely with little or no restrictions on maneuverability. **No delays**
B		60	Traffic flows freely, but drivers have slightly less freedom to maneuver. **No delays**
C		60	Density becomes noticeable with ability to maneuver limited by other vehicles. **Minimal delays**
D		57	Speed and ability to maneuver is severely restricted by increasing density of vehicles. **Minimal delays**
E		55	Unstable traffic flow. Speeds vary greatly and are unpredictable. **Minimal delays**
F		<55	Traffic flow is unstable, with brief periods of movement followed by forced stops. **Significant delays**

Source: 2000 HCM, Exhibit 21-3, Speed-Flow Curves with LOS Criteria for Multi-Lane Highways

As discussed in the *March 2010 Traffic Study Report*, in accordance with Caltrans guidelines, the LOS analyses were conducted using the *Highway Capacity Manual 2000* (Transportation Research Board 2000) methodology to obtain the LOS and corresponding measures of effectiveness for the study intersections and representative highway segments in the project area. Synchro 7.0 software was used to analyze signalized intersections while HCS 2000 software was used to analyze stop-controlled intersections, highway segments, and ramp merge/diverge operations. Truck percentages used in the level of service analysis were derived from peak hour vehicle classification counts. Truck percentages of 40 percent for the SR-58 and 15 percent for the local streets were applied to all the level of service analysis. While Synchro and HCS' two-lane highway and intersection level of service analysis modules permit a truck percentage input above 25 percent, HCS multilane highway and ramp merge/diverge modules do not allow a truck percentage input above 25 percent. Therefore, for 2020 and 2040 without project conditions, HCS analysis was conducted with truck percentage inputs. However, for 2020 and 2040 with project conditions, a Passenger-car-equivalent (PCE) factor of 2.0 was applied to the truck volumes to derive PCE volumes for analysis.

To determine the traffic operational level of service, the existing and projected volumes through an intersection are compared to the capacity of the intersection in order to calculate the delay per vehicle in seconds for the study intersection. The LOS criteria for signalized and stop-controlled intersections are provided in Tables 1-1 and 1-2 below, respectively. LOS categories range from good, nearly free-flow traffic at LOS A, to overloaded, stop-and-go conditions at LOS F.

Table 1-1: Level of Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec/veh)
A	<= 10
B	> 10 - 20
C	> 20 - 35
D	> 35 - 55
E	> 55 - 80
F	> 80

Source: Transportation Research Board 2000.

Table 1-2: Level of Service Criteria for Stop-Controlled Intersections

Level of Service	Control Delay per Vehicle (sec/veh)
A	0-10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: Transportation Research Board 2000.
LOS Criteria above applies to both Two-Way Stop-Controlled and All-Way Stop-Controlled intersections.

Two-lane highway operational analyses were conducted for existing and future without project segments of SR-58 at representative locations along the project limits. Multilane highway operational analyses were also conducted for future with-project segments of the highway at the Hinkley and Lenwood Road interchange locations. LOS criteria for two- lane and multilane highway operations are provided below in Tables 1-3 and 1-4, respectively.

Table 1-3: Level of Service Criteria for Two-Lane Highway Class I

Level of Service	Percent Time- Spent-Following	Average Travel Speed (mi/h)
A	<=35	60.0
B	> 35 - 50	60.0
C	> 50 - 65	59.4
D	> 65 - 80	56.7
E	> 80	55.0

Notes:
1. Source: Transportation Research Board 2000.
2. LOS based on free-flow speed of 60 mi/h

Table 1-4: Level of Service Criteria for Multilane Highways

Level of Service	Maximum density (pc/mi/in)	Average speed (mi/h)	Maximum volume to capacity ratio (v/c)	Maximum service flow rate (pc/h/in)
A	11	60.0	0.30	660
B	18	60.0	0.49	1,080
C	26	59.4	0.70	1,550
D	35	56.7	0.90	1,980
E	40	55.0	1.00	2,200

Notes:
1. Source: Transportation Research Board 2000.
2. LOS based on free-flow speed of 60 mi/h

LOS criteria for ramp merge/diverge analysis are provided in Table 1-5 below.

Table 1-5: Level of Service Criteria for Merge and Diverge Areas

Level of Service	Control Delay per Vehicle (sec/veh)
A	<= 10
B	> 10 - 20
C	> 20 - 28
D	> 28-35
E	> 35
F	Demand exceeds capacity

Source: Transportation Research Board 2000.

Traffic volume data for 2020 and 2040 conditions were derived from Caltrans traffic forecast data. With the build Alternatives 2, 3, and 4, adjustments to the future forecast volumes were made to account for the alignment and grade separations.

For the Alternative 2 condition, future traffic anticipated to access the SR-58 from local streets would need to enter and exit the Expressway at the Hinkley interchange and the Lenwood Road interchange, as other local intersections will be closed off with cul-de-sacs (figures showing Alternative 2 are in Chapter 2 of this document). Volume adjustments were made as follows: local traffic desiring to access SR-58 from Valley View Road to Flower Street on the west side of Hinkley Road would need to travel to the Hinkley Road interchange to access the highway. As the Alternative 2 alignment is proposed entirely south of the Hinkley community, both northbound and southbound traffic desiring to access SR-58 would be anticipated to use the existing SR-58 highway to access the Hinkley Road interchange. In addition, local traffic from east of Hinkley Road at Mountain View Road to Fairview Road would also be expected to use the Hinkley Road interchange to access SR-58. Local traffic from east of Hinkley Road at Mountain View Road to Fairview Road would also be expected to use the Hinkley Road interchange to access the SR-58. Since Summerset Road is located approximately half way between the planned Hinkley Road interchange and the planned Lenwood Road interchange, it is anticipated that Summerset Road traffic desiring to travel westbound would use the Hinkley Road interchange while traffic desiring to travel eastbound would use the Lenwood Road interchange. The Lenwood Road interchange is expected to draw traffic from Dixie Road and eastbound Summerset Road.

Alternatives 3 and 4 volume adjustments are similar since Alternative 3 utilizes the existing SR-58 alignment while Alternative 4 shifts just slightly north of the existing alignment (figures showing Alternative 3 and Alternative 4 are in Chapter 2 of this document). Volume adjustments were made for the two alternatives as follows: traffic originating from and going to north of SR-58 would be expected to travel along a northerly frontage road while traffic originating from and going south of SR-58 would be expected to travel along a southerly frontage road to access the Hinkley Road and Lenwood Road interchanges with SR-58. Similar to Alternative 2 volume adjustments, traffic from west of the Hinkley Road interchange would be expected to use the Hinkley Road interchange to access the SR-58 Expressway, while traffic east of Hinkley Road to westbound traffic from Summerset Road would also be expected access SR-58 via the Hinkley Road interchange. Lenwood Road interchange volume adjustments are the same for all three build alternatives as the proposed project design is the same at this location.

Table 1-6 shows existing and forecasted mainline traffic data on SR-58 within the project limits.

Regional Population/Traffic Forecasts

The 2008 Southern California Association of Government (SCAG) Regional Transportation Plan (RTP) Programmatic Environmental Impact Report (PEIR) determined that the 2008 baseline population for San Bernardino County was 2,097,756 and estimated that the regional population in 2035 would be 2,957,370. Given these numbers, there will be a nearly 41% increase in regional population between 2008 and 2035. Regional traffic is predicted to increase with the projected growth in population.

Table 1-6: Existing and Forecasted Mainline Traffic Data

Data	2011 Baseline	2016	Alternative 1 (No Build) Forecast 2020*	Alternatives 2, 3 and 4 Forecast 2020*	Alternative 1 (No Build) Forecast 2040*	Alternatives 2, 3 and 4 Forecast 2040*
Annual Average Daily Traffic (AADT)	12,100	14,200	16,000	16,000	24,100	24,100
Design Hour Volume (DHV)	1,570	1,820	2,050	2,050	3,080	3,080
Peak Hour Volume (DHV)	940	1,090	1,230	1,230	1,850	1,850
Directional Split (D/S)	60%	60%	60%	60%	60%	60%
Level of Service (LOS)	E	E	E	B	F	C
Vehicle to Capacity Ratio (V/C)	0.59	0.68	0.77	0.34	1.15	0.51
Trucks % in ADT	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Trucks % in DHV	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%

Source: Supplemental Traffic Data for Consistency with February 2010 Traffic Study Report Memorandum (October 2011).
* Traffic volume data for 2020/2040 conditions were derived from Caltrans traffic forecast data. From 2009 to 2040, the future growth factor of 1.085 is applied. For opening year 2020, the future growth factor of 0.385 is applied.

Projected Capacity Needs

Traffic forecasts for the opening year (2020) and forecast year (2040) are provided in Table 1-6 above. Average daily traffic (ADT) is forecast to nearly double, from 12,100 vehicles (2011) to 24,100 vehicles (2040) under Alternative 1 (the No Build alternative). If no improvements are made, this highway segment is projected to deteriorate from LOS E to LOS F by 2040, with heavy traffic congestion and great variations in speed.[5] The highway configuration for the existing and no-build forecast year 1 is the existing two lane conventional highway structure. Alternatives 2, 3, and 4 assume a four lane expressway thereby increasing the capacity of SR-58. The LOS under Alternatives 2, 3, and 4 would improve to LOS B in the opening year and LOS C in the forecast year.

System Safety Needs – Existing Accident Rates

The average accident rate for a segment of highway or an intersection is based on the highway characteristics (number of lanes, degree of curvature, etc.) and the vehicle miles traveled on the study segment during a given period of time. Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) shows that there were 45 accidents from May1, 2007 to April 30,-2010, on eastbound and westbound SR-58, between PM 22.2 to PM 31.1.

The project area experienced lower total accident rates than those for a similar highway (see Table 1-7). However, fatality rates were slightly higher than those expected for a similar facility. The types of collision were 15.6% broadside, 20.0% sideswipe, 20.0% rear end, 28.9% hit object, 2.2% overturn, 8.9% head-on, and 4.4% other. Primary collision factors were improper turns, other violations, excessive speeds and driving under the influence (Caltrans 2012b).

[5] Transportation Research Board. 2000. *Highway Capacity Manual*.

Table 1-7: TASAS data from 05-01-2007 to 04-30-2010

Accident rates (per Million Vehicles Miles) (05-01-2007 to 04-30-2010)						
Location	**Actual**			**Statewide Average for Similar Facilities**		
	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
PM 22.2/31.1	0.038	0.28	0.43	.025	.34	0.80

Source: Draft Project Report, December 2012.

An improved facility with additional capacity is needed. The two to four additional travel lanes, proposed by the build alternatives, and frontage roads that would be parallel to the highway on both sides would increase capacity for all types of traffic. Local traffic would be able to circulate within the community and adjacent localities by local road or by the proposed expressway. An additional lane in each direction would (1) allow interregional vehicles to travel along the corridor without having to reduce their speeds when transitioning from two lanes to one, and (2) separate slower moving truck traffic from passenger vehicle traffic. The implementation of design features such as full-width 10-foot shoulders, a separated median (width varies), and a clear recovery zone would improve passing conditions, increase sight distance, and minimize vehicle conflicts.

1.2.2.2 Roadway Deficiencies

Operational Deficiencies

Driveways and Intersections: The existing two-lane highway has numerous driveways and intersecting cross-streets, which present conflict points that affect the operation of the highway. Vehicles enter and exit the highway to access businesses, services, and residences along SR-58. There are numerous crossings (both paved and unpaved) where these turning movements occur.

Route Continuity between Existing Four-lane Expressways: At the project location, SR-58 is a two-lane facility; however, immediately east and west of the proposed project, SR-58 is a four-lane facility. The narrower highway section within the project area creates a bottleneck between the existing four-lane highway sections and decreases route continuity.

Structural Section Limitations

SR-58 extends a total of 240 miles, from U.S. 101 near San Luis Obispo, to the west, to I-15 in Barstow, to the east. SR-58 crosses three major north-south routes: I-5, SR-99, and U.S. 395. It is a major connection point for goods movement between Interstate 5 (I-5) in Bakersfield and I-15 and 40 (I-40) in Barstow.

State Route 58 is a major freight access corridor for the Central Valley. It acts as a major extension of the Interstate System by connecting I-5 in Bakersfield to I-15 and I-40 in Barstow and is part of the Strategic Highway Corridor Network (STRAHNET) between SR-99 and Interstate (I-15). It is designated as part of the National Highway System and it is also designated for oversized trucks under the Surface Transportation Assistance Act (STAA) of 1982. Traffic on SR-58 includes a high volume of interstate trucks that transport agricultural and

commercial commodities. As indicated by the truck percentages in Table 1-1, truck ADT will consistently increase through forecast year 2040. The truck percentage for all forecasted years, as shown in Table 1-1, is 40%. It is necessary to ensure that the highway pavement can accommodate an increasing number of Equivalent Single Axle Loads (ESALs) over its design life and an increasing number of STAA trucks. The existing pavement structural section is inadequate with respect to its ability to handle the high volume of truck traffic, which is contributing to rising maintenance costs[6]. As shown in Table 1-1, SR-58 is expected to continue to carry high volumes of truck traffic (40% in 2040).

ESAL estimates are used to determine the amount of damage that is caused by the varying number and types of axle loads that a particular pavement section is subject to over its design life. These calculations are made to determine pavement structural section design (pavement layer thicknesses). ESALs specific to SR-58 for a 10-, 20-, and 40-year design life are provided in Table 1-3. In addition, traffic indices (TIs) are also used to determine pavement thickness. The larger TIs correspond with thicker structural sections for the pavement. As indicated in Table 1-3, larger TIs were calculated for a 10-, 20- and 40-year design life, respectively.

The existing pavement structural section of SR-58 was not designed to accommodate the designation pertaining to the national network for STAA trucks, or the ESALs listed in Table 1-8. This has resulted in an increase in pavement maintenance costs.

Table 1-8: Equivalent Single Axle Load Estimate and Traffic Index

	Year	Inside and Outside Lane	
		Mainline ESAL	**Shoulder ESAL**
10-Year	2030	22,268,155	445,363
20-Year	2040	44,536,310	890,726
40-Year	2060	89,072,620	1,781,452
		Mainline TI	**Shoulder TI**
10-Year	2030	13.0	8.2
20-Year	2040	14.1	8.9
40-Year	2060	15.4	9.6

Source: System Metrics Group, Inc. 2010 (Table 19).

Improvements that promote access control and separate local traffic from interregional traffic (via grade-separation structures) would address operational needs within the project area. Additionally, construction of a new structural section that would extend overall pavement life and meet standards for STAA trucks would address existing structural section limitations. Less frequent pavement maintenance would reduce future maintenance costs as well as the number and frequency of delays for the traveling public.

[6] Caltrans Highway Design Manual Section 600.

State Highway System (SHS)

According to Streets and Highways Code (SHC), section 300 et seq., the intent of the SHS is to serve the state's heavily traveled rural and urban corridors: connect the communities and regions of the state; and serve the state's economy by connecting centers of commerce, industry, agriculture, mineral wealth, and recreation. SR-58 was designated as a part of the SHS under SHC, section 358. The proposed project area is a heavily traveled (Section 1.3.2.1) portion of SR-58. This portion of SR-58 currently has an LOS of E, and is forecasted to have an LOS of F in 2040 if the highway capacity is not increased, thereby negatively affecting the connection between the communities and regions of the state that are served by SR-58.

Intermodal Corridor of Economic Significance Act

The Intermodal Corridor of Economic Significance Act establishes the Intermodal Corridors of Economic Significance (ICES) system, as outlined in SHC sections 2190–2191. The ICES system is composed of corridors that are essential to the California economy in terms of national and international trade. Routes identified as part of the ICES system are important transportation arteries that connect or provide access to major sea or waterway ports, nationwide railway systems, airports, and interstate and intrastate highway systems, thereby serving as intermodal corridors of economic significance. The SR-58 Hinkley Expressway Project is within a portion of the highway that is part of the ICES system,[7] providing intermodal access to centers of commerce.

Interregional Road System

The Interregional Road System (IRRS) is established in SHC Section 164.3. The IRRS is a system of roads or projects that provide interregional connections to all economic centers in the state.[8] SR-58 between I-5 and I-15 is part of the IRRS. It is further classified as a High-Emphasis Focus Route, which requires a facility to be, at a minimum, a four-lane expressway (Caltrans 1999a). The proposed project involves a segment of SR-58 that is part of the IRRS but one of two segments that do not meet the IRRS requirement of a four-lane expressway. As part of the IRRS plan, it will be necessary to meet minimum standards and upgrade the existing two-lane highway to a four-lane expressway.

Freeway and Expressway System

The Freeway and Expressway System (FES) is established in SHC sections 250–257. The FES is a statewide system of freeways and expressways and connections thereto, creating a comprehensive system of access-controlled[9] freeways and expressways throughout the state.[10] The proposed project involves a segment of SR-58 that is part of the FES and therefore subject to access-control requirements. As part to the FES, there is a need to implement access control.

[7] P. 3, California Department of Transportation. 2004. *Transportation Concept Report.* Available: <http://www.dot.ca.gov/dist6/planning/tcrs/sr58tcr/sr58fulldocument.pdf>.
[8] California Highways. n.d. *State Highway Types*. Available: <http://www.cahighways.org/stypes.html>. Accessed: July 20, 2009.
[9] Access-controlled highways do not have intersections. Access and egress are provided by ramps at interchanges.
[10] California Highways. n.d. *State Highway Types*. Available: <http://www.cahighways.org/stypes.html>. Accessed: July 20, 2009.

Surface Transportation Assistance Act of 1982

In 1982, the federal government passed the STAA, a comprehensive transportation funding and policy act to address concerns about the surface transportation infrastructure (highways and bridges). The act allows oversize trucks on designated routes. SR-58 is a designated STAA route,[11] which must meet safety standards to accommodate the oversize STAA trucks. The proposed project involves a segment of SR-58 designated for use by STAA trucks. As a designated STAA route, there is a need to meet standards so that oversize STAA trucks can be accommodated.

1.2.2.3 Modal Interrelationships and System Linkages

Interface with Airport, Rail, Port, and Mass Transit Facilities

Various airports, such as the Southern California Logistics Airport, San Bernardino International Airport, Ontario International Airport, East Kern Airport, Palmdale Airport, and March Inland Port, are within the vicinity of the project area. Airports provide cargo services, with most also providing commuter air travel services. Table 1-9, below, provides a summary of cargo tonnage per airport and the approximate distance from the project area.

Additional airports within the immediate project area include Barstow Daggett, Apple Valley, Borax, El Mirage Field (Adelanto), and Gray Butte Field.

Table 1-9: Airport Distance and SCAG 2035 Cargo Tonnage

Facility	Approximate Distance	Tonnage (Thousands)
Southern California Logistics Airport	38 miles southwest	1,290
San Bernardino International Airport	75 miles southwest	230
Ontario International Airport	80 miles southwest	1,959
East Kern Airport	48 miles west	Unknown*
Palmdale Airport	75 miles southwest	781
March Inland Port (Airport)	92 miles southwest	1,130

* East Kern Airport is not within the SCAG jurisdiction that provided the 2035 projections.

Source: SCAG 2008 (RTP Page 111).

Again, SR-58 is part of the ICES system. It is an important transportation artery that provides access to major sea or waterway ports, nationwide railway systems, airports, and interstate and intrastate highway systems. SR-58 is also part of the IRRS, which requires four-lane expressways to connect the region's economic centers. Because of airport cargo tonnage projections, the need exists to facilitate the movement of cargo via ground and rail transport.

Rail cargo yards surrounding the project area include the Burlington Northern Santa Fe (BNSF) Barstow Rail Yard (18 miles east), Union Pacific Yermo Rail Yard (30 miles east), BNSF/Union Pacific Bakersfield Rail Yard (99 miles northwest), BNSF Victorville Rail Yard (39 miles southwest), Southern Pacific San Bernardino Rail Yard (65 miles southwest),

[11] 23 CFR 658, Appendix A.

BNSF San Bernardino Rail Yard (68 miles southwest), and Union Pacific Mira Loma Rail Yard (72 miles southwest). Additionally, the planned Southern California Rail Complex at the Southern California Logistics Airport in Victorville will provide on-site industrial facilities with direct linkages to rail, air, and ground cargo transport.[12] Because of the project's centralized location between the rail yards and the rail complex, there is a need to ensure uninterrupted transport of rail cargo; therefore, conflicts between highway traffic and rail traffic must be avoided.

Cargo trucks from ports west of the project area use this section of SR-58 to access locations to the east because there are few continuous east-west routes that provide interregional connections. These ports include the ports of Long Beach (140 miles away), Los Angeles (160 miles), San Diego (180 miles), and Hueneme (180 miles). Because of this east-west connection, there is a need to facilitate the movement of cargo via ground and rail transport.

1.2.2.4 Project as a Connecting Link

SR-58 is a major freight corridor for the Central Valley. It acts as a major extension of the Interstate System by connecting I-5 in Bakersfield to I-15 and I-40 in Barstow. It is part of the Strategic Highway Network (STRAHNET) between State Route 99 (SR-99) and I-15, designated as part of the NHS, classified as part of the FES, and designated for STAA trucks. It is also included as a High-Emphasis Route and Focus Route under the IRRS. Within District 8, it is functionally classified as a rural Principal Arterial (PM 0.0/29.4) and a rural Major Collector (C1) (PM 29.4/32.9).

The project serves as a connecting link between the facilities and/or systems listed below.

- Local Connections: The Southern California Logistics Airport is located 38 miles southeast of the project area. The planned Southern California Rail Complex at the Southern California Logistics Airport will provide on-site industrial facilities with direct linkages to rail, air, and ground cargo transport. Cargo transported between this cargo center and economic centers to the east will likely travel via this section of SR-58 when ground transport of goods is required.
- Regional Connections, Truck Terminals, and Airports: San Bernardino International Airport, Ontario International Airport, East Kern Airport, Palmdale Airport, and March Inland Port are located south and west of the project site. These airports also carry a substantial amount of cargo that requires rail or ground transport. Additionally, 10 major truck terminals and 80 trucking firms are located in San Bernardino County. Truck cargo carriers entering or leaving Southern California pass through San Bernardino County and often use this section of the SR-58, with 40% of the traffic on this segment of the highway.
- Regional Connections, Rail, and Port: Rail transport can be facilitated by reducing conflicts between railroad traffic and highway traffic. The railroad crossing within the project area extends to the BNSF Barstow Rail Yard and the Union Pacific, Yermo Rail Yard. These rail yards also connect to the BNSF/Union Pacific Bakersfield Rail Yard and Port Hueneme to the northwest. The BNSF Barstow Rail Yard and the Union Pacific Yermo Rail Yard also connect to the Victorville Rail Yard, the Southern Pacific San Bernardino Rail Yard, the BNSF San

[12] Southern California Logistics Airport and Rail Authorities. EIR

Bernardino Rail Yard, and the Union Pacific Mira Loma Rail Yard to the south. These rail yards to the south are also linked to the Port of Los Angeles and Port of Long Beach.

1.3 Independent Utility and Logical Termini

Logical termini are defined as the (1) rational end points for a transportation improvement project and (2) rational end points for a review of environmental impacts. Logical termini prevent segmentation, which may arise if a transportation need extends throughout an entire corridor, but environmental issues and transportation need are inappropriately discussed for only a segment of the corridor.

A project with independent utility or independent significance (1) can function as a standalone improvement and not force immediate transportation improvements elsewhere, or on the remainder of the facility (highway) and (2) does not restrict consideration of other reasonably foreseeable transportation improvements in an adjoining section.

1.3.1 Logical Termini and Sufficiency in Length

Improvements are proposed to close the gap between the two existing four-lane expressway segments immediately west and east of project area. The logical termini for physical improvements for this project, is the location where the expressway changes to a highway (i.e., changes from four lanes to two lanes) and the location where the highway changes back to an expressway (i.e., changes from two lanes to four lanes). The physical improvements for the proposed project would extend from PM 22.2 to PM 31.1; however, in order to account for signage during construction, the total project limits would extend from PM 21.7 to PM 31.6.

1.3.2 Independent Utility

The proposed project involves gap closure between two existing four-lane expressway segments and interchanges at key major roadways. The proposed project, and its design features, would not force immediate transportation improvements elsewhere or on the remainder of the highway for the following reasons:

- the project closes a gap between two four-lane highway segments and does not create a need for additional lanes beyond the westerly or easterly project termini, and
- although interchanges will be designed to accommodate all planned/programmed projects within the project area, the design will not create the need for those projects or other improvements.

1.3.3 Consideration of Alternatives for Other Reasonably Foreseeable Transportation Improvements

No transportation projects have been proposed or are reasonably foreseeable within or immediately adjacent to the limits of the proposed project. It is reasonably foreseeable that maintenance activities will need to be performed within or immediately adjacent to the proposed project limits, however, no maintenance activities have been proposed at this time. Therefore, the proposed project would not restrict the consideration of alternatives for other reasonably foreseeable transportation improvements, including adjacent to the project limits.

Chapter 2. **Project Alternatives**

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Chapter 2. Project Alternatives

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

- Alternative 1 – No-Build,
- Alternative 2 – Southerly Alignment,
- Alternative 3 – Existing Alignment, and
- Alternative 4 – Northerly Alignment.

This chapter defines the proposed project and discusses project alternatives in further detail.

2.1 Project Description

The project is located in San Bernardino County on SR-58 starting 2.8 miles west of Hidden River Road and ends 0.7 miles east of Lenwood Road. The physical improvements for the proposed project would extend from PM 22.2 to PM 31.1; however, in order to account for signage during construction, the total project limits would extend from PM 21.7 to PM 31.6. The project covers a distance of 8.9 miles.

Within the project limits, SR-58 is a conventional two-lane highway with 12-foot lanes and shoulders varying from six to eight feet wide. All existing local road intersections are stop-controlled for the local streets with the exception of Lenwood Road which is signalized. The purpose of the proposed project is to maintain route continuity, relieve congestion, upgrade the pavement structural and roadway cross-section to meet current standards, improve safety and operations within the project limits.

2.2 Alternatives

2.2.1 Project Alternatives

Various project alternatives have been evaluated and screened for engineering feasibility, cost, environmental implications, right-of-way requirements, and level of performance. In 1991, a Project Approval Report (PAR) provided preliminary data on various alternatives. In 2002, a Value Analysis was completed by Caltrans to further evaluate project alternatives. As the process continued, the public and various resource agencies were requested to provide input on the project's purpose and need and the alternatives under study. The alternatives presented in Figures 2.1 through 2.3 show the alignments and features of each Alternative. These figures reflect Caltrans' recommendations accomplished through the environmental scoping process, which evaluated public and resource agency comments on the proposed project purpose and need and the alternatives under study.

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Figure 2.1: Alternative 2 – Southerly Alignment (Identified Preferred Alternative), Sheet 1

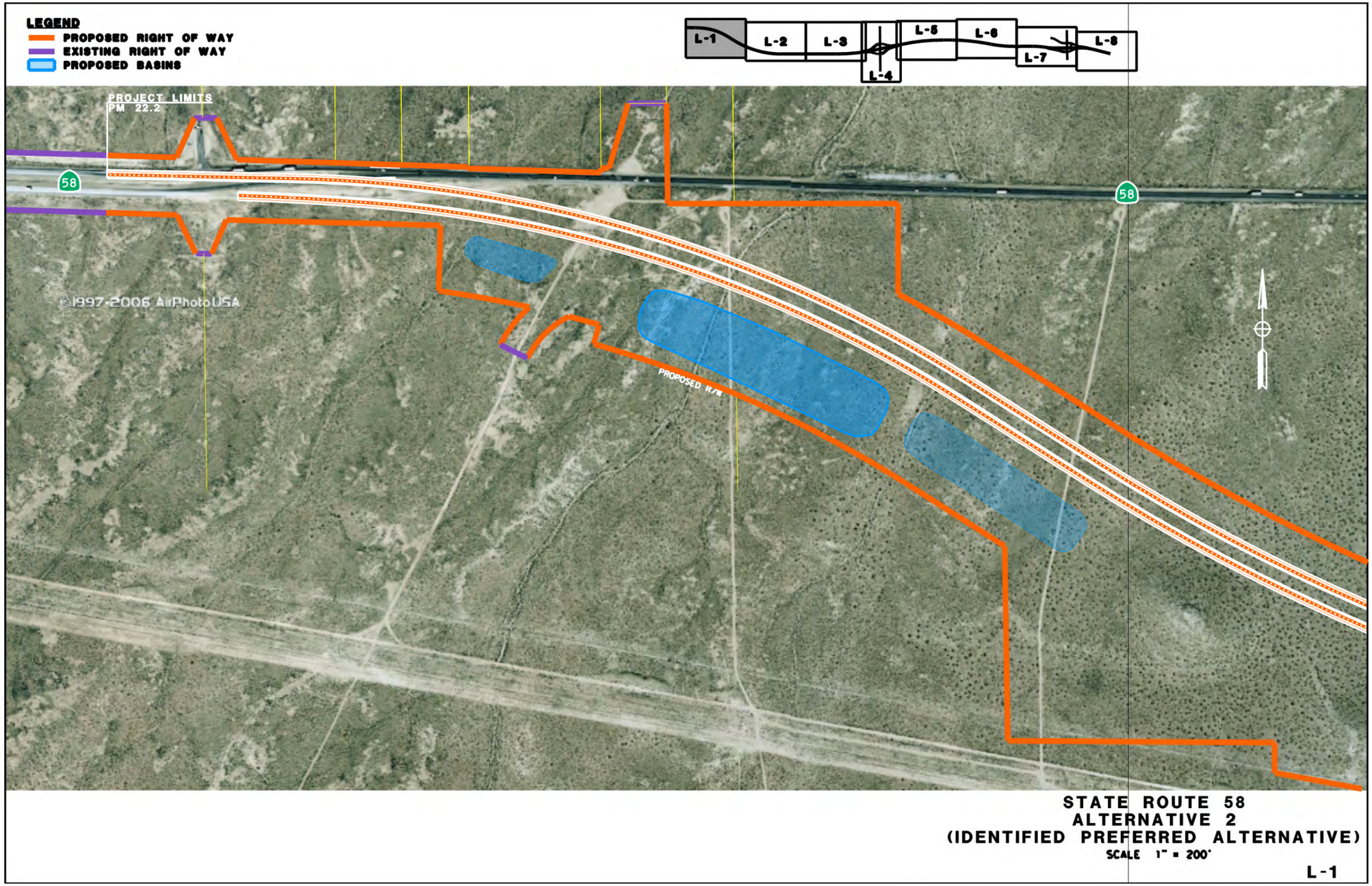

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Figure 2.1: Alternative 2 – Southerly Alignment (Identified Preferred Alternative), Sheet 2

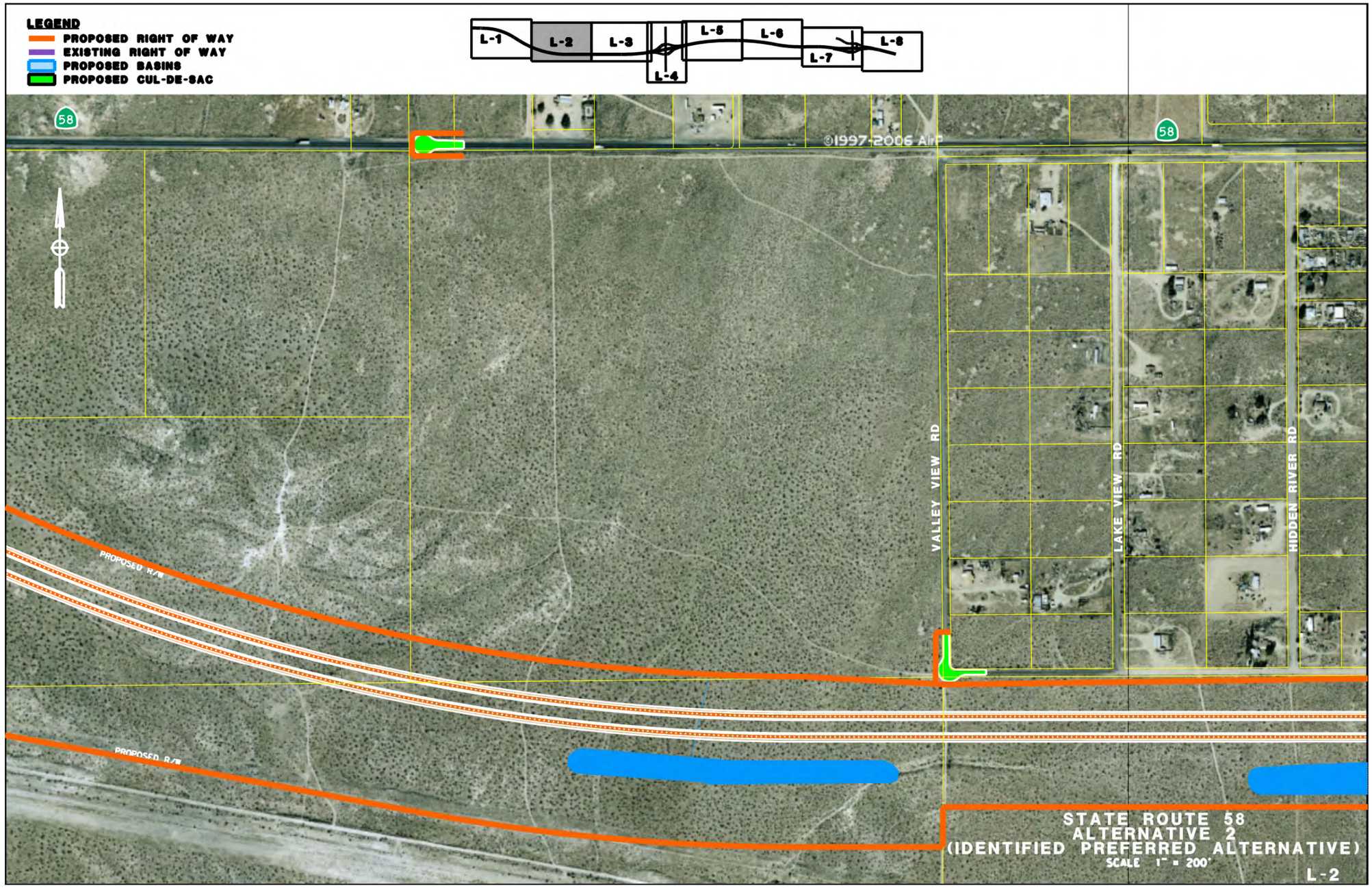

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Figure 2.1: Alternative 2 – Southerly Alignment (Identified Preferred Alternative), Sheet 3

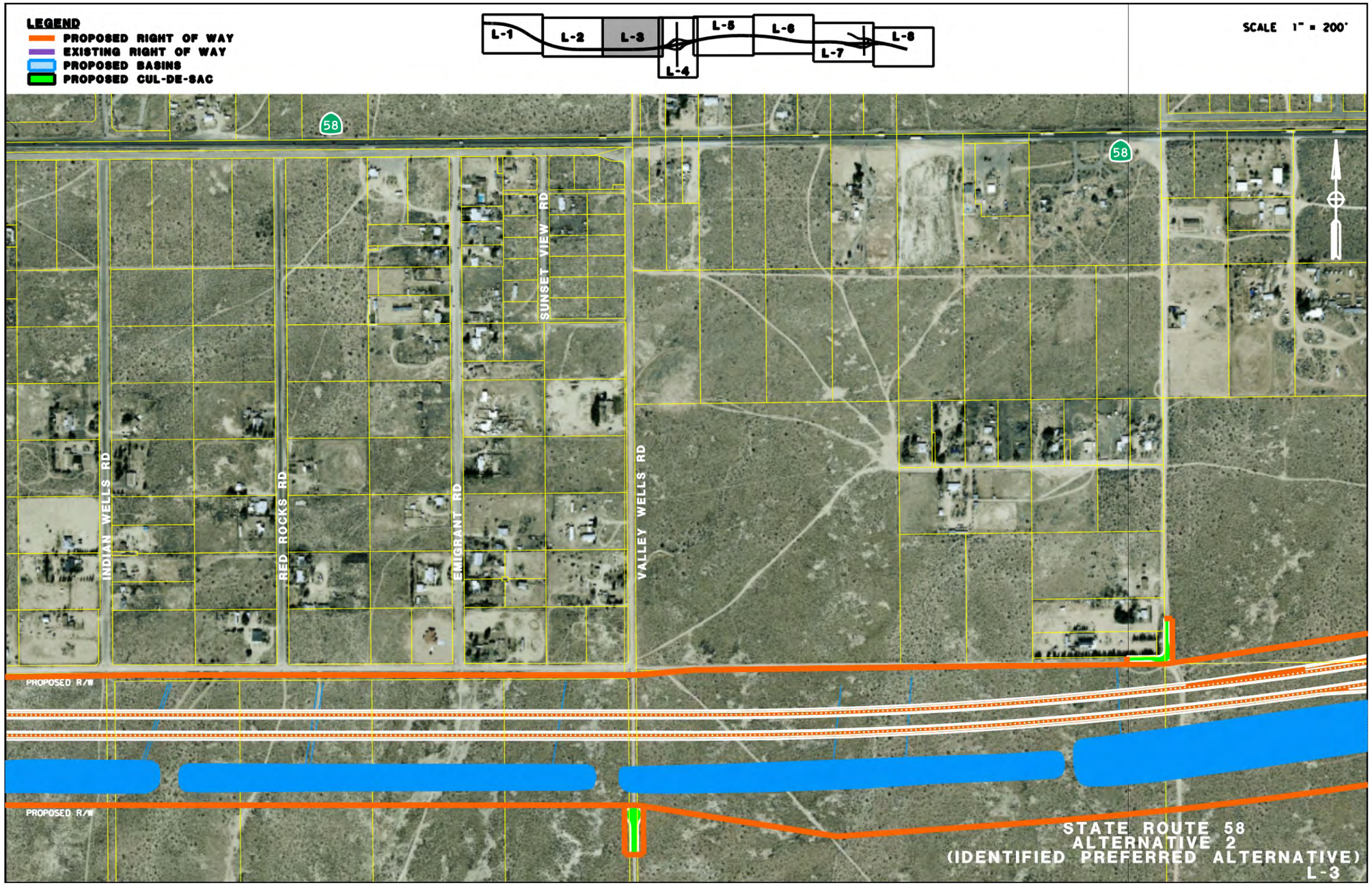

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Figure 2.1: Alternative 2 – Southerly Alignment (Identified Preferred Alternative), Sheet 4

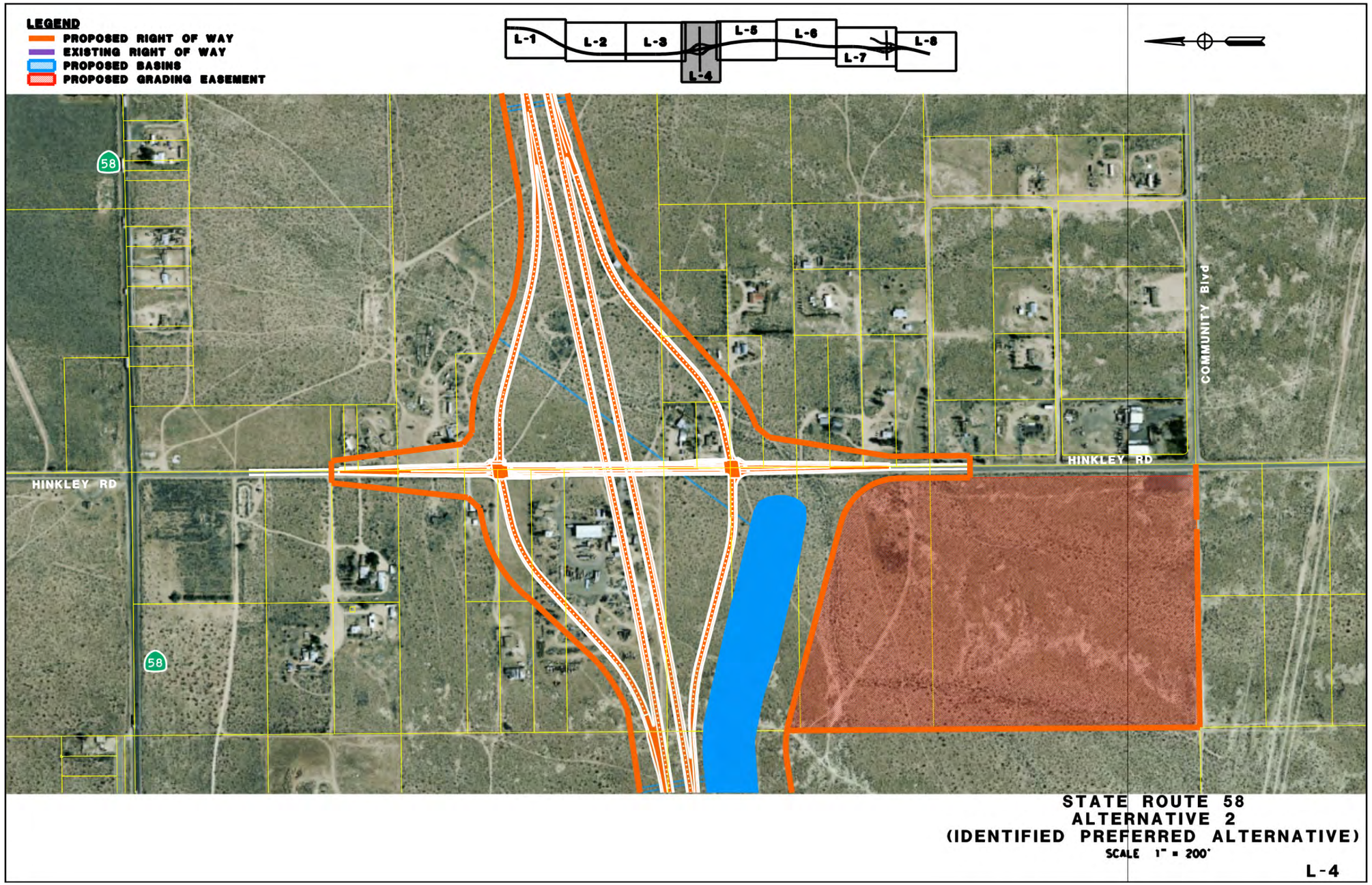

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Figure 2.1: Alternative 2 – Southerly Alignment (Identified Preferred Alternative), Sheet 5

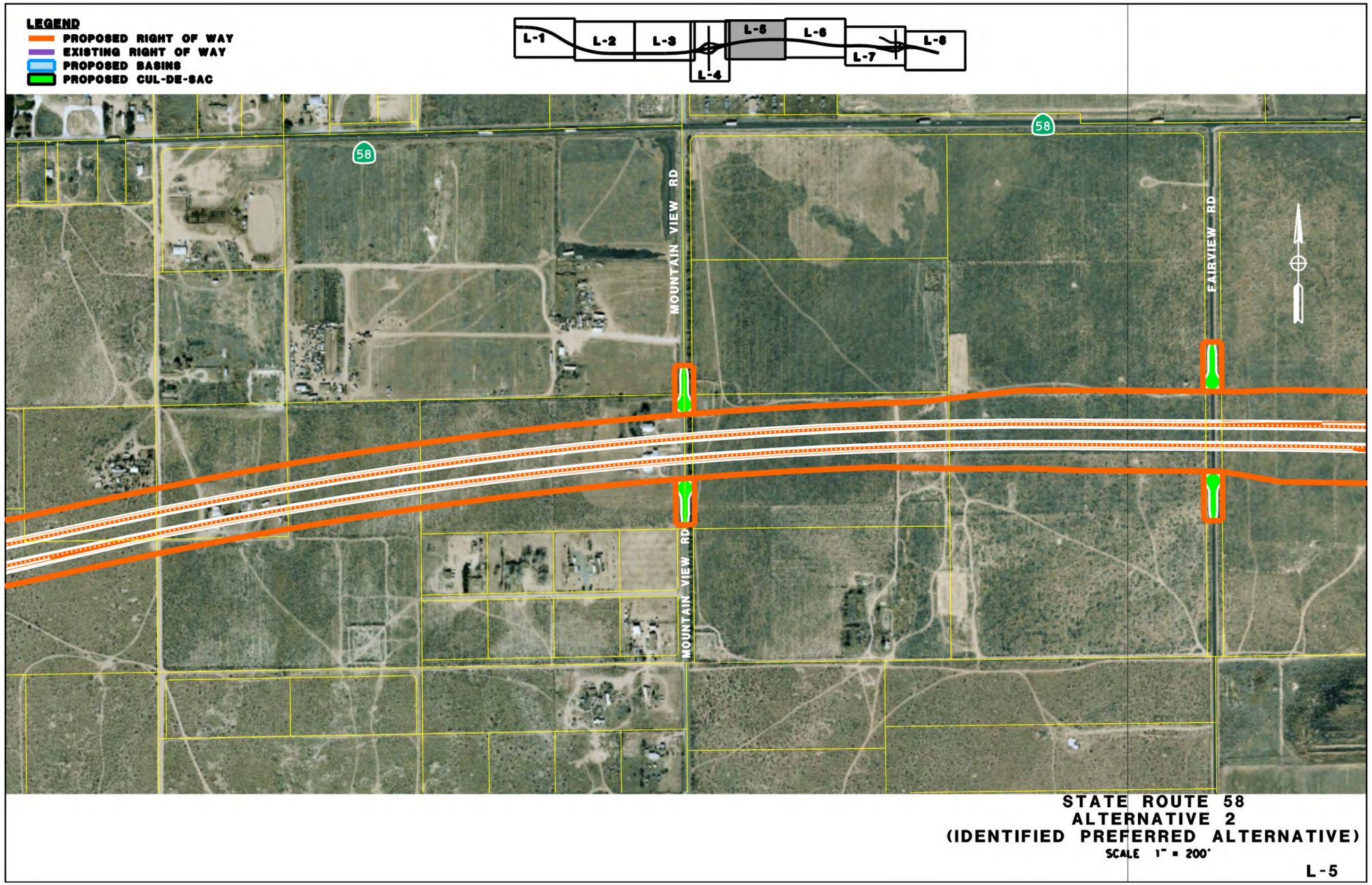

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Figure 2.1: Alternative 2 – Southerly Alignment (Identified Preferred Alternative), Sheet 6

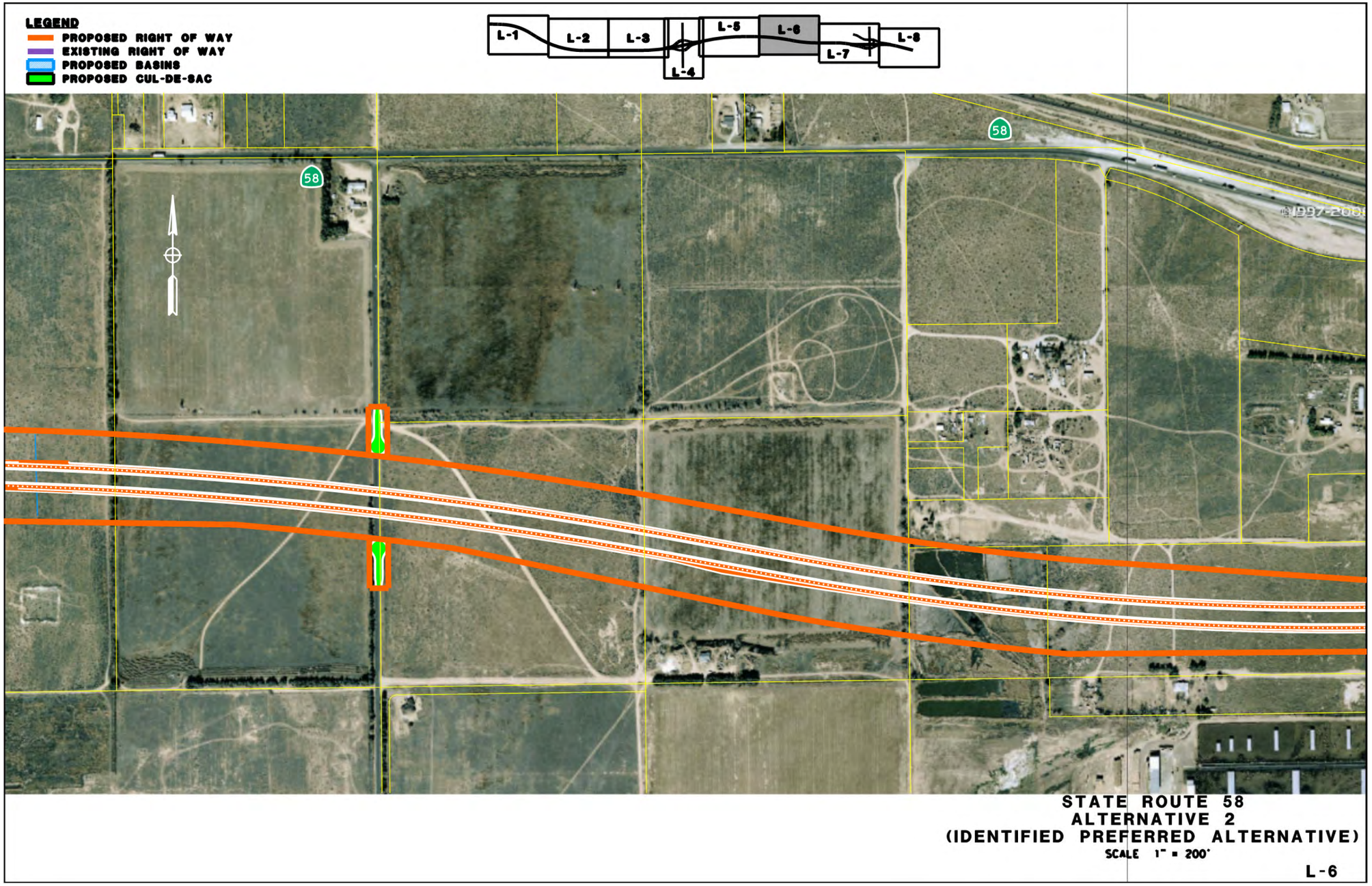

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Figure 2.1: Alternative 2 – Southerly Alignment (Identified Preferred Alternative), Sheet 7

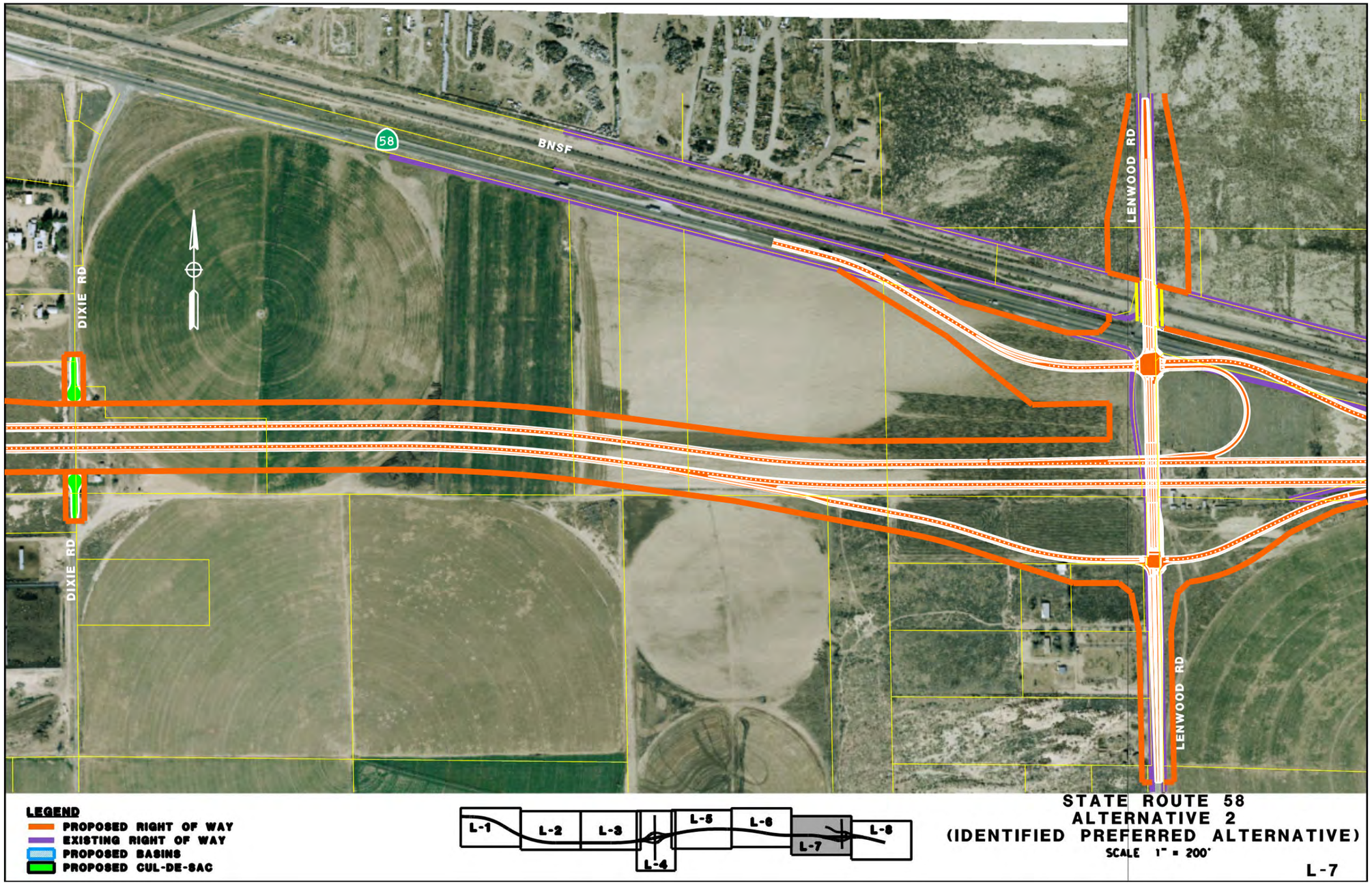

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Figure 2.1: Alternative 2 – Southerly Alignment (Identified Preferred Alternative), Sheet 8

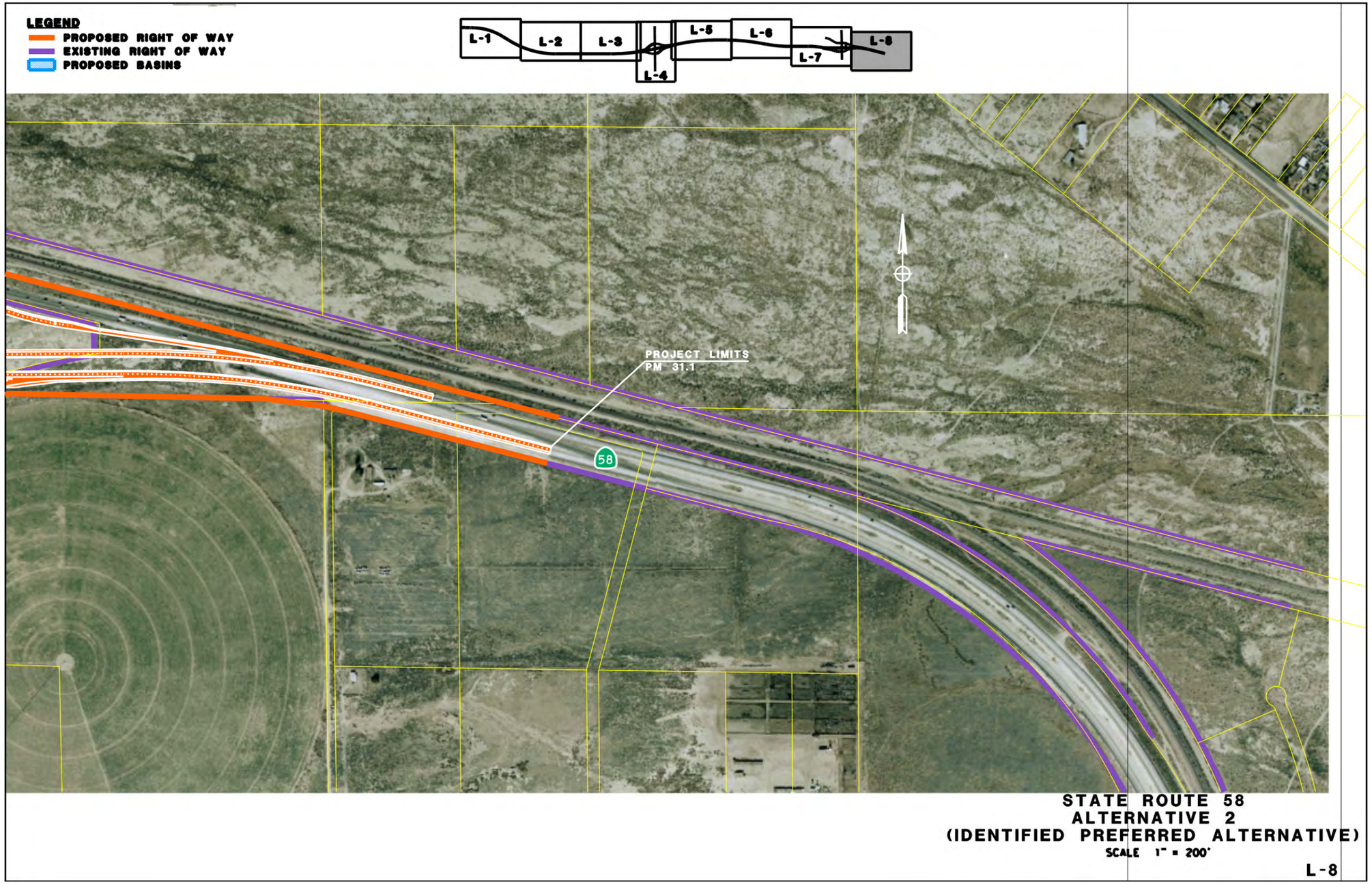

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Figure 2.2: Alternative 3 – Center/Existing Alignment, Sheet 1

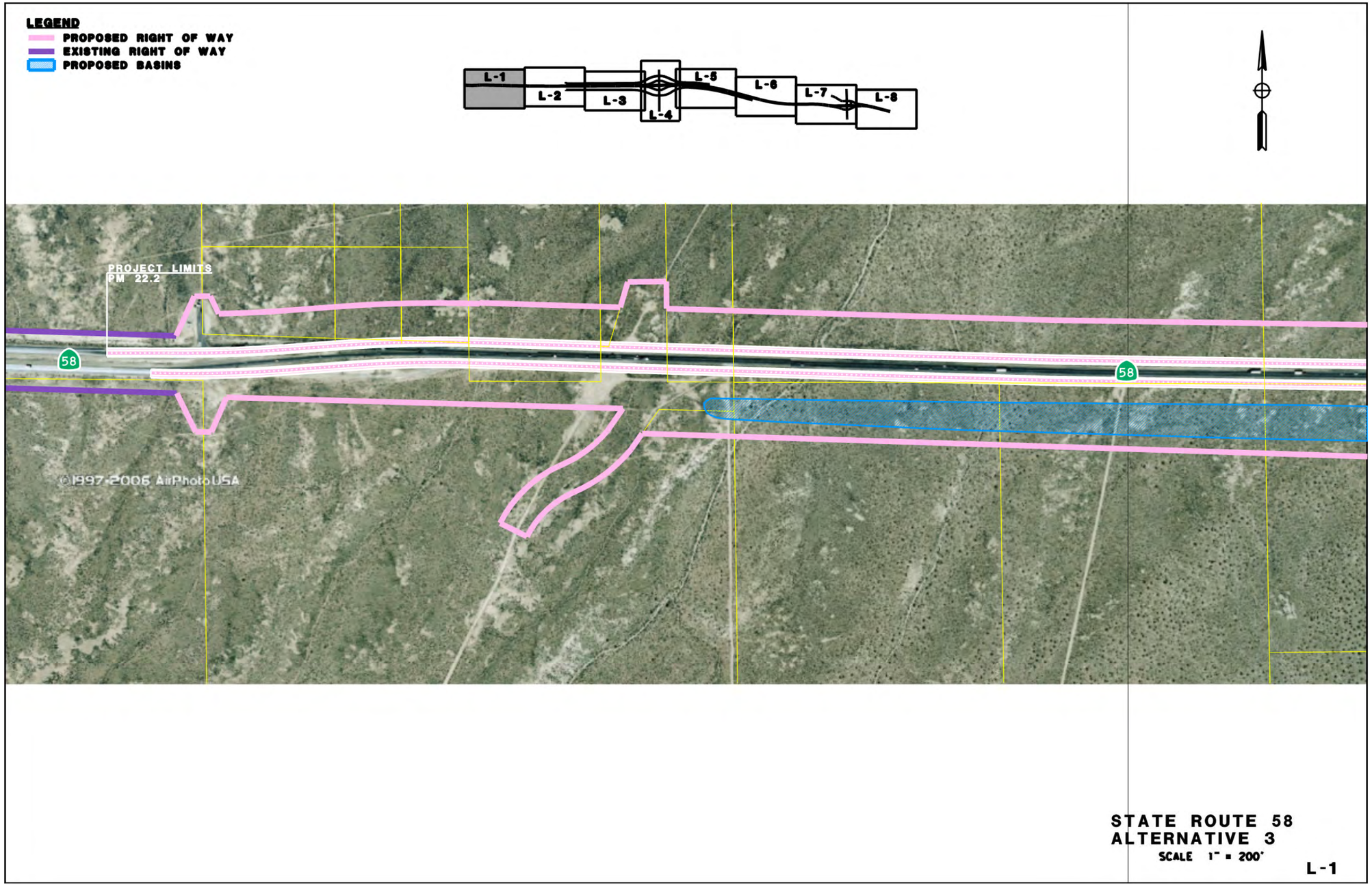

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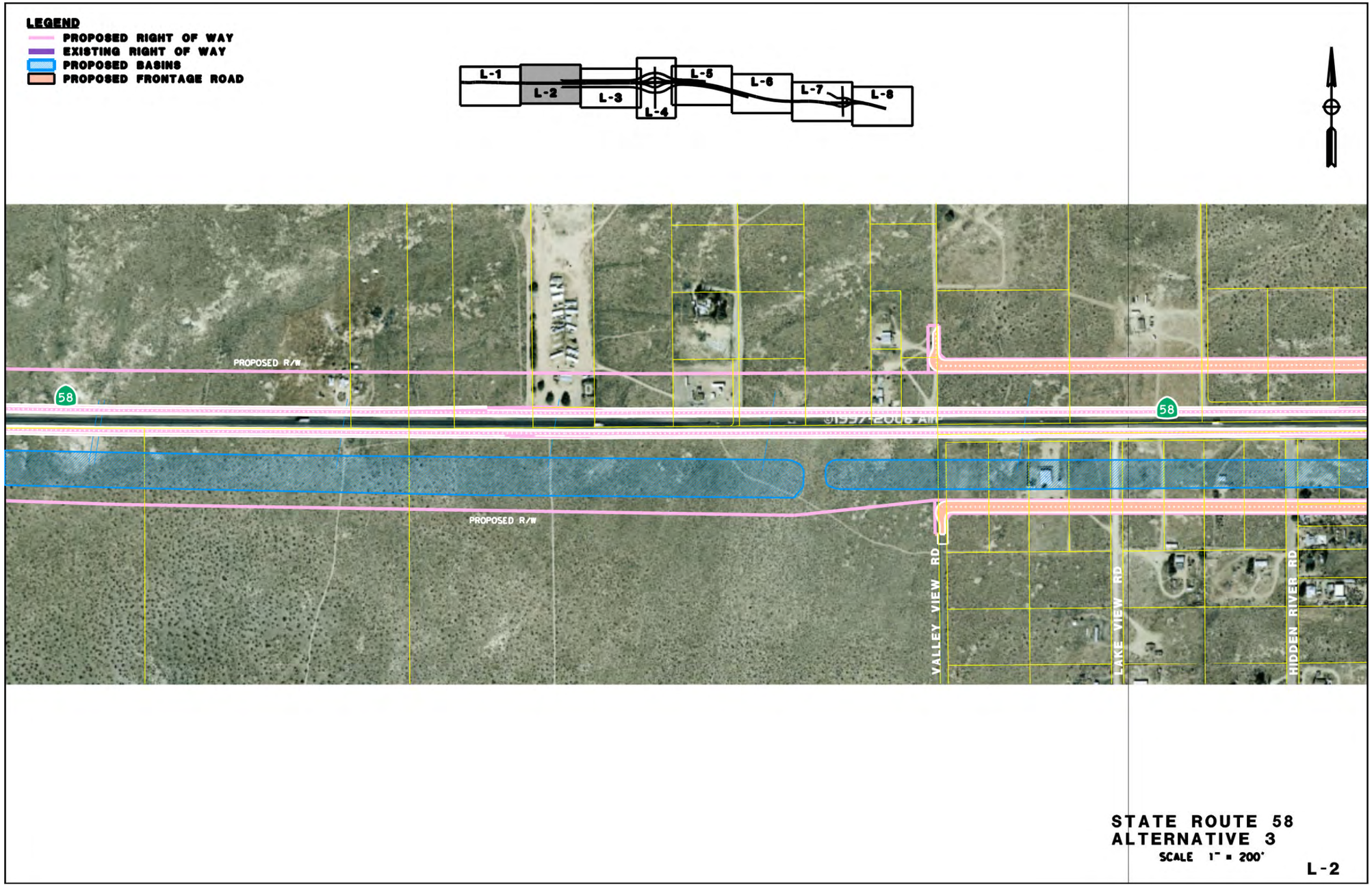
Figure 2.2: Alternative 3 – Center/Existing Alignment, Sheet 2



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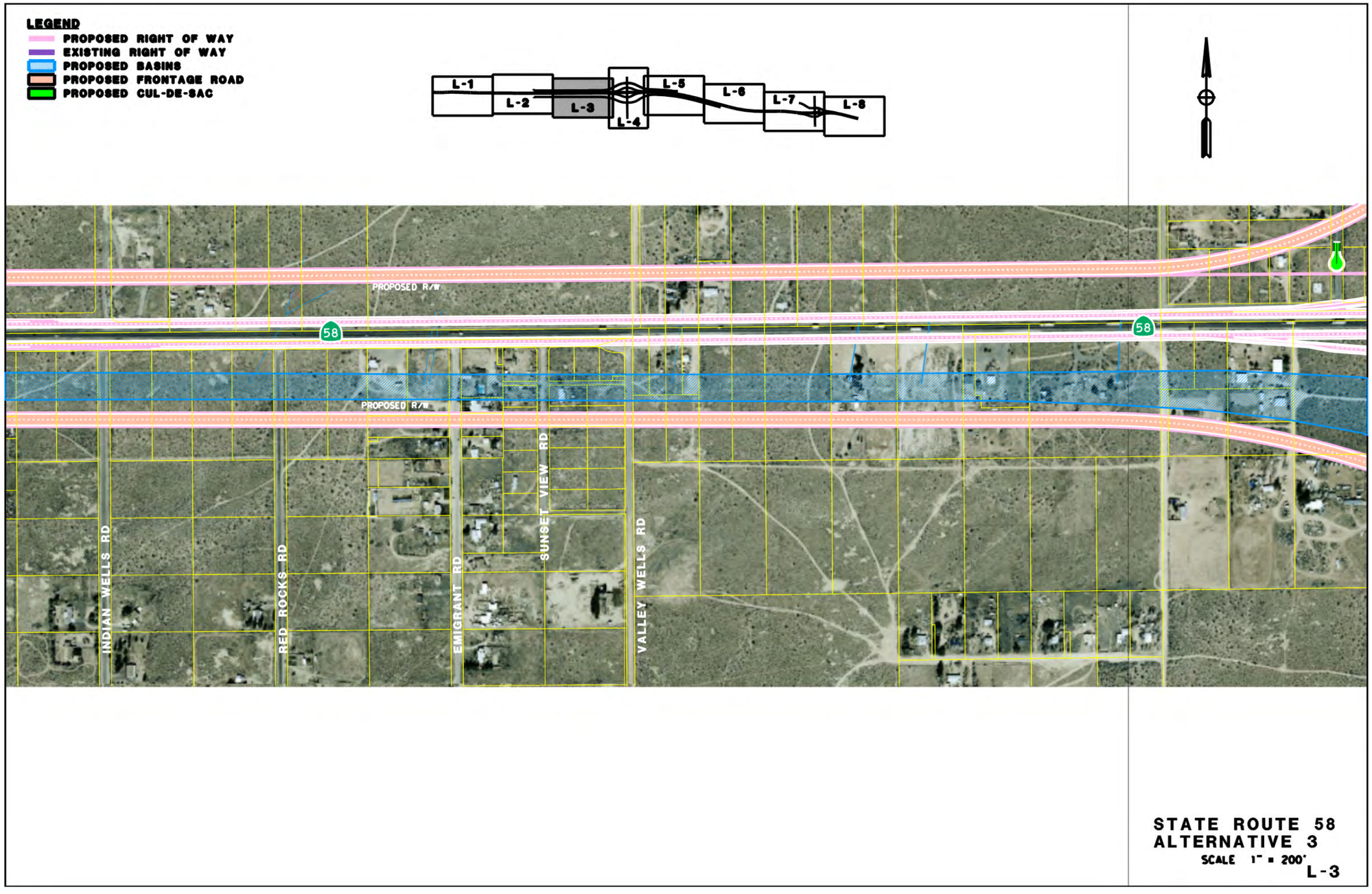

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Figure 2.2: Alternative 3 – Center/Existing Alignment, Sheet 4

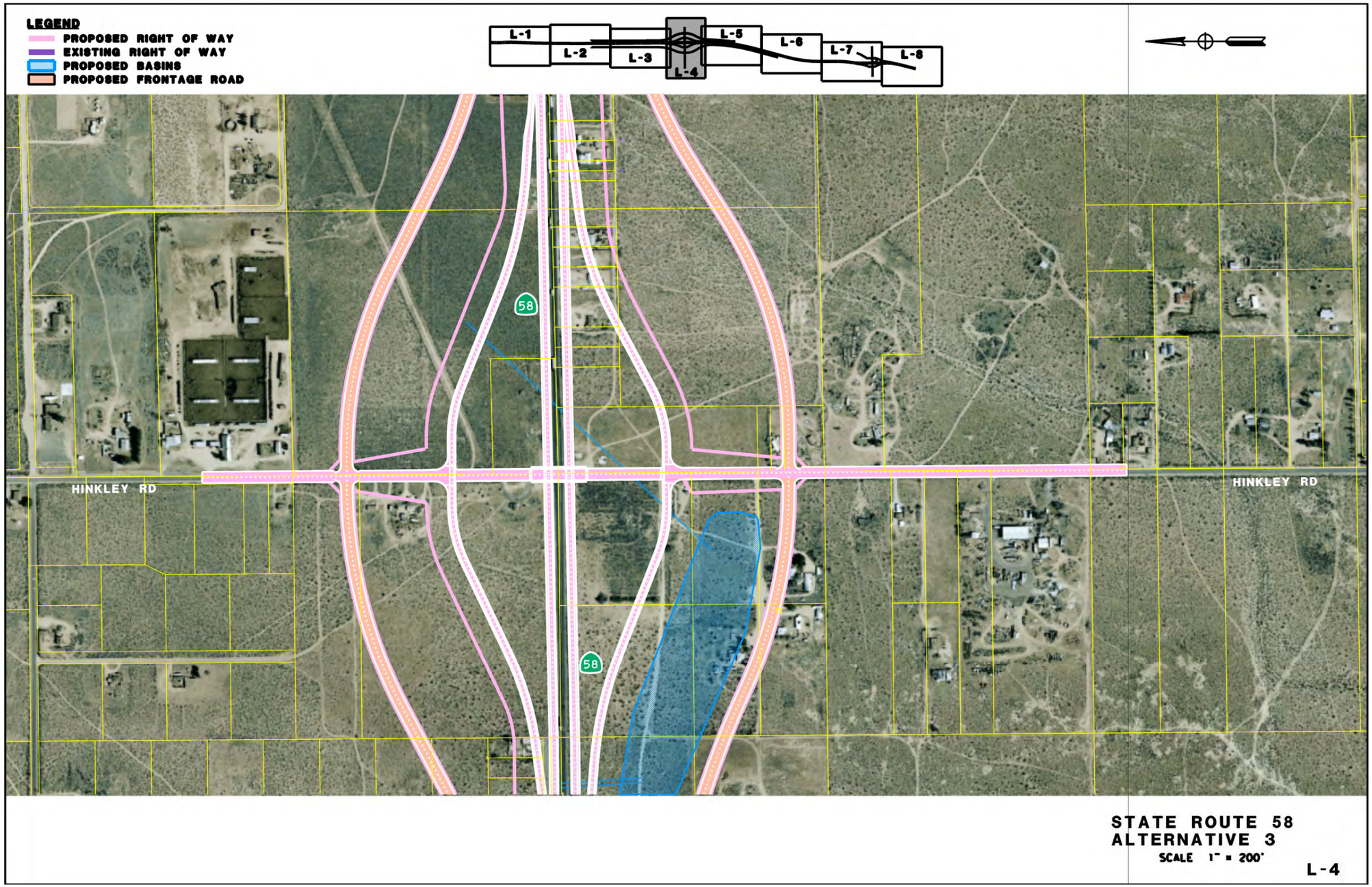

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Figure 2.2: Alternative 3 – Center/Existing Alignment, Sheet 5

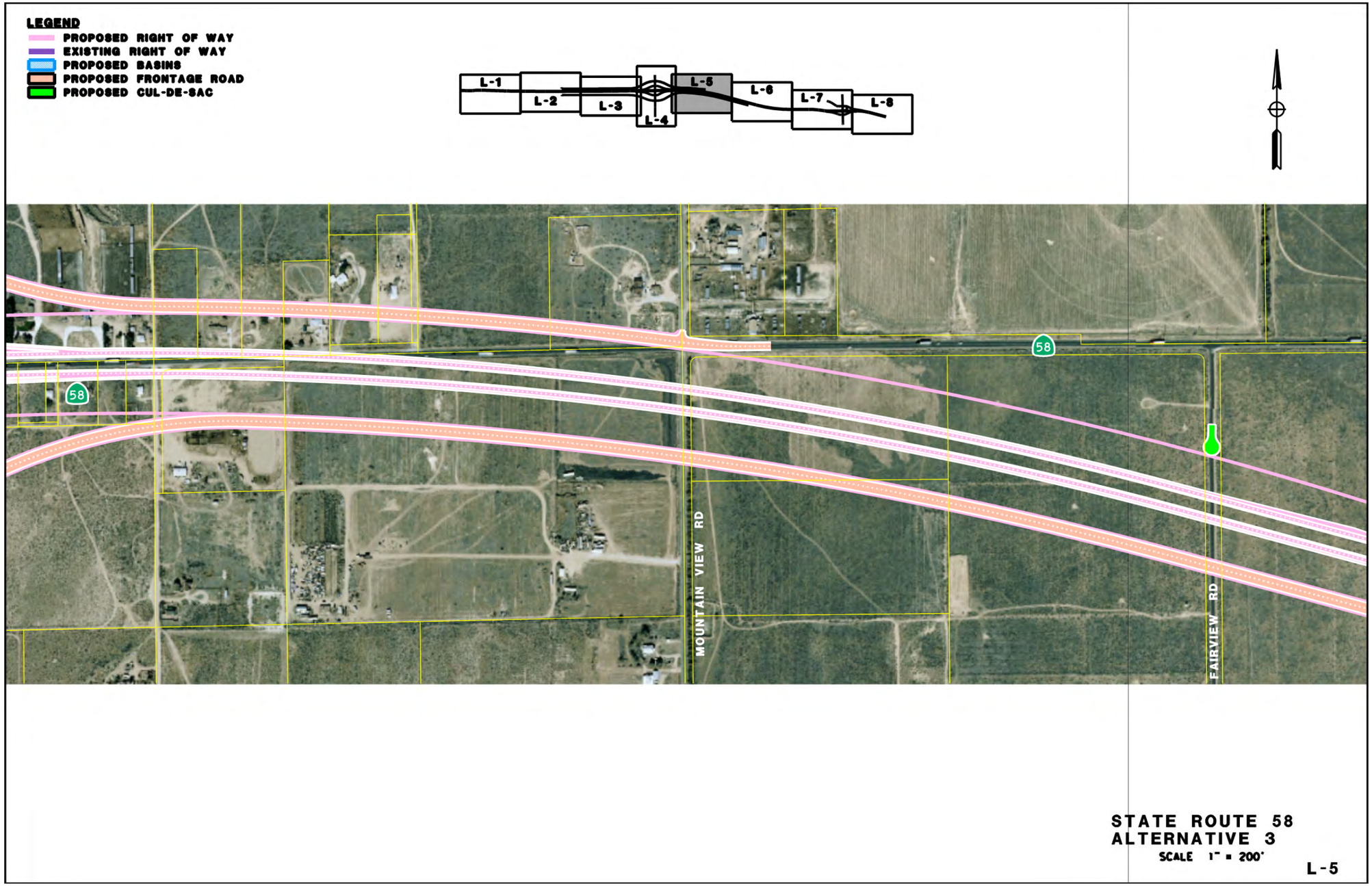

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Figure 2.2: Alternative 3 – Center/Existing Alignment, Sheet 6

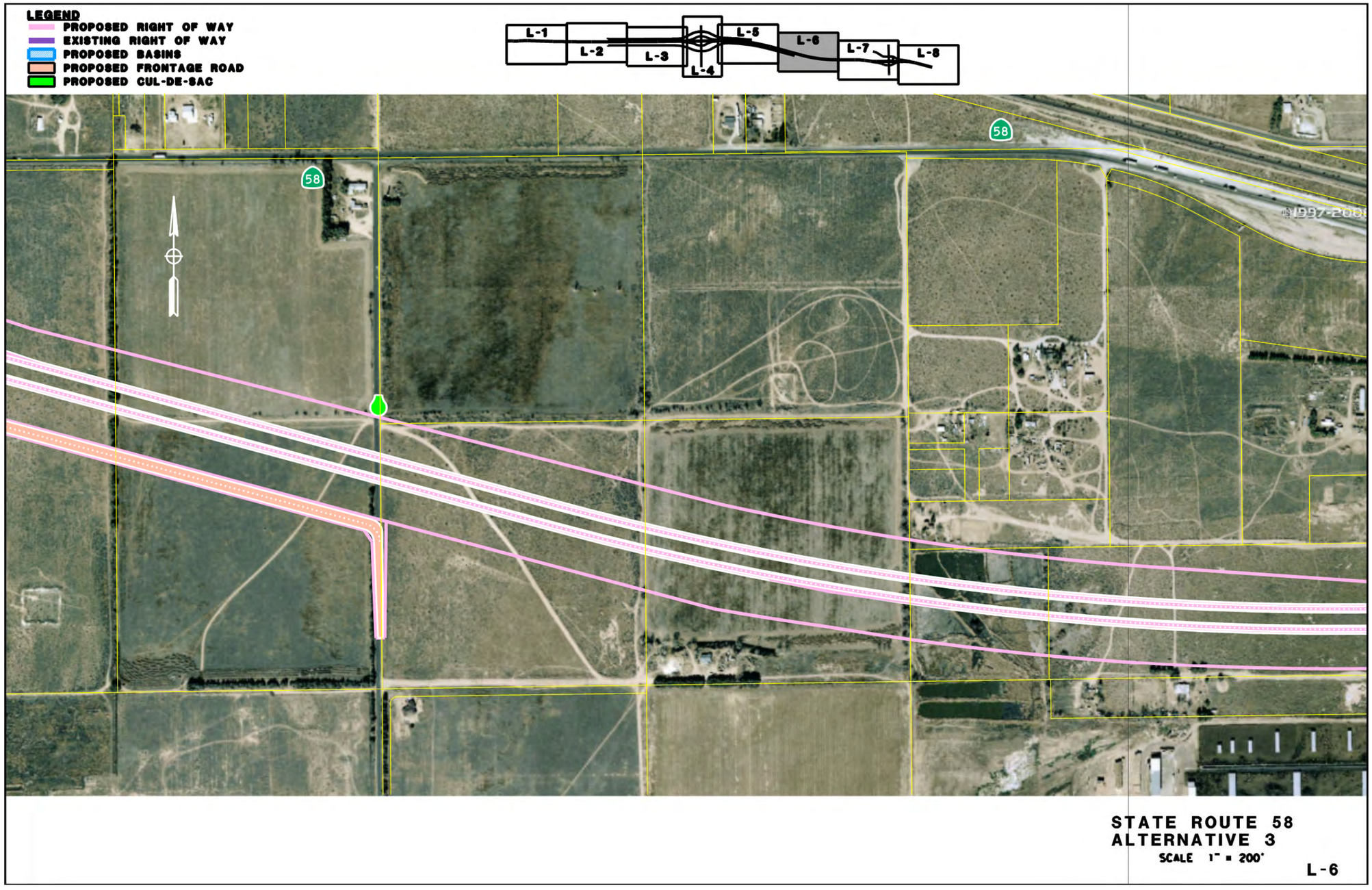

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Figure 2.2: Alternative 3 – Center/Existing Alignment, Sheet 7

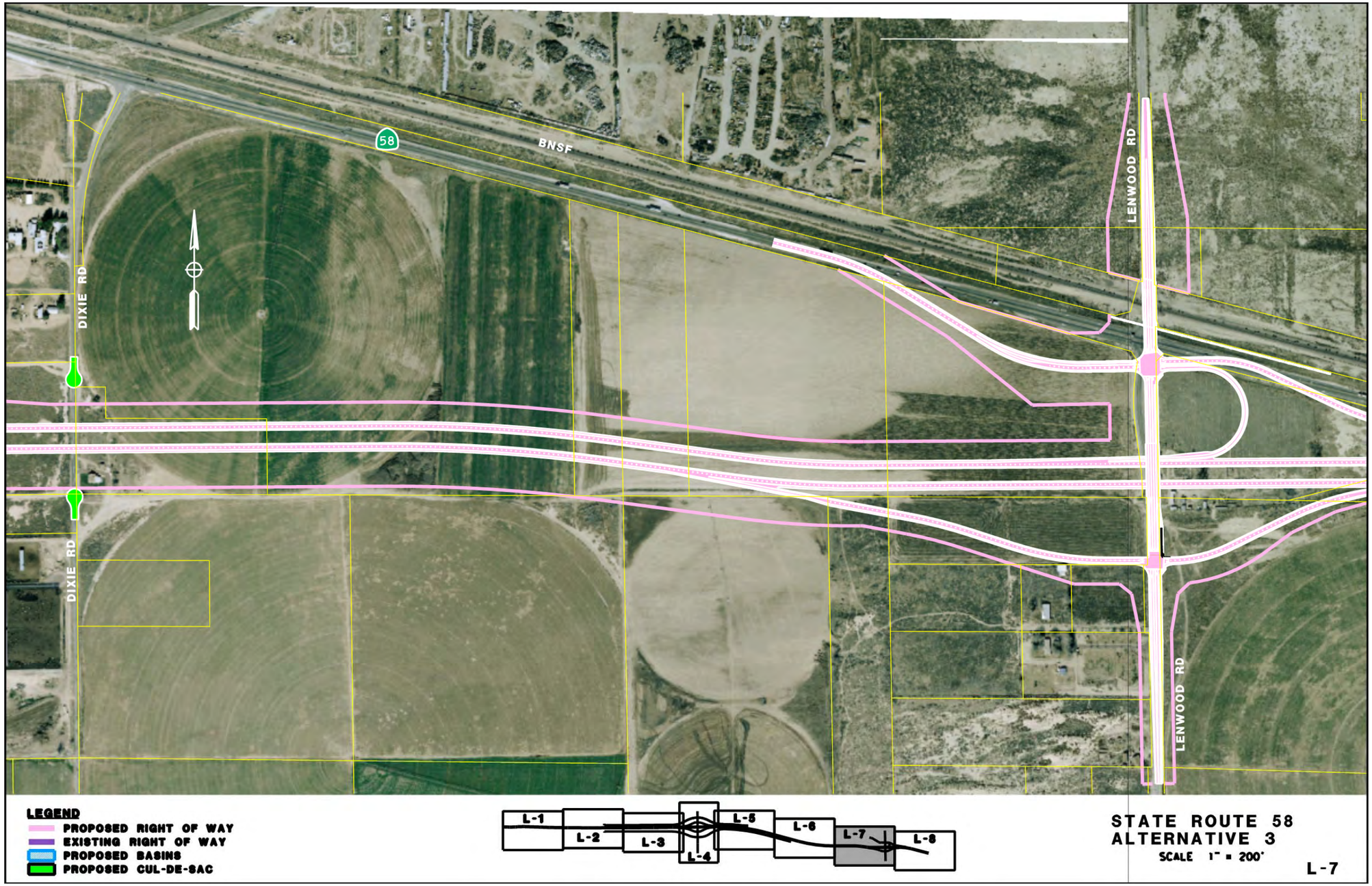

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Figure 2.2: Alternative 3 – Center/Existing Alignment, Sheet 8

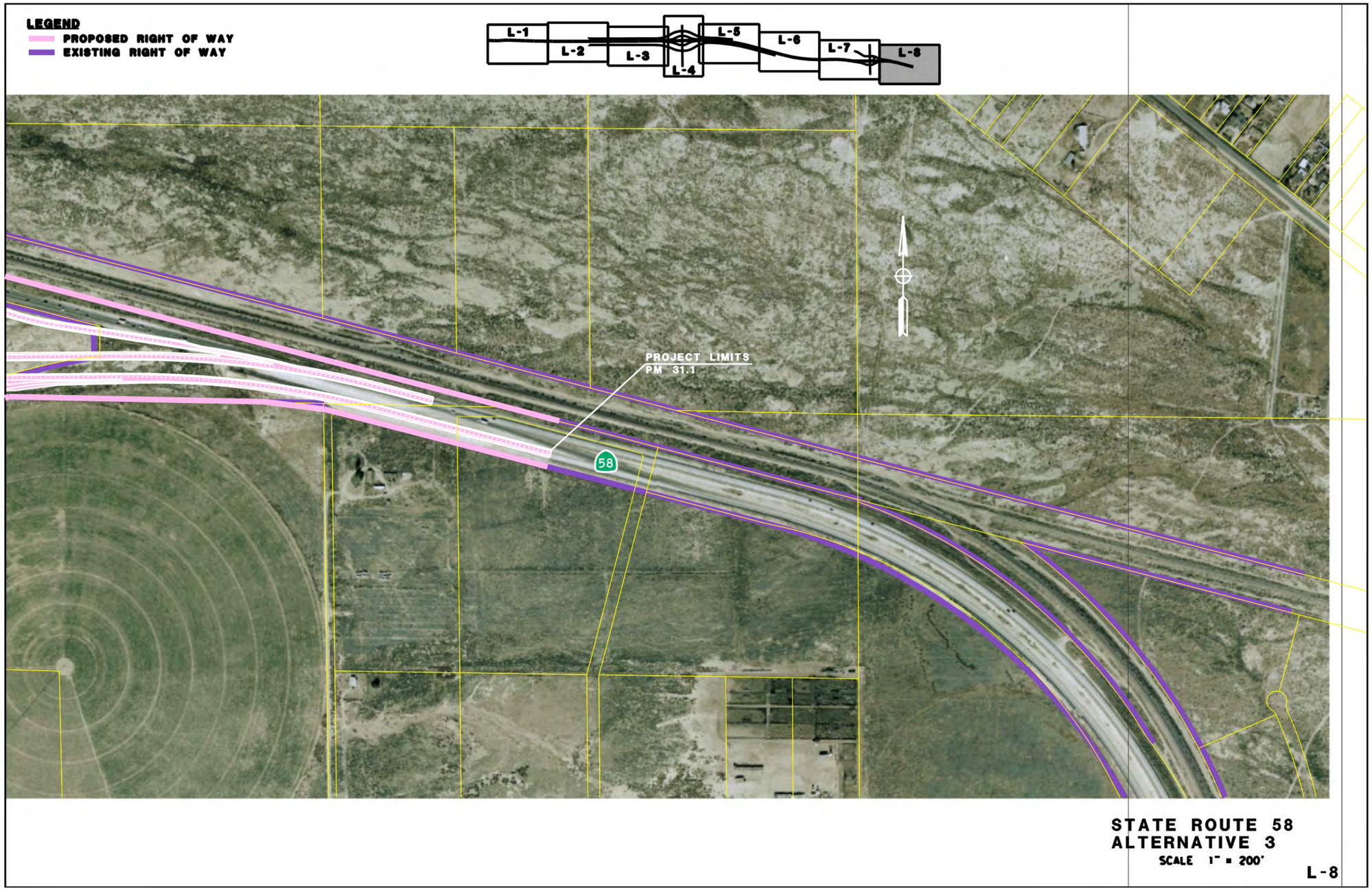

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Figure 2.3: Alternative 4 – Northerly Alignment, Sheet 1

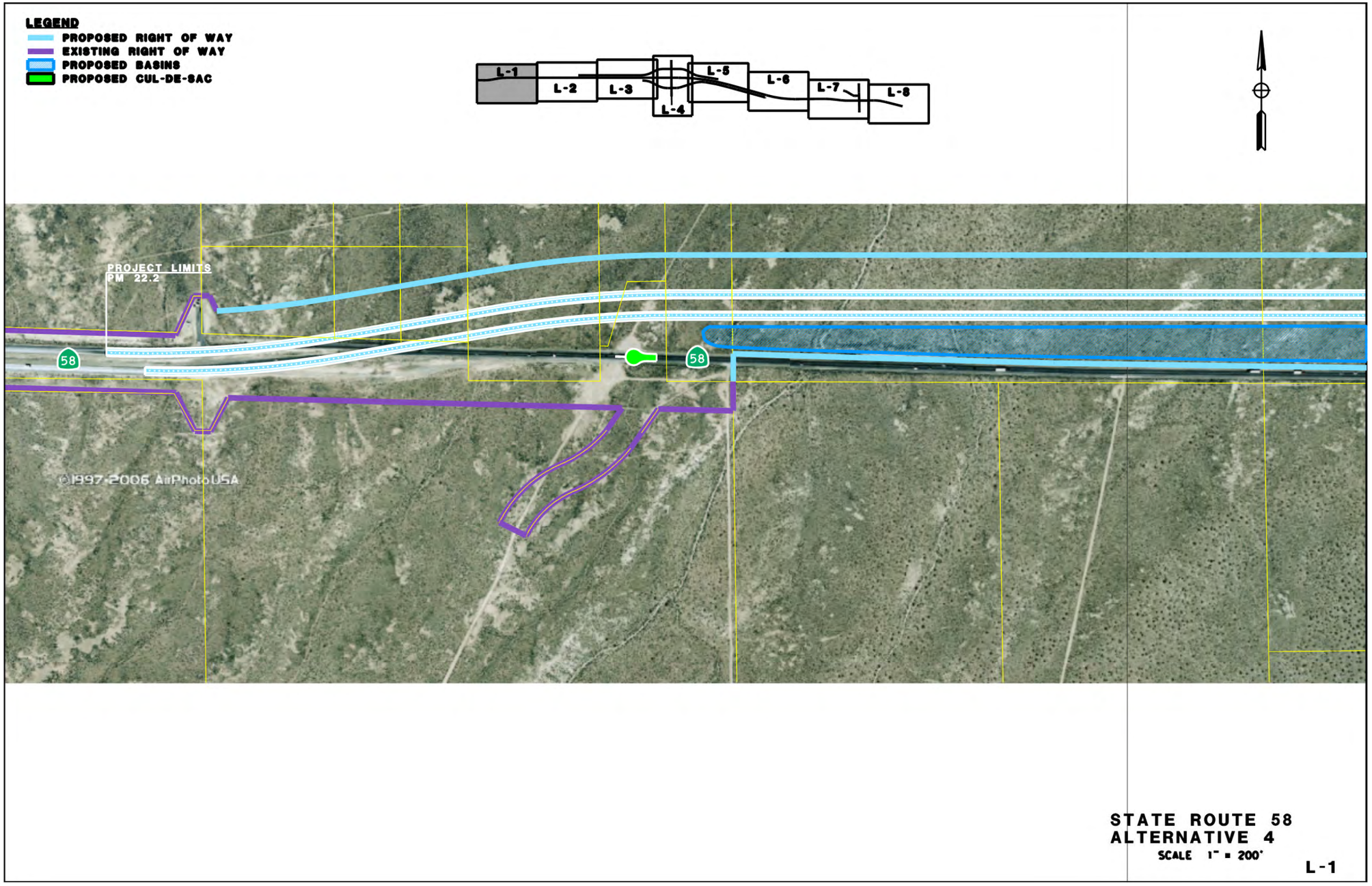

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Figure 2.3: Alternative 4 – Northerly Alignment, Sheet 2

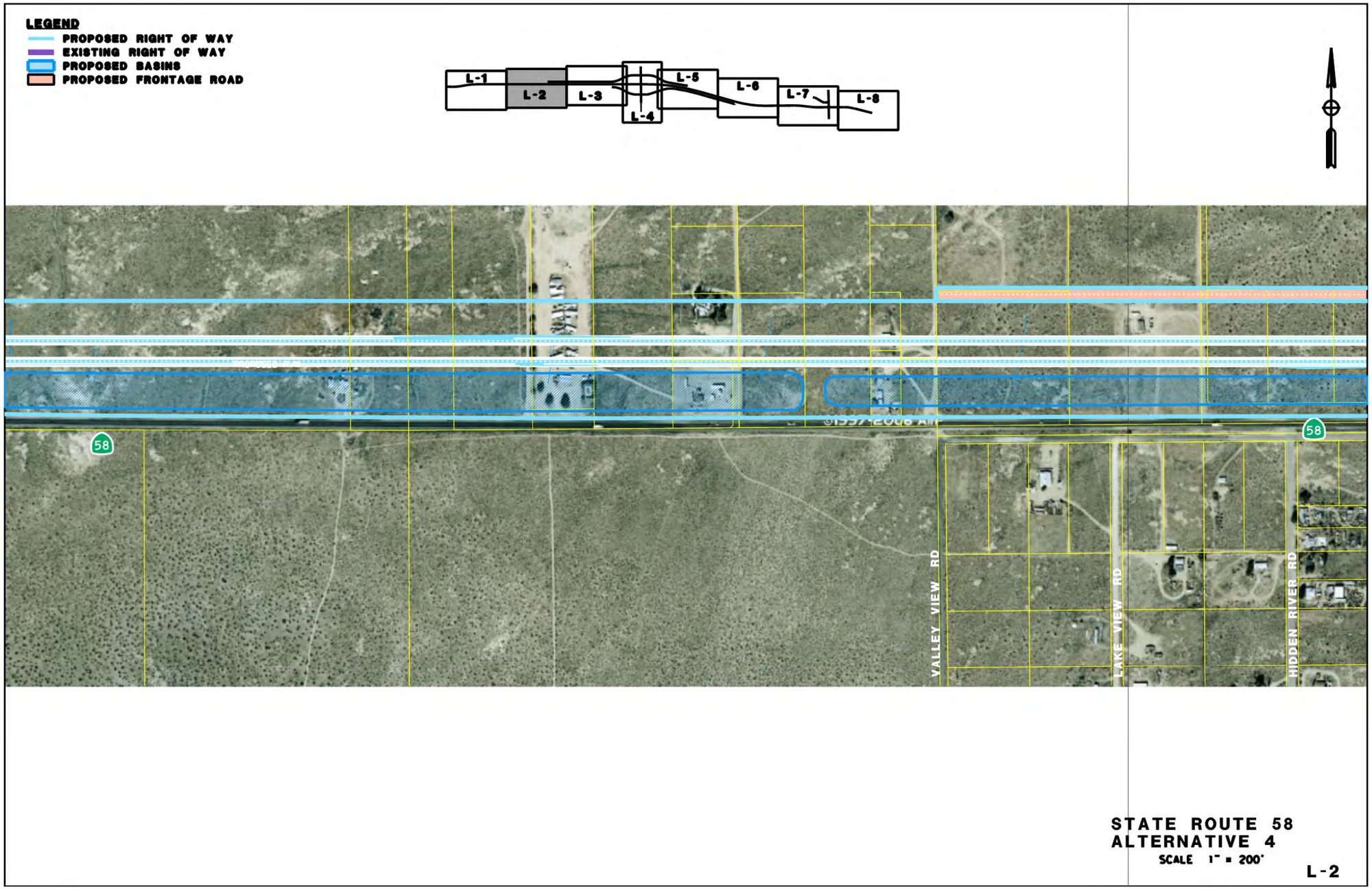

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Figure 2.3: Alternative 4 – Northerly Alignment, Sheet 3

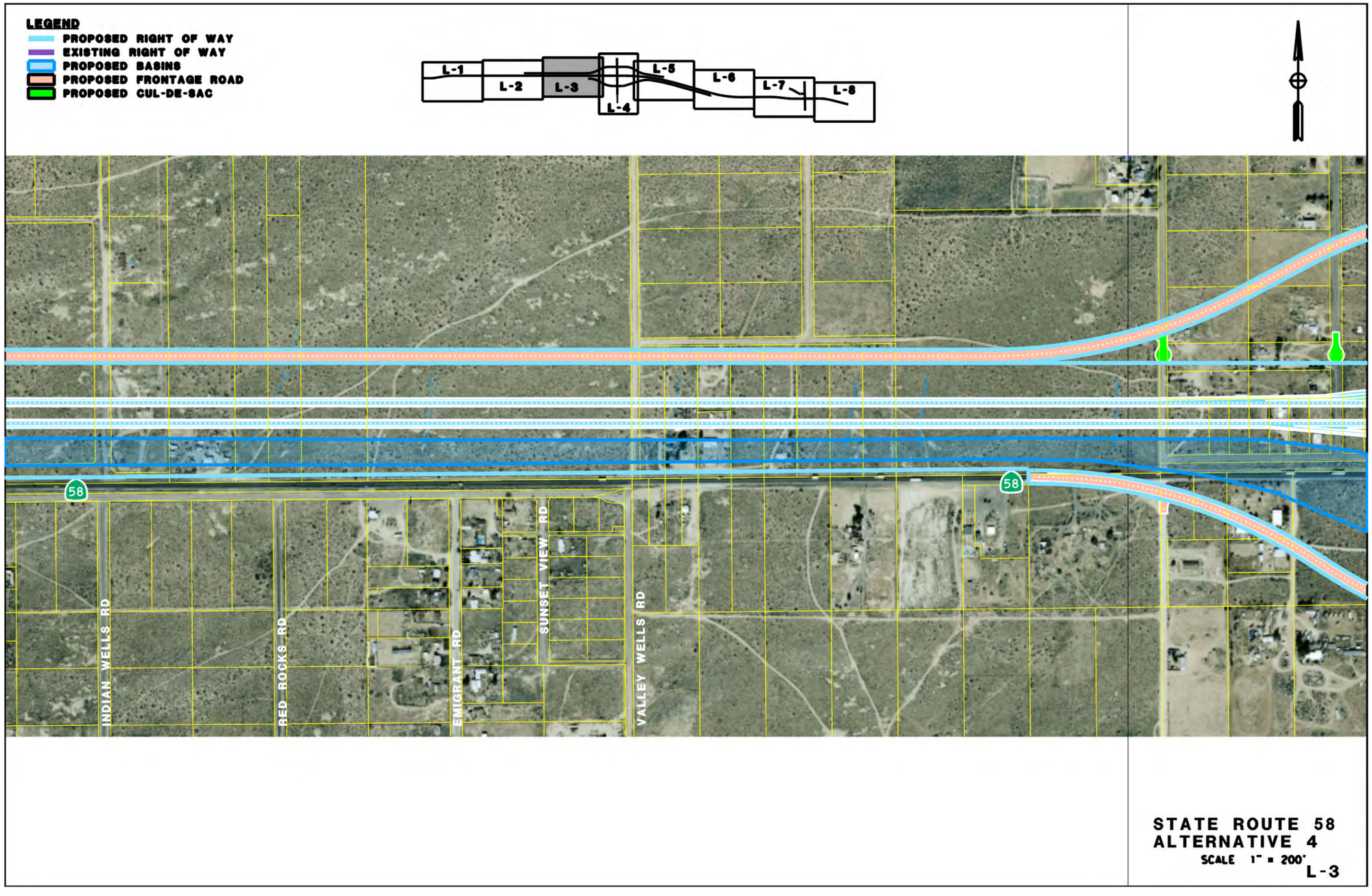

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Figure 2.3: Alternative 4 – Northerly Alignment, Sheet 4

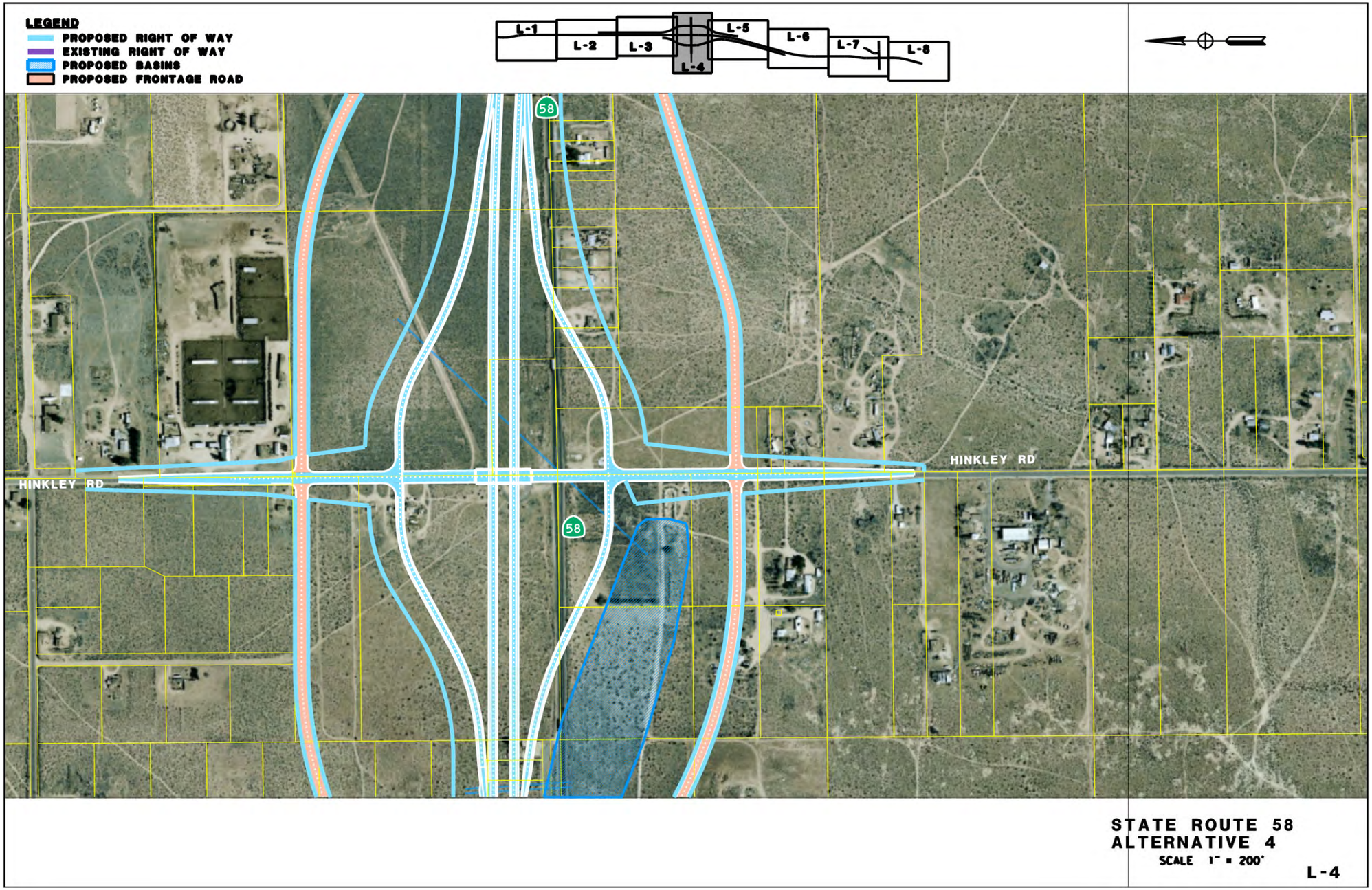

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Figure 2.3: Alternative 4 – Northerly Alignment, Sheet 5

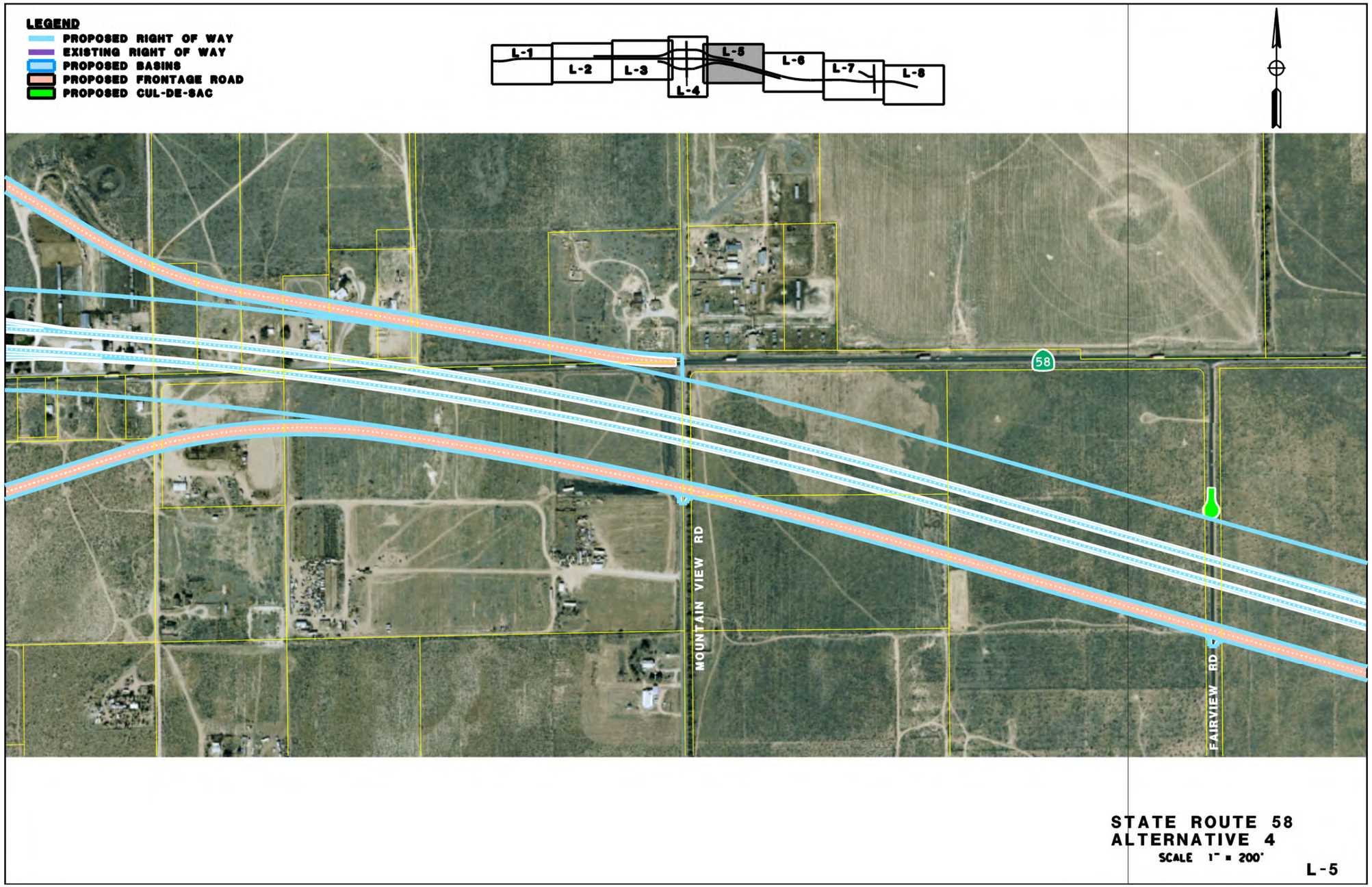

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Figure 2.3: Alternative 4 – Northerly Alignment, Sheet 6

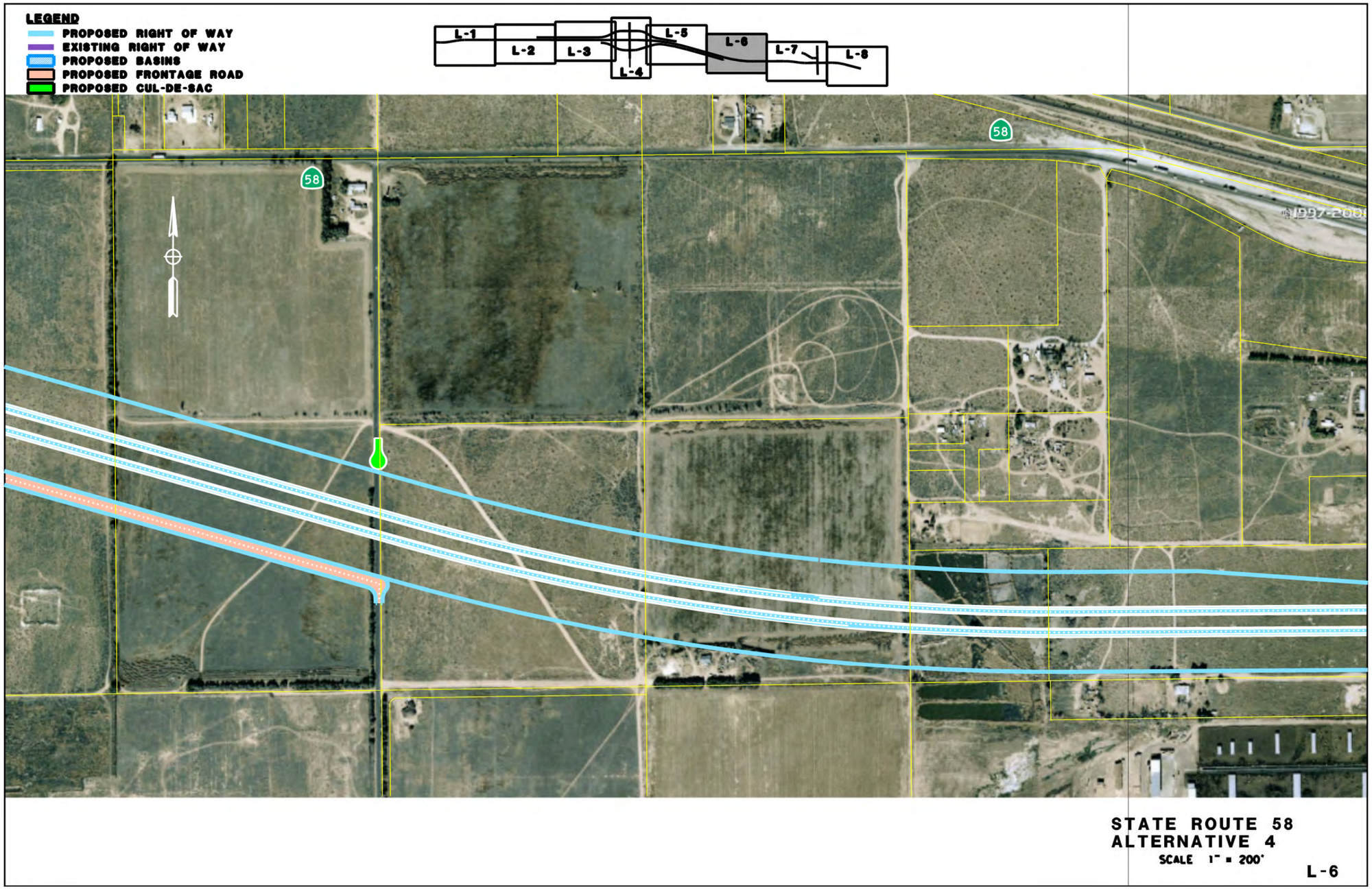

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Figure 2.3: Alternative 4 – Northerly Alignment, Sheet 7

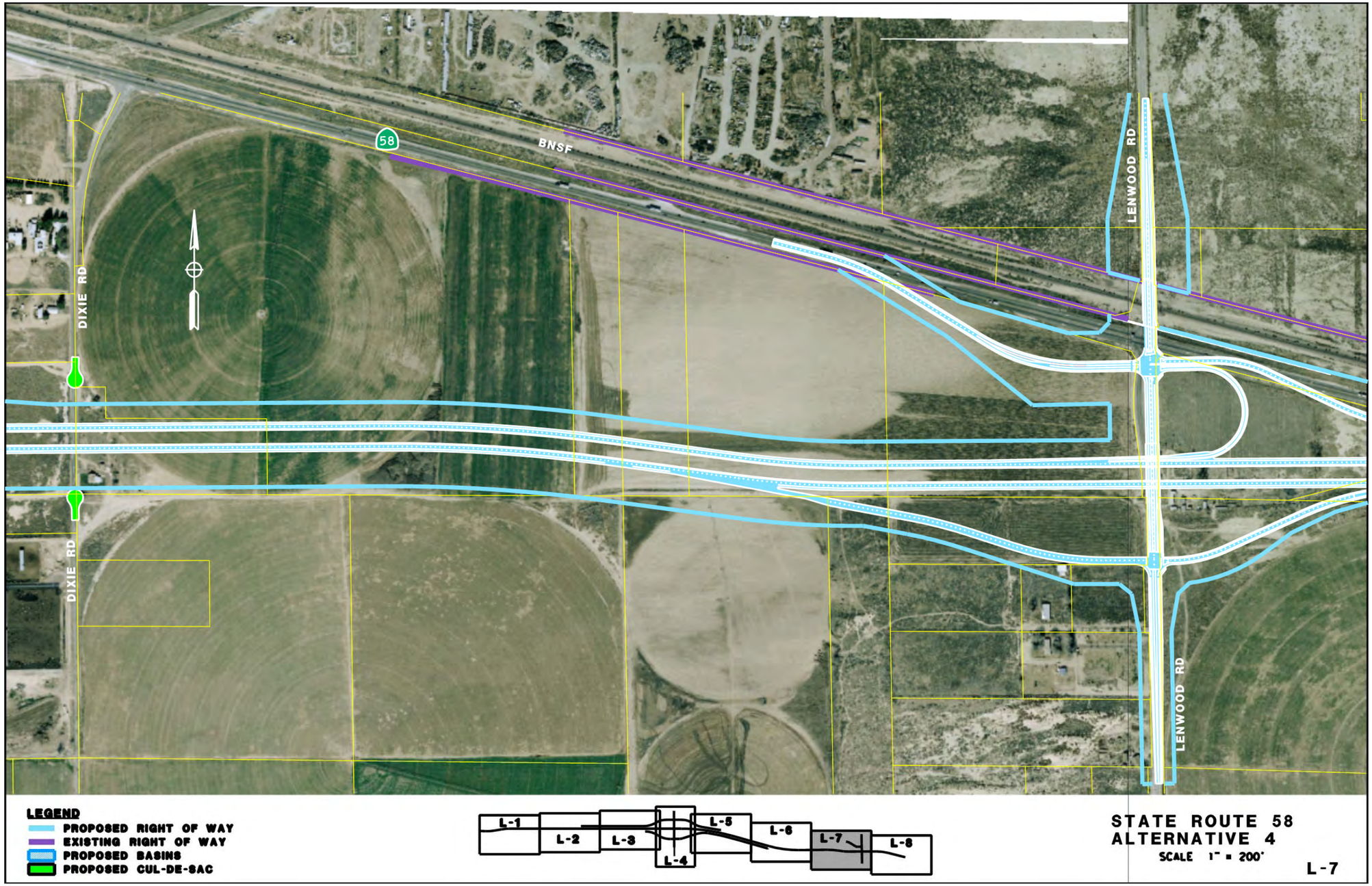

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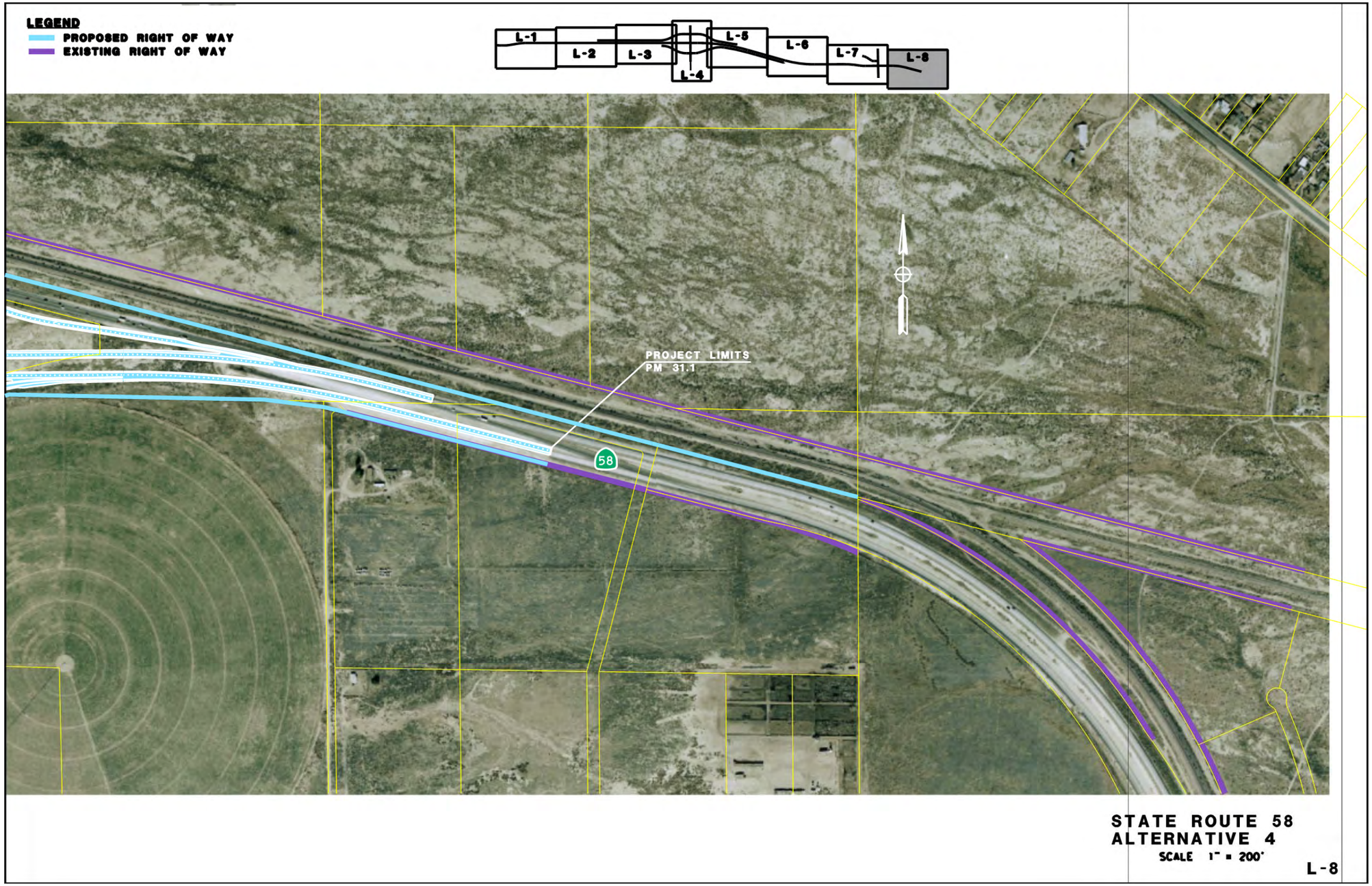
Figure 2.3: Alternative 4 – Northerly Alignment, Sheet 8



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2.2.1.1 Common Design Features of the Build Alternatives

The proposed project would widen SR-58 from a two-lane conventional highway to a four-lane expressway with full access control. See Figure 2.5 for the typical cross-sections for all alternatives. The expressway would include:

- 12-foot standard traveled way lanes,
- 10-foot standard shoulder widths, and
- 78-foot-wide median.[13]

For the mainline, standard lanes and standard shoulders are 12 feet and ten feet wide, respectively. The standard width for ramps is 12 feet, and the shoulders for those ramps are four feet on the left, and eight feet wide on the right (see Figure 2.4). For the local (overcrossing) streets within State right-of-way, standard lanes and shoulders are 12 feet and eight feet wide, respectively. For the local streets outside State right-of-way, standard lanes and shoulders proposed are/meet County roadway requirements.

Lighting and fencing would be detailed during final design; however, standard lighting at the exit peel-off and entrance merge locations would be provided. These lights are a standard feature and are used in both urban and rural settings, but they are designed to illuminate the roadway only. Drainage crossing locations and sizes shown on the maps are approximate. Final design plans would show all applicable details. The project proposes access to non-motorized transportation modes (e.g., pedestrian/bikes/equestrian) by providing 6-foot wide sidewalks as well as standard 8-foot shoulders across the two overcrossing bridges at Lenwood and Hinkley Roads.

A short length of the existing SR-58 at the east end of the project would be realigned to tie in to the Lenwood Road westbound (WB) entrance and exit ramps. This realigned roadway would be constructed on a fill section (elevated sections of a roadway). All locations with large vertical surfaces (i.e., retaining walls, sound walls, and bridge structures) would include aesthetic/architectural treatment to prevent graffiti.

Two Interchanges

Two interchanges (I/Cs) would be constructed – one at Hinkley Road and the other at Lenwood Road. The ramps would include both standard shoulder (eight-foot) and standard traveled way (12-foot) widths. All entrance ramps (WB and eastbound [EB]) would have two lanes at the local road and would transition to a single lane prior to merging onto the expressway. Unless otherwise specified, all exit ramps (WB and EB) would have one lane as they diverge from the expressway and would transition to two lanes prior to intersecting the local road. All exit ramps would also have three-way stops at the exit ramp intersections with the local road. Americans with Disabilities Act (ADA) compliant curb ramps would be included, where applicable. Typical cross sections for the interchanges are shown in Figures 2.4 through 2.5.

<u>Hinkley Road</u>. The Hinkley Road I/C would be constructed as a spread diamond type interchange.

<u>Lenwood Road</u>. The Lenwood Road I/C would be constructed as a partial cloverleaf with partial diamond type interchange. In addition to two lanes at the local road, the WB exit ramp would also include a left turn pocket. Also, dissimilar to all other entrance ramps, the WB entrance

[13] Final design will comply with the policies, principles, and standards contained in the "Highway Design Manual."

ramp will only be one lane. It would also be constructed as a loop radius entrance sharing the same structure with the WB exit ramp. A concrete curb would separate this entrance from the exit ramp. Lenwood Road would also involve improvements to accommodate the Burlington Northern Santa Fe (BNSF) rail line, which is described in detail in the "Railroad Involvement" subsection, below.

The Lenwood and Hinkley Road bridges have similar characteristics as follows:

- Lengths ranging from 244 to 250 feet;
- Minimum widths of 63 feet 5 inches;
- Three 12-foot wide lanes;
- Two 10-foot wide shoulders; and
- One six-foot wide sidewalk on one side.

Locations of the frontage road at the I/C depend on spacing requirements between ramp-termini and frontage road intersections. Away from the I/C, locations depend on other supporting features for the mainline such as drainage and associated headwalls and/or detention/retention basins. The project does not propose to reconstruct existing SR-58 in its entirety adding a 12-foot median with ten-foot shoulders. The proposed typical section shown for SR-58, presented in this environmental document, is for the transition from the existing SR-58 to the ramp terminus on Lenwood Road within the proposed State R/W. SR-58 typical sections, as presented (see Figures 2.4 and 2.5), would be retained until a preferred alternative is identified and detailed design is completed.

Figure 2.4: Typical Cross Sections

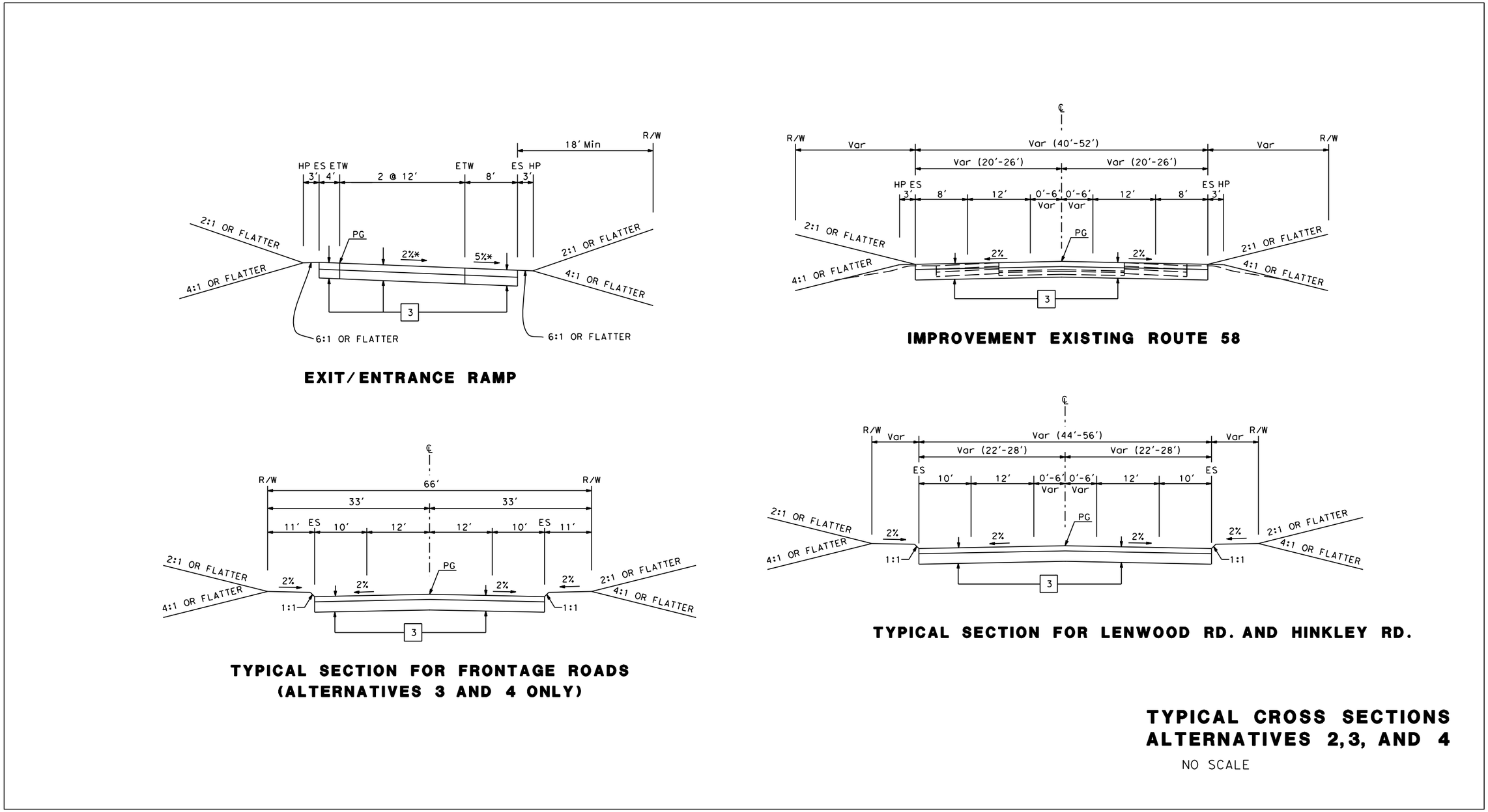

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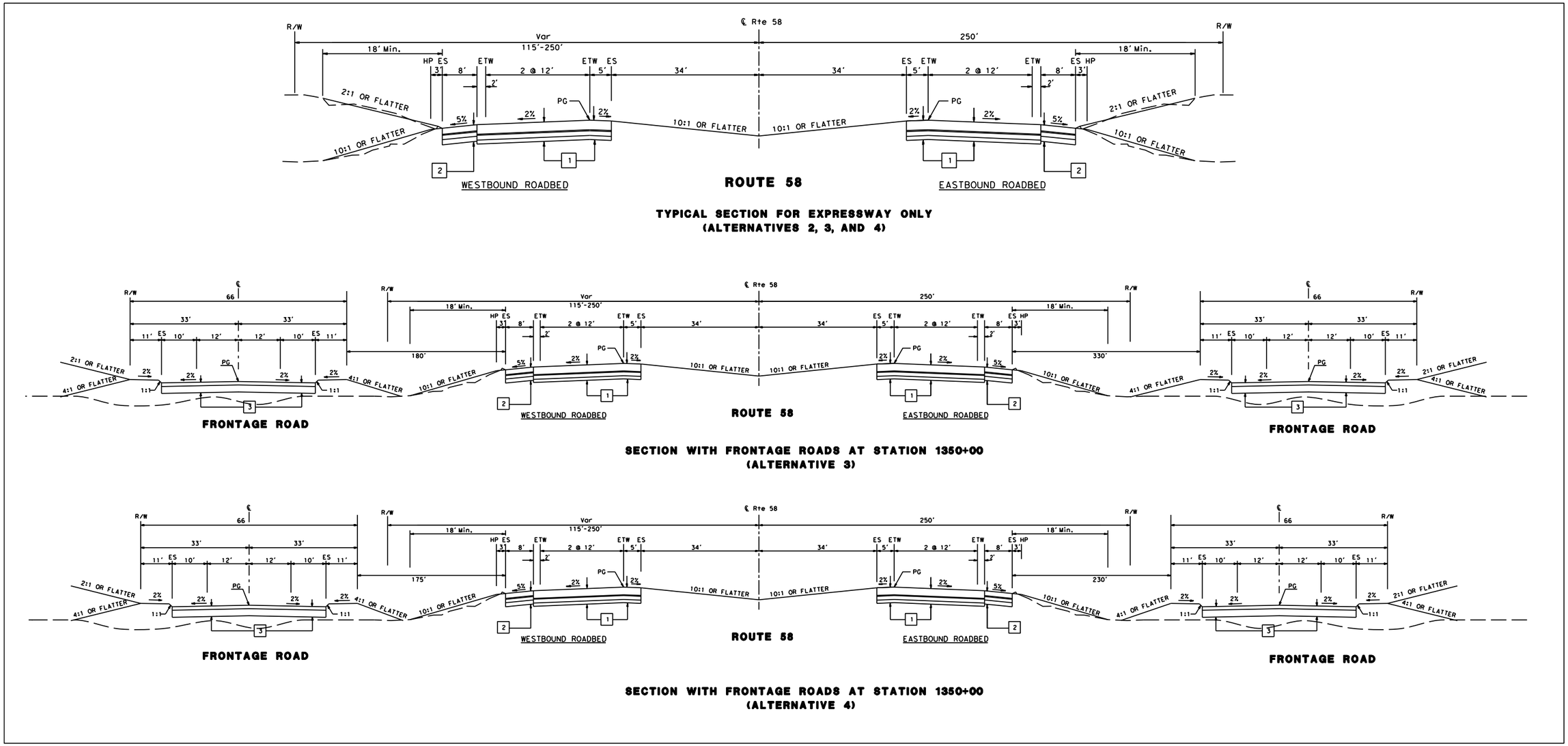
Figure 2.5: Cross Sections by Alternative



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Borrow/Fill Material Sites

The construction contractor will be responsible to determine which material sites to use for imported material, and to ensure any site is environmentally cleared and, if applicable, permitted. The borrow material will be required to be clean (free of hazardous wastes). Import material specifics and locations would be part of the final design phase for this project, and incorporated into the Plans, Specifications and Estimates section of the project contract. Excavated material that is not useable on the construction site would be used as fill elsewhere or would be transported for disposal in an approved landfill. Any material found to be contaminated would be analyzed to identify the type and level of contamination and then transported for disposal in an approved landfill.

One optional site which would be available to the contractor would be the Caltrans Opah Material Site, which has been cleared environmentally and is approximately 16 miles northeast from Hinkley, off of I-15. In addition, Caltrans is proposing to reactivate the Newberry Material Site, formerly known as the Newberry Borrow Pit. The site is located approximately 30 miles southeast from Hinkley, off of I-40. Environmental studies are just beginning for the Newberry Material Site project with preliminary scoping revealing the need to analyze possible impacts associated with the community, biological and cultural resources, noise, dust, and erosion control.

Local Roads and Frontage Roads

Direct access to SR-58, as currently exists from local roads, would be eliminated at all locations except for Hinkley Rd and Lenwood Rd. The proposed interchanges would allow local traffic to pass over SR-58, and continue on to local destinations.

Hinkley Road and Lenwood Road would be constructed with the following design features in the vicinity of the new SR-58:

- Standard 8-foot shoulder width,
- two lanes with standard 12-foot traveled lane width,
- a left-turn pocket, and
- ADA-compliant curb ramps, sidewalks, and crosswalks with striped/visible markings, where needed.

After the new SR-58 is complete, if either Alternative 2 or Alternative 4 is identified as the preferred alternative, the existing SR-58 will be relinquished to the County of San Bernardino. The existing SR-58 will remain as a two-lane roadway and serve as the local frontage road. The existing SR-58 at the west end of the project will be terminated with a cul-de-sac.

Frontage roads would be constructed north and south of the proposed widening (under Alternative 3) of SR-58 from Valley View Road to Summerset Road to provide access to adjacent property. The existing SR-58 from Fairview Road to Lenwood Road will remain under Alternatives 2 and 4 to serve as a Frontage Road and would be relinquished to the County of San Bernardino. Under Alternative 4, however, frontage roads would be built on both sides of the SR-58 facility near the Hinkley Road I/C (see Figure 2.5).

Drainage/Detention Basins

Drainage facilities will be installed to handle on-site as well off-site storm runoff and limit drainage flows across the expressway. Because the existing highway follows the natural terrain, the existing drainage flows across the highway at the low points or dips in the roadway. However, proposed culverts will be built to convey water in its natural course across the new SR-58. Detention basins are also included in the project design in order to minimize concentration of stormwater flow crossing the expressway.

Wildlife Crossing/Fencing

Desert tortoise is a federally listed endangered species and fencing would be provided at key locations throughout the project area to minimize the potential for impacts on this species.

Drainage facilities will allow crossing for small animal species underneath the new SR-58. Approximately 22 culverts will be designed as box culverts (with minimum dimension of three by five feet) to function as wildlife crossings for Desert tortoises. Wildlife crossings are discussed in detail in section 3.21 Threatened and Endangered Species.

Cut and Fill

With the exception of the westerly end of the project area, the expressway would be primarily on fill. Permanent erosion control would be selected during the design phase, in accordance with Caltrans' Design Manual Best Management Practices (BMPs), and would be applied to embankments with slopes 4:1 or steeper during construction. The expressway would be designed to include:

- fill slopes at 10:1 (typical), and
- median cross slopes no steeper than 10:1.

Ramps, local street improvements, and the Lenwood Road Overhead would be designed to include:

- fill slopes no steeper than 4:1, and
- cut slopes between 2:1 and 4:1 (variable).[14]

Utility Relocation

Several utility types may require relocation so that they can continue to function, including overhead and underground electrical, underground gas, overhead and underground telephone, overhead cable telephone, water, septic tanks, petroleum pipeline, and underground fiber optic. Based on an initial utility search, the following agencies/companies maintain utilities within the project area: (1) Southwest Gas, (2) Verizon, (3) Time Warner, (4) Southern California Edison, (5) Sprint, (6) Pacific Gas & Electric (PG&E), (7) San Bernardino County Special District Area 70, (8) Mojave Pipeline Operating Company, (9) El Paso Natural Gas Company, and (10)

[14] Final design will comply with the policies, principles, and standards contained in the *Highway Design Manual*.

Mojave Water Agency. Underground utilities that cross the highway would be encased per Caltrans policy.[15]

All wells will be relocated outside of the proposed state right-of-way, and existing wells within the state right-of-way will be capped.

Railroad Involvement

As part of each alternative, a bridge structure would be built to allow Lenwood Road to cross over the BNSF railroad tracks. A bridge would be constructed at this location, which would provide one travel lane in each direction along with a left-turn median.

Retaining Wall

One retaining wall would be added at Lenwood Road to support the BNSF grade separation bridge.

Staging Areas

Existing SR-58 and local roads would be used as construction staging areas. Staging plans would be developed during the design phase of the project, coordinated with the County and finalized prior to project construction.

Accommodation of Oversized Trucks

The STAA designates SR-58 (between I-5 and I-15) as a designated route for oversized trucks. Access control, separate local and expressway traffic, and new structural sections would accommodate oversize loads. The proposed alignments would also provide an increased ability to handle high volumes of truck traffic, and thereby would reduce long-term maintenance costs.

Design Exceptions and Status of Approval

The following features have been identified as necessary design exceptions, and will go through the approval process after the preferred alternative has been identified. They are summarized as follows:

Mandatory Exceptions

(1) Standard superelevation rates vary between 8-12%. Achieving the standard superelevation rate for the Hinkley and Lenwood interchanges would require larger curve radii at the ramp termini and lengthening the westbound on-ramp, which would require additional right-of-way. Therefore, it is proposed that the full standard superelevation rates[16] not be provided at the interchange ramps or along the existing SR-58 improvement that ties into the westbound ramp at Lenwood. Superelevation rate exceptions ranging between 3-8% would be requested.

(2) For new construction or major reconstruction, access rights are typically acquired on the opposite side of the local road from ramp terminals to preclude the construction of future

[15] Caltrans *Project Development Procedures Manual*. *Appendix LL*. Available at: http://www.dot.ca.gov/hq/oppd/pdpm/apdx_pdf/apdx_ll.pdf

[16] *Highway Design Manual* 6th Edition, May 7, 2012 (HDM) Index 202.2 states "Based on an e_{max} selected by the designer for one of the conditions, superelevation rates from Table 202.2 shall be used within the given range of curve radii."

driveways or local roads within the ramp intersections (Transportation Research Board 2000 and 2010). State access rights would not be acquired on the opposite side of the Lenwood westbound off-ramp because, although access is needed to connect the existing SR-58 to the Lenwood interchange, that portion will be relinquished to the County following completion of the proposed project.

Advisory Exceptions

(1) Two curb ramps will not be installed at each corner of the Hinkley Road and Lenwood Road I/C. Curb ramps would be provided for pedestrian access on only one side of each I/C[17] because pedestrian movements would be mainly in the north-south directions. There would be no businesses at any of the four quadrants due to the vehicle turning movements; therefore there is no need for pedestrians to cross the road in the east-west direction at the ramp termini.

2.2.1.2 Results of Value Analysis Study

Passage of the National Highway Systems (NHS) Act of 1995 included a mandate directing the U.S. Secretary of Transportation to develop a program requiring State Departments of Transportation to carry out a Value Analysis (VA) study for all Federal-aid projects on the NHS costing $25 million or more. In 2005, the federal government enacted the "Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users" (SAFETEA-LU) with new provisions and regulations. SAFETEA-LU expanded the scope of the 1995 Value Engineering legislation to include all projects on the Federal-aid system with an estimated project cost (capital and support costs) greater than or equal to $25 million. Title 23 USC Section 103 describes the "Federal-aid system" as the NHS and the Interstate System.

The goal of any VA Study is to improve value by sustaining or improving performance attributes of the project while at the same time reducing overall cost (including lifecycle operations and maintenance expenses). VA Alternatives are developed by the VA team as items to be considered as alternatives to either replace or enhance elements of the original concept, which in the context of a VA Study, is the design solution that is used as the baseline or starting point for the VA Study. The results of a VA Study may include new build alternatives to analyze, or design details that may be incorporated into one or more existing build alternatives, depending on whether they can be incorporated into the preliminary engineering and/or final design of the proposed project.

A VA study was conducted for the proposed project in October of 2002. The Value Analysis team identified nine ideas that were developed as value analysis alternatives, and analyzed using Value Analysis tools. Two of the nine value analysis alternatives presented with the results of the VA study for this project were accepted and one value analysis alternative was conditionally accepted.

Value Analysis alternative 1.2, "[e]liminate frontage road by buying the properties or paying access cut-off damages" was one of the two value analysis alternatives accepted. In conjunction

[17] *Highway Design Manual* 6th Edition, May 7, 2012 (HDM) Index 105.4 states: "(2) On new construction, two ramps should be installed at teach corner on the Standard Plans."

with the preliminary engineering for the proposed project that has occurred since the VA Study, this VA alternative has not been incorporated into the design of Alternative 3 and Alternative 4, however, it has been incorporated into the design of Alternative 2. Frontage roads have been included in Alternative 3 and Alternative 4 to maximize local access to the re-aligned SR-58 eliminating frontage roads through acquisition of parcels is not considered feasible because the costs involved would be well beyond the cost of constructing frontage roads, due to the quantity of these parcels being developed. The design of Alternative 2 is not planned to require construction of a frontage road, if parcels located between the western limits of the proposed project, extending south of the Alternative 2 alignment to Valley View Road are acquired. Local access to the re-aligned SR-58 as constructed for Alternative 2 would be maximized through use of the existing SR-58 highway, which would be relinquished to the County of San Bernardino following construction of the proposed project; as a result Alternative 2 will not require construction of a Frontage Road.

Value Analysis alternative 5.0, “[r]educe sound/noise by using earth berms” was the other value analysis alternative accepted. In conjunction with the preliminary engineering for the proposed project that has occurred since the VA Study has not been incorporated. Based on the results of the required Noise Study Report, no sound barriers are considered reasonable for Alternative 2 and Alternative 3, based on the reasonableness criteria, because the projected abatement cost for each barrier considered would exceed the reasonableness allowance. No sound barriers were considered reasonable for Alternative 4 either, except for one area located approximately along the right-of-way line roughly parallel to Frontier Road, located approximately between Summerset Road and Anson Road. The type of noise abatement proposed for this location, would require less right-of-way than a barrier using an earth berm.

Value Analysis alternative 4.0, “[p]rovide accel/decel lane at all at-grade intersections” was value analysis alternative that was conditionally accepted. The condition was to accept the deceleration lanes on SR-58 at the at-grade intersection and reject the acceleration lanes. In conjunction with the preliminary engineering for the proposed project that has occurred since the VA Study, interchanges have been incorporated into the designs of all three studied build alternatives, instead of accel/decel lanes at at-grade intersections.

2.2.1.3 Unique Features of Build Alternatives

Alternative 2: Realign and Widen to Four-Lane Expressway (Southerly Alignment)

Under Alternative 2 (see Figure 2.1), a new alignment would diverge from the existing alignment approximately two miles west of Valley View Road in a southeasterly direction to Valley View Road just south of Frontier Road, continuing along a gentle curve easterly from Valley View Road until it rejoins the existing alignment approximately 0.75 mile east of Lenwood Road. The alignment would run approximately 0.5 mile south of the existing SR-58 alignment.

Frontage Roads/Cul-de-sacs

After project construction, existing SR-58 would remain as a two-lane roadway; terminate on the west end as a cul-de-sac, and serve as a frontage road. This portion would be relinquished to the County of San Bernardino following completion of the proposed project.

Additional cul-de-sacs would be placed at the SR-58 facility near Wagner Road, Valley Wells Drive, Fairview Road, and Summerset Road south of the new SR-58 alignment; Flower Street north of the new SR-58 alignment; and Mountain View Road north and south of the new SR-58 alignment.

Alternative 3: Widen Existing SR-58 to Four-Lane Expressway (Existing Alignment)

Under Alternative 3 (see Figure 2.2, the new facility would run along the existing SR-58 alignment. The new alignment would diverge from the existing alignment just west of Mountain View Road along a gentle curve southeasterly to Lenwood Road, for approximately 3 miles. At the easterly end of the project limits, the alignment would be adjusted to avoid encroachment on the BNSF railroad. Of all the project build alternatives, Alternative 3 would require the most area for construction staging due to lack of open space areas and its proximity to existing structures within the Hinkley community. This alternative would require elaborate stage construction and associated cost to maintain the operation of SR-58 during construction.

Frontage Roads/Cul-de-sacs

After project construction, the easterly portion of existing SR-58 would remain as a two-lane roadway and would serve as a frontage road. This easterly portion of existing SR-58 would be relinquished to the County of San Bernardino.

Frontage roads would also be constructed to the north and south of the widened SR-58 in order to maintain access to adjacent properties. This would occur between (1) Valley View Road and Summerset Road and (2) Fairview Road and Lenwood Road.

The new local frontage roads would parallel the existing right-of-way, and then transition into curving alignments that would take them approximately 0.25 mile south and north of the widened roadway to their points of intersection with the existing north–south collector streets.

Utility Relocations

Beyond the utilities identified under “Common Design Features,” this alternative would require relocation of a number of overhead utility poles associated with a utility substation.

Alternative 4: Realign and Widen to Four-Lane Expressway (Northerly Alignment)

Under Alternative 4 (see Figure 2.3), the realignment and widening of SR-58 would occur slightly north of the existing SR-58. The new alignment would diverge from the existing alignment approximately 0.75 miles west of Valley View Road in a northeasterly direction, and would parallel the existing alignment of SR-58 on the north side until it rejoins the existing alignment approximately 0.75 miles east of Lenwood Road.

Frontage Roads/Cul-de-sacs

After project construction, existing SR-58 would remain as a two-lane roadway; terminate on the west end as a cul-de-sac, and serve as a frontage road (between the cul-de-sac and Flower Street

and also between Mountain View Road and Lenwood Road). These portions would be relinquished to the County of San Bernardino.

Frontage roads would also be constructed to the north and south of the widened SR-58 in order to maintain access to adjacent properties. This would occur between (1) Valley View Road and Mountain View Road, north of the proposed alignment and (2) Valley View Road and Summerset Road, south of the proposed alignment.

The new local frontage roads would parallel the existing alignment but transition into curving alignments that would take them approximately 0.25 mile south and north to their points of intersection with existing north–south collector streets.

Utility Relocations

Beyond the utilities identified under "Common Design Features," this alternative would require the relocation of a number of overhead utility poles associated with a utility substation.

Noise Barriers/Walls

An eight-foot noise barrier/wall is proposed under Alternative 4. The noise barrier/wall would be constructed on the south side of SR-58 along the proposed right-of-way. The west end of the noise barrier/wall would be located approximately 1,555 feet east of Summerset Road and the east end of the barrier would be located approximately 1,823 feet east of Summerset Road.

2.2.1.4 Alternative 1: No-Build (No-Action) Alternative

Under Alternative 1, SR-58 would remain as is without any improvements. SR-58 is currently operating at level of service (LOS) "E" and without improvements it is forecasted to operate at LOS "F" by 2040 (Section 1.3.2.1). Continuing local development and increasing traffic volumes would add to congestion, traffic delay, and likely cause deterioration in accident rates, operational efficiency and structural deficiencies. This alternative would not address the problems identified within this segment of SR-58. This alternative is referred to as the No-Build Alternative throughout this document.

2.2.2 Identification of Preferred Alternative

Full consideration was given to the technical studies prepared for the proposed alternatives, and data was carefully analyzed for all alternatives on an equal basis. After comparing and weighing the benefits and impacts of all of the feasible alternatives, at a Project Development Team (PDT) meeting on December 6, 2012, the PDT identified Alternative 2 as the preferred alternative, subject to public review. Final identification of a preferred alternative will occur after the public review and comment period. (See above figures showing Alternative 2). The rationale which the PDT employed follows.

The key benefits of Alternative 2 include:

Alternative 2 achieves the purpose and need of the proposed project, and provides the same level of operational improvement as the other two build alternatives (Alternative 3 and Alternative 4). All three build Alternatives 2, 3, and 4 would result in substantial operating improvements with LOS B or better in the design horizon year of the proposed project (2040), while providing the

benefits of improved safety with the grade separation of higher speed SR-58 traffic, elimination of the lane drop, and separation of the slower and bigger truck traffic. However, Alternative 2 is expected to cost substantially less, estimated at $159,895,000. The other two build alternatives, are estimated to cost $179,801,110 (Alternative 3) and $192,668,340 (Alternative 4), respectively.

As summarized below, Alternative 2 is expected to result in substantially fewer parcels needing to be acquired, and more specifically, is also expected to result in substantially fewer displacements of homes, businesses, as well as community facilities. In addition, Alternative 3 and 4 bisect and pass through the center of the Hinkley community, and therefore have greater community character and cohesion impacts than Alternative 2 (which skirts the southern fringe of the community).

Alternative 2	Alternative 3	Alternative 4
Acquisitions/Displacements: • 10 full acquisitions • 96 partial acquisitions • 13 residential units • 2 businesses	Acquisitions/ Displacements: • 69 full acquisitions • 164 partial acquisitions • 49 residential units • 5 commercial businesses • 1 church • partial displacement of 1 dairy	Acquisitions/Displacements: • 62 full acquisitions • 136 partial acquisitions • 56 residential units • 4 commercial business • partial displacement of 1 dairy

For the community of Hinkley, hazardous waste and the groundwater plume is a major issue, and impacts to hazardous materials and the mitigation systems which others have installed are a major consideration. Alternative 2 is expected to result in substantially fewer Pacific Gas and Electric (PG&E) wells in the project area being impacted, and would specifically avoid any impacts to any PG&E extraction wells and USGS wells, as summarized below:

Alternative 2	Alternative 3	Alternative 4
PG&E wells potentially impacted: • Supply (active) – 7 • Supply (inactive) – 2 • Monitoring (active) – 4	PG&E wells potentially impacted: • Supply (active) – 21 • Supply (inactive) – 13 • Monitoring (active) – 11 • Extraction (active) – 1 • Extraction (inactive) – 1	PG&E & USGS wells potentially impacted: • Supply (active) – 14 • Supply (inactive) – 14 • Monitoring (active) – 19 • Extraction (active) – 1 • Extraction (inactive) – 1 • USGS – 2

Regarding biological resources, it is currently expected that Alternative 2 would impact more acres than Alternative 3 or Alternative 4. Specifically, Alternative 2 is expected to impact 2.815 acres of California Department of Fish and Game (CDFG) jurisdictional waters, in comparison to Alternative 3 (expected to impact 0.625 acres) and Alternative 4 (expected to impact 0.707 acres). Alternative 2 will also result in more acres of vegetation and animal species habitat being impacted, including impacts to habitat for Desert Tortoise and Mohave ground squirrel (549.71 acres impacted by Alternative 2, 409.62 acres impacted by Alternative 3, and 427.31 acres impacted by Alternative 4).

The ability to mitigate impacts to these specific biological resources versus the ability to mitigate impacts to existing residences and businesses located in the project area, as well as the ability to minimize impacts to existing PG&E wells in the project area, is a major factor considered by the PDT in conjunction with identifying Alternative 2 as the Preferred Alternative.

The potential impacts of the proposed project to the community with respect to potential displacements and acquisition of property, minimizing impacts to PG&E wells in the project area, and the overall cost of the project in conjunction with satisfying the purpose and need for the project are expected to be the key criteria in the final identification of the Preferred Alternative after public circulation of the Draft Environmental Impact Report/Environmental Impact Statement prepared for this proposed project. For further details on impacts, please see the Summary Table, and Chapter 3 of this Environmental Document.

2.2.3 Final Decision-making Process

After the public circulation period, all comments will be considered, and Caltrans will identify a final preferred alternative and make the final determination of the project's effect on the environment. If Alternative 2 is identified as the final preferred alternative, Caltrans will certify that the project complies with CEQA, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations – if necessary –for impacts that will not be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have been considered prior to project approval. Caltrans will then file a Notice of Determination with the State Clearinghouse that will identify whether the project will have significant impacts, if mitigation measures were included as conditions of project approval, that findings were made, and, if necessary, that a Statement of Overriding Considerations was adopted. With respect to NEPA, Caltrans, as assigned by the Federal Highway Administration (FHWA), will document and explain its decision regarding the selected alternative, project impacts, and mitigation measures, if any, in a Record of Decision.

2.2.4 Alternatives Considered but Eliminated from Further Discussion

2.2.4.1 Humpyard Alternative

This alternative is discussed and was eliminated in the 1991 Project Approval Report (PAR) for SR-58. This alternative would have followed the same alignment as the current highway until PM 31.1, where it would have moved 1.9 miles southeasterly over the Mojave River and the BNSF Railroad Humpyard, and then tied into I-15 at the existing West Main Street interchange. It was eliminated from further discussion due to its less direct route, conflicts with existing homes, developed land, and prohibitive costs associated with crossing over the Humpyard and Mojave River (Caltrans 2012b), construction and staging problems (with the bridge over the Humpyard), and local support for the proposed project (Caltrans 2012b). The Project Approval Report was not issued for this project because the purpose/need and preliminary design were revised based on comments received.

2.2.4.2 Rimrock Alternative

This alternative is also discussed in the 1991 Project Approval Report for SR-58; however, similar to the Humpyard Alternative, it was eliminated from further discussion due to its less direct route, creating operational deficiencies, conflicts with existing homes, developed land, and costs associated with crossing over the Humpyard and Mojave River. It also would not cumulatively meet SR-58/I-15 FHWA freeway spacing requirements, would lack proper weaving/merging distances, and would have mixed freeway to freeway (regional traffic) with local road traffic. The Project Approval Report was not issued for this project because the purpose/need and preliminary design were revised based on comments received.

2.2.4.3 Alternatives Identified at the 2007 Scoping Meeting

All alternatives and alignments suggested by the community from the scoping meeting on June 26, 2007, were evaluated for engineering, cost, right-of-way, and environmental factors.

Northerly Alignment B, Parallel to SR-58: A recommendation was received to consider an alignment north of existing SR-58, and parallel to the BNSF railroad. This alternative was not selected for further study due to higher cost and similarity in concept and impacts to existing Alternative 4 (Northerly Alternative), which is carried forward for further evaluation within this environmental document.

Outlet Center Drive: A recommendation was received to create a project alignment which would bypass the community of Hinkley and connect to I-15 approximately one mile north of Outlet Center Drive. Upon review of this alternative, it was determined that Caltrans had previously considered a similar alternative (the Rimrock Alternative); however, it was not carried forward due to the following reasons:

- the new connection point at I-15 would not meet requirements for minimum separation distance between interchanges,
- there is an already existing SR-58 connection to I-15,
- much higher right-of-way impacts, and
- additional environmental footprint and impacts (primarily due to crossing over the Mojave River).

Modified Build Alternatives: Modifications to Alternative 2 (Southerly Alignment), Alternative 3 (Existing Alignment), and Alternative 4 (Northerly Alignment) were proposed and named 2MOD, 3MOD, and 4MOD. These alternatives provided interchanges at Valley View Road, Hinkley Road, Summerset Road, and Lenwood Road. These modified alternatives were not selected for further study because of:

- traffic data for Valley View Road and Summerset Road did not support the need for interchanges at these locations,
- the much higher cost, due to extra required freeway interchanges,
- increased right-of-way requirements, and
- larger environmental footprint impacts compared with Alternatives 2, 3, and 4.

2.2.4.4 Transportation System Management/Transportation Demand Management

Transportation Systems Management (TSM)/Transportation Demand Management (TDM) measures are strategies to enhance the efficiency of the transportation system while lowering cost. TSM measures seek to increase the number of vehicle trips that can be carried without adding lanes. TDM focuses on regional strategies for reducing vehicle trips and miles traveled and increasing vehicle occupancy. The population of the Community of Hinkley was approximately 920 in 2010 and the City of Barstow population was approximately 22,639 in 2010. As, identified in California Government Code § 65080 (b) (1) the policy element of transportation planning agencies is based on populations that exceed 200,000 persons for their regional transportation plans in regards to the development of measures of mobility and traffic congestion, including, but not limited to, daily vehicle hours of delay per capita and vehicle miles traveled per capita.

The populations within and nearest to the project area is not larger than 200,000 persons, as a result does not meet the requirements of California Government Code § 65080. Therefore, a separate TSM/TDM alternative was not evaluated for the Project.

2.3 Permits and Approvals Needed

Table 2-1 provides a list of permits, reviews, and approvals that would be required for project construction.

Table 2-1: Permits and Approvals Needed

Agency	Permit/Approval	Status
County of San Bernardino	Freeway agreement	Pending final design/construction needed for (1) local roads that will be closed, (2) construction of the new interchanges, and, as applicable (3) relinquishment of the existing SR-58 to the County.
County of San Bernardino	Temporary construction permits	Pending final design/construction Required for construction affecting local road systems
BNSF	Encroachment permit	Pending final design/construction Required for work performed within railroad right-of-way
Bureau of Land Management (BLM)	Application for proposed action	Under review by BLM Needed because of involvement of parcels owned by BLM
California Public Utilities Commission	Service contract and construction/maintenance agreements	Application would occur during final design Needed for construction of grade separated structure over BNSF rail line
California State Water Resources Control Board	Coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity (Construction General Permit, 99-08-DWQ)	Pending final design
California Regional Water Quality Control Board	Waste discharge permit/401	Pending final design
California Department of Fish and Game	1600/1602 Permit	Permit application will occur following approval of the final environmental document. Pending final design Needed for activities within ephemeral dry washes.
California Department of Fish and Game	2081 Incidental Take Permit	Permit coordination in progress Needed for Desert Tortoise/Loss Desert Tortoise Habitat Needed for Mohave Ground Squirrel
U.S. Fish and Wildlife Service	Section 7 consultation for threatened and endangered species	Section 7 coordination in progress Needed for Desert Tortoise

Chapter 3. Affected Environment, Environmental Consequences, and Avoidance, Minimization, Mitigation Measures

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Chapter 3. Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

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

- Coastal Zone: The project is not within the State Coastal Zone.
- Wild and Scenic Rivers: The project is not located near a designated Wild or Scenic River.
- Sole-Source Aquifer: The project is not within a designated Sole-Source Aquifer.
- Parks and Recreation: There are no designated parks or recreation areas within half a mile of any of the proposed build alternatives.

The Technical Reports prepared in support of this analysis are listed in Appendix G.

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3.1 Land Use

3.1.1 Existing and Future Land Use

3.1.2 Affected Environment

The Community Impact Assessment (CIA) (Caltrans 2011b) and the San Bernardino County General Plan and Zoning Code were used in the preparation of this section of the document.

The proposed project is located in the unincorporated community of Hinkley in western San Bernardino County (County) (Figure 1.2). The study area for land use extends from 0.5 mile south of proposed Alternative 2 (the southern alignment) to 0.5 mile north of proposed Alternative 4 (the northern alignment), and from 0.5 mile west of the western project limit to 0.5 mile east of the eastern project limit (Figures 2.1 through 2.3).

Existing Land Use (Baseline)

The community of Hinkley is predominantly rural with rural residences and farmland. Single-family and rural residences are located in clusters along the roads, including along the existing SR-58 alignment, with a few residences more sparsely located in the outer portions of the study area. Agricultural and dairy farms are concentrated along the eastern portion of the study area, with a few farms located adjacent to SR-58. Other uses include a mix of commercial, industrial, and institutional uses, such as a grocery store, a tavern/bar, churches, an elementary school, a senior citizen center, and a County fire station (see Figures 3.1A and 3.1B for the location of community facilities).

Future Land Use

Planned land uses in the study area, as designated in the San Bernardino County Land Use Zoning District maps, are shown in Figure 3.2. Caltrans contacted the San Bernardino Associated Governments, County of San Bernardino – Planning Department, California Regional Water Quality Control Board – Lahontan Region, and California Energy Commission to determine the proposed, future projects within the project vicinity, which are listed in Table 3.1-1 and shown on Figure 3.3.

Table 3.1-1: Proposed Development and Other Projects in the Area

	Name	Sponsor	Proposed Uses	Status
1	Lenwood Grade Separation	SANBAG	North of West Main St., approx. 400 ft north to 600 ft south of BNSF and Santa Fe railroad right-of-way: four-travel-lane grade separation	Design and Right-of-Way acquisition processing Construction expected to begin summer of 2013
2	Nursery Products Hawes Compost Facility	San Bernardino County	80-acre compost facility southeast of Hinkley	Approved July 2010
3	Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County	California Regional Water Quality Control Board, Lahontan Region	The goal of the project is to restore groundwater quality to background levels of chromium in the minimum amount of time practicable, while limiting or mitigating environmental impacts associated with the cleanup activities to the extent feasible.	DEIR approved for circulation August 2012
4	Abengoa Mojave Solar Project	California Energy Commission	An approximately 1,765-ac solar electric generating facility near Harper Dry Lake in unincorporated San Bernardino County approximately 9 miles northwest of Hinkley. The project includes a substation, interconnection to an existing transmission line, and fiber-optic telecommunication lines.	Final EA completed July 2011 Construction was initiated on August 29, 2011
5	Kramer Junction Realignment	California Department of Transportation	Construct a 4-lane expressway on SR-58 from the Kern County Line to 7.5 miles east of the Kramer Junction (58/395)	Preparing DEIR/DEIS
6	DesertXpress Enterprises, LLC High-Speed Passenger Train Project Decision to Grant Right-of-Way	DesertXpress Enterprises, LLC	Decision of the BLM to authorize a right-of-way grant for the construction, operation, maintenance, and termination of the proposed DesertXpress High-Speed Passenger Train Project on approximately 972 acres of public lands in San Bernardino County, California, and Clark County Nevada.	ROD October 2011

Sources: Caltrans District 08, San Bernardino Associated Governments, County of San Bernardino – Planning Department, California Regional Water Quality Control Board – Lahontan Region, and California Energy Commission.

Figure 3.1A: Existing Land Use (West)

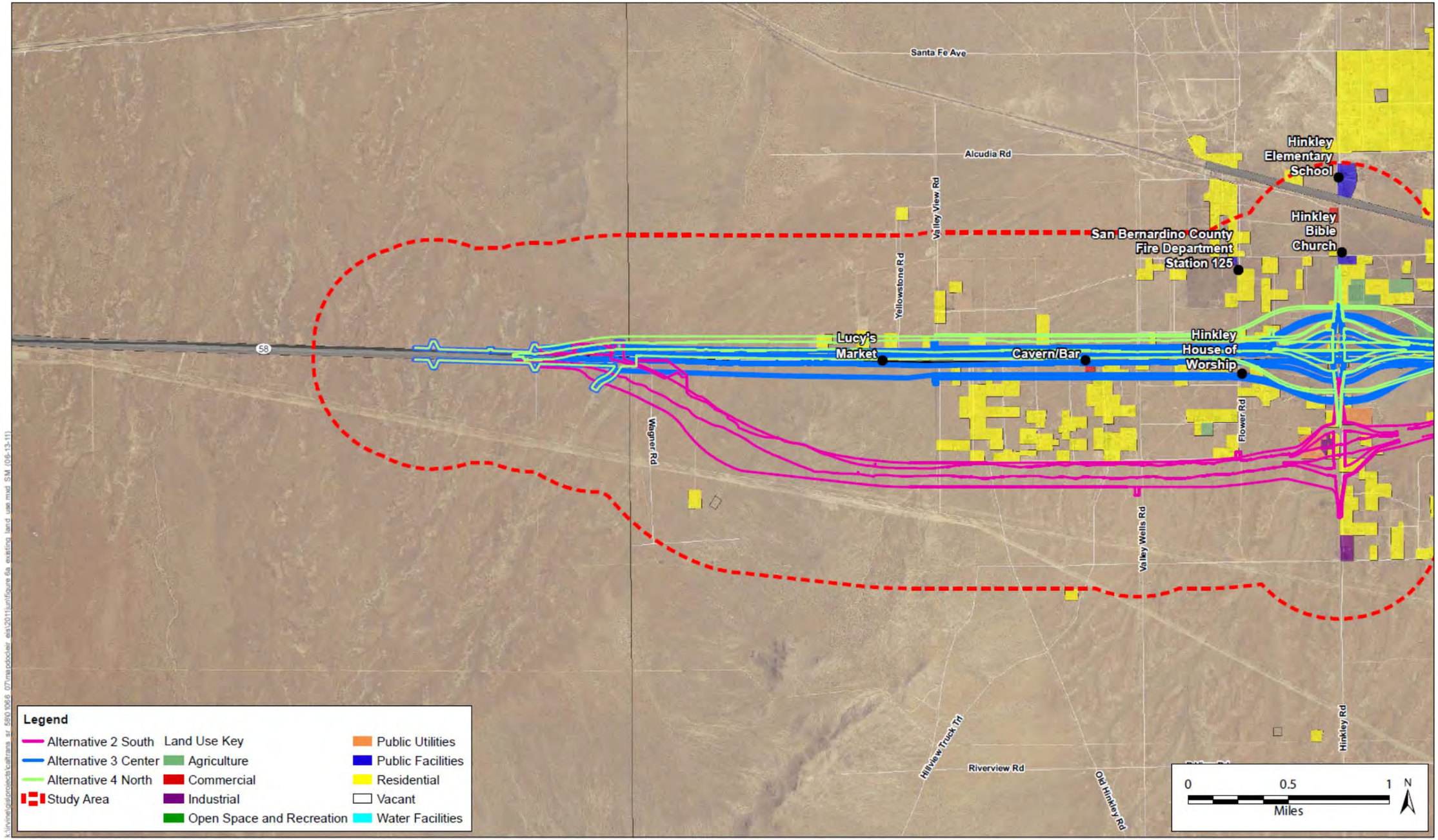

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Figure 3.1B: Existing Land Use (East)

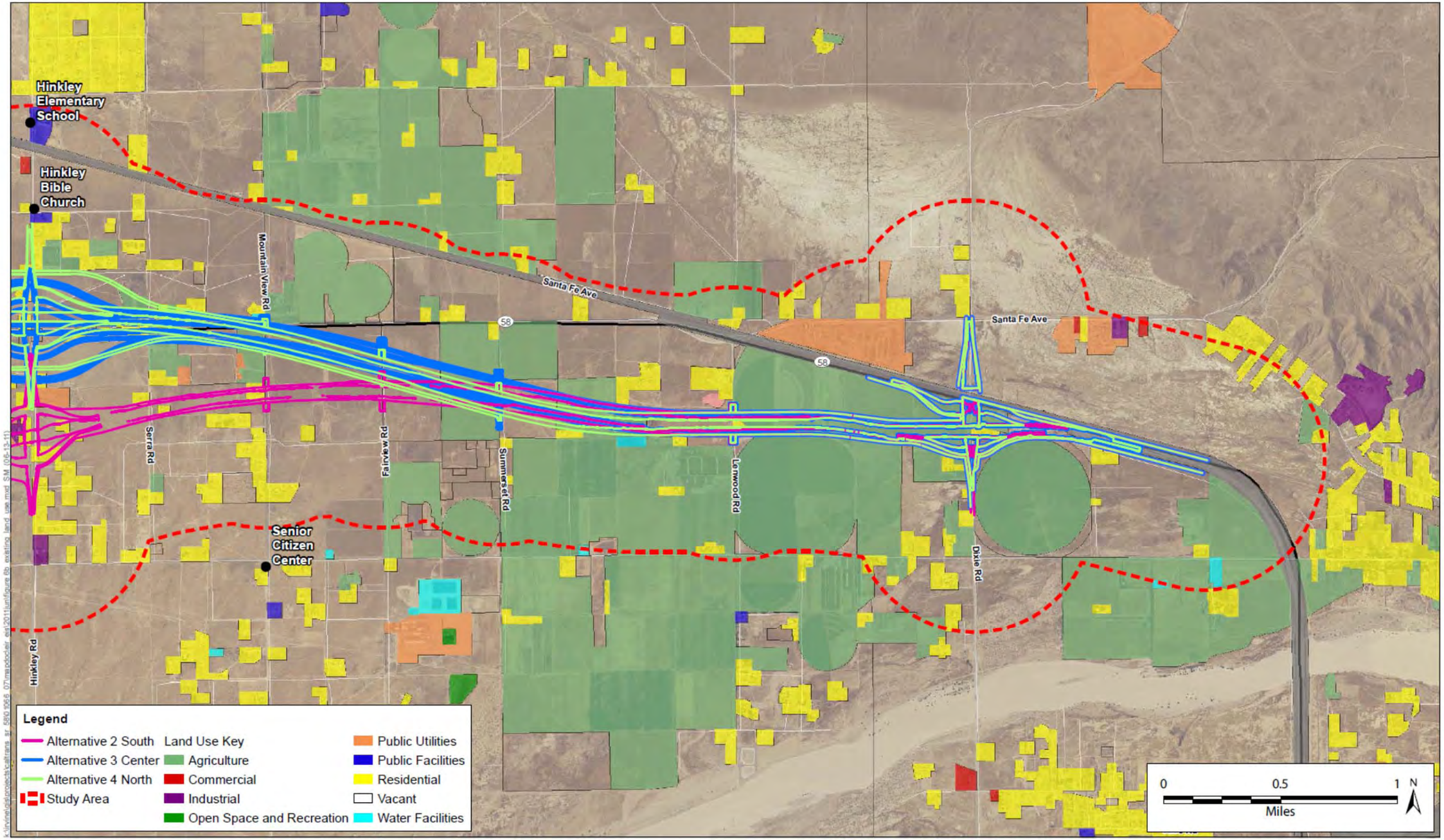

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Figure 3.2: Planned Land Use

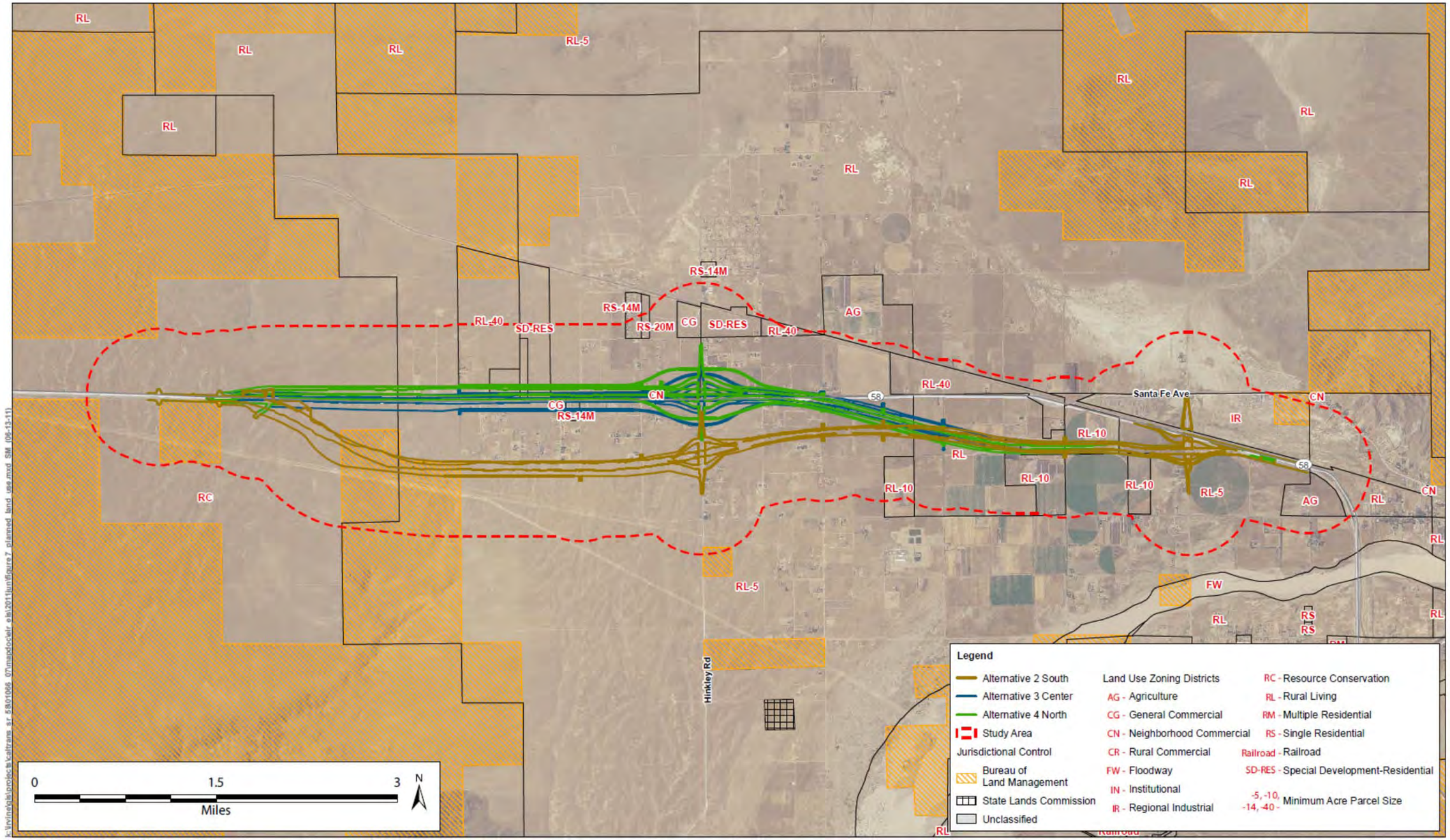

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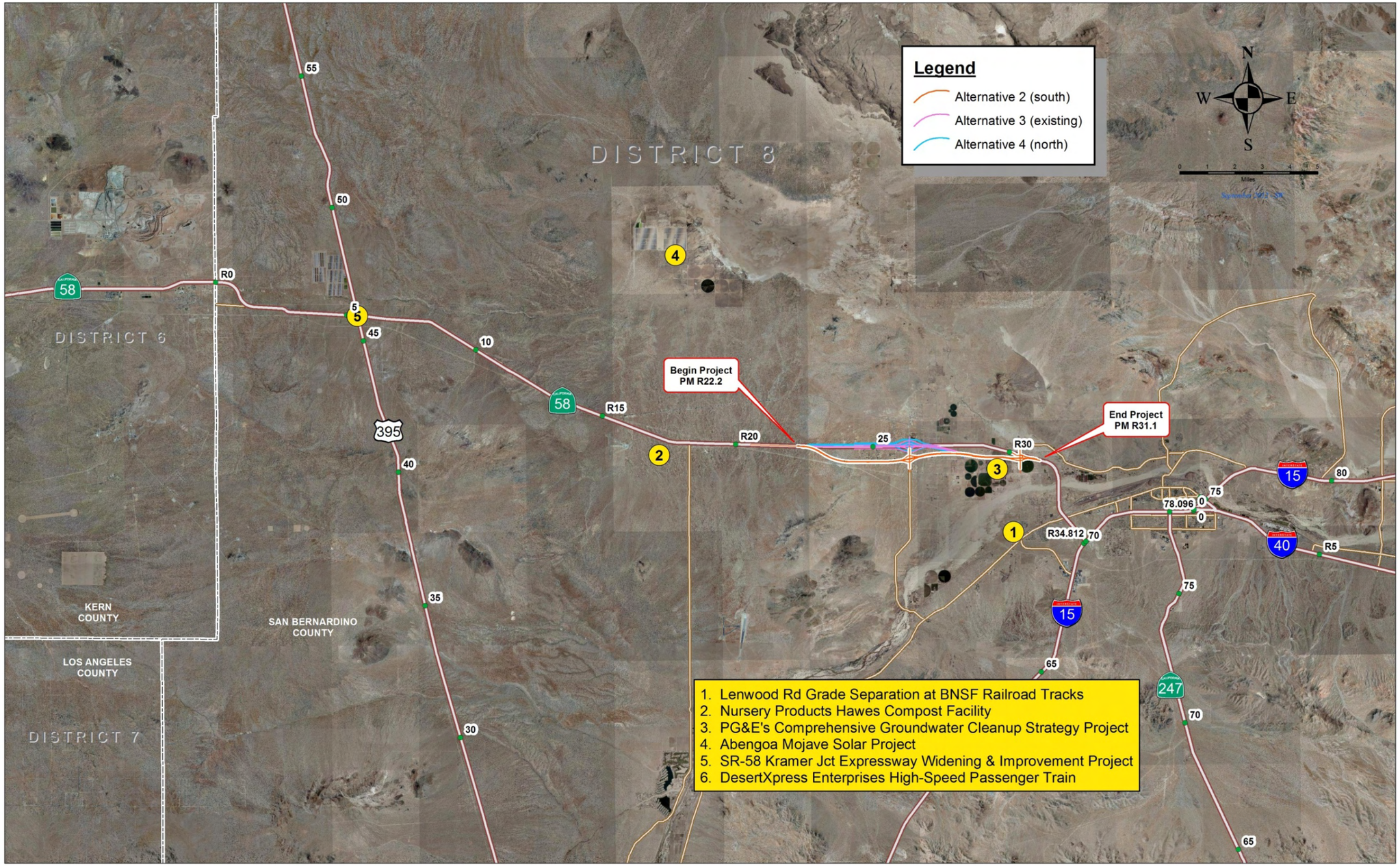
Figure 3.3: Proposed, Future Projects within the Project Vicinity



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3.1.3 Environmental Consequences (Existing and Future Land Use)

Alternative 1—No-Build Alternative

Alternative 1 would result in no modifications to SR-58 or the surrounding roadways in the community of Hinkley and would not affect land use within the study area.

Alternative 2—Southerly Alignment

Under Alternative 2, the greatest potential for impact exists for those land uses east of Flower Street to the area just east of Lenwood Road, along the proposed SR-58 alignment, because the alignment would run through land that has been developed or otherwise zoned for other uses. Land uses adjacent to the existing SR-58 alignment would not be substantially affected because this area would be subject to only minor alterations, which would be associated with the transition of the existing SR-58 segment to a County roadway facility. Similarly, land uses west of Flower Street would not be substantially affected because the developed land uses in this area would generally be avoided.

Under Alternative 2, 10 parcels would be fully acquired, and 96 parcels would be partially acquired. Under this alternative, 13 residential units and two nonresidential units (one agricultural farm and a freight line business) would be displaced.

Parcels proposed for complete acquisition would require zoning and land use designation amendments that would allow highway and roadway facilities to be built. Parcels proposed for partial acquisition may require zoning and land use designation amendments and result in the relocation of existing land uses to other areas. The extent of the impact resulting from partial parcel acquisition is determined by the size and location of the acquisition area relative to the existing parcel, the current use and occupancy, and the viability of the remaining parcel area with respect to its ability to continue to function as it did under the existing land use.

Multiple properties would incur a complete loss of the existing land use because of partial acquisitions. However, some properties that are subject to partial acquisition would be able to retain the existing land use. A permanent easement with a Conditional Use Permit (CUP),[1] or relinquishment of the proposed acquisition area to public facility use, would be required. These types of impacts would also apply to Alternatives 3 and 4.

Under Alternative 2 land use impacts would relate to an existing private land use changing to a public use to accommodate a new transportation facility. There would be substantial reductions in parcel sizes which would inhibit the continuation of an existing land use and the relocation of land uses to other areas because of displacement.

The proposed four-lane roadway would affect the rural character of the southern portion of the study area by adding a major, urbanizing element through an existing desert landscape. Most land uses in the study area are designated by the San Bernardino County General Plan as Rural Living, Agriculture, or Resource Conservation areas for management under the BLM.

[1] Per San Bernardino County Development Code, transportation facility uses within residential, commercial, industrial, and special purpose land use zoning districts are generally allowable with a Minor Use Permit; however, in compliance with Section 85.06.050 (Projects That Do Not Qualify for a Minor Use Permit), a Conditional Use Permit is necessary for the proposed project. San Bernardino County Development Code, 2007. Amended: March 25, 2010.

All of the proposed build alternatives would require partial or full acquisition of parcels containing residential, commercial, and farmland uses, which would result in inconsistencies with existing land uses, which is considered a potentially substantial impacts.

Alternative 3—Existing Alignment

Alternative 3 would widen the existing SR-58 roadway along its current alignment and require the acquisition of several adjacent residential farmland and commercial parcels. Under Alternative 3, 38 single-family residences, seven mobile homes, a multi-unit residential property with four units, two commercial businesses, farmland, a commercial livestock business, a church, and part of a dairy would be displaced.

Proposed improvements would occur primarily within the right-of-way along existing SR-58. Alternative 3 would diminish access and the public's ability to use project-adjacent, vacant land and open spaces. Most land use changes resulting from this alternative would be compatible with existing land use patterns, and the land uses of many parcels affected by the partial acquisitions would remain unchanged.

Multiple properties would incur a complete loss of an existing land use because of partial acquisitions, thereby preventing continuation of the existing use. For complete property acquisitions, land use designations would change from Residential, Commercial, and Resource Conservation to Government/Transportation. These impacts would also apply to Alternative 4.

Alternative 4—Northerly Alignment

Alternative 4 would realign SR-58 within the project limits, just north of the existing SR-58 facility. Existing SR-58 would be converted to a frontage road, providing both local access and enhancing circulation for local traffic. This segment would need to be re-designated as a local roadway. However, because the roadway currently exists, no substantial land use inconsistencies would occur with the conversion of the existing SR-58 alignment to a frontage road.

Under Alternative 4, 29 single-family residences, 23 mobile homes, a multi-unit residential property with four units, one commercial business, farmland, a commercial livestock business, and part of a dairy would be displaced.

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

3.1.4.1 Affected Environment

Southern California Association of Governments' Regional Transportation Plan and Regional Transportation Improvement Program

While the San Bernardino Associated Governments (SANBAG) is the council of governments and transportation planning agency for San Bernardino County, the Southern California Association of Governments (SCAG) develops and maintains the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP) for the counties of San Bernardino, Imperial, Los Angeles, Orange, Riverside, and Ventura. SCAG is mandated by federal law to research and develop plans for transportation, growth management, hazardous waste management, and air quality.

Several goals were developed and implemented during the development of the RTP. The RTP goals are:

- Maximize mobility and accessibility for all people and goods in the region;
- Ensure travel safety and reliability for all people and goods in the region;
- Preserve and ensure a sustainable regional transportation system;
- Maximize the productivity of our transportation system;
- Protect the environment, improve air quality, and promote energy efficiency; and
- Encourage land use and growth patterns that complement our transportation investments.

The 2008 cost-constrained RTIP provides a listing of capital improvement transportation projects proposed over a six-year period: fiscal year (FY) 2008/2009 to 2013/2014. The RTIP must include all transportation projects that require federal funding as well as all regionally significant transportation projects for which federal approval (by FHWA or the Federal Transit Administration [FTA]) is required, regardless of funding source. The proposed project is individually listed in SCAG's 2012 RTP under the San Bernardino County "State Highway Projects" section (Project ID 4351).

SANBAG participates in the development of the RTIP and is responsible for cooperative regional planning and furthering an efficient multi-modal transportation system countywide.

Interregional Transportation Improvement Program

Caltrans' 2008 Interregional Transportation Improvement Program (ITIP) identifies SR-58 as a focus route and recognizes its role as a major east-west goods movement route for interregional truck freight that also provides "operational flexibility for coping with emergencies in this region," a bypass for congestion from the Los Angeles basin, and an access route for recreational users to the southern Sierra Nevada (Interregional Transportation Strategic Plan, June 1998).

The State of California's Global Gateways Development Program (2002), developed by Caltrans together with the Business, Transportation and Housing Agency, also identifies SR-58 as a "[k]ey international trade corridor" and thus of high priority for improvement of grade separations.

California Scenic Highway Program

The California Scenic Highway Program was created by the state legislature in 1963 to preserve and protect scenic highway corridors from change that would reduce the aesthetic value of lands adjacent to highways. To be included in the state program, the highways proposed for designation must meet the Caltrans eligibility requirements and have visual merit. County highways and roads that meet California Scenic Highway Program standards may also be officially designated.

SR-58 is not currently a state- or county-designated Scenic Highway; however, the portion of SR-58 from SR-14 in Kern County to the I-15 junction in Barstow is identified by the county as an Eligible State Scenic Route in the list of Eligible State Scenic Routes in San Bernardino County.

The status of a state scenic highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a Scenic Highway. The current San Bernardino General Plan, adopted in 2007, does not include this stretch of SR-58 in its County Designated Scenic Routes[2]. As of April 2011, Caltrans has not received a Scenic Highway "official designation" application.

The potential for the proposed project to affect the existing visual character or quality of the site and its surroundings, as well as its consistency with the California Scenic Highway Program, is discussed in Section 3.7, *Visual/Aesthetics*.

Bureau of Land Management California Desert Conservation Area Plan – West Mojave Plan

Subsequent to the Federal Land Policy and Management Act of 1976, the Desert Conservation Area Plan (BLM 2006) was developed by the BLM in response to direction by Congress: "The use of all California desert resources can and should be provided for in a multiple use and sustained yield management plan to conserve these resources for future generations, and to provide present and future use and enjoyment, particularly outdoor recreation uses, including the use, where appropriate, of off-road recreational vehicles."

The California Desert Conservation Area Plan has been amended since adoption in 1980, including the 9,357,929-acre West Mojave Plan, which encompasses most of California's western Mojave Desert, including the project area. The West Mojave Plan is a habitat conservation plan and federal land use plan amendment that (1) presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel, and nearly 100 other sensitive plants and animals and the natural communities of which they are a part and (2) provides a streamlined program for complying with the requirements of the California and federal Endangered Species Acts.

1994 Desert Tortoise (Mojave Population) Recovery Plan and 2008 Draft Revised Recovery Plan for the Mojave Population of the Desert Tortoise

As an integral part of the 1994 Recovery Plan for the Desert Tortoise, six recovery units were designated within the six million acres of habitat throughout the Mojave Desert. Within each recovery unit, one to four Desert Wildlife Management Area (DWMAs) were designated to promote and manage desert tortoise recovery in specific areas within the recovery units.

The proposed project is located within two DWMAs that are part of the West Mojave Recovery Unit. The majority of the project area is located within the Fremont-Kramer DWMA; however, a portion of the Superior-Cronese DWMA is in the northeast portion of the project.

The U.S. Fish and Wildlife Service (USFWS) (2002) *Field Survey Protocol for Any Federal Action that May Occur within the Range of the Desert Tortoise* explicitly states that the BLM does not categorize lands that it does not manage, including military reservations and private

[2] 2007 San Bernardino County General Plan Open Space Element open space conservation overlay map at http://cms.sbcounty.gov/Portals/5/Planning/Zoning&ovelay%20maps/OpenSpaceCountywide.pdf. Accessed 12/01/12.

lands. The project site is not categorized on any BLM maps for desert tortoise habitat in the West Mojave Plan because the majority of the site is private land.

San Bernardino County General Plan

The San Bernardino County General Plan (San Bernardino County 2007) defines goals and establishes policies to achieve the overall vision of the County. The general plan identifies the community's land use, transportation, environmental, economic, and social goals and policies as they relate to land use and development. As such, the general plan forms the basis for local government decision-making, including development decisions.

The general plan is divided into three planning regions: the Valley, Mountain, and Desert Regions. The study area falls within the Desert Region. Consistent with Policy CI 5.2(j) of the General Plan Circulation and Infrastructure Element, all three build alternatives would include the placement of cul-de-sacs at select intersecting roadways to redirect traffic to facilities designed to accommodate access to and from the main highway. The relevant goals and policies of the Desert Region's Land Use Element are described below.

Land Use Element

Consistent with California Government Code, section 65302(a), the Land Use Element must address each of the following issues: distribution of housing, business, industry and open space, including agricultural land.

Goals (Desert Region)

- D/LU 1. Maintain land use patterns in the Desert Region that enhance the rural environment and preserve the quality of life of the residents of the region.

Policies (Desert Region)

- D/LU 1.1. Encourage low density development by retaining Rural Living (RL) zoning in Community Plan areas that are outside of city spheres of influence and removed from more urbanized community core areas.
- D/LU 1.4. Continue the conversion of the Special Development Land Use Zoning District (SD) in remote, outlying Desert areas to the appropriate land use designation (e.g., Rural Commercial [CR], Highway Commercial [CH], etc.).
- D/LU 2.1. Provide transitional uses and buffer incompatible uses such as residential and commercial uses and environmentally sensitive areas.

San Bernardino County Development Code

The San Bernardino County Development Code provides standards and guidelines for the continuing orderly growth and development of the County. Specifically, the development code creates a comprehensive and stable pattern of land uses upon which to plan transportation, water supply, sewage disposal, energy, drainage/flood control, and other public facilities and utilities. It encourages the most appropriate uses of land to prevent overcrowding and avoid an undue concentration of population, maintains and protects the value of property, and ensures compatibility between different types of development and land use. The relevant chapters of the development code are:

- Chapter 82.01. Land Use Plan, Land Use Zoning Districts, and Overlays
- Chapter 82.02. Allowed Land Uses and Development
- Chapter 82.03. Agricultural and Resource Management Land Use Zoning Districts
- Chapter 82.04. Residential Land Use Zoning Districts
- Chapter 82.05. Commercial Land Use Zoning Districts
- Chapter 82.06. Industrial and Special Purpose Land Use Zoning Districts
- Chapter 82.19. Open Space (OS) Overlay
- Chapter 83.02. General Development and Use Standards

A summary of the lot area requirements for land uses in the study area, compiled from the development code chapters listed above, is provided in Table 3.1-2.

Table 3.1-2: Zoning District Minimum Lot Size

Land Use Zoning District	Minimum Lot Area	Minimum Lot Dimensions		
		Minimum Width	Minimum Depth	Maximum Width-to-Depth Ratio
AG	10 acres [a]	300 ft	300 ft	1:4
RC	40 acres	300 ft	300 ft	1:4
OS	No requirement	No requirement	No requirement	No requirement
RL	2.5 acres [b]	150 ft	150 ft	1:3 for less than 10 acres 1:4 for 10 or more acres
RL- Mobile Home	20 acres			
RS	7,200 sf [b]	60 ft for less than 1 acre 140 ft for 1 acre or more	100 ft for less than 1 acre 150 ft for 1 acre or more	1:3 for less than 10 acres 1:4 for 10 or more acres
RS- Mobile Home	10 acres			
CN[c]	1 acre	120 ft	120 ft	1:3
CG[c]	5 acres	120 ft	120 ft	1:3
SD	40 acres	60 ft	100 ft	Lot of less than 10 acres - 1:3 Lot of 10 acres or more - 1:4

Source: San Bernardino County Code, Title 8, Development Code: Table 82-4C, Agricultural and Resource Management Land Use Zoning District Minimum Lot Size – Desert Region; Table 82-8C, Residential Land Use Zoning District Minimum Lot Size – Desert Region; Table 82-12C, Commercial Land Use Minimum Lot Size – Desert Region; and Table 82-18C, Industrial and Special Purpose District Minimum Lot Size – Desert Region. April 12, 2007. San Bernardino County Code, Title 8, Development Code: Table 84-8, Parcel Size and Density Standards for Mobile Home Parks. Amended March 25, 2010.

Notes:

[a] Except where modified by map suffix. The various designations within the AG Land Use Zoning District shall be limited to AG, AG-20, AG-40, AG-80, and AG-160.

[b] Except where modified by map suffix. The various designations within the RL Land Use Zoning District shall be limited to RL, RL-5, RL-10, RL-20, and RL-40. The various designations within the RS Land Use Zoning District shall be limited to RS, RS-10M, RS 14M, RS-20M, and RS-1.on

[c] Minimum lot area may be less than specified if the subdivision application is filed concurrently with a Planned Development, Conditional Use Permit, or Minor Use Permit application.

3.1.4.2 Environmental Consequences

Alternative 1—No-Build Alternative

Although the No Build Alternative would be consistent with land use designations, it would not implement RTIP Project ID 4351[3] or support the goals of the RTIP and RTP. Existing SR-58 is inconsistent with the highway segments that extend east and west of the proposed project. The general plan recognizes the need to ensure adequate transportation facilities to ease congestion and maintain adequate service levels. Therefore, Alternative 1 would be inconsistent with the goals and policies of local, regional, and state transportation plans and policies.

Build Alternatives 2, 3, and 4

The Build Alternatives would implement RTIP Project ID 4351, consistent with the RTIP and RTP. The general plan recognizes the need to ensure adequate transportation facilities to ease congestion and maintain adequate service levels, while maintaining land use patterns in the Desert Region that enhance the rural environment and preserve the quality of life of the residents of the region.

Consistent with Policy CI 5.2(j) of the general plan Circulation and Infrastructure Element, all three build alternatives would include the placement of cul-de-sacs at select intersecting roadways to redirect traffic to facilities designed to accommodate access to and from the main highway.

Proposed Alternatives 2, 3, and 4 would be consistent with the goals and policies of local, regional, and state transportation plans and policies; however, all of the proposed build alternatives would result in inconsistencies with existing land uses. These inconsistencies would be addressed through anticipated amendments to the zoning and land use designations for parcels affected by the proposed project, and approval of permanent easements and CUPs for parcels minimally affected. Therefore, Alternatives 2, 3, and 4 would not result in significant impacts to land use in the area.

3.1.4.3 Avoidance, Minimization, and/or Mitigation Measures

The Project’s inconsistencies with land use designations, such as agricultural and residential, will be addressed through minor amendments to the zoning and land use designations for parcels affected by the proposed project. Approval of permanent easements and CUPs that will be required will be adopted by the appropriate agencies.

[3] Project ID 4351description in Regional Transportation Improvement Program: Near Hinkley, from 1.4 miles west of Valley View Road to 0.7 mile east of Lenwood Road—realign and widen to four-lane expressway (two to four lanes) (Phase 2).

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3.2 Growth

3.2.1 Regulatory Setting

3.2.1.1 Federal Regulations

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, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations, 40 CFR 1508.8, refer to these consequences as secondary impacts. Secondary impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

3.2.1.2 State Regulations

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

3.2.2 Affected Environment

Information from this section of the document came from the *Community Impact Assessment* (Caltrans 2011b) prepared for the proposed project and 2010 Census Bureau data updates (Caltrans 2012a). Additional information is located in Section 3.4 Community Impacts.

The CIA compared demographic data of the project population and housing study area with data for the County and the city of Barstow. The population and housing study area is defined as census blocks used in the 2010 Census that are located adjacent to or span the alternative project alignments (Alternatives 2, 3, and 4).

According to the Census Bureau, the population of the study area was 920 persons in 2010. The total population for the study area is derived by combining the totals of the 72 Census blocks within the study area. The population and housing study area is intended to encompass an area where any potential impacts from project construction and operation would be reasonably foreseeable.

3.2.2.1 Population and Housing

The CIA and Section 3.4 compare demographic data of the project population and housing study area with data for the County and the city of Barstow. The population and housing study area is defined as those census blocks that are located adjacent to, or span the alternative project alignments (Alternatives 2, 3, and 4). For this project, the population and housing study area encompasses 60 census blocks, within six block groups, within three census tracts (see Figure 3.2.1). The population and housing study area is intended to encompass an area where any potential impacts from project construction and operation would be reasonably foreseeable.

Demographics

Regional Population and Housing

As reported in the 2010 census, the County's total population was 2,035,210; the city of Barstow's was 22,639. Additionally, the total number of housing units in the County was 699,637. Of this total, 87.4% were occupied and 12.6% were vacant. Of the total occupied housing units, 62.7% were owner-occupied and 37.3% were renter-occupied. In the city of Barstow, the total number of housing units was 9,555. Of the total housing units, 84.6% were occupied and 15.4% were vacant. Of the total occupied housing units, 49.0% were owner-occupied and 51.0% were renter-occupied.

The total number of housing units in the study area was 411, and had a higher percentage of owner-occupied housing units (67.6%) than the County (62.7%) and the city of Barstow (49.0%).

Local Area Population and Housing

As reported in the 2010 Census, the populations of the three census tracts that encompass the project study area were 545 (Census Tract 93), 3,691 (Census Tract 116), and 1,581 (Census Tract 119). The population of the project study area was 920 persons. Additionally, according to the 2010 census, the total number of housing units in the project study area was 411. The study area had a higher vacancy rate (21.2%) than the County (12.6%) and the city of Barstow (15.4%). The number of people per house was slightly lower in the project study area (2.8) than in the County (3.3) but the same as in the city of Barstow (2.8).

Projected Regional and Local Area Population and Housing

According to the County General Plan, San Bernardino County's population growth rate has exceeded that of California and the United States for the most of its history. During the past decade, the County grew rapidly and much faster than the state and nation. Over the next 10 years, the unincorporated Valley Region is projected to add over 130,000 new residents (+57%), and the unincorporated Mountain Region is projected to add nearly 32,000 new residents (+58%). Although the Mountain and Desert regions are increasing their share of the projected growth, the unincorporated Desert Region is expected to grow at a slower pace (+26%) than the Valley or Mountain regions. The spatial distribution of new residential construction is expected to continue to be skewed toward the Valley Region of the County, with over 70% of the County housing units in 2020. Moreover, the 2010 census demonstrates that the community of Hinkley is atypical for this region and that population is decreasing in number.

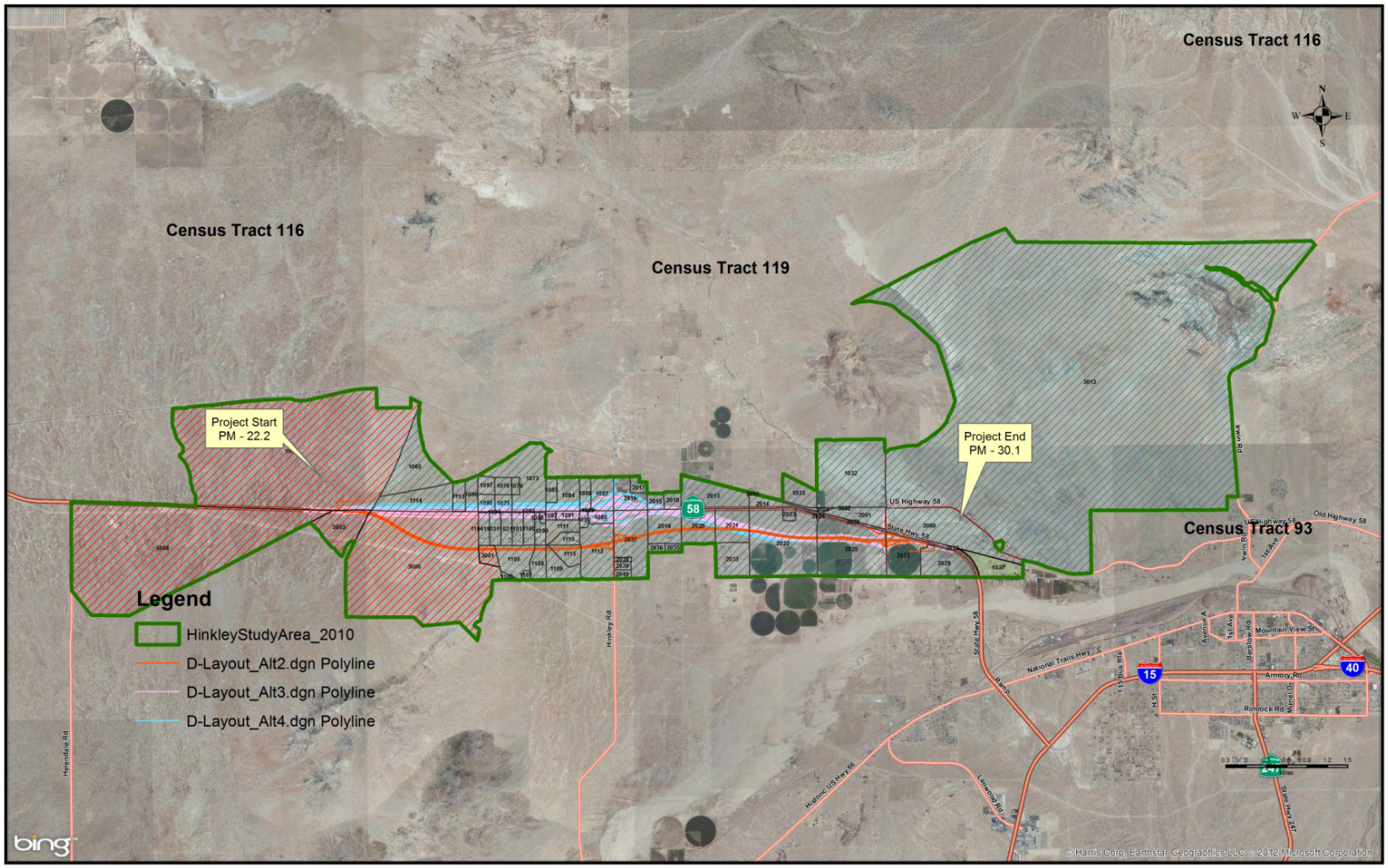
3.2.3 Environmental Consequences

Since growth-related effects represent permanent impacts of a project, there is no discussion of temporary impacts in this section.

Alternative 1—No-Build Alternative

Alternative 1 would not modify the current highway or local roadways. The only change anticipated as a result of Alternative 1 would be the deterioration of traffic conditions on SR-58 over time. This change would not be substantial enough in itself to result in changes within the project study area in the location, type, rate, increase, or amount of growth.

Figure 3.2.1: Census Map



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Build Alternatives

First-cut screening

As required per Caltrans "Guidance for Preparers of Growth-Related, Indirect Impact Analyses," an analysis was used in the CIA to ascertain the potential for the project to result in growth-related impacts and to determine the extent of analysis appropriate to the project. It was determined that the project build alternatives have the potential to change local access to and across SR-58 (See Chapter 2. Project Alternatives/Table 3.1-1). Although improved access/capacity to a transportation facility typically could facilitate growth, as evidenced in Section 3.1, known development in this area is mostly limited to utility work. However, transportation projects in rural areas have traditionally had a lower potential to cause growth-related impacts than suburban areas. Further, development is not likely to occur if the regional economy will not support new jobs and households, if credit or financing is not readily available, or if the availability of labor, suppliers, or local markets for goods is not sufficient.

The pattern and rate of population and housing growth projected to occur under all of the proposed Build Alternatives would be consistent with that contemplated in existing plans for the region. No new or expanded utilities, housing, or other similar permanent physical changes to the environment would be necessary as an indirect consequence of the proposed Build Alternatives and project-related growth is not "reasonably foreseeable."

Because the proposed build alternatives are not expected to increase the rate or amount of growth, nor have a substantial influence on growth in the affected project area or in the larger regional context, the growth analysis of this project is deemed complete and further analysis is not required.

3.2.4 Avoidance, Minimization, and/or Mitigation Measures

Because the proposed project does not have growth impacts avoidance, minimization, and/or mitigation measures are not required.

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3.3 Farmlands/Timberlands

The project study area is void of timberland (as defined by Public Resources Code [PRC] Section 4526), forest land (as defined in PRC Section 12220[g]), and timberland zoned Timberland Production (as defined by Government Code Section 51104[g]). The proposed project will not impact timberland or forestry resources. For this reason, this section analyzes impacts on farmlands only.

3.3.1 Regulatory Setting

3.3.1.1 Federal Regulations

NEPA and the Farmland Protection Policy Act (FPPA, 7 U.S.C. 4201-4209; and its regulations, 7 CFR Part 658) require federal agencies, such as FHWA, to coordinate with the Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

3.3.1.2 State Regulations

CEQA requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to deter the early conversion of agricultural and open space lands to other uses.

3.3.1.3 Local Regulations

The Conservation Element of the County General Plan provides direction regarding the conservation, development, and utilization of the County's natural resources, including soils that have the potential to be used for agriculture such as prime farmland. The Conservation Element and Desert Region goals and policies relevant to the proposed project are listed below.

Goals (Soils/Agriculture/Minerals)

- CO 6. The County will balance the productivity and conservation of soil resources.

Policies (Soils/Agriculture)

- CO 6.1. Protect prime agricultural lands from the adverse effects of urban encroachment, particularly increased erosion and sedimentation, trespass, and non-agricultural land development.
- CO 6.2. The County will allow the development of areas of prime agriculture lands supporting commercially valuable agriculture to urban intensity when it can be demonstrated that there is no long-term viability of the agricultural uses due to encroaching urbanization, creating incompatible land uses in close proximity to each other.

Goals (Desert Region)

- D/CO 4. Protect agricultural lands from the effects of nonagricultural development.

Policies (Desert Region)

D/CO 4.2. The conversion of agricultural land to non-agricultural uses shall be discouraged unless the proposed use can be demonstrated to be preferable in terms of economic development, and resource availability and resource conservation

3.3.2 Affected Environment

Information sources used in the preparation of this section include the CIA (Caltrans 2011b), 2008-2010 California Department of Conservation (DOC) Farmland Mapping and Monitoring Program, DOC 2006-2008 Land Use Conversion Report (2006-2008 LUCR), DOC 2008-2010 Land Use Conversion Report (LUCR), DOC Sources of Urban Land 2006-2008 (SUL), California Land Conservation [Williamson] Act 2010 Status Report (WA Report), 2011 Historic Property Survey Report (HPSR) (Caltrans 2011c), and the Farmland Conversion Impact Rating Form prepared in coordination with NRCS.

As mentioned in the HPSR (Caltrans 2011c), this homestead community emerged as an agricultural settlement because of its favorable shallow water table at a depth of 5 to 20 feet in the early 1900s. Although declining water levels, increased lift costs, and prolonged rainfall in the 1950s and 1960s caused some farmers to give up their farms. Then in the early 1970s, spiraling energy costs triggered a general abandonment of alfalfa production – the area's primary agricultural crop. Nevertheless, some farmland remains in the area.

The DOC and the NRCS classify agricultural lands into four categories: prime farmlands, farmlands of statewide importance, unique farmland, and farmland of local importance (DOC 2010).

- *Prime farmland* is rural land with the best combination of physical and soil characteristics for the production of crops and used for irrigated agricultural production at some point during the four years prior to the mapping date.
- *Unique farmland* is land other than prime farmland that has lesser quality soils that are used for the production of high-value specialty crops (e.g., citrus and nuts) that has been cropped at some time during the four years prior to mapping.
- *Farmland of statewide importance* is land that does not qualify as prime or unique farmland, and has been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- *Farmland of local importance* is defined by, and under the authority of, the Board of Supervisors of each county. San Bernardino County defines farmland of local importance as "[f]armlands which include areas of soils that meet all the characteristics of Prime, Statewide, or Unique farmland and which are not irrigated."[4] The definition also includes farmlands not covered by above categories, but is of high economic importance to the community.

According to the 2008-2010 LUCR, approximately 925,351 acres of agricultural land were inventoried in San Bernardino County in 2010, and 901,666 acres were inventoried in 2008. Approximately 12,848 acres of prime farmland were inventoried in 2010, a decrease from 14,090 acres in 2008. 1,179 acres were converted to grazing land primarily due to the lack of farming or

[4] *Farmland of Local Importance*, DOC, available at: http://www.conservation.ca.gov/dlrp/fmmp/Documents/Local_definitions_00.pdf

related activities for three or more cycles, 277 acres were converted for urban uses, and 185 acres were converted for other purposes.

Approximately 240 acres of unique farmland were converted to grazing land, 20 acres were converted for urban uses, and 1 acre was converted to other purposes. 1001 acres were converted from farmland of local or statewide importance to grazing land, 74 acres were converted for urban purposes, and 20 acres were converted to other purposes.

The 2010 WA Report states that 2,170 acres of prime farmland and 2,371 acres of non-prime farmland were enrolled under the Williamson Act in San Bernardino County in 2008 and 2009. This represents 0.32% of all County land. The community of Hinkley contains several acres of soil and farmland resources that are of local or statewide importance, as classified by the DOC, Division of Land Resource Protection. A one-mile radius study area was established to identify and examine farmland resources that could be affected directly or indirectly by the proposed project. According to DOC 2010 farmland maps, the study area contains approximately 823 acres of prime farmland, 100 acres of farmland of statewide importance, and 51 acres of unique farmland. In addition, approximately 470 acres of the total 823 acres of prime farmland are under Williamson Act contract, primarily in the eastern portion of the study area along Mountain Road, Santa Fe Road, Dixie Road, and Community Boulevard (Figure 3.3.1).

The Williamson Act of 1965 is the state's principal policy for the preservation of agricultural and open-space land. The program encourages landowners to work with local governments to protect important farmland and open-space. Landowners can enroll parcels for a minimum of 10 years. This program helps local governments to restrict land to agricultural and compatible open space use. In doing so, land is assessed for property taxes at a rate consistent with its actual use, rather than the potential value of the land. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. Williamson Act lands are classified as prime or non-prime.

According to CEQA Guidelines, section 15206, cancellation of Williamson Act contracts for parcels exceeding 100 acres is considered to be "of statewide, regional, or area wide significance," and thus subject to additional noticing and review requirements under CEQA.

A project that would convert prime agricultural land to non-agricultural use or impair the agricultural productivity would likely have an effect on the environment.

3.3.3 Environmental Consequences

All three of the proposed build alternatives would require the acquisition of farmland and vacant land that is mapped as prime, unique, or farmland of statewide or local importance. In addition, parcels currently under Williamson Act contract would be acquired for conversion to Caltrans right-of-way. The impacted farmland is located toward the east end of the project - in proximity to land that is in built-up urban areas, such as Barstow, with utilities and services that promote nonagricultural uses. The existing farmland units are below the average-size farming units in the county, and there are a few farm support services and suppliers within the area. Further, the amount of potentially impacted farmland is relatively small (0.47% to 0.53%) as compared to the total amount of farmland in the County of San Bernardino. Additionally, the amount of farmland potentially impacted by the proposed Project at the local level (within the Hinkley valley) is also relatively small. Of the total amount of prime, unique, and farmland of statewide importance (1,513 ac), the Project has the potential to impact 4.0% to 4.6% (61 – 69 ac).

3.3.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

Alternative 1 would not involve any project operations that would affect land zoned for agricultural use and/or land under Williamson Act contract, nor would this alternative affect agricultural operations or facilities that support agricultural production.

Alternative 2—Southerly Alignment

NRCS was consulted in the completion of a U.S. Department of Agriculture (USDA) Farmland Impact Conversion Rating Form AD-1006 prepared for the project, consistent with the land evaluation and site assessment process used by federal agencies to identify and take into account the adverse effects of their programs on the preservation of farmland. A copy of the form is provided in Appendix J. The analysis has been updated based on the most recently available county-wide farmland estimates available from the DOC.

Under Alternative 2, according to the NRCS data, 61 acres (0.47%) of the total farmland in the County would be converted to non-agricultural use. At the local level, Alternative 2 would convert 4.0% of the total (1,513 ac) farmland in the area. The combined land evaluation and site assessment (LESA) scoring for Alternative 2 resulted in an overall Farmland Impact Conversion Rating of 148 (see Table 3.3.1). FPPA Section 658.4(c)(2) states, "[s]ites receiving a total score of less than 160 need not be given further consideration for protection and no additional sites need to be evaluated." While Alternative 2 would result in the conversion of farmland that includes farmland of prime, unique, statewide, and/or local importance to nonagricultural uses, a LESA score of 148 indicates that the farmland proposed for conversion does not warrant further consideration for protection under the FPPA.

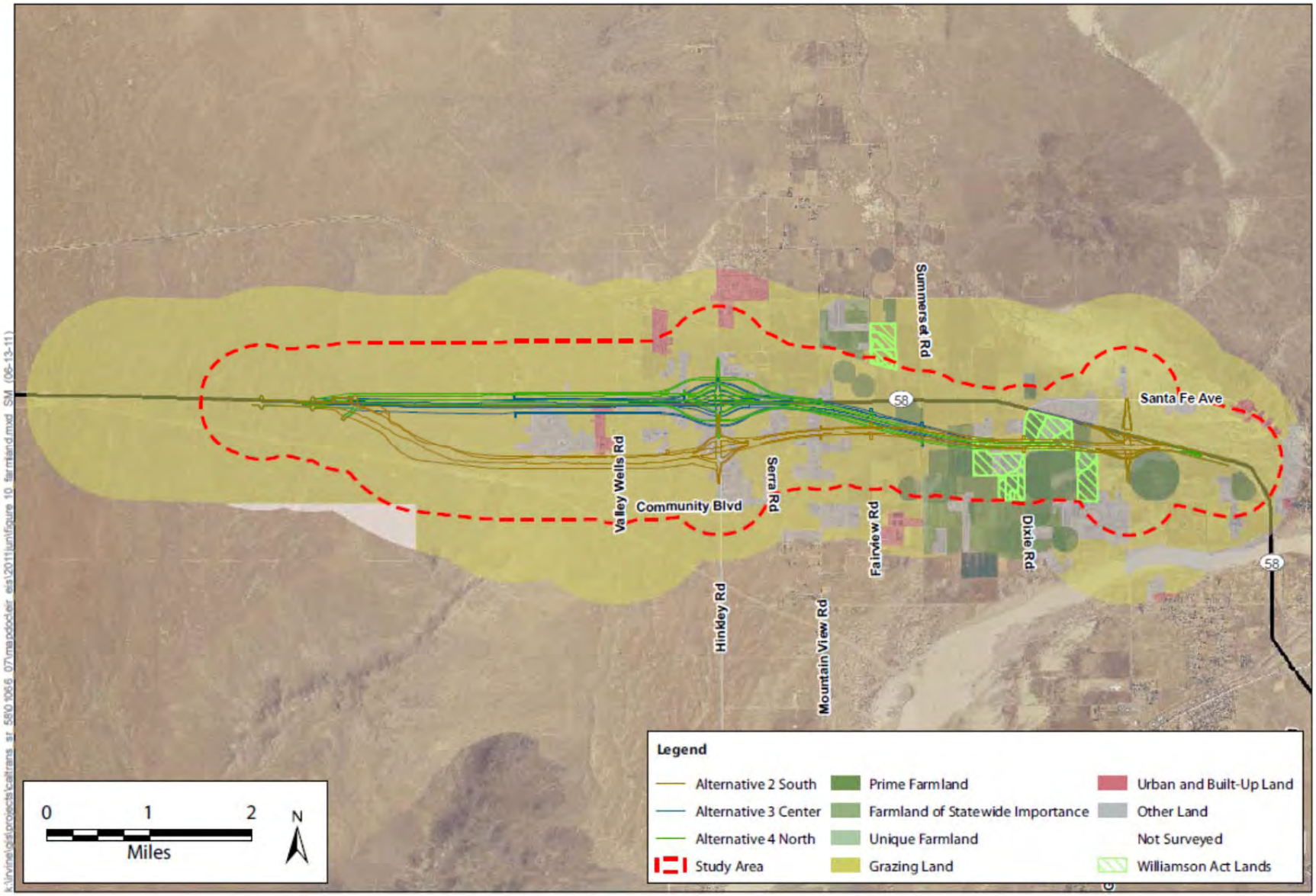
Table 3.3-1: Farmland Conversion Impact Rating Results

Farmland Conversion by Alternative				
Alternatives	**Land Converted (acres)**	**Prime and Unique Farmland (acres)**	**Percent of Farmland in County**	**Farmland Conversion Impact Rating**
2	61	55	0.47	148
3	69	63	0.53	150
4	61	54	0.47	152
Source: Form NRCS-AD-1006 (Farmland Conversion Impact Rating), DOC 2009				

Alternative 2 would result in the conversion of 26 acres of Williamson Act land representing approximately 0.57% of the land under Williamson Act contract in the County (4,541 acres), and 13% of the total land under a Williamson Act contract in the study area (approximately 470 acres). Because Alternative 2 would not exceed the state threshold of 100 acres of Williamson Act contract cancellations, this alternative would not be considered a project of statewide, regional, or area wide significance.

A few parcels proposed for complete and partial acquisition under Alternative 2 contain agricultural production uses, including farmland and a commercial livestock business, and are zoned AG (San Bernardino County 2007). Allowed uses within this zoning district include

Figure 3.3.1: Farmland Resources



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commercial agricultural operations, agriculture support services, open space and recreation uses (on non-farmed lands), transportation facility (with Conditional Use Permit), and rural residential uses and similar and compatible uses. Except where indicated in County zoning documents, the minimum parcel size for parcels zoned AG is 10 acres.[5] Zoning and land use designation amendments would be required to allow for the development of highway and roadway (transportation) facilities on parcels proposed for complete acquisition that are zoned AG. Some parcels subject to partial acquisition would still be able to retain the existing agricultural use on the remaining land, and a permanent easement with CUP, or relinquishment of the proposed acquisition area to public facility use (including zoning and land use designation amendments), would be required to accommodate the new transportation facility. Some of the parcels subject to partial acquisition with adequate remaining land viable for agricultural use may become inconsistent with current zoning if the remaining acreage is lower than that designated by the zoning district. For these occurrences, a zoning amendment to a new allowable minimum acreage would be required.[6]

It is anticipated that the zoning and land use designations for the affected parcels would be amended to accommodate the new public roadway facilities. With these land use designation and zoning amendments, and CUPs where applicable, Alternative 2 would be consistent with County zoning.

Alternative 3—Existing Alignment

According to the NRCS data, 69 acres (0.53%) of the total farmland in the County would be converted to non-agricultural use under Alternative 3. At the local level, Alternative 3 would convert 4.6% of the total (1,513 ac) farmland in the area. The combined LESA scoring for Alternative 3 was 150. While this alternative would result in the conversion of farmland that includes farmland of prime, unique, statewide, and/or local importance to nonagricultural uses, a LESA score of 150 indicates that the farmland proposed for conversion does not warrant further consideration for protection under FPPA, section 658.4(c)(2).

This alternative would also result in the conversion of 31 acres of Williamson Act land, representing approximately 0.68% of land under Williamson Act contract in the County (4,541 acres) and 6.5% of the total land under a Williamson Act contract in the study area (approximately 470 acres). Because Alternative 3 would not exceed the state threshold of 100 acres of Williamson Act contract cancellations, it would be considered a project of statewide, regional, or area wide significance.

A few parcels proposed for complete and partial acquisition under Alternative 3 contain agricultural production uses, including farmland, a commercial livestock business, and three dairies, and are zoned AG (San Bernardino County 2007). Because the CUPs that would allow for transportation facility use of the parcels zoned AG have not been developed or approved, the

[5] Various designations within the AG Land Use Zoning District provide for minimum parcel sizes other than 10 acres, as indicated by AG-20, AG-40, AG-80, and AG-160. San Bernardino County Code, Title 8, Development Code: Table 82-4C, Agricultural and Resource Management Land Use Zoning District Minimum Lot Size – Desert Region. April 12, 2007. Amended March 25, 2010.
[6] Variance may be required if new acreage falls below minimum acreages allowable under current zoning designations.

proposed new roadway facilities would be inconsistent with the current zoning. Zoning and land use designation amendments would be required to allow for the development of highway and roadway (transportation) facilities on land proposed for complete acquisition that are zoned AG. Some parcels subject to partial acquisition would still be able to retain the existing agricultural use on the remaining land, and a permanent easement with CUP, or relinquishment of the proposed acquisition area to public facility use (including zoning and land use designation amendments), would be required to accommodate the new transportation facility. Some of the parcels subject to partial acquisition with adequate remaining land viable for agricultural use may become inconsistent with current zoning if the remaining acreage is lower than that designated by the zoning district. For these occurrences, a zoning amendment to a new allowable minimum acreage would be required.

It is anticipated that the zoning and land use designations for the parcels affected would be amended to accommodate the new public roadway facilities. With these land use designation and zoning amendments, and CUPs where applicable, Alternative 3 would be consistent with County zoning.

Alternative 4—Northerly Alignment

According to the NRCS data, 61 acres (0.47%) of the total farmland in the County would be converted to non-agricultural use under Alternative 4. At the local level, Alternative 4 would convert 4.0% of the total (1,513 ac) farmland in the area. The combined LESA scoring for Alternative 4 was 152. While this alternative would result in the conversion of farmland that includes farmland of prime, unique, statewide, and/or local importance, to nonagricultural uses, a LESA score of 152 indicates that the farmland proposed for conversion does not warrant further consideration for protection under FPPA, section 658.4(c)(2).

This alternative would also result in the conversion of 30.4 acres of Williamson Act land, representing approximately 6.5% of the total land under Williamson Act contract in the study area (approximately 470 acres). Because Alternative 4 would not exceed the state threshold of 100 acres of Williamson Act contract cancellations, it would not be considered a project of statewide, regional, or area wide significance.

A few parcels proposed for complete and partial acquisition under Alternative 4 contain agricultural production uses, including farmland, a commercial livestock business, and three dairies, and are zoned AG (San Bernardino County 2007). Because the CUPs that would allow for transportation facility use of the parcels zoned AG have not been developed or approved, the proposed new roadway facilities would be inconsistent with the current zoning. Zoning and land use designation amendments would be required to allow for the development of highway and roadway (transportation) facilities on parcels proposed for complete acquisition that are zoned AG. Some parcels subject to partial acquisition would still be able to retain the existing agricultural use on the remaining land, and a permanent easement with CUP, or relinquishment of the proposed acquisition area to public facility use (including zoning and land use designation amendments), would be required to accommodate the new transportation facility. Some of the parcels subject to partial acquisition with adequate remaining land viable for agricultural use may become inconsistent with current zoning if the remaining acreage is lower than that

designated by the zoning district. For these occurrences, a zoning amendment to a new allowable minimum acreage would be required.

Because the proposed project is consistent with the transportation goals and policies of the County General Plan, and the project is included in the RTIP, it is anticipated that zoning and land use designation amendments for the parcels affected would occur to accommodate the new public roadway facilities; therefore, with the application of zoning amendments and CUPs, where applicable, Alternative 4 would be consistent with County zoning.

3.3.3.2 Temporary Construction Impacts

Alternative 1—No-Build Alternative

Alternative 1 would not involve any construction activities that would affect land zoned for agricultural use and/or land under Williamson Act contract. Therefore, this alternative would not result in any adverse impacts involving conflict with agricultural zoning and/or Williamson Act contract land.

Build Alternatives 2, 3, and 4

Construction impacts such as limited road access for farm equipment and dust generated during earthmoving activities and construction trips have potential to interfere with adjacent agricultural operations. Such impacts would be temporary and minimized with the implementation of a TMP and dust control measures.

3.3.4 Avoidance, Minimization, and/or Mitigation Measures

Alternatives 2 through 4 would result in the permanent conversion of more than 60 acres of farmland.

The following avoidance and minimization measures will be implemented to address these impacts:

- **FA-1:** The implementation of a TMP (refer to Section 3.6, *Traffic and Transportation/Pedestrian and Bicycle Facilities*) and dust control measures (refer to Section 3.14, *Air Quality*) would minimize construction impacts.

  The following elements will be major components of the project TMP:
  - public awareness campaign particularly related to the scheduling of work;
  - construction zone enforcement enhancement program;
  - use of portable changeable message signs;
  - advance information signing that will communicate date, time, and duration of ramp closures; and
  - preparation of temporary detour plans, if needed, during the plans, specifications, and estimates phase of the project (note: no detours are anticipated at this time).
- **FA-2:** Caltrans shall consult with San Bernardino County and/or NRCS to determine if an alternative compensation ratio or measure is deemed appropriate for the impacted farmland

once the preferred alternative is selected. The proposed project's impact would be minimized with the purchase of an agricultural conservation easement of comparative quantity and quality to the farmland converted within the project limits.

- **FA-3:** Caltrans will minimize disruption to farm operations to properties impacted by closure of current direct access to SR-58. Alternative access would be provided to all properties affected by the project.
- **FA-4:** If it is determined during the Final Design phase of the project that a parcel zoned for agricultural activity is anticipated to only involve potential partial acquisition, in addition to all applicable real property acquisition requirements being satisfied, the commitment(s) of Measure FA-2 above will be implemented to the fullest extent possible.
- **CI-7:** For impacts to agricultural business and dairies, every effort will be made during Final Design and Construction to minimize impacts to these, in an effort to allow them to continue operation with as little disruption as possible.

3.4 Community Impacts

3.4.1 Regulatory Setting

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

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

3.4.2 Affected Environment

Information from this section of the document came from the April 2011 *Community Impact Assessment* (Caltrans 2011b) prepared for the proposed project and 2010 Census Bureau data updates (Caltrans 2012a).

The proposed project is located within the community of Hinkley, California, approximately five to 14 miles west of the city of Barstow and almost 40 miles north of the city of Victorville. Due to data availability, the study area for community impacts is defined in two ways: (1) at the Census tract level for general demographic and economic characteristics; and (2) at the Census block level for detailed population and housing information. Figure 3.4A provides an aerial photograph of the project location at a regional scale and delineates the three Census tracts involved in this project – Tracts 93, 116, and 119. The project is approximately 9.3 miles long, exact length varies by alternative, and approximately eight of the nine miles are within Tract 119 under all proposed alignments.

The community of Hinkley is predominantly rural with rural residences and farmland. Single-family and rural residences are located in clusters along the roads, including along the existing SR-58 alignment, with a few residences more sparsely located in the outer portions of the study area. Agricultural and dairy farms are concentrated along the eastern portion of the study area, with a few farms located adjacent to SR-58. Hinkley community residences are primarily located along the south side of SR-58. Other land uses in the area include limited commercial, industrial, and institutional uses such as a grocery store, a tavern/bar, two places of worship, an elementary school, a senior citizen center, and a County fire station (Figures 3.1.1A and 3.1.1B show the locations of community facilities).

The study area, at the block level, for community impacts is defined as those 72 Census blocks used in the 2010 Census located adjacent to or span the alternative project alignments (Alternatives 2, 3, and 4). According to the Census Bureau, the population of the study area was 920 persons in 2010. Figure 3.4B shows the study area at the block level and identifies the 72 Census blocks and block groups wherein the project is located.

Most land uses in the study area are designated by the San Bernardino County General Plan as Rural Living, Agriculture, or Resource Conservation areas for management under the BLM. A few parcels are designated for single-family residential, regional industrial, commercial, or special development uses (San Bernardino County 2007). Railroad tracks operated by the Burlington Northern Santa Fe (BNSF) railroad run north of and parallel to SR-58 in the study area.

3.4.3 Community Character and Cohesion

3.4.3.1 Characteristics of Cohesion

The study area is a rural community largely defined by SR-58 and the BNSF railroad, which are two existing physical barriers that shape land use in the Hinkley community. *Cohesion*, an important characteristic of a community, is the degree to which residents have a "sense of belonging" to their neighborhood, a level of commitment of the residents to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. *Cohesion* also refers to the degree of interaction among the individuals, groups, and institutions that make up a community. Cohesive communities are associated with specific social characteristics, which may include long average lengths of residency (stability index), frequent personal contact, social interaction, high levels of community activity, location and type of community facilities, and ethnic homogeneity. These characteristics hold true for the study area.

Hinkley is overall a cohesive community. According to the U.S. Census Bureau 2010 ACS estimates, 45.4% of Hinkley residents have lived in the area for more than 10 years compared to only 37.4% of County residents and 35.7% of city of Barstow residents. Hinkley residents have lived in their neighborhoods for longer periods of time compared to other County residents or residents of the nearest city. In discussing property ownership with community members it is common for properties to pass generationally within families (Spasojevich, Carmela. Personal Interview 20 December 2011). Additionally, the clustering of residences throughout Hinkley, as well as adjacent to SR-58, indicates cohesion within the community.

The potential for social interaction is associated with the availability of community amenities such as public facilities and local businesses. The location of amenities is also indicative of the general socializing, interaction, and mobility of a community. Community amenities in the study area are located predominantly along SR-58, Hinkley Road, Mountain View Road, and Flower Road. These include an elementary school (Hinkley Elementary School), two churches (Hinkley Bible Church and the Hinkley House of Faith), a grocery store (Hinkley Market), a tavern/bar, and a senior citizens center (Hinkley Senior Citizens) (see Figures 3.1.1A and 3.1.1B). All are accessible to members of the community. Due to the SR-58 facility, lack of established sidewalks, roadway options, and distances between residences and community amenities, vehicles are anticipated to be the primary mode of travel within the community.

Figure 3.4A: Demographic Study Area - Tracts

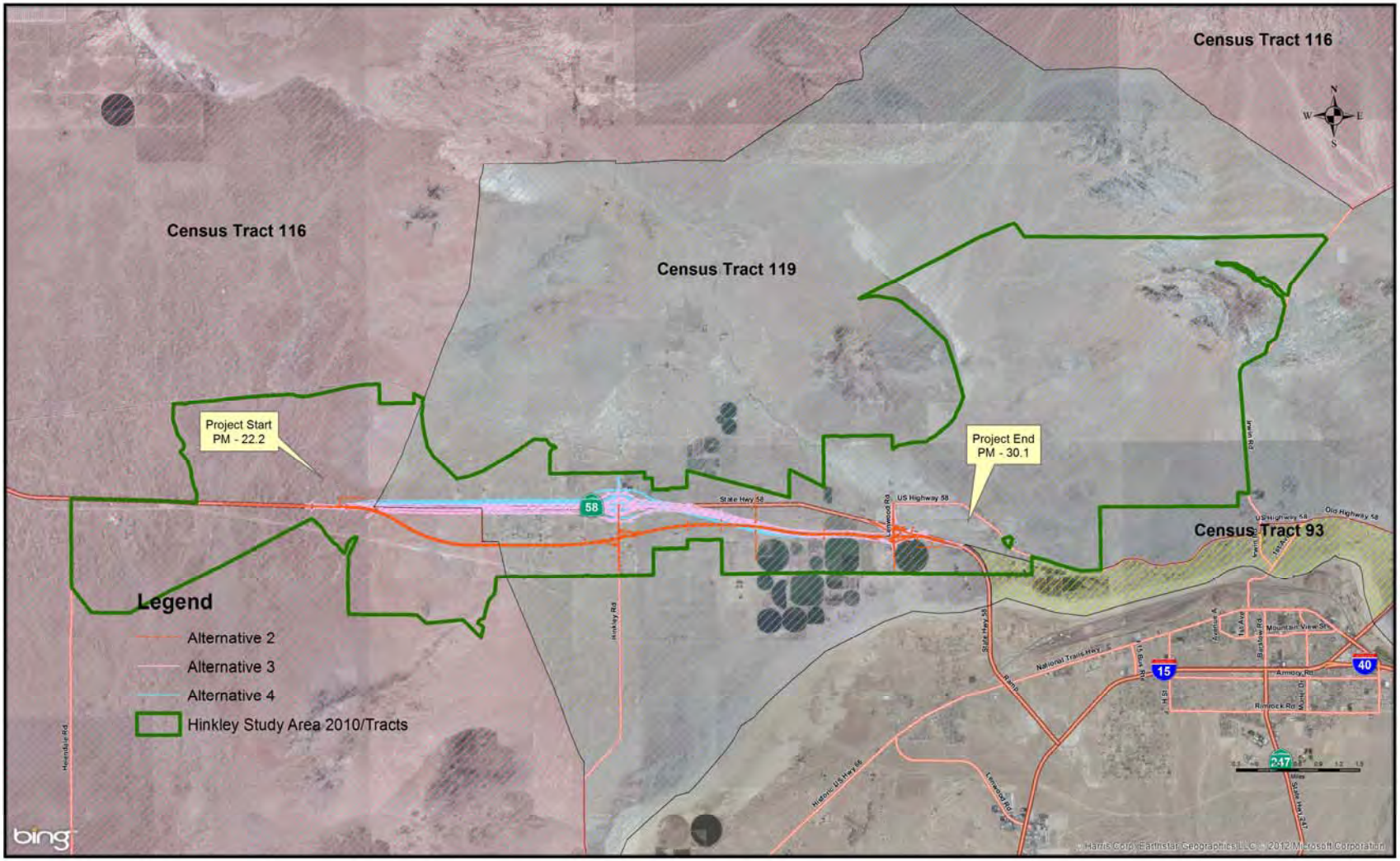

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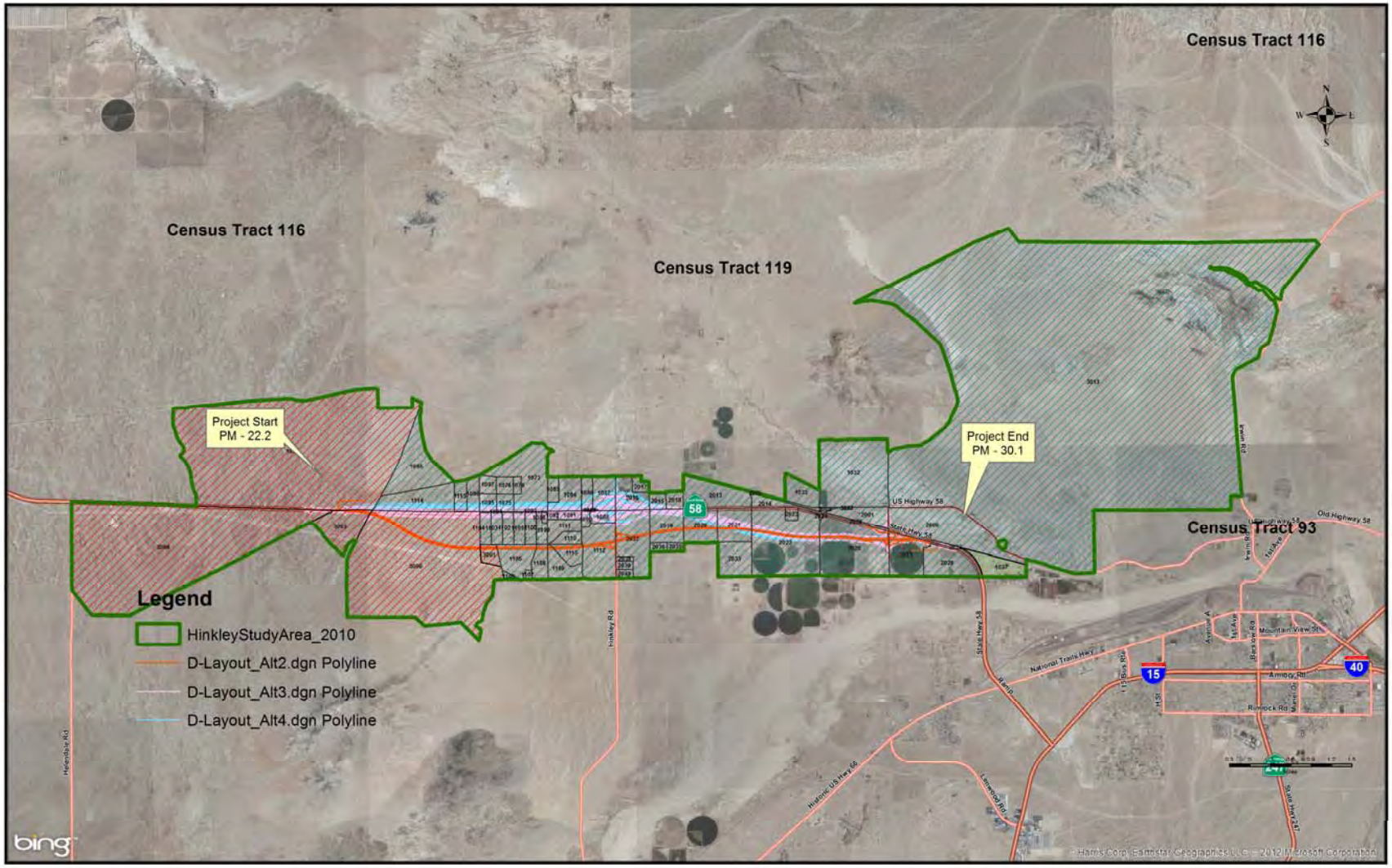
Figure 3.4B: Demographic Study Area – Blocks



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Local Access and Circulation

Most of the traffic in the project area travels along SR-58 as it is an important route for local traffic, regional travelers, and commercial trucks. Existing SR-58 and roadways which provide local access and circulation within the study area are paved. These streets include Hinkley Road, Lenwood Road, Community Boulevard, Mountain View Road, Dixie Road, Summerset Road, Santa Fe Avenue, and portions of West Arcadia Road, Park Avenue, Flower Street, and Mulberry Street. These streets are important internal and regional circulation routes for the community. A substantial number of roads are not paved and mostly lead to rural residences on the outskirts of the project area.

Access to and from SR-58 is provided at-grade at all of the existing road intersections. Presently, residents enjoy direct access to SR-58 and other roadways that provide mobility within the community. However, for pedestrians, the lack of crossing options and traffic on SR-58 inhibits north-south access, which creates a division between the north and south areas of Hinkley. Access to the various amenities is provided via SR-58, intersecting local streets, and the existing frontage road along a portion of the existing SR-58 alignment.

A comparison of circulation and access in the study area was made with that of the County.[1] Local circulation is primarily via motorized vehicles. Table 3.4-1 summarizes the type of transportation used by commuters during home-to-work trips in the three Census tracts, the County, and the city of Barstow residents. According to the American Community Survey (ACS) 2006-2010 estimates, the majority of individuals in Tract 119, which comprises most of the project, commute to work by car (91.5%) while only a small percentage commuted by public transit (0.7%), 1.1% of the population used other means, none of the Tract's residents walked to work, and 6.6% worked at home. This is comparable to commuting characteristics of the County where 90.9 % commute by car; but slightly different from other modes used by County residents where the demographics vary and therefore other options are available. In the County, for example 1.8% of residents use public transit, 2.0% walk, 1.4% uses other means, and only 3.8% work at home.

Table 3.4-1: Transportation Types Used for Commuting and Time

Area	Total[1]	Car, truck, or van	Percent %	Public Transit	Percent %	Walked	Percent %	Other means	Percent %	Worked at home	Percent %	Mean travel time[2]
San Bernardino County	808,563	735,358	90.9	14,660	1.8	15,894	2.0	11,724	1.4	30,927	3.8	29.3
Barstow city	9,461	8,299	87.7	404	4.3	513	5.4	96	1	149	1.6	25.3
Tract 93	605	486	80.3	4	0.7	41	6.8	-	0	74	12.2	14.7
Tract 116	2,174	2,057	94.7	-	0	100	4.6	-	0	17	0.8	29.6
Tract 119	1,626	1,489	91.5	11	0.7	-	0	18	1.1	108	6.6	31.1

Source: U.S. Census Bureau DP03, 2006-2010 American Community Survey Estimates
[1]Total: Persons employed and commuting to work.
[2] Mean travel time: In minutes.

[1] Data for transportation characteristics is provided by American Community Survey 2006-2010 estimates to the tract level. Therefore, the study area for local circulation analysis consists of the tracts bisected by the proposed project.

The mean travel time for Tract 119 residents is similar to that of the County of San Bernardino residents at 31.1 and 29.3 minutes, respectively. This means most of the working population travels outside their area of residence for work.

Business, Employment, and Economic Conditions

According to the General Plan, the County Desert Region is expected to remain as bedroom communities, with relatively small increases in new jobs, while the majority (74%) of the unincorporated County employment growth over the next 10 years is expected to occur in the Valley Region.

Within the project study area, analyzed here at the tract level with emphasis on Tract 119, businesses include a market, dairies, and small stores such as a tint shop, a graphics shop, an antique store, and a bar/tavern. There are no office-type businesses in the study area. Local commercial and retail activities are limited to a few businesses located intermittently along the existing SR-58 alignment, as well as along Hinkley Road, Mountain High Road, and Flower Road. These commercial facilities and convenience stores provide basic groceries and food supplies to the current residents in Hinkley, and also serve customers traveling on SR-58; such businesses are similar to those found elsewhere throughout unincorporated San Bernardino County.

The California Board of Equalization report of taxable sales for the second quarter of 2006 indicated that total taxable sales for San Bernardino County totaled $8,056,565, an increase of 7% over the previous year. No taxable sales data were available for the study area.

Employment characteristics by type of occupation are fairly similar across the demographic areas, as shown in Table 3.4-2, except for those who reside in Tract 116 – where 39.4% of the population is in management, business, science, and art type occupations. Like residents in the County, and those who live in the city of Barstow, most of the residents in Tract 119 are either in sales and office (27.3%) or management, business, science, and arts (26.5%). A substantial percentage (31.3%) of the population in Tract 93, at the east end of the proposed project, is in sales and office occupations.

Table 3.4-2: Comparison of Employment Statistics

Occupation	San Bernardino County	Percent (%)	City of Barstow	Percent (%)	Tract 93	Percent (%)	Tract 116	Percent (%)	Tract 119	Percent (%)
Total[1]	823,910	100.0	9,350	100.0	614	100.0	2,174	100.0	1,656	100.0
Management, business, science, and arts	229,462	27.9	2,295	24.5	128	20.8	856	39.4	439	26.5
Service	146,541	17.8	2,117	22.6	118	19.2	316	14.5	239	14.4
Sales and office	222,528	27.0	2,116	22.6	192	31.3	544	25.0	452	27.3
Natural resources, construction, and maintenance	96,278	11.7	1,407	15.0	81	13.2	225	10.3	271	16.4
Production, transportation, and material moving	129,101	15.7	1,415	15.1	95	15.5	233	10.7	255	15.4

Source: U.S. Census Bureau, 2006-2010 American Community Survey Estimates (ACS) - DP03.
[1] Employed population, 16 years and over, in civilian labor force.

Table 3.4-3 provides employment statistics by industry for the County, the city of Barstow, and the Census tracts affected by the proposed project – Tracts 93, 116, and 119. According to the ACS 2006-2010 estimates the largest industry, employing 17.1% of residents living in the three tracts involved by the project, is the education service, health care, and social assistance industry. It is also the largest industry in the city of Barstow (18.6%) and in the County of San Bernardino (21.4%). The second largest industry employing residents of Tract 119 is retail trade (15.0%); which is also the second largest in the County (12.7%) and fourth in the city of Barstow (12.1%).

Table 3.4-3 Comparison of Employment Statistics

Industry	San Bernardino County	Percent (%)	City of Barstow	Percent (%)	Tract 93	Percent (%)	Tract 116	Percent (%)	Tract 119	Percent (%)
Total[1]	823,910	100.0	9,350	100.0	614	100.0	2,174	100.0	1,656	100.0
Agriculture, forestry, fishing and hunting, and mining	6,256	0.8	50	0.5	18	2.9	-	0.0	19	1.1
Construction	70,951	8.6	503	5.4	21	3.4	156	7.2	54	3.3
Manufacturing	85,943	10.4	463	5.0	2	0.3	112	5.2	137	8.3
Wholesale trade	33,179	4.0	79	0.8	19	3.1	39	1.8	11	0.7
Retail trade	104,614	12.7	1,135	12.1	143	23.3	141	6.5	249	15.0
Transportation and warehousing, and utilities	63,024	7.6	962	10.3	76	12.4	328	15.1	219	13.2
Information	14,762	1.8	30	0.3	-	0.0	89	4.1	47	2.8
Finance and insurance, and real estate and rental and leasing	46,496	5.6	395	4.2	15	2.4	-	0.0	84	5.1
Professional, scientific, management, administrative, and waste management services	68,024	8.3	648	6.9	37	6.0	206	9.5	124	7.5
Educational services, health care, and social assistance	175,905	21.4	1,738	18.6	145	23.6	549	25.3	284	17.1
Arts, entertainment, recreation, and accommodation and food services	67,563	8.2	1,349	14.4	42	6.8	51	2.3	152	9.2
Other services, except public administration	40,190	4.9	602	6.4	49	8.0	118	5.4	58	3.5
Public administration	47,003	5.7	1,396	14.9	47	7.7	385	17.7	218	13.2

Source: U.S. Census Bureau, 2006-2010 American Community Survey Estimates – DP03
[1]Civilian employed population 16 years and over

An aggregate total of 4.0% of employed residents living in the three tracts were engaged in agriculture, forestry, fishing, and hunting industries. Because there are no evident areas near the study area where forestry, fishing, and hunting could be carried out and because the study area contains a substantial number of farms, it is assumed that most of these residents are employed in agriculture. This percentage is higher than that of the County (0.8%) and the city of Barstow (0.5%). But the County's percentage (0.8%) is similar to Tract 119's 1.1% - where approximately eight of the nine-mile long project is located.

Out of the three Census tracts, Tract 93 has the highest (2.9%) number of residents working in the agriculture, forestry, fishing, and hunting industry. No residents of Tract 116 reported working in this industry, and only 19 residents (1.1%) of Tract 119 reported being employed in agriculture – because as previously mentioned, there's no evidence of forestry, fishing, and/or hunting near the project. The 2.9% of Tract 93, located at the east end of the project limits, coincides with the fact that most farms are located at the eastern portion of the proposed project.

Demographic Profile

A comparison of demographic data of the project study area with data for the County and the city of Barstow was performed to determine if the study area exhibited characteristics that would indicate character and cohesion unique to the local community. The area displays age and race/ethnic homogeneity.

Table 3.4-4 lists population data for the County, the city of Barstow, and the study area – defined here to the Census block level – as reported in the 2010 Census. In 2010, the County's total population was 2,035,210; the city of Barstow population was 22,639. Table 3.4-4 also provides the age data for the County, the city of Barstow, and the study area, as reported in the 2010 Census. In the County, 29.2% of the population was under 18 and 8.9% was 65 or older. The city of Barstow had a similar distribution, with 29.8% under 18 and 10.7% 65 or older.

Table 3.4-4 Regional and Local Characteristics—Age

Area	Total Population	Under 18	Percent (%)	65 & Over	Percent (%)
San Bernardino County	2,035,210	594,588	29.2	181,348	8.9
City of Barstow	22,639	6,739	29.8	2,419	10.7
Study Area[1]	920	246	26.7	134	14.6
Census Tract 93	1,257	333	26.5	175	13.9
Block Group 1	1,257	333	26.5	175	13.9
Census Tract 116	7,444	1,710	23.0	1,533	20.6
Block Group 1	1,547	387	25.0	208	13.5
Block Group 3	2,486	442	17.8	736	29.6
Census Tract 119	3,567	942	26.4	477	13.4
Block Group 1	946	249	26.3	141	14.9
Block Group 2	693	219	31.6	75	10.8
Block Group 3	768	200	26.0	102	13.3

Source: U.S. Census Bureau 2010 SF 1 – P12
[1] Study Area total derived from the 72 2010 Census Blocks adjacent to or the span of the project.

According to the data in Table 3.4-4, the study area contains a substantially greater percentage of persons under 18 years of age (26.7%) than persons 65 years of age and older (14.6%), but the majority of the community population (540 persons, 58.7%) were between the ages of 18 and 64. Tract 119, where most of the proposed project is located, demonstrates similar age demographics – 60.2% of the population is between 18 and 64 years old. The County's working-age population is 61.9% - similar to the project area and the city of Barstow's (59.5%) working population.

Table 3.4-5 details the race/ethnicity statistics for the County, the city of Barstow, and the study area, as reported in the 2010 Census. In the County, the largest ethnic/racial group was White (56.7 %), followed by Hispanic or Latino (of any race) (49.2 %). In the 2010 Census 21.6% of the County residents categorized themselves in the Some Other Race category. The remaining 21.6%, in descending order, consisted of Black or African-American, Asian, people of Two or More races, American Indian & Alaska Native, and Native Hawaiian/Pacific Islander. In the city of Barstow, the largest ethnic/racial group was also White (52.3 %), followed by Hispanic or Latino (of any race) (42.8 %). In the city of Barstow, 18.7% of the residents consider themselves of Some Other race. The remaining 28.9 %, in descending order, consisted of Black or African-American, people of two or more races, Asian, American Indian & Alaska Native, and Native Hawaiian/Pacific Islander.

For the study area, the largest ethnic/racial group was also White (68.6 %). Although substantially higher than that of the County or that of the closest city, the numbers in the study area and the population in Tract 119 (70.9% White) show racial/ethnic homogeneity in the community. Hispanic or Latino (of any race) (38.8 %), was the second largest ethnic group in the study area. 20.2 % of those living in the study area consider themselves to be of Some Other race. The remaining 11.2%, in descending order, consisted of people of Two or More races (5.4 %), Black or African-American (3.2%), Asian (1.2 %), American Indian and Alaska Native (1.1%), and Native Hawaiian/Pacific Islander (0.3%).

Housing Characteristics

Table 3.4-6 lists the occupancy rate, tenure, and status of ownership (owner-occupied or renter-occupied) in the County, the city of Barstow, and the study area, as reported in the 2010 Census.

In the County, the total number of housing units was 699,637. Of this total, 87.4% were occupied and 12.6% were vacant. Of the total occupied housing units, 62.7% were owner-occupied and 37.3% were renter-occupied. In the city of Barstow, the total number of housing units was 9,555. Of the total housing units, 84.6% were occupied and 15.4% were vacant. Of the total occupied housing units, 49.0% were owner-occupied and 51.0% were renter-occupied. In contrast, the study area had a higher percentage of owner-occupied housing units (67.6%) than the County (62.7%) and the city of Barstow (49.0%).

The total number of housing units in the study area, involving the 72 blocks, was 411; the study area had a higher vacancy rate (21.2%) than the County (12.6%) or the city of Barstow (15.4%). The number of people per house was slightly lower in the study area (2.5) than in the County (3.3) but fairly close to that of the city of Barstow (2.8).

Table 3.4-7 lists the types of housing—single-family residence, multi-family residence, mobile home, and other— in the County, the city of Barstow, and the Census tracts where the project is located – Tracts 93, 116, and 119, as reported in the 2010 Census. Housing information by type

Table 3.4-5: Regional and Local Characteristics—Race/Ethnicity

	Race															Ethnicity	
Area	**Total Population**	**White**	**Percent (%)**	**Black or African American**	**Percent (%)**	**American Indian & Alaska Native**	**Percent (%)**	**Asian**	**Percent (%)**	**Native Hawaiian & Other Pacific Islander**	**Percent (%)**	**Some Other Race**	**Percent (%)**	**Two or More Races**	**Percent (%)**	**Hispanic or Latino (of any race)**	**Percent (%)**
San Bernardino County	2,035,210	1,153,161	56.7	181,862	8.9	22,689	1.1	128,603	6.3	6,870	0.3	439,661	21.6	102,364	5.0	1,001,145	49.2
City of Barstow	22,639	11,840	52.3	3,313	14.6	477	2.1	723	3.2	278	1.2	4,242	18.7	1,766	7.8	9,700	42.8
Study Area[1]	920	631	68.6	29	3.2	10	1.1	11	1.2	3	0.3	186	20.2	50	5.4	357	38.8
Census Tract 93	1,257	854	67.9	51	4.1	27	2.1	12	1.0	25	2.0	216	17.2	72	5.7	507	40.3
Block Group 1	1,257	854	67.9	51	4.1	27	2.1	12	1.0	25	2.0	216	17.2	72	5.7	507	40.3
Census Tract 116	7,444	5,912	79.4	368	4.9	76	1.0	231	3.1	17	0.2	529	7.1	311	4.2	1,439	19.3
Block Group 1	1,547	1,160	75.0	40	2.6	33	2.1	30	1.9	2	0.1	205	13.3	77	5.0	412	26.6
Block Group 3	2,486	1,999	80.4	113	4.5	11	0.4	123	4.9	5	0.2	138	5.6	97	3.9	421	16.9
Census Tract 119	3,567	2,528	70.9	128	3.6	71	2.0	49	1.4	9	0.3	604	16.9	178	5.0	1,237	34.7
Block Group 1	946	646	68.3	33	3.5	15	1.6	7	0.7	-	0.0	209	22.1	36	3.8	357	37.7
Block Group 2	693	464	67.0	22	3.2	11	1.6	8	1.2	1	0.14	161	23.2	26	3.8	287	41.4
Block Group 3	768	540	70.3	41	5.3	21	2.7	10	1.3	1	0.13	110	14.3	45	5.9	265	34.5

Source: U.S. Census Bureau 2010 SF 1 – QTP-4
[1] Study Area total derived from the 72 2010 Census Blocks adjacent to or the span of the project.

Table 3.4-6: Regional Local Housing Characteristics—Occupancy and Tenure

Area	Total	Occupied	Percent (%)	Owner-Occupied Units	Percent (%)	Renter-Occupied Units	Percent (%)	Vacant	Percent (%)	Persons Per Household
San Bernardino County	699,637	611,618	87.4	383,573	62.7	228,045	37.3	88,019	12.6	3.3
City of Barstow	9,555	8,085	84.6	3,964	49.0	4,121	51.0	1,470	15.4	2.8
Study Area[1]	411	324	78.8	219	67.6	105	32.4	87	21.2	2.5
Tract 93	545	455	83.5	275	60.4	180	39.6	90	16.5	2.8
Block Group 1	545	455	83.5	275	60.4	180	39.6	90	16.5	2.7
Tract 116	3,691	2,934	79.5	2,133	72.7	801	27.3	757	20.5	2.7
Block Group 1	781	587	75.2	368	62.7	219	37.3	194	24.8	2.7
Block Group 3	1,351	1,076	79.6	813	75.6	263	24.4	275	20.4	1.9
Tract 119	1,581	1,276	80.7	910	71.3	366	28.7	305	19.3	2.9
Block Group 1	460	337	73.3	225	66.8	112	33.2	123	26.7	2.1
Block Group 2	301	231	76.7	145	62.8	86	37.2	70	23.3	2.2
Block Group 3	308	267	86.7	209	78.3	58	21.7	41	13.3	2.6

Source: U.S. Census Bureau 2010 SF1 – PL H1 and H4.
[1] Study Area total derived from the 72 2010 Census Blocks adjacent to or the span of the project.

Table 3.4-7: Regional and Local Housing Characteristics—Type

Area	Total[1]	Single-Family Residence	Percent (%)	Multi-Family Residence	Percent (%)	Mobile Home	Percent (%)	Other Units[2]	Percent (%)
San Bernardino County	691,321	516,956	74.8	131,083	19.0	42,305	6.1	977	0.1
City of Barstow	9,720	5,746	59.1	3,125	32.2	760	7.8	89	0.9
Census Tract 93	636	442	69.5	100	15.7	94	14.8	-	0.0
Census Tract 116	3,232	2,718	84.1	240	7.4	274	8.5	-	0.0
Census Tract 119	1,546	1,091	70.6	58	3.8	364	23.5	33	2.1

Source: U.S. Census Bureau, 2006-2010 American Community Survey (ACS) Estimates - DP04
[1] Data are based on a sample data and are subject to sampling variability.
[2] The "Other Units" category includes boats, recreational vehicles, vans, campers, tents, etc.

is not available to the block level and the analysis is therefore carried out to the tract level with an emphasis on Tract 119 as the bulk of the project, including all alternatives, lies within this tract (see Figure 3.4B). According to the 2010 Census, Tract 119 had a slightly lower percentage of single-family residences (70.6%) than the County (74.8%) but greater than the closest city to the project – city of Barstow (59.1%). Tract 116, located at the west end of the proposed project, had a substantially greater percentage (84.1%) of single-family residences than the County or the city of Barstow. But all three tracts had lower percentage of multi-family residences than the County or the city; Tract 119 had the least number (58 or 3.8%) of multi-family residences in comparison to the other tracts, city, and the County. Conversely, Tract 119 had substantially higher percentage of mobile homes (23.5%) and other types of living quarters (2.1%) than all the other geographic areas/levels considered in this analysis.

3.4.3.2 Environmental Consequences

The physical and operational characteristics of each of the alternatives were analyzed to determine whether the project would impede or complicate access to SR-58 and other roadways.

The community surrounding the proposed project is predominantly rural. Cohesiveness in the community is evident in the clustering of residences and the community's stability index, which is moderately high due to the long tenure of residents in the study area. Therefore, community character/cohesion impacts, affected by the new expressway's bi-section or division of the community, along with removal/displacement and/or relocation of homes and businesses, would be considered adverse. Although the existing SR-58 facility and the BNSF railway currently function as a barrier between the north and south portions of the community, the proposed expressway would make it more difficult to move across the community for motorists, pedestrians, bicyclists, as well as for horses/equestrian use.

In addition, the community includes community facilities, such as churches, a school, and a senior citizen center that potentially form spaces where social interactions occur. With access across the facility restricted to only the two interchanges, people would experience a barrier in these social activity-activity spaces, and for their access to the community facilities. For all build alternatives, removal of farmland and open space (important resources for the community), would add to the community character impacts. Impacts related to community cohesion for each of the alternatives are described below.

Permanent Impacts

Alternative 1—No-Build Alternative

Alternative 1 would not involve any modifications to the current highway or surrounding roadways in the community of Hinkley. Due to the absence of improvements to SR-58, Alternative 1 would not decrease congestion in the project vicinity, and therefore would not provide any benefits or improvements to existing access and circulation. This alternative would not permanently impair access to and from the surrounding community through the placement of additional barriers or other impediments to the local circulation pattern. No physical change in the environment would permanently divide, disperse, or otherwise disrupt the community. Therefore, Alternative 1 would not result in potentially substantial impacts to access and/or circulation, relative to population and housing.

Community Cohesion/Character

Because this alternative would not involve modifications that would further divide, disperse, or otherwise severely disrupt the community and no barriers or other physical changes in the environment would result, no potentially substantial impacts on community cohesion/character would occur.

Alternative 2—Southerly Alignment

Alternative 2 would realign SR-58 approximately 0.5 mile south of the existing roadway. Access to the future SR-58 alignment in the project area would be limited to major roadways with adequate exit spacing, as advised by the *Highway Capacity Manual*; these include Hinkley and Lenwood Roads. Cul-de-sacs would be added to the south ends of local streets that currently intersect with Frontier Road between Valley View Road and Hinkley Road, eliminating direct access to this alignment. These improvements are required as safety measures.

Table 3.4-8 below presents a comparison of changes in SR-58 access travel distances experienced under each of the build alternatives. The data is a useful indicator of how the proposed project would affect access and circulation in the project area. Analysis of the changes in access to SR-58 is discussed for each of the build alternatives following.

Table 3.4-8: Changes to Access and Circulation

Location	Increase in Travel Distance (Miles)		
	Alternative 2	Alternative 3	Alternative 4
Valley View Road (north of SR-58)	0.5	Minimal[1]	Minimal
Valley View Road (south of SR-58)	0.3	Minimal	Minimal
Lake View Road (north and south of SR-58)	0.65	0.5	0.5
Indian River Road(north and south of SR-58)	0.75	0.65	0.65
Indian Wells Road (north and south of SR-58)	0.8	0.75	0.75
Red Rooks Road (north and south of SR-58)	0.9	0.9	0.9
Hillview Road (south of SR-58)	1.1	1.1	1.1
Valley Wells Road (north of SR-58)	1.4	1.2	1.2
Valley Wells Road (south of SR-58)	1.4	1.25	1.25
Flower Road (north of SR-58)	0.8	0.75	0.75
Flower Street (south of SR-58)	0.8	0.6	0.6
Hinkley Road (north of SR-58)	0.4	Minimal	Minimal
Hinkley Road (south of SR-58)	Minimal	Minimal	Minimal
Mountain View Road (north of SR-58)	1.25	1.4	1.4
Mountain View Road (south of SR-58)	1.1	1.2	1.2
Fairview Road (north of SR-58)	0.75	0.75	0.75
Fairview Road (south of SR-58)	0.75	0.7	0.7
Summerset Road (north of SR-58)	Minimal	Minimal	Minimal
Summerset Road (south of SR-58)	Minimal	Minimal	Minimal
Road Dixie Road (north of SR-58)	1.0	1.0	1.0
Road Dixie Road (south of SR-58)	1.0	1.0	1.0
Lenwood Road (north of SR-58)	Minimal	Minimal	Minimal
Lenwood Road (south of SR-58)	Minimal	Minimal	Minimal

[1] Minimal indicates a change in distance traveled by less than 0.25 mile.
Source: ICF Jones & Stokes 2008..

As a result of the changes to the SR-58 alignment and local roadways, some properties would no longer have direct access to SR-58, but would still have access to SR-58 and other areas of Hinkley via other routes. This would result in longer distances traveled for some local residents to access the realigned SR-58 (greater than 0.3 mile) compared to the current access routes for residents living along ten of the 13 roadways that currently intersect SR-58.

The proposed replacement area for residents requiring relocation as a result of this alternative would be the general community of Hinkley and extend to the city of Barstow, which is immediately adjacent to the displacement area. Changes in commute distances and the availability of services associated with relocated residents would depend on where residents are

relocated. Currently, within the proposed project area there are numerous groundwater monitoring wells and treatment wells. Groundwater is contaminated in the area generally between Summerset Road and Mountain View Road in the area of the proposed expressway project and would affect all of the proposed build alternatives as this impacts the availability of relocation resources.

The proposed project would provide improvement in safety, traffic operations, and congestion. Pedestrian design features would be incorporated where appropriate and feasible, including providing sidewalks at the Lenwood and Hinkley overcrossings, striping all crosswalks, and constructing curb ramps at intersections. Therefore, while Alternative 2 would result in changes to pedestrian access and movement, impacts would be minimized with the implementation of pedestrian design features.

Community Cohesion/Character

Under Alternative 2, SR-58 would be realigned approximately 0.5 mile south of its existing location. Existing zoned land uses in the area where this alignment would occur are residential and rural living; thus, this alternative would introduce a highway through an area where no major roadways currently exist, creating a new barrier that would inhibit access between areas north and south of the new alignment. While the proposed new roadway alignment would generally avoid residential areas of the Hinkley community, compared to Alternatives 3 and 4—including the mobile home park located along the existing SR-58 roadway, as well as the residential clusters located south of the existing SR-58 roadway, which include homes along Flower Street—property acquisitions and associated removal of residential and nonresidential structures, and residential relocations would occur under this alternative. This alternative would impact 13 residences, a farm, and a freight line business; but it avoids the mobile home park and misses the central area of the community.

Further, Alternative 2 would function as a bypass of community facilities by avoiding the central area of the community. Alternative 2 would skirt the southern edge of the community. Impacts to businesses in Hinkley would be expected, as motorists/truckers/regional travelers would be less likely to stop in the community. Speeds on the new facility would be higher (with a design speed of 70 mph), and many travelers may choose not to stop. Such bypass impacts would be expected to be slightly less severe for the other two alternatives since they pass through the central area of the community.

The proposed new intersection with Hinkley Road would bisect a small cluster of residences that currently form a cohesive unit. This type of physical disruption would also occur along Mountain View Road, where two to three homes appear to be cohesively interlinked.

As it relates to community cohesion overall, however, Alternative 2 has less impacts than Alternatives 3 and 4 since this alignment would avoid more residential areas of the Hinkley community. Nevertheless, the addition of a major facility through the desert landscape would impact the rural, community character of the study area by adding an urbanizing element where currently none exists; therefore, potentially substantial impacts would result.

Alternative 3—Existing Alignment

At the regional level Alternative 3 would have beneficial effects on access and circulation by relieving congestion along SR-58, which is a major thoroughfare highway. Alternative 3 would widen SR-58 and restrict access to two interchanges within the project limits. Existing direct

access to SR-58 from local roadways would be eliminated via cul-de-sacs. Alternative 3 would eliminate the driveways along SR-58 that provide direct access to the roadway. Due to elimination of direct access from residential driveways, residents would have to travel longer distances (more than 0.3 mile) to access SR-58 compared to the current access routes for residents living along eight of the 13 roadways that intersect SR-58, as it now exists.

Pedestrian design features would be incorporated where appropriate and feasible, including providing sidewalks at the Lenwood and Hinkley overcrossings, striping all crosswalks, and constructing curb ramps at intersections. Therefore, while Alternative 3 would result in changes to pedestrian access and movement, impacts would be minimized with the implementation of pedestrian design features.

Community Cohesion/Character

Alternative 3 would widen existing SR-58 and result in the acquisition of properties, removal of residential and nonresidential structures, and relocation of several residences, including a mobile home park and two businesses. This alternative would also provide a frontage road on either side of SR-58 to facilitate local vehicular and pedestrian access to the surrounding community facilities, which include two places of worship located adjacent to the project alignment. Alternative 3 would result in the removal of several single-family homes and associated residential displacements that play an important role in the general cohesion of the community.

Hinkley is a cohesive community. As it relates to community cohesion/character, Alternative 3 would eliminate long-established patterns of community interaction between neighbors due to the acquisition and removal of residences (49), businesses (5), and a community facility (a church). This would be a major impact to the remaining community. By definition a neighbor is someone who lives, works, and/or provides business or community services, close by. Project scoping efforts reveal that for those who live in the community of Hinkley living, working, and interacting with “good” neighbors is a source of value and pride. “Good” neighbors are friendly, considerate and reach out to connect to others in order to protect and support their community. Therefore, the introduction of a major, urbanizing element which would eliminate existing residences, business, and long-established patterns of community interaction between neighbors would result in potentially substantial impacts. Mobile home parks are generally more cohesive communities within the larger community, with their own activity spaces and important neighbor-support activities, and impacts to this park from home removals would be a major impact to cohesion and character.

Compared with Alt 2, Alt 3 would have greater division of the community since it has a more central alignment through the community. Similar impacts would result under Alternative 4.

Alternative 4—Northerly Alignment

Within the region, Alternative 4 would have beneficial effects on access and circulation. The proposed project would relieve congestion and facilitate improved circulation in the surrounding communities. In addition, under Alternative 4, the existing SR-58 would be converted to a southern frontage road and would not be substantially altered. A future additional northern frontage road would provide local access and circulation. For residents who access their properties via SR-58, creation of frontage roads would result in greater traffic safety.

Similar to Alternatives 2 and 3, access to the future SR-58 alignment in the project area would be limited to Hinkley and Lenwood Roads to provide adequate exit spacing. Cul-de-sacs would be added to local streets that currently intersect SR-58 between Valley View Road and Hinkley Road, eliminating direct access to the new SR-58 alignment. This would result in longer distances traveled (more than 0.3 mile) compared to the current access routes for residents living along eight of the 13 roadways that currently intersect SR-58. Changes in commute distances and the availability of services associated with relocated residents would depend on where residents were relocated.

Pedestrian design features would be incorporated where appropriate and feasible, including providing sidewalks at the Lenwood and Hinkley overcrossings, striping all crosswalks, and constructing curb ramps at intersections. Therefore, while Alternative 4 would result in changes to pedestrian access and movement, impacts would be minimized with the implementation of pedestrian design features.

Community Cohesion/Character

Alternative 4 would realign SR-58 north of the existing location, along parcels that are not currently designated for highways or roadway uses. Because existing land uses are zoned for residential and rural living, Alternative 4 would introduce a roadway through an area where no roadways currently exist. Therefore, this alternative would generally widen the barrier that currently exists between the north and south portions of the Hinkley community.

Alternative 4 would result in the acquisition of properties, removal of residential and nonresidential structures, and relocation of residences that form cohesive units in the study area. Approximately 13 mobile home units at the Sunshine Mobile Home Park located north of existing SR-58 and west of Yellowstone Road would be removed. In addition, portions of the southern frontage road and the relocated Hinkley Road intersection would bisect several clusters of homes located south of SR-58, including homes along Hidden River Road and Flower Street. This type of physical impact is also expected to occur along Mountain View Road, where a cluster of two to three homes is located. Of all the Build Alternatives, Alternative 4 has the highest number of home removals (56).

Although the number of residential units (56), and businesses (4) removed under this alternative varies slightly from Alternative 3, as it relates to community cohesion/character, Alternative 4 would result in potentially substantial impacts for the same reasons listed under Alternative 3.

Temporary/Construction Impacts

Alternative 1—No-Build Alternative

Alternative 1 would not result in any construction activities that would produce temporary construction impacts.

Alternatives 2, 3, and 4

All of the proposed build alternatives would result in substantial, temporary impacts to community cohesion/character.

Construction activities would result in temporary, localized, site-specific disruptions to the population in the proposed project area, primarily related to construction-related traffic changes from trucks and equipment in the area; partial and/or complete street and lane closures, with some requiring detours; increased noise and vibration; lights and glare; and changes in air emissions. Activities such as building demolition and grading of acquired lands would occur adjacent to some residences. Construction impacts would greatly affect land uses adjacent to the proposed Alternatives 3 and 4, which are predominantly rural residential but at greater densities than those located further south of the existing SR-58.

The Visual Impact Assessment (VIA), Air Quality Report (AQR), and Noise Study Report (NSR) prepared for the proposed project provide additional detail on the type and magnitude of these kinds of temporary construction effects. Summaries of the findings of these studies are found later in this chapter.

3.4.3.3 Avoidance, Minimization, and/or Mitigation Measures

CI-1: A Construction Management Plan and a Transportation Management Plan would be prepared for the project and include coordination efforts that would inform the community about project activities, maintain access to and from the project area during construction, minimize construction-period traffic, control glare, dust, and noise (see Section 3.6, Traffic and Transportation/Pedestrian and Bicycle Facilities, Section 3.7 Visual/Aesthetics, Section 3.3 Farmland, Section 3.14 Air Quality, and Section 3.15 Noise and Vibration). Measures to minimize construction impacts in these sections, also apply to minimizing permanent community cohesion/character impacts.

CI-2: Pedestrian design features shall be incorporated wherever feasible on the existing SR-58 and/or the proposed frontage roads, including providing sidewalks along the proposed Lenwood and Hinkley overcrossings, striping all crosswalks, and constructing curb ramps at all new intersections.

CI-3: To address bypass impacts, during Final Design, Caltrans will coordinate with the community and County regarding the possibility of placing a *Welcome* sign at both ends of the proposed expressway with brief information encouraging visitors to visit services offered in Hinkley.

CI-4: During Final Design and Construction, every effort will be made to further minimize the amount of right-of-way needed for the facility, and to further minimize community and environmental impacts in accordance with Directors Policy Number DP-22: Context Sensitive Solutions.

CI-5: For permanent impacts to community character, Visual Measures AES-1 through AES-8; and Farmland Measures FA-1 through FA-4 are also designed to minimize impacts.

3.4.4 Relocations

3.4.4.1 Regulatory Setting

Federal Regulations

The Caltrans Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of RAP is to ensure that persons displaced as

a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix D for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 USC 2000d, et seq.). Please see Appendix C for a copy of Caltrans's Title VI Policy Statement.

3.4.4.2 Affected Environment

Unless otherwise noted, the information from this section came from the *Community Impact Assessment* (Caltrans 2011b) and *Draft Relocation Impact Report (DRIR)* (Caltrans 2010b) prepared for the proposed project.

The displacement area has been defined to include those Census blocks from the 2010 U.S. Census of Population and Housing that are located within 0.5 mile of the project alignment build alternatives (Alternatives 2, 3, and 4). Therefore, the displacement areas includes the area from 0.5 mile north of the northernmost alignment to 0.5 mile south of the southernmost alignment, and from 0.5 mile west of the western project limit to 0.5 mile east of the eastern project limit (see Figures 3.4.1 through 3.4.3).

The displacement area lies in the unincorporated community of Hinkley, a predominantly rural community. The existing land uses in the vicinity of the proposed project are rural residential and agricultural, with some commercial, industrial, and utility/maintenance lines such as utility pipes and transmission lines. Single-family and rural residences are located in clusters along the roads near SR-58, including along the existing SR-58 alignment, with a few residences more sparsely located away from SR-58. Farmlands, including agricultural farmlands and dairies, are concentrated along the eastern portion of the existing SR-58 alignment, with a few farms located adjacent to SR-58.

3.4.4.3 Environmental Consequences

A Draft Relocation Impact Report (DRIR) (Caltrans 2010b) was prepared for the proposed project to determine impacts related to the acquisition of properties and displacement of residents and/or businesses in the project area as a result of each of the proposed alternatives. The DRIR identified a replacement area for the displaced resources. The replacement area is the area immediately adjacent to the displacement area and extends to include all of zip codes 92347 and 92311. In other words the replacement area includes unincorporated parts of San Bernardino County surrounding Hinkley as well as the city of Barstow which is located ten to 14 miles away from the community of Hinkley.

Permanent Impacts

Alternative 1—No-Build Alternative

Alternative 1 would not result in the acquisition and/or displacement of businesses, facilities that support businesses, or employee-occupied residences in the project area; therefore, impacts would not occur.

Figure 3.4.1: Alternative 2 – Location of Possible Property Acquisition

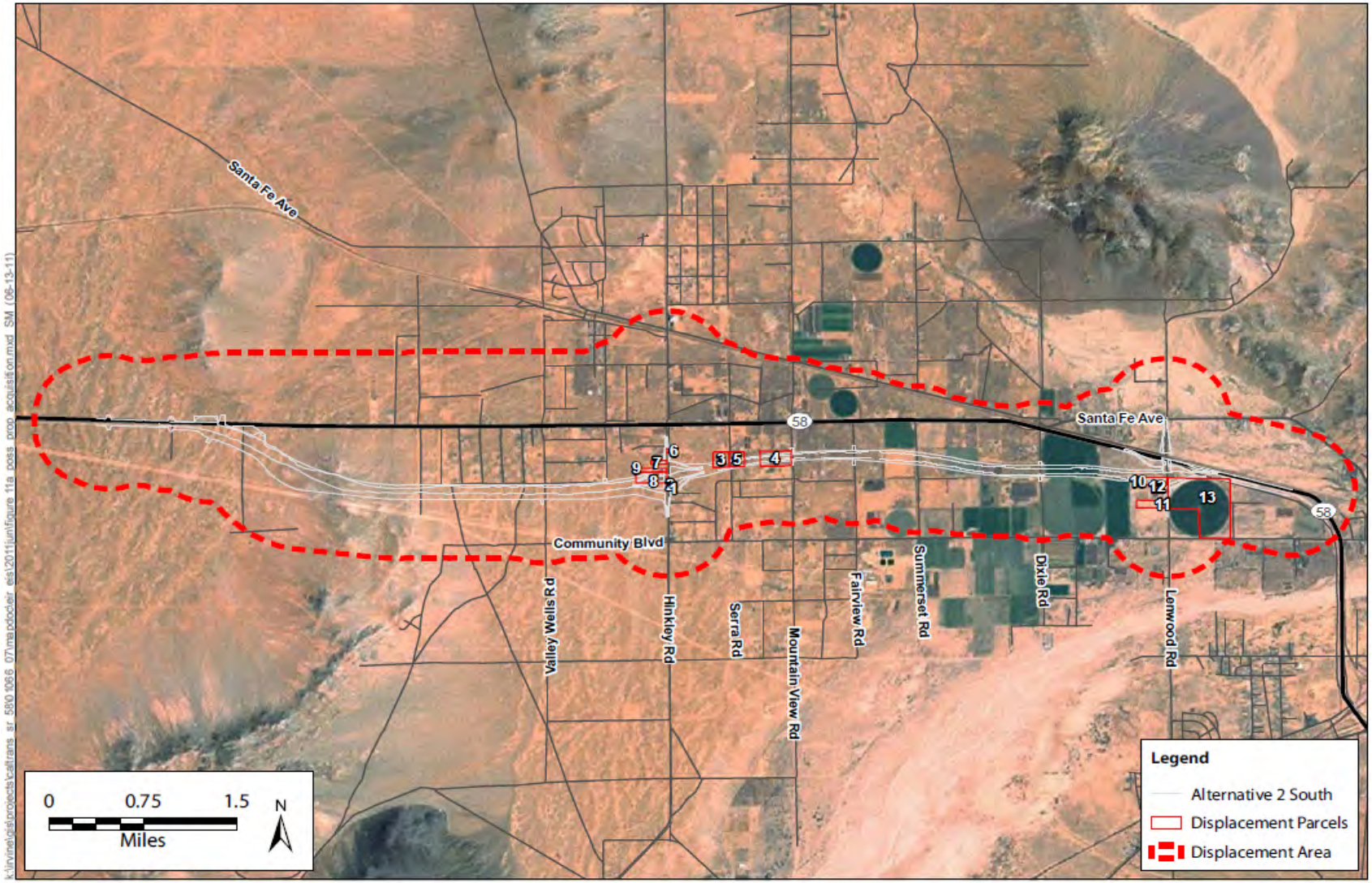

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Figure 3.4.2: Alternative 3 – Location of Possible Property Acquisition

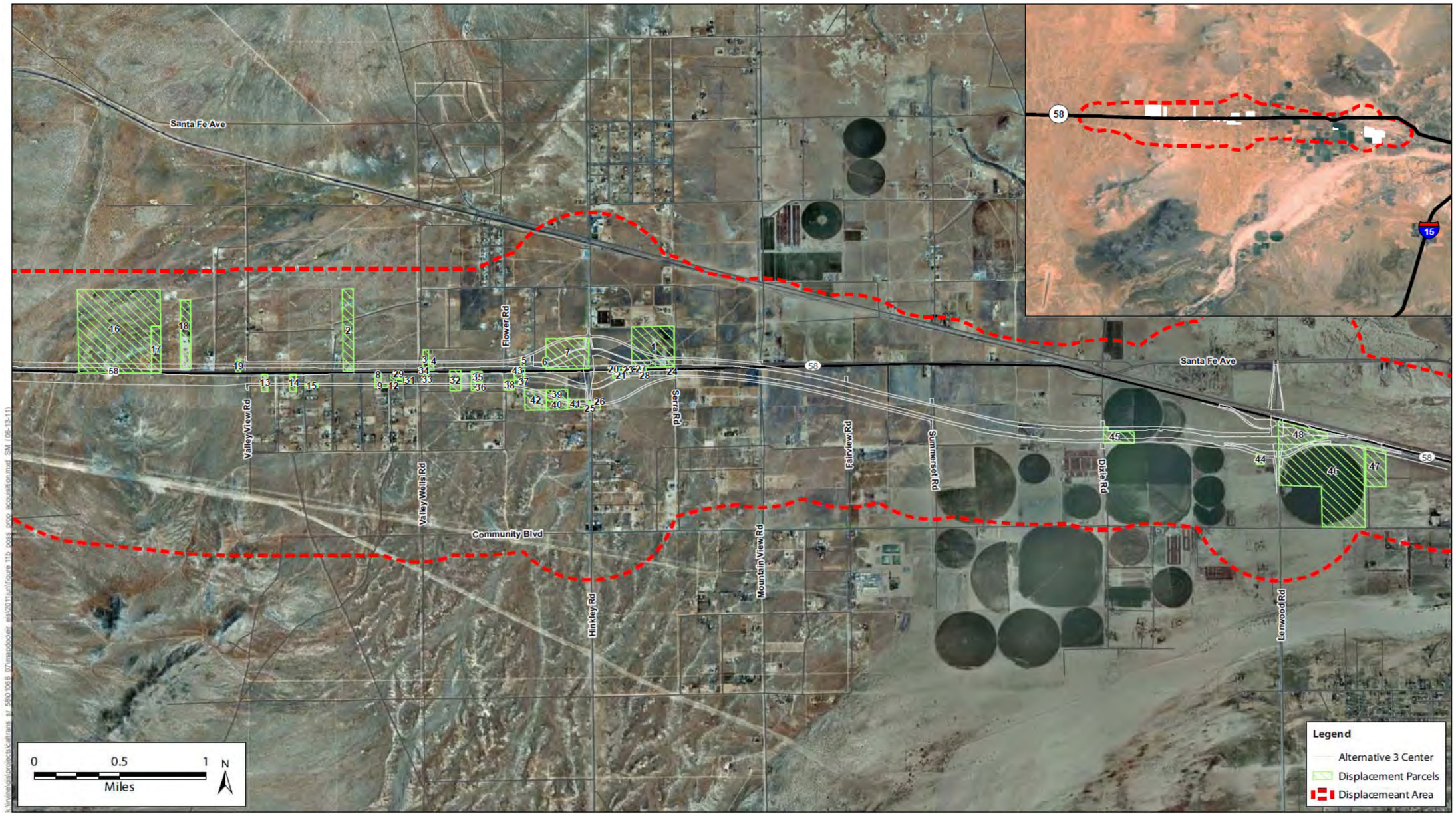

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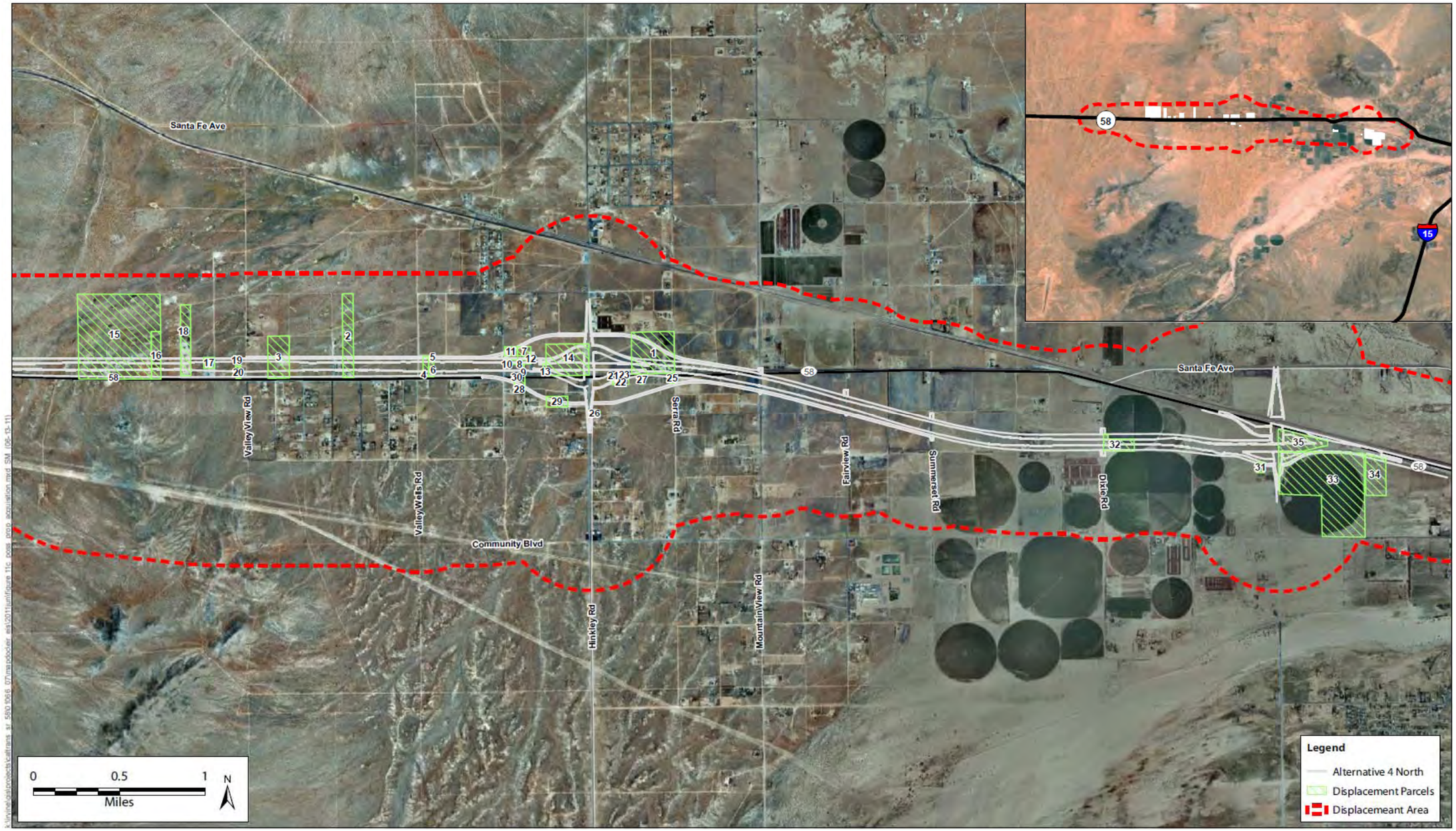
Figure 3.4.3: Alternative 4 – Location of Possible Property Acquisition



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Alternative 2—Southerly Alignment

Under Alternative 2, ten parcels would be fully acquired, and 96 parcels would be partially acquired. Under this alternative, 13 residential units and two nonresidential units (one agricultural farm and a freight line business) would be displaced. Both the farm and the freight line business have a single-family residence located on the same parcel (see entries 8 and 10 in Table 3.4-9). According to the DRIR prepared for this project, the current housing market in the area (within zip codes 92347 and 92311 which includes the city of Barstow) has sufficient ability to absorb the displacement of all residential units requiring relocation under the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended. The term "able to absorb" means that there are sufficient homes in the area available to allow for relocation of displaces. Per the Relocation Assistance Program (see Appendix C), *[r]esidential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable "decent, safe and sanitary" replacement dwelling, available on the market, is offered to them by Caltrans*. In terms of farmland, only small amounts of farmland would be acquired from various parcels, the partial acquisition of agricultural land is not likely to result in relocation of agricultural operations or to lead farmlands to become inoperable and thus require relocation. As it relates to residential relocations, however, adverse impacts may occur. Although the number of displaces under Alternative 2 would be substantially less than those required under Alternatives 3 and 4, this relocation means possibly having to move ten to 14 miles away. Because of the rural character and size of the community, in addition to the distance away from friends and neighbors, Alternative 2 may have substantial impacts.

Table 3.4-9: Proposed Acquisitions with Displacements—Alternative 2

Map ID	APN	Current Land Use	Tenant/ Owner Occupied	Total Land Area (acres)	Acquired Area (acres)	Remaining Area (acres)
1	0494-031-10	Single-family residence	Owner	1.26	1.26	0.0
2	0494-031-11	Single-family residence	Tenant	1.26	1.26	0.0
3	0494-201-01	Mobile Home	Owner	10.11	3.57	6.54
4	0494-201-22	Single-family residence	Owner	20.32	10.77	9.56
5	0494-201-36	Single-family residence	Tenant	10.06	5.21	4.85
6	0494-201-39	Mobile Home	Owner	1.50	0.45	1.05
7	0494-312-19	Single-family residence	Owner	2.51	0.94	1.57
8	0494-312-26[a]	Single-family residence/ Business	Owner	15.09	13.56	1.53
9	0494-312-27	Single-family residence	Owner	5.03	2.87	2.16
10	0497-031-12[b]	Single-family residence	Tenant	9.96	8.65	1.31
11	0497-031-13	Single-family residence	Owner	9.96	8.65	9.69
12	0497-031-16	Single-family residence	Tenant	1.93	0.40	1.53
13	0497-221-02[c]	Single-family residence/ Agriculture	NA	121.35	8.02	113.34

Source: TRW 2010; Caltrans 2010a; Site visit conducted by ICF International in June 2010; San Bernardino County Land Use Plan 2007.
APN = Assessor Parcel Number
[a] APN 0494-312-26 has a single family residence as well as a freight line business, both of which would be displaced.
[b] APN 0497-031-12 has a single family residence as well as a farm, both of which would be displaced.
[c] APN 0497-221-02 is an agricultural land with single family residence. However, only the single family residence of the property is being displaced. The agricultural land would be partially acquired, but the farm would not require displacement.

Alternative 3—Existing Alignment

Under Alternative 3, 69 parcels would be fully acquired and 164 parcels would be partially acquired. This alternative would displace 26 owner-occupied single-family residences, 12 tenant-occupied single-family residences, five owner-occupied mobile homes, two tenant-occupied mobile homes; a multi-unit residential property with four units, two commercial businesses, farmland, a commercial livestock business, a church, and would partially displace a dairy (see Table 3.4-10). According to the DRIR prepared for this project, the current housing market in the area (within zip codes 92347 and 92311 which includes the city of Barstow) has sufficient ability to absorb the displacement of the owner-occupied 26 single-family residential properties and seven mobile homes requiring relocation under the Uniform Relocation Assistance and Real Property Acquisitions Act of 1970, as amended. The term "able to absorb" means that there are sufficient homes in the area available to allow for relocation of displaces. Per the Relocation Assistance Program (see Appendix C), *[r]esidential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable "decent, safe and sanitary" replacement dwelling, available on the market, is offered to them by Caltrans.*

The surrounding area is anticipated to be able to absorb the acquisition of the six non-residential properties. Since the surrounding area has the potential to absorb the displacement of non-residential properties under this alternative, no potentially substantial impacts to business, employment, and/or economic impacts, or farm-related impacts would occur. With regard to residential displacements, the residential units within the area are comparably priced and are of comparable size to the units that would be displaced. As with Alternative 2, but to a larger scale, displaces under Alternative 3 may need to relocate ten to 14 miles away.

Further, the DRIR indicates that the replacement area may lack adequate resources to absorb displaced single-family rental housing. Although there are several options available to displaces including the use of last resort housing,[3] relocation to multi-family rental units in the city of Barstow (ten to 14 miles away), and comparable single-family housing in the City of Victorville (approximately 40 miles away), Alternative 3 may have a substantially adverse impacts.

Table 3.4-10: Proposed Acquisitions with Displacements—Alternative 3

Map ID	APN	Use	Tenant/ Owner Occupied	Total Land Area (acres)	Acquired Area (acres)	Remaining Area (acres)
1	0494-041-14[a]	Single-family residence/ Dairy Farm	N/A	40.05	13.37	26.68
2	0494-061-06	Single-family residence	Owner	20.10	2.34	17.77
3	0494-093-02	Mobile Home	Owner	2.50	1.16	1.34
4	0494-093-06	Single-family residence	Owner	1.25	1.16	0.09
5	0494-111-07	Single-family residence	Tenant	0.63	0.63	0.0
6	0494-112-04	Single-family residence	Tenant	0.63	0.63	0.0
7	0494-112-14	Quadruplex	Owner/ Tenant	30.08	28.63	1.45
8	0494-142-05	Stores/retail (Beer bar)	NA	1.54	1.54	0.0
9	0494-142-15	Single-family residence	Owner	1.00	0.50	0.50

[3] Based on the inadequate housing identified in the immediate area for tenants and mobile home occupants, Last Resort Housing Program payments may be utilized. Last Resort Housing Program, as defined by the Caltrans Relocation Assistance Program, includes payment for tenant occupied housing and owner-occupied properties.

Map ID	APN	Use	Tenant/ Owner Occupied	Total Land Area (acres)	Acquired Area (acres)	Remaining Area (acres)
10	0494-143-19	Single-family residence	Owner	1.14	1.14	0.0
11	0494-143-20	Single-family residence	Tenant	0.36	0.36	0.0
12	0494-143-22	Single-family residence	Owner	0.56	0.36	0.24
13	0494-151-05	Mobile Home	Owner	2.53	1.65	0.88
14	0494-152-05	Single-family residence (Possibly vacant)	Owner	2.53	1.68	0.84
15	0494-153-12	Single-family residence	NA	1.03	0.45	0.58
16	0494-171-02	Single-family residence	Tenant	146.74	14.93	131.82
17	0494-171-03	Single family residence (Possibly vacant)	Tenant	9.99	1.88	8.11
18	0494-181-37	Mobile Home Park (1 unit displaced)	Tenant	16.01	1.21	14.81
19	0494-181-62	Single-family residence	Tenant	1.30	0.90	0.41
20	0494-201-07	Single-family residence (Appears vacant/ abandoned)	Tenant	1.47	1.47	0.0
21	0494-201-08	Single-family residence and business (M&M Tinting)	Tenant	0.73	0.73	0.0
22	0494-201-09	Single-family residence	Tenant	0.73	0.73	0.0
23	0494-201-10	Single-family residence	Owner	0.73	0.73	0.0
24	0494-201-19	Single-family residence (Possibly vacant)	Owner	1.03	1.03	0.0
25	0494-201-39	Mobile Home	Owner	1.50	0.42	1.08
26	0494-201-41	Mobile Home	Owner	0.50	0.50	0.0
27	0494-201-46	Single-family residence	Owner	0.73	0.73	0.0
28	0494-201-47	Single-family residence	Owner	0.73	0.73	0.0
29	0494-291-01	Single-family residence	Owner	0.66	0.66	0.0
30	0494-291-02	Single-family residence	Owner	0.42	0.42	0.0
31	0494-291-13	Single-family residence	Owner	0.45	0.45	0.0
32	0494-311-07	Single-family residence	Owner	5.05	3.79	1.26
33	0494-311-38	Single-family residence	Owner	0.63	0.63	0.0
34	0494-311-39	Single-family residence	Owner	0.63	0.63	0.0
35	0494-311-46	Single-family residence	Owner	2.21	2.21	0.0
36	0494-311-47	Single-family residence-vacant land	Tenant	2.45	1.25	1.20
37	0494-312-05	Single-family residence	Owner	1.26	1.26	0.0
38	0494-312-07	Religious/Church	N/A	2.27	1.48	0.78
39	0494-312-13	Single-family residence	Owner	5.03	4.50	0.53
40	0494-312-14	Single-family residence	NA	5.02	0.46	4.56
41	0494-312-16	Single-family residence	Owner	4.26	2.29	1.97
42	0494-312-30	Single-family residence	Owner	9.17	0.22	8.95
43	0494-312-33	Mobile Home	Owner	2.52	2.52	0.0
44	0497-031-16	Single-family residence	Tenant	1.93	0.41	1.53
45	0497-192-16[b]	Single-family residence/ Farmland	Tenant	8.82	8.07	0.75
46	0497-221-02[c]	Single-family residence/ Farmland (Structures overlap with APN 0497-231-01)	NA	121.35	8.11	113.24

Map ID	APN	Use	Tenant/ Owner Occupied	Total Land Area (acres)	Acquired Area (acres)	Remaining Area (acres)
47	0497-221-08	Single-family residence Mobile Home	Tenant	17.53	1.20	16.33
48	0497-231-01	Single-family residence	NA	16.72	16.72	0.0

Source: TRW 2010; Caltrans 2010aDepartment 2010a; Site visit conducted by ICF International in June 2010; San Bernardino County Land Use Plan 2007.
[a]APN 0494-041-14 has a single family residence as well as a dairy. The single-family residence would be fully displaced; however, the dairy would be partially displaced.
[b] APN 0497-192-16 has a single family residence as well as a farm, both of which would be displaced.
[c] APN 0497-221-02 is an agricultural land with single family residence. However, only the single family residence of the property is being displaced.

Alternative 4—Northerly Alignment

Under Alternative 4, 62 parcels would be fully acquired and 136 parcels would be partially acquired. This alternative would displace 19 owner-occupied single-family residences, 10 tenant-occupied single-family residences, two owner-occupied mobile homes, 21 tenant-occupied mobile homes, a multi-unit residential property with four units, one commercial business, farmland, and a commercial livestock business, and would partially displace a dairy (see Table 3.4-11).

Table 3.4-11: Proposed Acquisitions—Alternative 4

Map ID	APN	Current Land Use	Tenant/ Owner Occupied	Total Land Area (acres)	Acquired Area (acres)	Remaining Area (acres)
1	0494-041-14[a]	Single-family residence/ dairy farm	N/A	40.05	15.55	24.49
2	0494-061-06	Single-family residence	Owner	20.10	5.01	15.09
3	0494-061-38	Single-family residence	Tenant	20.18	10.30	9.88
4	0494-093-02	Mobile home	Owner	2.50	2.43	0.07
5	0494-093-03	Single-family residence	Owner	1.25	1.17	0.08
6	0494-093-06	Single-family residence	Owner	1.25	1.25	0.0
7	0494-111-02	Single-family residence	Tenant	2.63	2.63	0.0
8	0494-111-04	Single-family residence	Tenant	1.31	1.31	0.0
9	0494-111-07	Single-family residence	Tenant	0.63	0.63	0.0
10	0494-111-10	Single-family residence	Owner	1.31	1.31	0.0
11	0494-111-11	Single-family residence	Tenant	2.61	1.88	0.73
12	0494-111-16	Single-family residence	Owner	1.31	1.31	0.0
13	0494-112-04	Single-family residence	Tenant	0.63	0.63	0.0
14	0494-112-14	Quadruplex	Owner/ Tenant	30.08	30.08	0.0
15	0494-171-02	Single-family residence	Tenant	146.74	33.07	113.67
16	0494-171-03	Single-family residence	Tenant	9.99	4.29	5.70
17	0494-181-34	Single-family residence	Owner	2.53	2.25	0.28
18	0494-181-37	Mobile home park (19 units displaced)	Tenant	16.01	1.21	12.20
19	0494-181-61	Single-family residence	Owner	1.00	0.85	0.15
20	0494-181-62	Single-family residence	Tenant	1.30	1.30	0.0
21	0494-201-07	Single-family residence (Appears vacant/ abandoned)	Tenant	1.47	1.47	0.0

Map ID	APN	Current Land Use	Tenant/ Owner Occupied	Total Land Area (acres)	Acquired Area (acres)	Remaining Area (acres)
22	0494-201-08	Single-family residence and Business (M&M Tinting)	Tenant	0.73	0.73	0.0
23	0494-201-09	Single-family residence	Tenant	0.73	0.73	0.0
24	0494-201-10	Single-family residence	Owner	0.73	0.73	0.0
25	0494-201-19	Single-family residence (Possibly vacant)	Owner	1.03	1.03	0.0
26	0494-201-39	Mobile home	Owner	1.50	0.42	1.17
27	0494-201-46	Single-family residence	Owner	0.73	0.73	0
28	0494-312-05	Single-family residence	Owner	1.26	0.12	1.14
29	0494-312-13	Single-family residence	Owner	5.03	2.88	2.15
30	0494-312-33	Mobile home	Owner	2.52	2.30	0.22
31	0497-031-16	Single-family residence	Tenant	1.93	0.41	1.53
32	0497-192-16[b]	Single-family residence/ farmland	Tenant	8.82	8.07	0.75
33	0497-221-02[c]	Field and seed/single-family residence	NA	121.35	8.11	113.24
34	0497-221-08	Single-family residence/mobile home	Tenant	17.53	1.20	16.33
35	0497-231-01	Livestock/single-family residence	NA	16.73	16.73	0.0

Source: TRW 2010; Caltrans 2010aDepartment 2010a; Site visit conducted by ICF International in June 2010; San Bernardino County Land Use Plan 2007.
[a] APN 0494-041-14 has a single family residence as well as a dairy. The single-family residence would be fully displaced; however, the dairy would be partially displaced.
[b] APN 0497-192-16 has a single family residence as well as a farm, both of which would be displaced.[c] APN 0497-221-02 is an agricultural land with single family residence. However, only the single family residence of the property is being displaced.

As with Alternatives 2 and 3, the DRIR found that the surrounding area has the potential to absorb the displacement of non-residential properties under this alternative, and therefore no potentially substantial impacts on business, employment, and/or economic impacts, or farm-related impacts would occur. The DRIR also finds that the current housing market in the relocation area (within zip codes 92347 and 92311 which includes the city of Barstow) has sufficient ability to absorb the displacement of 19 single-family residential properties requiring relocation under the Uniform Relocation Assistance and Real Property Acquisitions Act of 1970, as amended. Per the Relocation Assistance Program (see Appendix C), *[r]esidential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable "decent, safe and sanitary" replacement dwelling, available on the market, is offered to them by Caltrans.*

As with Alternative 3 and single-family rental housing, under Alternative 4 the replacement area may lack adequate resources to absorb displaced mobile homes and rental housing. Although there are several options available to displaces including the use of last resort housing,[4] relocation to

[4] Based on the inadequate housing identified in the immediate area for tenants and mobile home occupants, Last Resort Housing Program payments may be utilized. Last Resort Housing Program, as defined by the Caltrans Relocation Assistance Program, includes payment for tenant occupied housing and owner-occupied properties.

multi-family rental units in the city of Barstow (ten to 14 miles away), and comparable single-family housing in the City of Victorville (approximately 40 miles away), Alternative 4 may have substantially adverse impacts.

Temporary Impacts

Alternative 1—No-Build Alternative

Construction activities would not occur under Alternative 1; therefore, no potentially substantial impacts would occur.

Build Alternatives 2, 3, and 4

Construction activities associated with any of the three build alternatives would result in temporary, localized, site-specific disruptions to the local businesses in the proposed project area, primarily related to construction-related traffic changes from trucks and equipment; partial and/or complete street and lane closures, with some requiring detours; increased noise and vibration; light and glare; and changes in air emissions. Because project construction activities would be temporary and short-term in duration, no potentially substantial impacts are anticipated.

Implementation of a Construction Management Plan that informs the community about project construction activities and maintains access to and from the project area during construction is expected to satisfactorily avoid or minimize potentially substantial impacts on access to and from local businesses and employment.

3.4.4.4 Avoidance, Minimization, and/or Mitigation Measures

CI-4: During Final Design and Construction, every effort will be made to further minimize the amount of right-of-way needed for the facility, and to further minimize community and environmental impacts in accordance with Directors Policy Number DP-22: Context Sensitive Solutions.

CI-6: All relocation activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. A business survey will be conducted to assist with the relocation of any businesses that are displaced. Relocation resources will be available to all displaces without discrimination.

CI-7: For impacts to agricultural business and dairies, every effort will be made during Final Design and Construction to minimize impacts to these, in an effort to allow them to continue operation with as little disruption as possible.

3.4.5 Environmental Justice

3.4.5.1 Regulatory Setting

Federal Regulations

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by President Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately

high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2010, this was $22,314 for a family of four.

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

3.4.5.2 Affected Environment

Unless otherwise noted, the information from this section of the document came from the *Community Impact Assessment* (Caltrans 2011b) prepared for the proposed project and 2010 Census Bureau data updates (Caltrans 2012a).

As previously mentioned, the study area is defined in two ways due to data availability: (1) at the Census tract level for general demographic and economic characteristics; and (2) at the Census block level for detailed population and housing information. Figure 3.4A provides an aerial photograph of the project location at a regional scale and delineates the three Census tracts involved in this project – Tracts 93, 116, and 119. The project extends close to nine miles long, depending on the alternative, and approximately eight of the nine miles are within Tract 119 under all proposed alignments. The population of the study area for the 72 blocks, at least half a mile from the project footprint, was 920 in 2010 (See Table 3.4-5). In Tract 119, the total population was 3,567.

Minority Population

Race and ethnicity statistics for the County, the city of Barstow, and the study area are detailed in Table 3.4-5. In the County, the largest racial group in 2010 was White (56.7%). Racial minorities accounted for 16.6% of the population – Black or African-American (8.9%), Asian (6.3%), American Indian & Alaska Native (1.1%), and Native Hawaiian/Pacific Islander (0.3%). Those who consider themselves of Some Other Race or of Two or More Races accounted for 26.6% of the population. Hispanics (of any race) accounted for 49.2% of the County's population. In the city of Barstow, the largest racial group was also White (52.3%). 26.5% of the population considered themselves of Some Other Race or of Two or More Races. The remaining 21.2%, in descending order, consisted of Black or African-American, people of Two or More Races, Asian, Native American, Native Hawaiian/Pacific Islander, and Other. 42.8% of the residents in the city of Barstow were Hispanic or Latino (of any race).

The distribution of the study area population's race/ethnicity is slightly different from that of the County and the city of Barstow. According to the 2010 Census, the study area had a higher percentage of people of White origin (68.6%) than the County (56.7%) and the city of Barstow (52.3%). Tract 119 had an even higher percentage (70.9%) of White population. The other two tracts involved in the project also had greater percentages of White population than the County or the City; in Tract 93 67.9% of the population was White and 79.4% in Tract 116. The largest racial minority in the study area (at the combined block level) and in Tract 119 was Black or

African American at 3.2% and 3.6% respectively. Hispanics comprised the largest ethnic minority in the area. However, both the combined 72 blocks (38.8%) and Tract 119 (34.7%) had a smaller Hispanic/Latino population than the County or the City.

Income and Poverty Statistics

The income and poverty characteristics of the study area, presented here at the tract level due to data availability, are based on data from the 2010 Census. Table 3.4-12 shows per capita income (PCI) and number and percentage of people below the poverty level in the County, the city of Barstow, and the three tracts traversed by the project. The 2010 poverty threshold used for the 2010 American Community Survey data, as defined by the U.S. Census Bureau, was $11,139 for an individual and $22,314 for a family of four.

The data indicate that the PCI for Tract 119 ($22,846) was higher than in the County ($21,867) and the city of Barstow ($19,643). Although, the median household income ($51,477) in that tract was lower than the County but higher than that of the city of Barstow.

The percentage of population below the poverty threshold in the study area in 2010 (23.9%) was greater than in the County (14.8%) and the city of Barstow (21.4%). The disparity is even greater in the Families with Related Children Under 18 category where 30.0% of families with related children living in Tract 119 are below the poverty threshold as compared to the County's 16.1%. Although the percent of families living in poverty in Tract 119 is similar to that of the city of Barstow (28.7%), it is vastly different than the poverty rate of neighboring tracts (Tract 93 0.0% and Tract 116 14.2%). The population (23.9%) and family (30.0%) poverty levels contained in Tract 119 are indicative of a disadvantaged population.

Table 3.4-12: Existing Regional and Local Housing Characteristics—Income/Poverty

Area	Population For Whom Poverty is Determined	Median household income (dollars)	Per Capita Income[1]	Population Below Poverty Level	Population Below Poverty Level (%)	Families w/ related children under 18 (%)
San Bernardino County	1,961,244	$ 55,845	$ 21,867	291,020	14.8	16.1
City of Barstow	22,837	$ 45,166	$ 19,643	4,888	21.4	28.7
Census Tract 93	1,318	$ 34,395	$ 20,986	75	5.7	0.0
Census Tract 116	5,403	$ 55,158	$ 28,726	829	15.3	14.2
Census Tract 119	4,113	$ 51,477	$ 22,846	981	23.9	30.0

Source: U.S. Census Bureau (DP03 & S1701), 2006-2010 American Community Survey Estimates
[1]Per Capita Income in 2010 inflation-adjusted dollars.

3.4.5.3 Environmental Consequences

Per Executive Order 12898, the term *minority* includes persons who identify themselves as Black/African-American, Asian, Native Hawaiian/Pacific Islander, American Indian & Alaska Native, or of Hispanic/Latino origin. The term *low-income* includes persons whose household income is at or below the Health and Human Services (HHS) poverty guidelines. A different threshold (e.g., U.S. Census Bureau poverty threshold) may be utilized as long as it is not selectively implemented and is inclusive of all persons at or below the HHS poverty

guidelines. Corresponding with 2010 Census data, the U.S. Census Bureau 2010 poverty threshold, defined as $11,139 for an individual and $22,314 for a family of four, has been used in this analysis.

The discussion of environmental justice that follows has been prepared in accordance with the applicable guidance for addressing environmental justice, including U.S. Department of Transportation Order 5610.2 (April 15, 1997), FHWA Order 6640.23 (December 2, 1998), the FHWA *Western Resource Center Interim Guidance* (March 2, 1999), the FHWA *California Division Environmental Justice Environmental Documents Checklist*, and the Department's *Desk Guide—Environmental Justice in Transportation Planning and Investments* (2003a). Caltrans' *Desk Guide—Environmental Justice in Transportation Planning and Investments* (2003a).

Permanent Impacts

Alternative 1—No-Build Alternative

Alternative 1 would not involve any modifications to the current highway or surrounding roadways in the community of Hinkley and would have no environmental effects on minority and low-income populations.

Alternatives 2, 3, and 4

For all of the proposed build alternatives there would be no environmental justice issues, based upon the demographic data for the adjusted study area as shown on Table 3.4-12. The ethnicity data show a higher percentage of Whites in the study area compared with the County average.

Although there is a noticeable Hispanic/Latino population in the area, Hinkley is for the most part a racially/ethnically homogeneous community. With regards to income, the poverty level of Tract 119, where most of the project is located, is 23.9% which indicates a disadvantaged population in comparison to regional income characteristics. However, because all the alternatives traverse the community in a similar manner and poverty[5] pockets are not discernible from the overall community, disproportionate impacts would not occur.

No minority or low-income populations have been identified that would be adversely or disproportionately affected by the proposed project as determined above. Therefore, the proposed project would have no impacts under E.O. 12898.

Temporary Impacts

Alternative 1—No-Build Alternative

Alternative 1 would not result in any construction activities that would produce temporary construction impacts.

Alternatives 2, 3, and 4

All three build alternatives would include construction activities that would result in temporary, localized, site-specific disruptions to the population in the proposed project area, primarily related to construction-related traffic changes from trucks and equipment in the area; partial and/or complete street and lane closures, with some requiring detours; increased noise and

[5] As defined by the U.S. Census Bureau poverty thresholds of $11,139 for an individual and $22,314 for a family of four in 2010.

vibration; light and glare; and changes in air emissions. Activities such as building demolition and grading of acquired lands would occur adjacent to some residences. Construction impacts would adversely affect land uses adjacent to Alternatives 3 and 4, which are predominantly rural residential. The AQR, VIA, and NSR prepared for the proposed project provide additional detail on the type and magnitude of these kinds of temporary construction effects. A Construction Management Plan and a TMP would be prepared for the project and include measures to minimize construction-period traffic and access/circulation impacts (see Section 3.6, *Traffic and Transportation/Pedestrian and Bicycle Facilities)*.

Because the project construction activities would be temporary, short-term in duration, and generally limited to daytime hours, no substantial adverse effects are anticipated.

3.4.5.4 Avoidance, Minimization, and/or Mitigation Measures

Based on the above discussion and analysis, the build alternatives would not cause disproportionately high and adverse effects on any minority or low-income populations as per E.O. 12898 regarding environmental justice. Therefore no avoidance, minimization, and/or mitigation measures are required.

3.5 Utilities/Emergency Services

3.5.1 Affected Environment

3.5.1.1 Utilities

Water Service

Water services for the study area were provided by the Southern California Water Company. In 2005, Southern California Water Company changed its name to the Golden State Water, which is the current, water service provider. The study area receives its water from the Mojave River Basin-Centro subbasin. The Mojave Water Agency and San Bernardino County Special District Area 70 also maintain utility lines in the study area.

A 42-inch pipeline south of SR-58 is maintained by the Mojave Water Agency.

Wastewater Service

Most residential properties in the study area and surrounding High Desert area are on private sewage treatment systems (septic). The Barstow Water Reclamation Facility currently processes 2.7 million gallons per day (MGD) and has an overall capacity of 4.5 MGD (San Bernardino County 2006). It serves the city of Barstow and some of the surrounding areas.

Natural Gas Service

Southwest Gas Corporation (Southwest) provides natural gas service to the study area as well as the High Desert area, Victor Valley, Barstow, and portions of the North Desert. According to the Circulation and Infrastructure Background Report for the San Bernardino County General Plan, two PG&E natural gas pipelines run parallel to existing SR-58 on both north and south sides (San Bernardino County 2006). PG&E, El Paso Natural Gas Company, and the Mojave Pipeline Operating Company also maintain pipelines in the study area.

South of SR-58, there are two 34-inch PG&E pipelines and one 42-inch Kern River gas transmission pipeline.

Crude Oil

A 30-inch crude oil pipeline is located south of existing SR-58. Additional utility search information will be obtained during final design to determine the service area and ownership of this pipeline.

Solid Waste

San Bernardino County’s Solid Waste Management Division (SWMD) is responsible for the operation and management of the County’s solid waste disposal system, which consists of six regional landfills, eight transfer stations, and five community collection centers (San Bernardino

County 2006). The County contracts with Burrtec Waste Industries for disposal site operations and maintenance. The County is responsible for solid waste management in unincorporated county areas.

According to the Circulation and Infrastructure Background Report, the County has nine landfills in the Valley and the Desert Regions (six of which are County owned) and 21 transfer stations. All nine landfills and 13 transfer stations owned and operated by the County have drop-off sites for recyclable materials (San Bernardino County 2006). San Bernardino County continues to have disposal capacity available for solid waste generated but not diverted in excess of 15 years. Permitted disposal capacity is available at the Barstow, California Street, Colton, Fort Irwin, Landers, Marine Corps Air Ground Combat Center, Mid-Valley, San Timoteo, and Victorville landfills (San Bernardino County 2006). Construction refuse/debris from the proposed project could be hauled to the nearest landfill, the Barstow landfill site, located 16.3 miles away from the project area.

Electrical Service

Southern California Edison (SCE) provides electricity to the project study area. SCE is the nation's second-largest electric utility, based on the number of customers. It serves 4.2 million customers in central and Southern California, including the High Desert Corridor. The utility's 50,000-square-mile service territory has a population of more than 11 million (City of Barstow 2009). SCE maintains utility lines in the project area and a substation south of SR-58.

Telephone

Verizon and Sprint are the telephone companies for the project study area. They both maintain utility lines in the project area.

Cable

Time Warner Cable provides cable services to the project area and maintains utility lines in the project area.

3.5.1.2 Emergency Services

California Highway Patrol

The California Highway Patrol (CHP) ensures safety and provides public services to those who use the State Highway System. The CHP also assists local government during emergencies when requested. The nearest CHP station is the Barstow CHP office, located at 300 East Mountain View in the city of Barstow, approximately 15 miles east of the project study area (refer to Table 3.5-1). This office has jurisdiction within the project study area. The CHP has mutual assistance agreements with all local and state emergency, fire, and ambulance services.

San Bernardino County Sheriff's Department

The San Bernardino County Sheriff's Department (SBCSD) Barstow Station is also responsible for providing law enforcement to the study area. Its jurisdiction encompasses over 10,000 square miles, just over half of the total square miles of the County (San Bernardino County Sheriff's Department 2009). Deputy Sheriffs assigned to the Barstow Station patrol the communities of Baker, Daggett, Hinkley, Lenwood, Ludlow, Newberry Springs, Sandy Valley, Yermo, Red Mountain, and Trona. Due to the large area that the deputies cover, they regularly assist and are assisted by the CHP, Barstow Police Department, and the Bureau of Land Management Rangers (San Bernardino County Sheriff's Department 2009). They also work closely with the Provost Marshal's Office and the Criminal Intelligence Division investigators at Fort Irwin and the Marine Corps Logistics Base, which are both located within the Barstow Station jurisdiction (San Bernardino County Sheriff's Department 2009).

San Bernardino County Fire Department

The San Bernardino County Fire Department's (SBCFD's) North Desert Division is responsible for fire protection within the study area. SBCFD's North Desert Division covers an area of 10,884 square miles and serves approximately 150,000 people in 19 different communities and cities in the County. There are currently 20 fire stations within the division (San Bernardino County Fire Department 2009).

The nearest fire station to the project site is the North Desert Division – Hinkley Station 125, located at 37284 Flower in the community of Hinkley (Table 3.5-1). Station 125 is staffed on an on-call basis with paid-call firefighters who live in the local community. Apparatus consists of one Type 1 structure engine, one Type 4 brush patrol with four-wheel drive, one water tender providing additional water for rural areas, and a squad containing specialized support equipment. The Hinkley station protects the Hinkley community, provides assistance to the city of Barstow, and responds to the I-15 corridor north and south of Barstow as well as the vast unincorporated areas west to the San Bernardino County line near Boron (San Bernardino County Fire Department 2009).

Hospitals

Barstow Community Hospital is located at 555 South 7th Avenue in the city of Barstow and is the closest hospital to the project study area. The hospital has 56 licensed beds, 34 active physicians, and 250 hospital employees (Barstow Community Hospital 2009). St. Mary Medical Center and Desert Valley Community Hospital would also be able to serve the study area. Their addresses and distances from the project site are listed in Table 3.5-1.

Table 3.5-1: Emergency Service Providers

Facility	Address	Direction from Hinkley	Distance from Hinkley (miles)
Fire			
San Bernardino County Fire Department Station 125	37284 Flower, Hinkley CA 92347	NA – located in the community	0.4
Police			
California Highway Patrol	300 East Mountain View, Barstow, CA 92311	East on SR-58	5
San Bernardino County Sheriff – Coroner Department, Barstow Sheriff's Office	225 East Mountain View, Barstow, CA 92311	East on SR-58	5
Hospitals			
Barstow Community Hospital	555 South 7th Avenue, Barstow CA 92311	East on SR-58	6
St. Mary Medical Center	18300 Highway 18, Apple Valley CA 92307	South on U.S. 395, east on SR-18	35
Desert Valley Community Hospital	16850 Bear Valley Road, Victorville CA 92395	South on U.S. 395	45

3.5.2 Environmental Consequences

3.5.2.1 Permanent Impacts

Alternative 1—No-Build Alternative

The No-Build Alternative would not involve any modifications to the current highway or surrounding roadways. Due to the absence of improvements to SR-58, congestion would not be decreased nor traffic safety improved in the project vicinity; therefore, potential benefits to emergency response services associated with access and circulation improvements would not occur. The absence of benefits under the No-Build Alternative, however, would not constitute an adverse impact on community facilities and/or services. No long-term impacts to utilities are anticipated under the No-Build Alternative.

Build Alternatives 2, 3, and 4

Alternative 2 would realign SR-58 approximately 0.5 mile south of the existing roadway. Access to the future SR-58 alignment in the project area would be limited to major roadways with adequate exit spacing, as advised by the *Highway Capacity Manual*; these include Hinkley and Lenwood roads. Cul-de-sacs would be added to the south ends of local streets that currently intersect Frontier Road between Valley View Road and Hinkley Road, eliminating direct access to the new SR-58 alignment. These improvements are required as safety measures.

Under this alternative several utility types may require relocation, including overhead and underground electrical, underground gas, overhead and underground telephone, overhead cable telephone, water, septic tank, petroleum pipeline and underground fiber optic.

As described above, community facilities are mostly located along Hinkley Road and Flower Street. Under the build alternatives, access to Hinkley Elementary School would not change substantially. Access for students coming from the northern area of Hinkley would not change, and students coming from the southern area would continue to be able to use Hinkley Road for access across SR-58. Because Flower Street would no longer directly connect to SR-58, the access route for the SBCFD (located on Flower Street) would be slightly longer (0.5 miles).

However, local circulation would be enhanced due to the decrease in congestion along SR-58 and the addition of the frontage roads. In addition, under Alternative 2, the existing SR-58 alignment would remain open and continue to be an important local roadway that would facilitate movement and response time for the fire department.

A TMP, in accordance with Deputy Directive DD-60-R1, will be developed prior to completion of the Project Approval and Environmental Document phase.[1] Historical highway conditions, current traffic volumes, and the preferred location would be used to identify appropriate TMP strategies and performance standards.

Alternatives 2, 3, and 4 would not involve construction of any habitable structures, nor would it increase population growth (see Section 3.2, *Growth*) in the project area. Therefore, no impacts would occur as there would be no demand for new or expanded emergency facilities or services.

3.5.2.2 Temporary Impacts

Alternative 1—No-Build Alternative

Because this alternative would not involve any construction activities, this alternative would not have any adverse impacts on community facilities and services.

Build Alternatives 2, 3, and 4

Several utility types may require relocation, including overhead and underground electrical, underground gas, overhead and underground telephone, overhead cable telephone, water, septic tank, petroleum pipeline, and underground fiber optic. Based on an initial utility search, the following agencies/companies maintain utilities within the project area: (1) Southwest, (2) Verizon, (3) Time Warner Cable, (4) SCE, (5) Sprint, (6) PG&E, (7) San Bernardino County Special District Area 70, (8) Mojave Pipeline Operating Company, (9) El Paso Natural Gas Company, and (10) Mojave Water Agency. Underground utilities which cross the highway would be encased per Caltrans policy.

All wells would be relocated outside of the proposed Caltrans right-of-way and existing wells within the Caltrans right-of-way would be capped.

A detailed study of utility relocations would be conducted during the final design. Depending on the level of impacts, these facilities would need to be protected, adjusted/modified, or relocated. The affected utilities would be relocated in accordance with state law and regulations, and

[1] DD-60-R1 can be viewed at http://admin.dot.ca.gov/bfams/admin_svcs/sw_policy/dd/dd_by_number.html.

County policies. There would be ongoing coordination between Caltrans, the County, affected agencies, and utility companies in order to minimize potential disruption of utility service; therefore, no adverse effects to public services would occur. Due to the coordination and adherence to regulations and policies, it is not anticipated that any residential utility services would be impacted.

Construction activities associated with the build alternatives would result in temporary, localized, site-specific disruptions to the utilities and emergency services in the project area, primarily related to: construction-related traffic changes from trucks and equipment; and partial and/or complete street and lane closures, some requiring detours. In addition, non-fire-related medical emergencies could temporarily increase with the presence of construction workers and heavy machinery during construction of the project. The AQR, VIA, and NSR prepared for the proposed project provide additional detail on the type and magnitude of these temporary construction effects. A Construction Management Plan and TMP would be prepared for the project and include measures to minimize construction-period traffic and access/circulation impacts, and coordination of detour routes with County sheriff and fire departments.

Because the project construction activities would be temporary and would be implemented in a manner that minimizes the effects on utilities and emergency services, no adverse effect is expected to result.

3.5.3 Avoidance, Minimization, and/or Mitigation Measures

In order to prevent unreasonable traffic delays and impacts to emergency access and utilities, the following Caltrans standard practices would be implemented.

- **UT-1:** Caltrans will coordinate all utility relocation work with the affected utility companies to ensure minimum disruption to customers in the service areas during construction.
- **TR-1:** Caltrans will prepare a TMP to ensure efficient movement of local and regional traffic during construction. The TMP and the construction plans will be provided to community agencies, such as the fire department, prior to project commencement. The information provided will include access and traffic management plans detailing any projected temporary street closures or expected traffic delays due to construction vehicles using the roadways. The following elements will be major components of the project TMP:
    a. public awareness campaign particularly related to the scheduling of work;
    b. construction zone enforcement enhancement program;
    c. use of portable changeable message signs;
    d. advance information signing that will communicate date, time, and duration of ramp closures; and
    e. preparation of temporary detour plans, if needed, during the plans, specifications, and estimates phase of the project (note: no detours are anticipated at this time).

3.6 Traffic and Transportation/Pedestrian and Bicycle Facilities

3.6.1 Regulatory Setting

3.6.1.1 Federal Regulations

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

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally-assisted programs is governed by the USDOT regulations (49 CFR part 27) implementing Section 504 of the Rehabilitation Act (29 USC 794). FHWA has enacted regulations for the implementation of the ADA, including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to Federal-aid projects, including Transportation Enhancement Activities.

Americans with Disabilities Act

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

Surface Transportation Assistance Act of 1982

In 1982, the federal government passed the Surface Transportation Assistance Act (STAA) this act allows oversized trucks on designated routes. SR-58 is a designated STAA route which must meet safety standards to accommodate the STAA oversized trucks.

3.6.1.2 State Regulations

Intermodal Corridor of Economic Significance Act

The Intermodal Corridor of Economic Significance Act establishes the (ICES) system as outlined in the SHC sections 2190-2191. The ICES system is composed of corridors that are most essential to the California economy in terms of national and international trade. Routes identified as part of the ICES corridor are important transportation arteries that connect or provide access to major sea or waterway ports, nationwide railway systems, airports, and interstate and intrastate highway systems, thereby serving as an intermodal corridor of economic significance. SR-58, between Bakersfield and Barstow is part of the ICES system. The SR-58 Hinkley Expressway Project is within a portion of the highway that is part of the ICES and provides intermodal access to centers of commerce.

3.6.2 Affected Environment

Within the project limits, SR-58 is a conventional two-lane highway with 12-foot lanes and shoulders varying from six to eight feet wide. All existing local road intersections are stop-controlled for the local streets with the exception of Lenwood Road which is signalized.

This discussion provides a description of traffic conditions applicable to the project area on SR-58 (PM R22.2/R31.1) near Hidden River Road and Lenwood Road. Information sources used in the preparation of this section include the *Traffic Study Report for the SR-58 Realignment and Widening Project* (Caltrans 2010i-j, and 2011f) and San Bernardino County General Plan (San Bernardino County 2007).

3.6.2.1 Existing Traffic

Highway Levels of Service (LOS)

Discussion of the existing traffic, the LOS standards for two- and four-lane highways, and the traffic forecasts for the opening year (2020) and forecast year (2040) is in Section 1.3.2.1. Table 3.6-1 also shows existing traffic volumes, or 2011 baseline conditions, for SR-58.

Table 3.6-1: SR-58 Mainline Traffic Data

Data	2011 Baseline	2016	Alternative 1 (No Build) Forecast 2020*	Alternatives 2, 3, and 4 Forecast 2020*	Alternative 1 (No Build) Forecast 2040*	Alternatives 2, 3, and 4 Forecast 2040*
Annual Average Daily Traffic (AADT)	12,100	14,200	16,000	16,000	24,100	24,100
Design Hour Volume (DHV)	1,570	1,820	2,050	2,050	3,080	3,080
Peak Hour Volume (DHV)	940	1,090	1,230	1,230	1,850	1,850
Directional Split (D/S)	60%	60%	60%	60%	60%	60%
Level of Service (LOS)	E	E	E	B	F	C
Vehicle to Capacity Ration (V/C)	0.59	0.68	0.77	0.34	1.15	0.51
Trucks % in ADT	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Trucks % in DHV	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%

Source: Supplemental Traffic Data for Consistency with February 2010 Traffic Study Report Memorandum (October 2011).
* Traffic volume data for 2020/2040 conditions were derived from Caltrans traffic forecast data. From 2009 to 2040, the future growth factor of 1.085 is applied. For opening year 2020, the future growth factor of 0.385 is applied.
Note: The data in this table is the same as the data provided in Table 1-1 in Chapter 1 of this document.

3.6.3 Environmental Consequences

3.6.3.1 Permanent Impacts

Alternative 1: No-Build Alternative

Under the No-Build Alternative no improvements would be made to SR-58.

With no improvements SR-58 will operate at LOS E (significant delays) in 2020 and is expected to operate at LOS F (considerable delays) in 2040.

Table 3.6-2 lists the LOS for intersections that currently bisect existing SR-58, for the Existing Condition (with 2009 as a baseline year) and for the No-Build and Build Alternatives in the Design Horizon Year (2040). This data is expressed in time delays, for both mid-day and PM peak hours. In the baseline year (2009) the SR-58 facility operates at LOS C or better at both the Hinkley Road and Lenwood Road intersections, during both the mid-day and PM time periods. Under the No-Build Alternative in 2040, the Hinkley Road intersection is expected to operate at LOS F or E – substantial traffic delays, while the Lenwood Road intersection is expected to operate at LOS D – minimal delays. As shown under Other Intersections, Flower Street (PM peak hour) and Hinkley Road (both mid-day and PM peak hours) are projected to operate at unacceptable LOS E/F in 2040. Additionally, under the No-Build Alternative, all-way stop controlled intersections at Valley View Road, Valley Wells Road, Mountain View Road, Summerset Road, and Lenwood Road would operate at poor levels of service (LOS D) during either mid-day, PM, or peak hours. PM peak hours are projected to operate at unacceptable LOS E/F in 2040.

Table 3.6-2: Intersection LOS with SR-58, Existing (2009 Baseline) vs. 2040 – Design Horizon Year (No-Build and Build Alternatives)

	Mid-day		PM	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Intersection (Existing)				
Hinkley Road	16.0/15.9	C/C	15.6/14.5	C/B
Lenwood Road	18.8	B	15.2	B
Intersection (Alternative 1: No Build)				
Hinkley Road[1]	55.8/90.8	F/F	49.0/51.9	E/F
Lenwood Road	51.5	D	41.0	D
Intersection (Alternative 2: Southerly)				
Hinkley Road[1]	8.6/8.6	A/A	8.0/8.0	A/A
EB Off-ramp	8.4	A	9.4	A
EB On-ramp	11.2	B	11.9	B
WB Off-ramp	7.2	A	6.4	A
WB On-ramp	9.3	A	8.8	A
Lenwood Road[1]	8.4/8.0	A/A	8.7/8.2	A/A
EB Off-ramp	8.0	A	7.3	A
EB On-ramp	10.6	B	10.2	B
WB Off-ramp	6.5	A	6.8	A
WB On-ramp	9.3	A	9.4	A

	Mid-day		PM	
	Delay (sec/veh)	**LOS**	**Delay (sec/veh)**	**LOS**
Intersection (Alternative 3: Reconstruct Existing 58 to 4-lane expressway), (Alternative 4: Northerly Alternative)				
Hinkley Road[1]	8.0/8.0	A/A	7.9/7.8	A/A
EB Off-ramp	8.4	A	9.4	A
EB On-ramp	11.2	B	11.8	B
WB Off-ramp	7.2	A	6.4	A
WB On-ramp	9.3	A	8.8	A
Frontage Road 1	7.6	A	7.2	A
Frontage Road 2	7.4	A	7.5	A
Lenwood Road[1]	8.4/8.0	A/A	8.7/8.2	A/A
EB Off-ramp	8.0	A	7.3	A
EB On-ramp	10.6	B	10.2	B
WB Off-ramp	6.5	A	6.8	A
WB On-ramp	9.3	A	9.4	A
Other Intersections (Alternative 1: No Build)				
Valley View Road[1]	19.3/32.7	C/D	28.8/25.3	D/D
Hidden River Road	16.8	C	14.2	B
Valley Wells Road	14.6	B	14.7/27.8	B/D
Flower Street[1]	18.1/20.3	C/C	35.0/42.9	D/E
Mountain View Road[1]	25.6/31.5	D/D	28.4/25.7	D/D
Fairview Road	14.0	B	13.9	B
Summerset Road	10.2	B	28.4	D
Dixie Road	15.3	C	15.0	B

[1]Where data was differentiated north of the intersection (N/) and south of the intersection (S), the two values are presented in the following format: (N/S).
Source: System Metrics Group, Inc. 2010.

Common Effects of Alternatives 2, 3, and 4

Under Alternatives 2, 3, and 4, SR-58 is projected to operate at LOS A, in 2020 through 2040, as shown in Table 3.6-1.

Under all of the proposed build alternatives, access to the proposed expressway would be provided by grade-separated interchanges (I/Cs) at Hinkley Road and Lenwood Road. Any other roads that currently bisect the expressway would be converted to cul-de-sacs. Three-way stop signs would be constructed at all the exit ramps termini.

Right-of-way acquisition for potential future ramp metering needs are proposed at all of the I/C entrance ramps and would comply with the requirements of the Ramp Meter Design Manual. The Ramp Meter Design Manual requires the inclusion of right-of-way to accommodate vehicle storage requirements and High Occupancy Vehicle (HOV) preferential lanes, ramp metering equipment, and CHP enforcement. However, the installation of ramp meters is not included in the proposed project. A separate project would install and utilize the ramp meters.

Under all of the proposed build alternatives, pedestrian facilities would be designed to comply with ADA requirements. Curb ramps would be provided at Hinkley Road, and the Lenwood Road I/Cs. Low-mobility groups have not been identified nor are expected to be impacted by the proposed project.

Under all of the proposed build alternatives, at the Lenwood I/C where Lenwood Road intersects the railroad tracks, an overhead structure is proposed for safety, operations, and geometric concerns. By designing Lenwood Road to cross over the tracks, potential conflicts will be avoided between traffic and train operations. To improve safety and operations the Hinkley Road I/C is proposed to provide additional access and circulation to SR-58 within the proposed project area.

Alternative 2: Southerly Alignment

Under Alternative 2, traffic is expected to enter and exit SR-58 at the proposed Hinkley Road and Lenwood Road I/Cs. Local traffic from the west side of Hinkley Road (between Valley View Road and Flower Street) and from the east side of Hinkley Road (between Mountain View Road and Fairview Road) would need to access SR-58 on its proposed southerly alignment via the proposed Hinkley Road I/C.

Summerset Road is located approximately half way between the proposed Hinkley and Lenwood Road I/Cs and it is anticipated that Summerset Road traffic desiring to travel westbound would use the proposed Hinkley Road I/C, while traffic desiring to travel eastbound would use the proposed Lenwood Road I/C. The Lenwood Road I/C is expected to draw traffic from Dixie Road and eastbound Summerset Road.

Alternative 3: Existing Alignment

Traffic is expected to enter and exit SR-58 at the proposed Hinkley Road and Lenwood Road I/Cs because local intersections would be closed off with the proposed cul-de-sacs. Local traffic from the west side of Hinkley Road (between Valley View Road and Flower Street) and from the east side of Hinkley Road (between Mountain View Road and Summerset Road) would need to access SR-58 on its proposed southerly alignment via the proposed Hinkley Road I/C.

Traffic originating from SR-58, traversing north, is expected to travel along the northerly Frontage Road #1. Traffic originating from SR-58, traversing south, is expected to travel along the southerly Frontage Road #2 to access the proposed Hinkley Road and Lenwood Road I/Cs.

Alternative 4: Northerly Alignment

Because Alternative 4 shifts just slightly north of the existing alignment, local road impacts are similar to Alternative 3.

Traffic is expected to enter and exit SR-58 at the proposed Hinkley Road and Lenwood Road I/Cs because local intersections would be closed off with the proposed cul-de-sacs. Local traffic from the west side of Hinkley Road (between Valley View Road and Flower Street) and from the east side of Hinkley Road (between Mountain View Road and Summerset Road) would need to access SR-58 on its proposed southerly alignment via the proposed Hinkley Road I/C. Traffic originating from SR-58, traversing north, is expected to travel along the northerly Frontage Road #1. Traffic originating from SR-58, traversing south, is expected to travel along the southerly Frontage Road #2 to access the proposed Hinkley Road and Lenwood Road I/Cs.

3.6.3.2 Temporary Impacts

Alternative 1: No-Build Alternative

Under the No-Build Alternative, grade separation, highway realignment and/or the construction of new I/Cs would not occur. Temporary impacts due to construction are not expected.

Alternative 2: Southerly Alignment

Lane closures on the existing SR-58 would likely be required. Shoulders would be used as construction areas. Travel lane widths may be reduced during construction activities.

Alternative 3: Existing Alignment

Lane closures under Alternative 3 on the existing alignment would be the most extensive. The existing two-lane highway would likely be utilized because widening on each side of the roadway would be conducted. Shoulders would be utilized as construction areas. Travel lane widths may be reduced during construction activities.

Alternative 4: Northerly Alignment

Closures of lanes in one direction of existing SR-58 would likely be required during construction activities. Shoulders would be utilized as construction areas. Travel lane widths may be reduced during construction activities.

3.6.4 Avoidance, Minimization, and/or Mitigation Measures

- **TR-1:** Caltrans will prepare a TMP to ensure efficient movement of local and regional traffic during construction. The TMP and the construction plans will be provided to community agencies, such as the fire department, prior to project commencement. The information provided will include access and traffic management plans detailing any projected temporary street closures or expected traffic delays due to construction vehicles using the roadways. The following elements will be major components of the project TMP:

  a. public awareness campaign particularly related to the scheduling of work;

  b. construction zone enforcement enhancement program (COZEEP);

  c. use of portable changeable message signs (PCMS);

  d. advance information signing that will communicate date, time, and duration of ramp closures;

  e. closures will be planned to minimize impacts to local circulation to the maximum extent feasible; and

  f. preparation of temporary detour plans, if needed, during the plans, specifications, and estimates (PS&E) phase of the project (note: no detours are anticipated at this time).

- **TR-2:** Frontage road intersections will be constructed a minimum of 500 feet from the proposed Hinkley I/C.
- **TR-3:** If Alternative 3 alignment is selected, widening on each side of the roadway would be done in stages so that only a maximum of one lane is closed at one time.
- **TR-4:** If Alternative 4 alignment is selected, construction activities would be planned so that at the end of each work shift, both eastbound and westbound lanes are open to traffic.
- **TR-5:** Additional motorist information strategies such as portable changeable message signs would be deployed along both approaches of the highway to inform local as well as non-local drivers during construction.
- **TR-6:** If Alternative 3 alignment is selected, one-way traffic control would be required and directed by a flagger on each approach to provide for one-way traffic movement.

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3.7 Visual/Aesthetics

A Visual Impact Assessment for the project was prepared in August 2010. This section is based on the findings of that assessment.

3.7.1 Regulatory Setting

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

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

3.7.2 Affected Environment

The project area is located within the Harper Valley and an Undefined watershed. The Mojave River, the nearest substantial watercourse, runs north and northwesterly from the Mojave River Forks Dam at the San Bernardino Mountains, across the Mojave Desert to the area southeast of Hinkley, then turns east and northeasterly to the Mojave River Wash near Barstow. SR-58 spans the Mojave River, just east of the project limits. The segment of SR-58 within the project limits is not currently a designated Scenic Highway; however, the portion of SR-58 from SR-14 in Kern County to the I-15 junction in Barstow is identified by the county as an Eligible State Scenic Route in the list of Eligible State Scenic Routes in San Bernardino County.

Within the project limits, scenic views for land use vary from the east to west. The eastern half of Hinkley contains a high concentration of commercial farms and dairies. Between Mountain View Road and Hinkley Road land use transitions between commercial farms, family farms, and dairies. The scenic views for land uses from Hinkley Road to the western project limits predominantly contain a mix of small-businesses, established neighborhoods containing single-family homes, and community facilities. Custom-built rural homes exist throughout the project area, and typically occupy large lots. Many of these homes contain first and/or second story north-facing porches.

The project view shed includes northern views and southern views of mountains, vegetation, alfalfa fields, and other natural and man-made features. There are panoramic views of Mount General, Lynx Cat Mountain, Black Mountain, and distant mountain ridgelines north of existing SR-58. The southern panoramic views are comprised of Iron Mountain, Silver Mountain, Stoddard Mountain, and the ridgeline of the Shadow Mountains. Vegetation in the project area consists of Mojave creosote bush scrub, desert saltbush scrub; rabbit bush scrub, and ruderal vegetation.

3.7.2.1 Landscape Units

Landscape Unit 1: Eastern Project Limits to Mountain View Road (LU1)

Within this view shed the landscape is comprised of northern and southern views of dairies, commercial farms, custom-built homes, mountains, and vegetation. The commercial farms contain alfalfa fields that vary in color from bright green to dark green. There are areas of soil and desert scrub vegetation that range in color from brown to red-brown, and dark green to gray-green in color during the winter months.

This vegetation is transformed into a range of colors from golden, gray-brown to bright green during other seasons. This view contrasts with the expansive blue and white view of the sky that comprises the background.

Horizontal line elements predominate in the views, contrasted by the rounded forms of hills and mountain ridgelines and the occasional vertical counterpoint of telephone poles. These views are vivid and possess high levels of visual intactness and unity due to subtle topographic variations, freedom from encroaching elements, and overall compositional harmony.

Landscape Unit 2: Between Mountain View Road and Hinkley Road (LU2)

The landscape within LU2 is comprised of northern and southern views of dairies, commercial farms, custom-built homes, mountains, vegetation, and family farms. LU2 is a visual transitional area between LU1 and LU3. The views are similar in nature to those in LU1, and contain the same ranges in color. There are moderately-high levels of visual intactness and unity because of the gradual increase in the topographic variation and encroachment elements.

Landscape Unit 3: Hinkley Road to Yellowstone Rd (LU3)

LU3 is comprised of established single-family home neighborhoods, family farms, and custom-built homes, businesses, and community facilities. The landscape contains views of mountains, family farms, vegetation, and custom-built homes. There is a moderate level of vividness and visual intactness because of man-made elements within the landscape. These elements include single-family homes, farm buildings, fencing, telephone poles, and signage.

Horizontal line elements dominate the view shed, contrasted by the rounded forms of far-off mountain ridgelines and hills. There are areas of soil and desert scrub vegetation that range in color from brown to red-brown during the winter months, and are transformed into a range of colors from golden, gray-brown to dark green with the changes in season and day light. These views contrast with the expansive blue and white view of the sky that comprises the background.

Landscape Unit 4: Yellowstone Rd to the Western Project Limits (LU4)

LU4 is comprised of the western end of the project area, and starts at Lucy’s Market. LU4 contains the Sunrise Mobile Home Park, unoccupied residential property, and open space. There is a moderately-low level of vividness and a high level of visual intactness because of the predominance of the open space within the landscape.

Horizontal line elements dominate the view shed, contrasted by the rounded forms of far-off mountain ridgelines and hills. There are areas of soil and desert scrub vegetation that range in color from brown to red-brown, and vegetation that ranges in color from gray-green to green during the winter months. The colors are transformed into a range of colors from golden, gray-brown to dark green with the changes in season and daylight. The vivid contrast of the expansive view of blue and white sky is enhanced by the muted recessive colors of the ground plain.

3.7.2.2 Key Views

The analysis identified eight specific key views that would be noticeably altered by the proposed project. Given the largely homogenous nature of landforms, color, and texture in the project area, the key views were chosen, to provide a representative cross-section for scenic quality, to represent typical views along the alignment, and to represent views from a potential nearby sensitive viewer group.

In addition, certain representative views have been designated as key observation points (KOPs). These KOPs were chosen for analysis of the project area's visual character and quality because they uniquely convey the visual character and quality of the view shed at locations where project features are proposed and/or where sensitive viewers are present.

The visual quality of each KOP is rated as the average of the three criteria: vividness, intactness, and unity, as shown below in the table following each view. On a scale of one to five, five is a very high rating for visual quality and indicates a high degree of vividness, intactness, or unity; four indicates a moderately high level of visual quality; three indicates moderate visual quality, while two and one are equivalent to moderately low and very low visual quality, respectively. Vividness ratings are based on the presence or absence of natural landscape with desert sand and vegetation, and the degree to which views of far-off mountain ridgelines—the key visual resource in this setting—can be readily acquired. Intactness ratings are based on the presence or absence of manmade structures in this otherwise largely natural setting. Unity ratings are based on the overall compositional harmony of the landscape and manmade structures present in it.

KOP1 - Westward Looking View from Eastern Project Boundary

Figure 3.7.1: Key Observation Point 1

KOP1 is a western view from the eastern project boundary on existing SR-58, and lies within LU1. For all of the proposed alternatives the position of the highway would remain the same at this location. The 12-foot berm on the left side of the photograph currently prohibits motorists from viewing the commercial farms and several associated alfalfa fields located south of the project area. The BSNF Railroad runs adjacent to the highway on the right side and then gradually turns to a northwest angle from the highway. There are alfalfa fields located adjacent to the BNSF Railroad line.

The primary viewer groups within KOP1 are motorists because there are very few residential or business viewers. Motorists experience an at-grade view within KOP1, with a southern view that is partially blocked by an existing berm. A commercial farm with a family dwelling is on the southwestern side of KOP1, but its existing northern view is blocked by the berm.

Vividness

Ridgeline views of distant mountains provide strong contrast to the subdued horizontal landforms of the foreground and mid-ground. Lack of vegetation increases the importance of the horizon and sky. Consistent color and texture of ground plan has minimal contrast to existing soil or vegetation. The berm at the viewers' left along with the rail elements at right adds an additional line pattern of a single vanishing point at the horizon. Existing Vividness is rated moderately high (4.0).

Intactness

The berm at the viewers' left disrupts horizontal views as a man-made element within dominantly natural view-shed. The mid-ground and foreground elements are farm fields, the roadway, and adjacent railroad. The roadway is representative of the standard motorist view and is considered a neutral element. Adjacent rail road-elements, by their distance from the views, are a minor disruption. Existing Intactness is moderately high (4.0).

Unity

Consistent foreground, to mid-ground, to background color produces a land unit with high color unity. An open, flat topography with the road visually links the landscape elements. Adjacent rail lines with intermittent activity and sidelined railcars provide a minor disruption of the existing uniform view-shed, with the road linking the background to foreground elements. Existing Unity is rated moderate (3.0).

Proposed Change

The berm at the viewers' left would be replaced with the beginning of a new alignment for all alternatives, and the roadbed would be raised. A change from the existing berm to a new raised alignment would not create a substantial change of visual quality to motorists whose midground views are already reduced by the existing berm. Vividness would remain moderately high (4.0), intactness would remain moderately high (4.0), and unity would remain moderate (3.0) for all alternatives.

Table 3.7-1: Changes in Key Observation Point 1

Key Observation Point		Vividness	Intactness	Unity	Average (V+I+U)/3	Change
KOP 1	**Existing (Baseline)**	4	**4**	**3**	**3.67**	
	Proposed Alternative 2, 3, and 4	**4**	**4**	**3**	**3.67**	**.0**

KOP 2 - View north from Livingston Rd

Figure 3.7-2: Key Observation Point 2

KOP2 lies within LU2. It is a northwest view of the proposed project. The proposed interchange at Hinkley Road would be visible on the left side of the photograph. SR-58 would be approximately seven feet above the existing grade. The Hinkley Interchange would have an overpass with a 23.5 foot vertical clearance. The total height of the overpass at Hinkley Road, including the barrier and chain-link fence, would be approximately 42 feet (the height equivalent of two and a half single story residences) above the existing native grade. The overpass would be next to the existing white building in Alternative 2, further north in Alternative 3. The overcrossing would create built-up slopes and walls to carry the roadbed over SR-58. The overpass at Hinkley Road for Alternative 4 would not be remarkable from this view point. The primary viewer group within KOP2 would be rural homes. Many of the homes are custom-built and have northern facing porches and/or balconies, making these viewers highly sensitive to visual intrusion.

Vividness

Ridgeline views of distant mountains provide strong contrast to the subdued horizontal landforms of the foreground and mid-ground. Lack of vegetation increases the importance of the horizon and sky. Consistent color and texture of ground plan has minimal contrast to existing soil or vegetation. Existing Vividness rated average (3.0).

Intactness

EXISTING: This element is a characteristic Desert view-shed. Mid-ground and foreground elements are dominated by desert scrub, with a neutral line of buildings in the mid-ground. The man-made elements are a minor disruption on an otherwise untouched natural setting. Existing Intactness is moderately high (4.0).

Unity

EXISTING: Consistent foreground, to mid-ground, to background color produces a land unit with high color unity. Open, flat topography with a line of buildings in the mid-ground visually links the landscape elements. Existing Units is rated high (5.0).

Proposed Change

Alternative 2 would introduce an elevated highway and banked turn overcrossing at the proposed interchange at Hinkley Road. The height of the overcrossing would dominate the mid-ground view, lessen the connection of background to foreground elements, and introduce man-made grading patterns and structures. Alternative 2 would reduce vividness to moderately low (2.0), intactness to moderate (2.0), and unity to moderate (3.0).

Alternative 3 would introduce the same elements as Alternative 2, only at the existing highway alignment, which is further away from KOP2. Alternative 3 would be a minor change in the landscape because of the distance. Vividness would be reduced to moderately low (2.0), intactness to moderate (2.0) and unity to moderately low (2.0).

Alternative 4 is not visible from KOP 2 because the distance to the overpass at Hinkley Road would make it unremarkable from this view point. Therefore, the visual qualities would remain unchanged.

Table 3.7.2: Changes in Key Observation Point 2

Key Observation Point		Vividness	Intactness	Unity	Average (V+I+U)/3	Change
KOP 2	Existing (Baseline)	3	4	5	4	
	Proposed 2	2	2	3	2.33	-1.67
	Proposed 3	2	2	2	2.0	-2.07

KOP 3 - Southern View of SR-58 from the corner of Hinkley Road and Acacia Street

Figure 3.7.3: Key Observation Point 3

KOP3 is located north of SR-58 on the corner of Hinkley Road and Acacia Street and looks south towards the proposed interchange for Alternative 2, 3, and 4. KOP3 is located between LU2 and LU3, as evidenced by the mix of viewer groups. Hinkley Bible Church, two residences, and a dairy are located on the left side of the photograph. A residence is located on the right side of the photograph. The proposed interchange would be a dominant visual element under Alternative 4, a moderate visual element under Alternative 2, and would be a minor visual element under Alternative 3. Viewers would be highly sensitive to the change in view because they are mostly residents.

Vividness

Ridgeline views of distant mountains, and buildings and natural vegetation in the mid-ground, provide strong contrast to the subdued horizontal landforms of the foreground. The subtle variation in colors and texture of the ground plan increases the importance of the horizon and sky. Existing vividness at KOP3 is rated average (3.0).

Intactness

Currently, viewers at KOP3 experience a rural living view-shed with natural elements and expansive horizontal views. Overhead utilities are a minor intrusive element within the mid-ground and foreground. The roadway is representative of a standard motorist view and is considered a neutral element. Existing intactness is moderate (3.0).

Unity

The variation in color between the topography of the mid-ground, and the buildings and trees in the mid-ground produces a land unit with moderate color unity. The power lines are a minor disruption but do not obstruct the visual pattern of the dominant native landscape. The concentration of buildings in the mid-ground, and road, visually link the landscape elements. Existing Units is rated moderate (3.0).

Proposed Change

For all of the proposed alternatives the existing roadbed would be elevated, and a banked turn interchange would be constructed. Total height of the proposed overcrossing would be approximately 42 feet above the present grade. Also, the existing landscape, which contrasts with the adjacent native cover, would be removed for the interchange and replaced by graded slopes. With re-vegetation, land cover would blend into the existing view shed, but re-vegetation in arid regions is generally protracted. Moreover, the interchange would introduce substantial man-made landforms.

Alternative 2 is not visible from KOP3 and so the visual qualities would remain as moderate.

The interchange would be highly visible on Hinkley Road under Alternative 4; reducing vividness to low (1.0), intactness to moderately low (2.0), and unity to moderately low (2.0).

Under Alternative 3, the interchange would be visible with a similar loss of contrast with the ridgeline (Iron Mountain). More of the existing landscape and its contact to native cover would remain. And the further distance from KOP3 would allow part of the existing mid-ground view to remain. This alternative would reduce each visual quality to moderately low (2.0).

Table 3.7-3: Changes in Key Observation Point 3

Key Observation Point		Vividness	Intactness	Unity	Average (V+I+U)/3	Change
KOP 3	Existing (Baseline)	3	3	3	3	
	Proposed Alternative 4	1	2	2	1.66	-1.33
	Proposed Alternative 3	2	2	2	2	-1

KOP 4 - Northern View on Hinkley Road between Pioneer Road and Catskill Road

Figure 3.7.4: Key Observation Point 4

KOP4 is located south of existing SR-58 on Hinkley Road between Pioneer Road and Catskill Road, and looks north towards the proposed interchange. The Hinkley overpass would be a dominant visual element under Alternative 2, further from the viewer and a moderate visual element under Alternative 3, and the distance would reduce the interchange to a minor element of the mid-ground views under Alternative 4. In Alternative 2 and 3, the Hinkley overpass would rise approximately 42 feet above the existing grade in order to have vertical clearance over SR-58. In the above picture, the overpass at its highest point (at crossing SR-58) would be about two-thirds the height of the power line poles on the viewers' left. The primary viewer group in KOP4 is rural residential, and therefore highly sensitive to the view. Views from the north facing porches and/or balconies within this view shed would be dominated by the proposed interchange.

Vividness

Ridgeline views of distant mountains provide strong contrast to the subdued horizontal landforms of the foreground and mid-ground. The muted colors of vegetation increase the significance of the horizon and sky. Consistent color and texture of ground plan has minimal contrast of either soil or of vegetation. Existing Vividness rated average (3.0).

Intactness

Viewers currently experience a natural view-shed with expansive horizontal views. Overhead utilities are a minor intrusive element within the mid-ground and foreground. The roadway is representative of standard motorist view and is considered a neutral element. Existing Intactness is moderate (3.0).

Unity

Consistent foreground to mid-ground to background color produces a land unit with high color unity. Open, flat topography with the road visually links the landscape elements. Existing Units is rated moderate (3.0).

Proposed Change

The existing roadbed would be elevated, and a banked turn interchange would be constructed. The proposed interchange would substantially reduce the views' intactness by introducing a dominating man-made element. Graded abutment slopes would contrast with existing native cover, reducing visual intactness. Existing land cover would be disrupted by graded slopes of the overpass. Man-made slopes of the overpass would be a substantial contrast to the overall, flat landforms of the existing foreground and mid-ground views.

The interchange would be highly visible on Hinkley Road under Alternative 2, and would intrude upon the mountain views. Although the interchange would be distantly visible under Alternative 3, it would result in similar impacts to the view shed. Due to the loss of horizon lines, both alternatives will lessen the visual qualities – vividness, intactness, and unity – of KOP4 to low (1.0). Alternative 4 is not visible from KOP 4 and would not change the visual qualities.

Table 3.7-4: Changes in Key Observation Point 4

Key Observation Point		Vividness	Intactness	Unity	Average (V+I+U)/3	Change
KOP 4	Existing (Baseline)	3	3	3	3	-2
	Proposed Alternative 2 and 3	1	1	1	1	

KOP5 – Western View on SR-58 at Valley Wells Road

Figure 3.7.5: Key Observation Point 5

KOP5 is looking east on SR-58 at Valley Wells Road, and is within LU3. The affected viewer groups are a mix of businesses, rural custom-built homes, established residential neighborhoods, and family farms. The house on the left side of the road is custom-built and part of a family farm. KOP5 would be most affected by Alternatives 3 and 4 because they include elevating the highway six feet, installing detention basins on the south side of the highway, and building frontage roads on both sides of the highway. Under Alternative 4, an elevated highway would be built slightly north of the existing alignment, detention basins would be incorporated on the south side of the new alignment, and a banked turn interchange would be a visible, minor element in the northeastern mid-ground view.

Vividness

Ridgeline views of distant mountains provide strong contrast to the subdued horizontal landforms of the foreground and mid-ground. Lack of vegetation increases the importance of the horizon and sky. Consistent color and texture of ground plan has minimal contrast of either soil or of vegetation. Existing vividness at KOP5 is rated average (3.0).

Intactness

Viewers currently experience a predominantly natural view-shed with expansive horizontal views. Native landforms are flattened in the foreground and mid-ground and have only minor alterations from development. Overhead utilities are a minor intrusive element within the mid-ground and foreground. The roadway is representative of standard motorist view and is considered a neutral element. Existing Intactness is moderate (3.0).

Unity

Consistent foreground, to mid-ground, to background color produces a land unit with high color unity. Open, flat topography with the road visually links the landscape elements. Existing Units is rated moderate (3.0).

Proposed Change

Alternative 2 is not visible for KOP5 and would not alter its visual qualities.

Alternatives 3 and 4 elevate the existing roadbed six feet and add a series of detention basins on the south side of the highway. The embankment of the raised roadbed and intermittent, high profile vehicles (e.g., commercial trucking), would become a dominant element in the mid-ground view. The graded slopes for the proposed roadbed will also substantially alter the dominantly flat foreground and mid-ground views from KOP5. The raised roadbed would be visually important due to proximity to the views, and would create a horizontal separation of existing foreground to mid-ground elements, and a disruption of land cover. The detention basins for Alternative 3 will not be visible from KOP5 and would not impact the visual qualities from this location. Since Alternative 4 would be built slightly north of the existing alignment, the detention basins would be visible only to an immediately adjacent viewer. More distant viewers would see over the basins with less than substantial changes to existing view shed.

Overall, vividness would be reduced to low (1.0) for Alternatives 3 and 4; intactness would be reduced to low (1.0) for Alternatives 3 and 4. Unity would be reduced to low (1.0) for Alternative 3 while only being reduced to moderately low (1.5) for Alternative 4 because it would be located further away from KOP5.

Table 3.7-5: Changes in Key Observation Point 5

Key Observation Point		Vividness	Intactness	Unity	Average (V+I+U)/3	Change
KOP 5	Existing (Baseline)	3	3	3	3	
	Proposed Alternative 3	1	1	1	1	-2
	Proposed Alternative 4	1	1	1.5	1.17	-1.83

KOP 6 - View of Southern Alignment from Hillview Road and Frontier Road

Figure 3.7.6: Key Observation Point 6

KOP6 is only affected by Alternative 2. It is a southern view of the proposed southerly highway alignment from Hillview Road at Frontier Road on the western side of the proposed project. The affected viewer group is primarily rural, residential. The homes are mostly custom built family homes for enjoyment of the area as evidenced by the house on the left and family farms, as evidence by the house on the right. Under Alternative 2, the proposed Hinkley interchange would be visible just to the left of SR-58, just beyond the second power pole in this photo.

Vividness

Ridgeline views of distant mountains, and buildings and natural vegetation in the mid-ground, provide strong contrast to the subdued horizontal landforms of the foreground. The subtle variation in colors and texture of the ground plan increases the importance of the horizon and sky. Existing vividness rated average (3.0).

Intactness

Currently, viewers experience a rural living view-shed with natural elements and expansive horizontal views. Overhead utilities are a minor intrusive element within the mid-ground and foreground. The roadway is a representative of a standard motorist view and is considered a neutral element. Existing intactness is moderate (3.0).

Unity

The variation in color between the topography of the mid-ground and the buildings and trees in the mid-ground produces a land unit with moderate color unity. The buildings in the mid-ground and road visually link the landscape elements. Existing Units is rated moderately high (4.0).

Proposed Change

Under Alternative 2, the existing roadbed would be elevated, and a banked turn interchange would be constructed. The interchange would be highly visible to the southeast on Hillview Road under Alternative 2, would intrude upon the mountain views, and would dominate the mid-ground views. The raised road bed would also disrupt the existing continuity of low horizontal landforms dominating the foreground and mid-ground. Man-made slopes of the interchange would contrast to the existing dominant flattened landforms. Alternative 2 would reduce vividness to moderately low (2.0), intactness to moderately low (2.0), and unity to moderate (3.0).

Table 3.7-6: Changes in Key Observation Point 6

Key Observation Point		Vividness	Intactness	Unity	Average (V+I+U)/3	Change
KOP 6	Existing (Baseline)	3	3	4	3.33	
	Proposed Alternative 2	2	2	3	2.33	-1

KOP7 - Western View from the corner of SR-58 and Red Rock Road

Figure 3.7.7: Key Observation Point 7

KOP7 is looking west down SR-58 from Lucy's Market at Red Rock Road and is within LU4. The affected viewer groups are commuters, truck traffic, and some distant residents. Under Alternatives 3 and 4 properties adjacent to the existing and proposed alignments would be acquired as right-of-way. The number of businesses and custom-built homes decrease in number from this point to the western end of

the project. KOP7 would be most affected by Alternative 3. The highway would be elevated by six feet, detention basins would be installed on the south side of the highway, and frontage roads would be installed on both sides of the highway.

Vividness

Ridgeline views of distant mountains provide strong contrast to the subdued horizontal landforms of the foreground and mid-ground. The limited amount of vegetation increases the significance of the horizon and sky. Consistent color and texture of ground plane has a minimal contrast with either soil or vegetation. Existing Vividness rated average (3.0).

Intactness

Viewers currently experience a predominantly natural view-shed with expansive horizontal views. Overhead utilities are a minor intrusive element within the mid-ground and foreground. The roadway is representative of a standard motorist view and is considered a neutral element. Existing Intactness is moderate (3.0).

Unity

Consistent foreground, to mid-ground, to background color produces a land unit with high color unity. Open, flat topography with the road visually links the landscape elements. Existing Units is rated moderate (3.0).

Proposed Change

The existing roadbed would be elevated under Alternatives 3 and 4 and a series of detention basins would be placed on the south side of the highway.

Under Alternative 3, the vividness for motorists would increase because the higher roadbed would essentially afford this viewer group more of a perspective vantage point view of the mid-ground and background elements. South facing views for the distant residents would be reduced because the raised roadbed would disrupt the mid-ground and horizon views. This raised road bed would also reduce the open character of the view shed for residents. These impacts would reduce the visual qualities – vividness, intactness, and unity – of KOP7 to low (1.0).

Under Alternative 4, the detention basins would not be visible to users from KOP7 and are not considered impacts for this alternative. Therefore, an average (3.0) vividness rating would be maintained. Because the impact of a raised roadbed would be lessened by the distance from this view point, the intactness and unity of the view shed would only be reduced to moderately low (2.0).

Alterative 2 is not visible from KOP7 and would not affect its visual qualities.

Table 3.7-7: Changes in Key Observation Point 7

Key Observation Point		Vividness	Intactness	Unity	Average (V+I+U)/3	Change
KOP 7	Existing (Baseline)	3	3	3	3	
	Proposed Alternative 3	1	1	1	1	-2
	Proposed Alternative 4	3	2	2	2.33	-0.67

KOP 8 - Eastern view of SR-58 from Sunrise Mobile Home Park

Figure 3.7.8: Key Observation Point 8

KOP8 is a view looking east on SR-58 at the Sunrise Mobile Home Park and is within LU4. The affected viewer groups are a mix of businesses, motorists, and some custom-built homes. The primary viewer groups would be motorists, including commuter traffic, local traffic, and truck traffic. The adjacent properties would be acquired for right-of-way under Alternative 3 and Alternative 4. KOP8 would be most affected by Alternative 3. The highway would be elevated by six feet, detention basins would be installed on the south side of the highway, and frontage roads would be installed on both sides of the highway.

Vividness

Ridgeline views of distant mountains provide strong contrast to the subdued horizontal landforms of the foreground and mid-ground. The limited amount of vegetation increases the importance of the horizon and sky. Consistent color and texture of ground plan has a minimal contrast with either soil or vegetation. Existing Vividness rated average (3.0).

Intactness

Viewers currently experience a predominantly natural view-shed with expansive horizontal views. Existing landforms are intact with only minor, man-made changes. Land cover is broken by the width of the roadbed and shoulders and consistent from a viewers' left to right. Overhead utilities are a minor intrusive element within the mid-ground and foreground. The roadway is representative of a standard motorist view and is considered a neutral element. Existing Intactness is moderate (3.0).

Unity

Consistent foreground, to mid-ground, to background color produces a land unit with high color unity. Land cover is consistent from left to right in the view, broken by the road's width. The present roadbed is built at adjacent native grades. Open, flat topography visually links the landscape elements across the road. Existing Unity for the existing is rated moderate (3.0).

Proposed Change

Under Alternatives 3 and 4, the existing roadbed would be elevated approximately six feet, and a series of detention basins would be placed on the south side of the highway. If Alternative 3 is selected, the detention basins would be visible to motorists as short-term foreground views. But the detention basins would not be visible from KOP8, if Alternative 4 is selected, because alignment would be built to the south of the view point. For both alternatives, the mid-ground and background views for motorists would be slightly improved by the added height. But the addition of man-made grading in an otherwise dominantly, intact landscape would create a substantially lower visual unity and intactness. Motorists would be slightly aware of the elevation change and the loss of continuity to adjacent landforms. Therefore, vividness would remain moderate (3.0), but intactness would be reduced to moderately low (1.5) and unity would be reduced to somewhat low (2.5) for both alternatives. Alternative 2 is not visible from KOP8 and would not alter its visual qualities.

Table 3.7-8: Changes in Key Observation Point 8

Key Observation Point		Vividness	Intactness	Unity	Average (V+I+U)/3	Change
KOP 8	Existing Baseline)	3	3	3	3	
	Proposed Alternate 3	3	1.5	2.5	2.33	-0.67
	Proposed Alternative 4	3	1.5	2.5	2.33	-0.67

3.7.2.3 Viewer Groups

Viewer groups at all of the KOPs are commuter motorists, truck traffic, local traffic, and residents. Viewer sensitivity and view duration are consistent at each KOP for the viewer groups. Table 3.7-9 displays viewer sensitivity and view duration for each viewer group.

Table 3.7-9: Viewer Sensitivity and View Duration at All Key Observation Points along the Project Alignment

	Viewer Sensitivity	View Duration
Commuter Traffic	Moderate	Short-term/ Routine
Truck Traffic	Low	Short-term
Local Traffic	High	Routine
Residents	High	Regular
Local Businesses/ Community Facilities	Moderate	Routine
Commercial Farms	High	Regular

The viewer group sensitivity levels are based on the time and nature of the exposure each group has to the existing landscape and the visual quality that currently characterizes this visual setting. The views of mountain ridgelines, open spaces, and unobstructed sky views are key characteristics within the project area.

Motorists

Motorist sensitivity to the visual character increases with the nature, duration, and frequency of travel through the project area. Travelers by truck have a low sensitivity to changes in scenery because the nature, duration, and frequency of their exposure to the project area are set by commercial needs as opposed to personal preference. Commuters are moderately sensitive to changes in scenery, because they choose to travel through the project on a regular basis, but do not live in or adjacent to the project area. Local travelers are highly sensitive to changes in scenery because of their continuous and intentional presence within community.

Commercial Farm Viewers

Commercial farms are predominately located on the western end of the proposed project within LU1 and LU2. Farms, fields, and structures contribute to the unique and vivid nature of LU1 and LU2 through the addition of colorful fields and livestock to the landscape. Typically, the farmers live on the same property as their farms and enjoy the same expansive views as their non-commercial neighbors, making them highly sensitive to changes in visual character.

Figure 3.7.9: Commercial Dairy/Farm

Local Businesses/ Community Facilities

Local businesses and community facilities include two stores, two churches, a senior center, and a school. These facilities serve as gathering points for the residents for a mixture of indoor and outdoor activities. The school and senior center hold activities that are both indoors and outdoors, while the other facilities typically hold only indoor activities. The predominance of indoor uses makes these viewers moderately sensitive to changes in visual character.

Figure 3.7.10: Lucy's Market

Residential Viewer Types

Hinkley residents live in established neighborhoods, custom-built rural homes, and on family farms. Views from these homes are typically expansive, with expansive mid-ground and foreground views. The rural nature of the views makes the residents highly sensitive to changes in scenery.

Figure 3.7.11: Family Farm

Figure 3.7.12: Custom-Built Rural Homes

Figure 3.7.13: Established Neighborhoods

3.7.3 Environmental Consequences

3.7.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

No new structural elements would be added under the No-Build Alternative and therefore, no change in the visual setting and visual resources would occur.

Alternative 2—Southerly Alternative

Alternative 2 would have a dominant mid-view effect for KOP2, KOP4, and KOP6. The proposed project would improve motorist views within LU1 because the raised roadbed would enhance the mid-ground and background views by elevating traffic above the berm. The view experienced while traveling from east to west would be a new view, because the alignment would be south of existing SR-58. Alternative 2 would re-align with the location of existing SR-58 in LU4 at the project limits. Motorists would not be substantially affected because they would experience an enhanced view at the western project limits, a new view throughout the project area, and then would join an existing view.

Residents located close to the northern side of the proposed alignment may have potentially substantial adverse effects to their southern-facing views because a highway and interchange would be introduced where none currently exists. The neighborhood in KOP3, and a number of rural homes, may experience potentially substantial adverse impacts to their northern views because the proposed interchange would dominate their mid-ground view. The neighborhood in KOP6 would experience moderately adverse impacts to the south, because the view shed would include the new highway alignment.

Residents, businesses, and community facilities would experience impacts ranging from moderate to no-impact based on their respective distance from the proposed alignment. The northern views would remain intact for most viewers.

Alternative 3—Existing Alignment

The proposed project would improve motorist's views within LU1 because the raised roadbed would enhance the mid-ground and background views by elevating traffic above the berm. The quality of the view would deteriorate from east to west because of the visual encroachment of detention basins and frontage roads. Commuting and local travelers would experience an adverse change in views, because of the respectively moderate and high level of sensitivity of these groups.

The residents, local businesses, and community facilities would experience a substantial deterioration of foreground and mid-ground views from the current view to the addition of proposed interchange, roadbed, and detention basins. The level of deterioration would be highest among adjacent viewers north and south of the proposed alignment, and would decrease in severity based on the distance from the project area. The impact to these viewer groups may potentially be substantially adverse because of the respectively high and moderate level of sensitivity of these viewers.

Alternative 4—Northerly Alternative

The neighborhood KOP3 is located north of SR-58 on the corner of Hinkley Road and Acacia Street and would be more adversely affected under Alternative 4 than under Alternative 3, because the Hinkley interchange would be located closer to KOP3. Impacts resulting from Alternative 4 would be the same as those in Alternative 3 for the rest of the viewer groups because the alignment footprints overlap on the eastern and western end of the project. Viewers located south of the proposed alignment would have a primary view of the large detention basins, and then the elevated highway and interchange. Motorists would be adversely impacted by the reduction of existing views and local travelers would experience the

highest level of impacts because of their high level of visual sensitivity. Residents, local businesses, and community facilities would experience a substantial deterioration of the foreground and mid-ground views.

3.7.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

There would be no visual impacts associated with the No-Build Alternative, because there would be no construction activities associated with this project. Therefore, Alternative 1 would result in no temporary visual effects.

Build Alternative 2, 3, and 4

Potential visual impacts would result from earthmoving activities, limited removal of vegetation in the construction zone, and other construction activities (e.g., staging/stockpiling road-building materials, the presence of construction equipment, and temporary traffic barricades). Construction activities would include grading work, other routine construction activities, and truck shipments.

The resulting temporary impacts would adversely affect the southern views of residential viewer groups located along the proposed alignments because there would be disruption to areas where there are currently no activities associated with building a highway.

3.7.4 Avoidance, Minimization, and/or Mitigation Measures

A Construction Management Plan and a Transportation Management Plan would be prepared for the project and include measures to minimize construction-period traffic and access/circulation impacts. The following measures would be implemented to avoid, minimize, and/or mitigate potential visual impacts associated with the proposed project:

- **AES-1:** All lighting used for the project will be directional, directing light to the highway facility and away from homes and habitats to minimize glare (directional lighting) impacts to the night sky, and to avoid affecting background sky views. Glare (directional lighting) shields would be used.
- **AES-2:** Detention basins and bioswales will be designed and addressed as visually integrated elements of the landscape planting. Contour grading of basins will minimize the visual impact by blending with the surrounding natural landscape features.
- **AES-3:** Bridge structures shall be pigmented an earth tone that is compatible with the native soil color within the project limits.
- **AES-4:** Native plantings shall be used to minimize the visual impact of the highway and associated detention basins. Drought tolerant native trees and shrubs will be planted at appropriate locations, especially near the drainage basins, and at the two proposed Interchanges to soften the structures. These interchanges would become the gateways into the community, and will be landscaped. Inert materials will also be considered where appropriate to beautify these areas and reduce erosion.
- **AES-5:** The berm located on the west side of the project area shall be graded and vegetated to reflect the natural terrain.
- **AES-6:** Where possible, concrete drainage ditches would be avoided in favor of soft-bottom ditches to reduce urbanizing elements, and to encourage infiltration and vegetation growth. Where required, concrete ditches will be pigmented to blend with adjacent soil.

- **AES-7:** Erosion Control: all disturbed soil areas will be treated with erosion control measures, including seeding with native plant/native grass seeds. For further detail see measure GEO-2 (#6, Erosion).
- **AES-8:** To address impacts relating to cohesion/rural character, and the bisecting of the community by the facility, design efforts will be made to provide linkage across the facility, such as sidewalks on the interchanges, to encourage pedestrians, and bicyclists in the community, to cross the facility.

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3.8 Cultural Resources

3.8.1 Regulatory Setting

"Cultural resources" as used in this document refers to all "built environment" resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act of 1966, as amended, (NHPA) sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, FHWA, State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the Advisory Council's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA's responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Pilot Program (23 United States Code [USC] 327).

The Archaeological Resources Protection Act (ARPA) applies when a project may involve archaeological resources located on federal or tribal land. ARPA requires that a permit be obtained before excavation of an archaeological resource on such land can take place.

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. See Appendix B for specific information regarding Section 4(f).

Historical resources are considered under CEQA, as well as California Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way.

Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the SHPO before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

Caltrans policy is to conduct Section 106 and CEQA Historical Resources studies concurrently and to use the Section 106 determinations for the basis of making CEQA conclusions.

3.8.2 Affected Environment

Unless otherwise noted, the information from this section was taken from the Historic Property Survey Report (HPSR) (Caltrans 2011c), which included a Historical Resources Evaluation Report (HRER) (Caltrans 2011c), and an Archaeological Survey Report (ASR) (Caltrans 2011c), documenting cultural resource conditions in the project Area of Potential Effect (APE).

A request was made to the Native American Heritage Commission (NAHC) for a search of the Sacred Lands File (SLF) on July 6, 2007. The NAHC responded on July 12, 2007, stating that a search of the SLF failed to indicate the presence of Native American cultural resources in the immediate project area. A list of nine Native American individuals/organizations was provided by the NAHC for additional consultation in regards to Native American cultural resources or Project-related concerns. Correspondence related to the proposed project can be found in Attachment B of the HPSR.

The HPSR, and associated documentation, were prepared in accordance with Caltrans' Section 106 PA executed on January 1, 2004. Historic archaeological and built environment resources were identified for the National Register of Historic Places (NRHP), as required by 36 CFR Part 800 and the regulations implementing Section 106 of the NHPA.

The APE is delineated to encompass the maximum extent of ground disturbances required by the Project design as well as areas of indirect effects. The APE for the proposed project encompasses all construction related activities, including staging areas, detention basins, anticipated BMP locations, temporary construction easements, permanent right-of-way acquisition, and areas that may be indirectly affected by the project. The first tier of adjacent parcels was included in the APE to account for indirect effects. In cases where adjacent parcels are extensive, largely rural, or undeveloped, only the area immediately adjacent to the Project was included in the APE.

The vertical limits of the APE were defined by the potential ground-disturbing excavation parameters, which includes a maximum depth of 12 feet for excavation of the roadbed; a maximum depth of 50 feet through a quartz diorite hill along Alternative 2; a maximum depth of 33 feet for caste in drill holes for an overhead sign; a maximum depth of 30 feet for retaining walls and a maximum depth of 15 feet for sound walls; and a maximum depth of 20 feet for detention basins, culverts, and grade separations.

A cultural resources literature and records search of the general Project location was first conducted in April 2002 by San Bernardino Archaeological Information Center (SBAIC) staff. An updated records search at the SBAIC was completed in May 2007. For purposes of this investigation, the general Project location was defined as a one-mile radius surrounding the Project APE.

Results of this search indicate that 17 area specific cultural resources surveys and/or evaluation investigations have been previously conducted within the general Project vicinity. These investigations resulted in the documentation of fifteen cultural resources including nine archaeological sites, one linear resource (BNSF Railroad, CA-SBR-6693H), and five isolated artifacts.

A cultural resources survey of the Project APE was completed between May 8, 2007 and June 21, 2007 and a second survey was conducted between August 17 and 21, 2010. As a result of the cultural resources surveys, 22 new cultural resources (15 archaeological resources and 7 built-environment resources) were identified within the Project APE.

Architectural field surveys were performed from January 19 to 20, 2011. Seven built-environment resources were identified within the Project's APE and recorded. The built-environment resources include segments of two historic-period dirt roads and five historic-period buildings or groups of buildings. Three of these groups of buildings are associated with former dairies/farmsteads. All seven of the built-environment resources were determined not eligible for the National Register as a result of the current study, and are also not historical resources under CEQA because they do not meet the California Register criteria. The SHPO concurred with the determinations on January 23, 2012 (see SHPO letter, Comments and Coordination, Chapter 5).

Of the 15 archaeological properties identified in the project APE, 5 are considered Archaeological Property Types and Features Exempt from Evaluation under Attachment 4 of the Section 106 PA and are therefore not considered potentially eligible properties (see Section 7.4 below). One other previously recorded archaeological site (CA-SBR-5563/H) was previously determined ineligible for listing on the NRHP (Hammond 1986a, 1986b), with SHPO concurrence on December 6, 1986 (see Appendix B of the HPSR) and did not require further cultural resources management during this current study.

The nine remaining, unevaluated sites identified within the APE are listed in Table 3.8-1.

Table 3.8-1: Summary of Unevaluated Archaeological Resources Identified within the Project APE

Sites (CA-SBR-)	Project Alternative(s)	Site Description	Recommendations
12740H	3, 4	Historical site consisting of cinder block and concrete building remains associated with water tower and well head.	Section 106 Evaluation and Additional Research if Alternative 3 or 4 is selected
12741H	3, 4	Historical well and water conveyance system.	Additional Research if Alternative 3 or 4 is selected
12742H	3, 4	Two concentrations of historical refuse and building materials.	Section 106 Evaluation if Alternative 3 or 4 is selected
12743H	3, 4	Three concentrations of historical refuse.	Section 106 Evaluation if Alternative 3 or 4 is selected
12744H	3, 4	Historical foundation associated with a large refuse scatter.	Section 106 Evaluation if Alternative 3 or 4 is selected
12745H	4	Small historical refuse scatter.	Section 106 Evaluation if Alternative 4 is selected
12746H	3, 4	Small historical refuse scatter.	Section 106 Evaluation if Alternative 3 or 4 is selected
13884/H	3, 4	Possible privy pit and historical refuse scatter; one prehistoric artifact also present.	Section 106 Evaluation if Alternative 3 or 4 is selected
Æ-JS-1/H	2,3,4	Multi-component site with prehistoric habitation debris and historic refuse scatter.	Section 106 Evaluation and Additional Research if Alternative 2, 3, or 4 is selected

To assess the Project's potential impact to cultural properties and to allow a comparison of the alternatives, Caltrans has completed the identification of all properties (i.e., built environment and archaeological) within the APE. Caltrans also fully evaluated the historical significance, under Section 106, of the built environment properties because the evaluation of those properties is based upon information readily obtained during the identification process and does not require physical disturbance of the property. The results are reported in the HPSR and are summarized here. The evaluation of the historic significance of individual archeological sites, unlike the built environment, requires the gathering of additional information through some type of ground disturbing activity. Since ground disturbing activities destroy some of the value of the archeological property, those activities have been postponed until after public circulation of this Draft EIR/EIS. Once a Preferred Alternative is selected, and prior to completion of the Project Approval and Environmental Document phase, Caltrans will perform the Section 106 evaluations on any archeological sites located within that alternative's alignment to determine the properties' historical significance and fulfill Caltrans' responsibilities under Section 106. By limiting subsurface testing and additional study to those sites within the Preferred Alternative, Caltrans will avoid unnecessary impacts to sites on the other, unselected, alternatives. Caltrans will report the findings of these evaluations in a Supplemental HPSR and seek concurrence on these findings from SHPO. It is anticipated that Site AE-JS-1/H would be determined eligible for listing in the NRHP under Criterion D. If this is the case, Caltrans would seek concurrence on a finding of Adverse Effect. Mitigation would be documented in a Memorandum of Agreement (MOA) and would involve data recovery.

It is anticipated that none of the 9 archaeological sites yet to be evaluated will warrant preservation in place. As mentioned in the regulatory setting, historic sites on or eligible for the NRHP and archaeological sites on or eligible for the NRHP, which warrant preservation in place as determined by Caltrans and the official(s) with jurisdiction, require evaluation to determine if a use of a 4(f) resource is anticipated. As part of the project development for this project it was determined by Caltrans that the required Phase II archaeological excavations to further document the potential impacts will be completed between the draft and final EIS in order to reduce the amount of disruption and impact to potentially sensitive sites. After completion of the Phase II technical study, Caltrans will circulate the revised Cultural Resources section of this EIS, in order to meet our commitments of public comments and disclosure on the potential impacts to 4(f) resources if applicable (i.e. that the resource triggers the requirements of section 4(f)). The appropriate sections of the EIS will be revised accordingly based on our findings and coordination with SHPO. All necessary evaluations and SHPO concurrences under Section 106 will be obtained prior to completion of the Final Environmental Document. If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Gary Jones, District 8 Native American Coordinator (DNAC)) ([909] 383-7505) so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

3.8.3 Environmental Consequences

There are nine unevaluated sites within the APE. Alternative 4 has the potential to affect all nine sites, Alternative 3 has the potential to affect eight of the sites, and Alternative 2 has the potential to affect one site.

Once a Preferred Alternative is selected, and prior to completion of the Project Approval and Environmental Document phase, Caltrans will perform the Section 106 evaluations on any archeological sites located within that alternative's alignment to determine the properties' historical significance and fulfill Caltrans' responsibilities under Section 106. By limiting subsurface testing and additional study to those sites within a selected Preferred Alternative, Caltrans will avoid unnecessary impacts to sites on the other, unselected, alternatives.

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties. If, after evaluation, any of the nine remaining unevaluated archaeological sites are found to be eligible for the National Register of Historic Places under Criteria A, B, or C, they would also qualify as Section 4(f) historic sites.[1] Responsibility for compliance with Section 4(f) has been assigned to Caltrans pursuant to the Memorandum of Understanding under MAP-21, see 23 USC 138 and 49 USC 303, including determinations and approval of Section 4(f) evaluations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

If it is determined that a historic property that qualifies as a Section 4(f) resource will be permanently used by one or more of the alternatives, and the completion of Section 106 compliance results in a finding of "no adverse effect" on the historic property, then consistent with 23 CFR 774.17 Caltrans anticipates making a *de minimis* impact finding in conjunction with compliance with Section 4(f). According to the Section 106 PA, and contingent upon the specifics associated with any other findings, Caltrans may inform SHPO in writing that a non-response for the purposes of a "no adverse effect" or a "no historic properties affected" determination will be treated as the written concurrence for the *de minimis* determination; this may be combined with the Section 106 PA notification letter to SHPO regarding the finding of effect.

3.8.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

The No Build Alternative would not result in permanent impacts to cultural resources.

Alternative 2—Southerly Alignment

No known historic properties, yet identified, in the Alternative would be impacted. However, one of the unevaluated cultural or archaeological properties lies within the alternative footprint and would be impacted.

[1] Section 4(f) does not apply to archaeological resources that are important chiefly because of what can be learned from data recovery and have minimal value for preservation in place (i.e., those that are eligible under Criterion D). (See 23 CFR 774.13[b] [1].)

Alternative 3—Existing Alignment

No known historic properties, yet identified, in the Alternative would be impacted. However, eight of the unevaluated cultural or archaeological properties lie within the alternative footprint and would be impacted.

Alternative 4—Northerly Alignment

No known historic properties, yet identified, in the Alternative would be impacted. However, all nine of the unevaluated cultural or archaeological properties lie within the alternative footprint and would be impacted.

3.8.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

The No Build Alternative would not result in temporary impacts to cultural resources.

Build Alternatives 2, 3, and 4

Impacts to cultural resources would result from construction of any of the build alternatives, not from operation of the facility itself. Impacts to cultural resources are considered permanent, not temporary.

3.8.4 Avoidance, Minimization, and/or Mitigation Measures

In compliance with Section 106, further information gathering – including ground disturbing activities – for the purpose of evaluating the historical significance of the identified archeological sites, will be concluded prior to completion of the Project Approval and Environmental Document phase. The results and findings will be reported in a Supplemental HPSR. Based on the SHPO's concurrence with Caltrans' findings in the Supplemental HPSR, additional Section 106 consultation (Finding of Effect) may be required for historic properties on the preferred alternative. Any avoidance, minimization, and/or mitigation measures for the proposed Project will be included in the Final EIR/EIS to address any adverse effects to historic properties.

- **CR-1:** If cultural materials are discovered during construction, all earthmoving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- **CR-2:** If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the county coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, which will then notify the MLD. At this time, the person who discovered the remains will contact Gary Jones, District 8 Native American Coordinator at (909) 383-7505 so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC Section 5097.98 are to be followed as applicable.

3.9 Hydrology and Floodplains

3.9.1 Regulatory Setting

3.9.1.1 Federal Regulations

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration (FHWA) requirements for compliance are outlined in 23 CFR 650 Subpart A.

In order to comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments
- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the project.

The base floodplain is defined as "the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the base floodplain."

3.9.1.2 State Regulations

The California Reclamation Board cooperates with various federal, state, and local agencies and governments in establishing, planning, constructing, operating, and maintaining flood control works. The board also maintains the integrity of the existing flood control system and designated floodways through its regulatory authority by issuing permits for encroachments.

3.9.2 Affected Environment

The following discussion is based on information contained in the *Hydrology and Water Quality Technical Report—State Route 58 Hinkley Expressway Project* (Caltrans 2010d) the *Location Hydraulic Study* (Caltrans 2012d), and the *Floodplain Evaluation Report Summary - State Route 58 Hinkley Expressway Project* (Caltrans 2012c).

3.9.2.1 Surface Water Hydrology

The project area is located in an Undefined[1] and Harper Valley watersheds, which are located in the larger Mojave hydrologic basin (see Figure 3.9.2). The Mojave hydrologic basin has a surface area of Watershed encompasses approximately 4,500 square miles, and is located entirely within

[1] The US Geological Survey (USGS) defines watersheds based on "hydrographic and topographic criteria that delineate an area of land upstream from a specific point on a river, stream or similar surface waters." (http://nhd.usgs.gov/wbd.html. Accessed 12/17/12) All watersheds are assigned a hydrologic ten digit unit code by the USGS, some have specific names. Those not assigned a specific name are referred to as "Undefined" watersheds.

the County of San Bernardino. The Mojave River is the nearest significant watercourse; approximately 1.5 miles southeast of the proposed project. Most of the Mojave River flows subterranean, breaching the surface between the cities of Barstow and Victorville (Caltrans 2010d).

The local topography is comprised of relatively flat desert land with occasional gently rolling hills and has a general drainage pattern of superficial flow from the southwest to the northeast (see Figure 3.9.2). Surface water flows from Iron Mountain near the west end of the project area, crosses over the project area and drains northeasterly to the north part of Hinkley Valley, which is between Mountain Lynx Cat and Mountain General (Caltrans 2002).

The existing topography of the site is relatively flat to gently rolling terrain; the proposed alignments would traverse a series of coalescing alluvial fans, sloping down to the northeast. The elevation for the area between the project's western limit (PM R22.2, STA 351+20) and Valley View Road (PM R24.4, STA 393+30) is high compared to the proposed alignment east of Valley View Road. The elevation for the area ranges from 2,356 feet to 2,251 feet above sea level, with rock outcrops between kilopost (KP) 37.9 and KP 39.4, where deep cuts for the proposed project are anticipated. Towards the eastern limits of the project, the topography is generally flat with a gradient of approximately16 feet per mile (descending to the northeast).

Drainage generally occurs in washes and flood-flow channels during infrequent major rain events. There are numerous undefined watercourses, which drain a substantial area of desert. These watercourses are alluvial fan in nature, and many appear and disappear within a few hundred yards of each other (Caltrans 2010d). Perennial and intermittent streams are rare in this area, and no major streams are located within or cross the project area.

From the western most point of the proposed improvements to 0.5 mile east of Summerset Road, the existing alignment follows the natural contour of the land. This part of SR-58 has no longitudinally directed asphalt concrete (AC) dikes or ditches for water control runoff. No culverts cross below the pavement or drainage gullies. Following a sheet flow drainage pattern, surface runoff from higher terrain south of the highway generally flows across the traveled way. Runoff does concentrate to a degree and flows across the highway through several existing dips at the west part of the alignment. No major creeks or tributaries crossing the proposed alignment have been identified, but four unnamed washes transect the western portion of the proposed alignment at STA 367+50, 371+00, 388+00, 395+50. None of these drainages are perennial. The largest two of the four drainage courses originate on the northern side of Iron Mountain, approximately 0.75 mile south of the proposed frontage road, and drain northeasterly, crossing the project area. The first drainage is incised into soil and is approximately seven feet wide and three feet deep where it would cross the proposed frontage road and the existing alignment. The second drainage is incised into soil and bedrock and is approximately ten feet wide and three feet deep where it crosses the frontage road, but is less than three feet wide and one foot deep where it crosses the existing alignment. (see Figure 3.9.3). These drainages are dry year-around unless long-term moderate-to-heavy rainfall occurs (Caltrans 2002).

3.9.2.2 Groundwater Hydrology

The Harper Valley Groundwater Basin, with a total surface area of approximately 640 square miles underlies the proposed project area. Recharge to the basin generally occurs through infiltration of rainfall and percolation of surface water runoff through alluvial fans around the

Figure 3.9.1: FEMA Floodplain Map

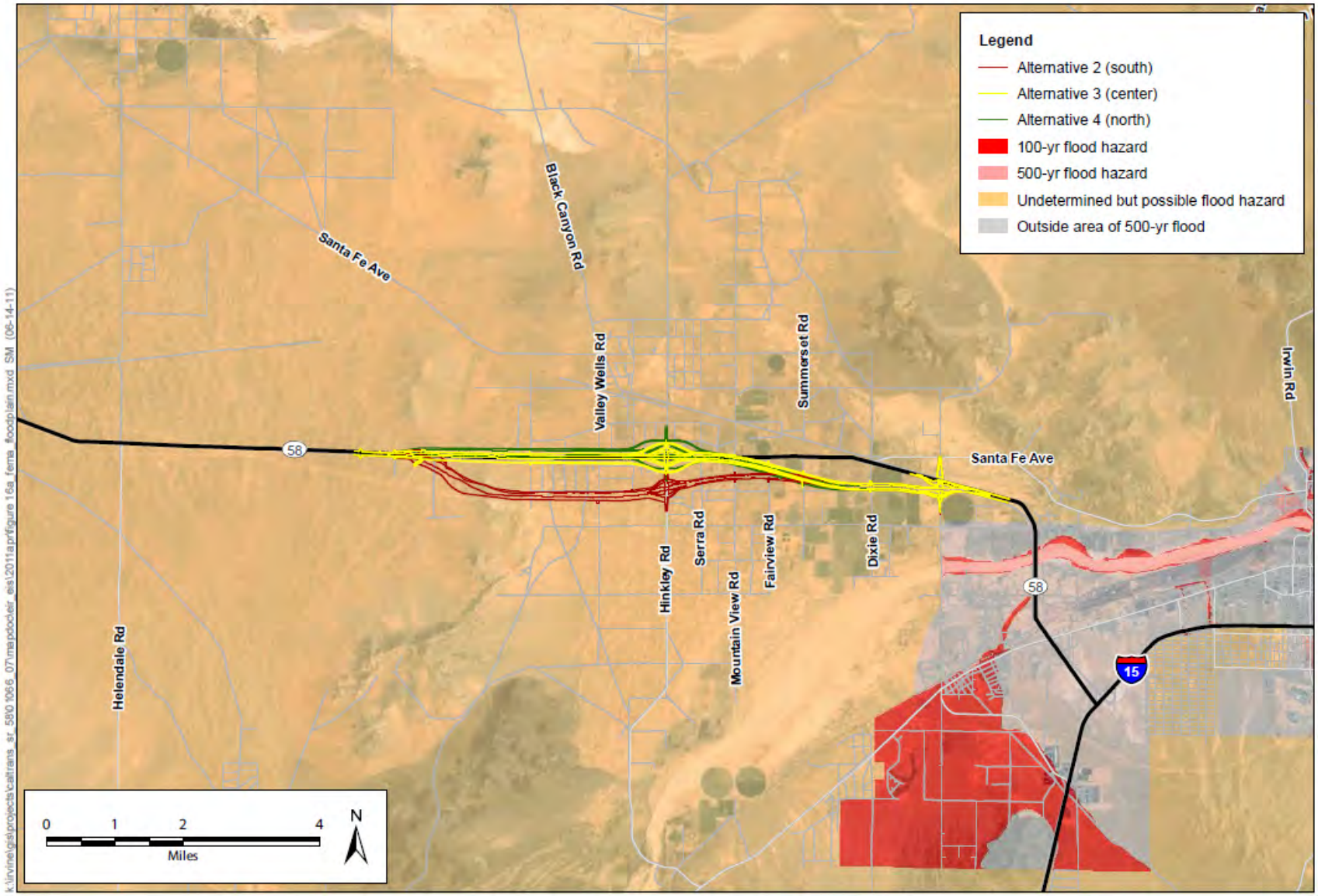

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Figure 3.9.2: Watersheds and Groundwater Basins

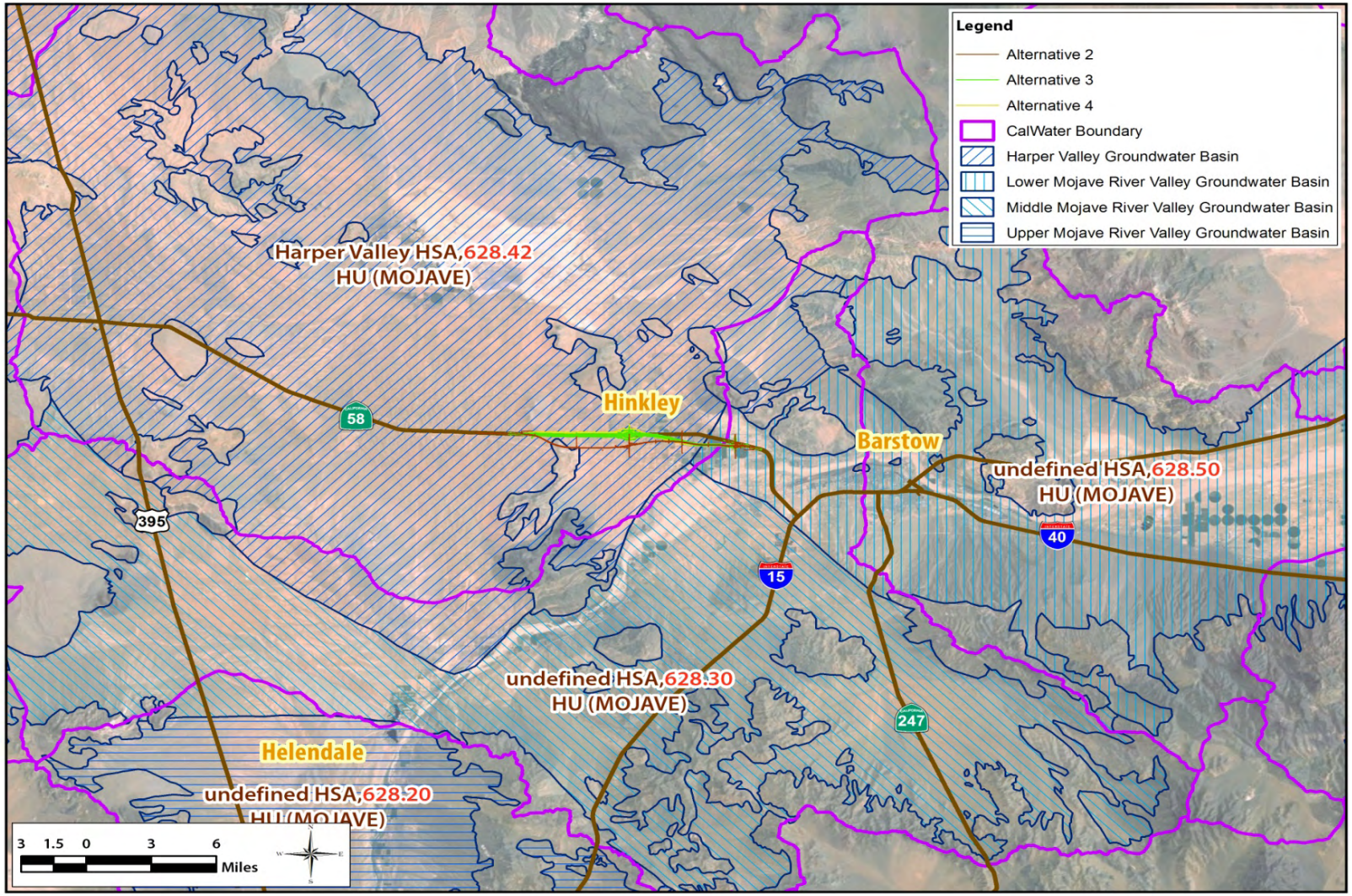

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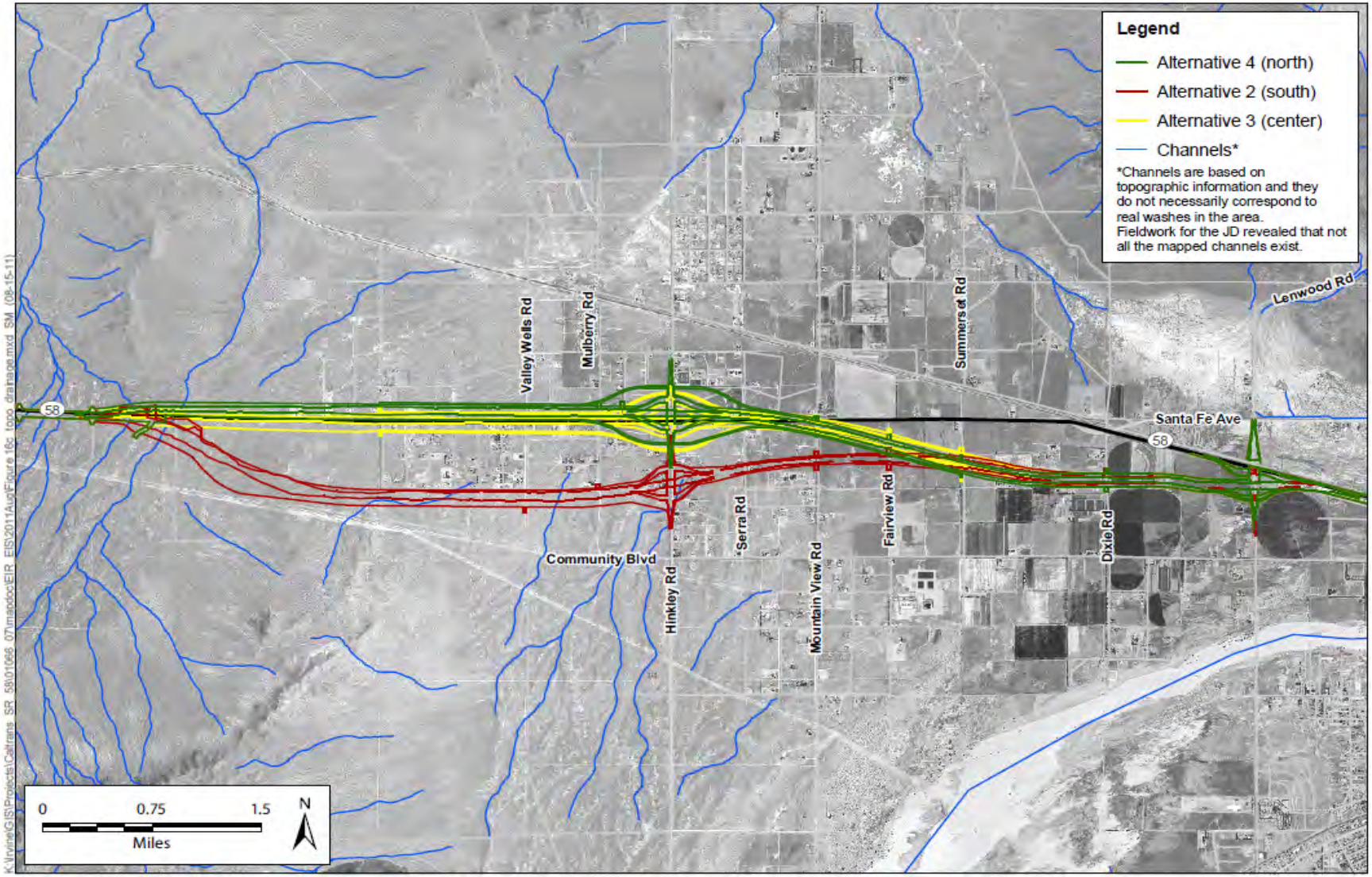
Figure 3.9.3: Topography/Drainage Patterns



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edges of the valley. Other sources of recharge to the basin include groundwater underflow from the Middle Mojave River Valley and Cuddeback Valley groundwater basins. Groundwater drainage in the basin occurs via very short-term streams that flow towards Harper Dry Lake. Flows have remained steady since the mid-1990s, though groundwater levels in some wells have fluctuated (Caltrans 2010d).

In general, available data indicate that groundwater depths in the basin may range from approximately 170 to 310 feet below ground surface (bgs) (Caltrans 2010d). Supplemental groundwater information obtained through the Department of Water Resources, Division of Planning and Local Assistance (DPLA) reveals that the shallowest groundwater measurement in their database was 36.3 feet bgs in March 1958 and 274.2 feet bgs in April 1999 near the eastern end of the proposed project. Based on readings from two observation wells adjacent to the proposed project limits, groundwater levels have exhibited a decrease in depth of approximately 133.9 to 273.9 feet since the mid-1990s (Caltrans 2002). Groundwater was not encountered during preliminary site exploration for the proposed project.

3.9.2.3 Floodplain Characteristics

The Federal Emergency Management Agency (FEMA) identifies designated zones to indicate flood hazard potential and provides information on flood hazard and frequency for cities and counties on its Flood Insurance Rate Maps (FIRMs). FIRMs were consulted in order to identify flood hazard areas in the vicinity of the proposed project (see Figure 3.9.1). Only one FIRM (06071C3915H) containing the easternmost portion of the project area has been printed by FEMA, as it is located in an incorporated area of San Bernardino County. This portion of the project is mapped in an area classified as Zone D, which is defined as “an area in which flood hazards are undetermined, but possible” (FEMA 2008a). The remaining project area is included in map panels that are unprinted by FEMA. Map panels 06071C3895H, 06071C3900H, and 06071C3875H remain unprinted as they are located in an unincorporated area of the county “in which flood hazards are undetermined, but possible” (FEMA 2008b). No natural and beneficial floodplain values were identified for the project area.

Due to the lack of flood hazard mapping, Caltrans field maintenance supervisors were contacted to obtain empirical evidence regarding flooding within the project area. According to field maintenance supervisors, there have been few, if any, instances of water overtopping the road, even in areas where there are no culverts. Additionally, there has been little, if any, need to clean debris or silt from a storm, or do any other storm maintenance work within the project limits (Caltrans 2010d).

3.9.3 Environmental Consequences

A modified hydrologic analysis was performed by Caltrans District 8 staff to determine impacts of the proposed project on hydrology and flooding in the project area. The analysis approximated the actual discharges that could be expected from a 100-year storm. A 100-year storm event has a 1% probability of occurring within a given year. As part of the analysis, the area tributary to the proposed project was divided into 22 drainage basins. These drainage basins were modeled to determine their adequacy in conveying 100-year storm flows. Based on the Hydrology and Flood Analysis, all anticipated flows can be conveyed under the proposed highway alignment by utilizing detention basins when necessary. The following preliminary design features will be incorporated during the final design phase of the project in accordance with Caltrans standard design practice:

1. The roadway will be designed so that a 100-year frequency storm will not overflow the road, in general conformance with Caltrans' design practice.
2. In several locations, it is necessary to construct detention basins to reduce peak discharge to the point where it will not overtop the road. Both the basins and their attendant outlet pipes have been sized using CivilSoft Flood Routing Programs to assure their adequacy in passing the 100-year design flood.
3. Channels and ditches will be used to collect and convey flows into one main flow, or into a detention basin which may have a single outlet or multiple outlets, before it crosses the road.
4. In conjunction with maintenance considerations and preliminary engineering efforts to date, it is anticipated that culverts will not be less than 36" in diameter. Circular culverts will be used whenever possible, as box culverts are more susceptible to sediment deposition in the flow line.
5. Training dikes will be provided in locations where it is necessary to channel the overland flow onto the culvert outlet.
6. To the extent feasible, all culverts will be constructed with their inverts on natural ground approximating the gradient of the flow line they are to serve, for purposes of helping to prevent bed load deposition in the culvert.
7. All culverts will be designed for the 100-year AMC II storm.
8. The inclusion of 22 culverts that will disperse the water pressure and concentration of flows, water velocity at the culverts are expected to be limited to ten feet per second in order to prevent excessive scour.

Further detail regarding the analysis and calculations performed can be found in the *Hydrology and Drainage Report—State Route 58 via Hinkley Widening and Realignment Project* (Caltrans 2010d).

3.9.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, there would be no changes made to SR-58. Consequently, there would be no adverse impacts to hydrology and floodplains in the project area. The existing surface and groundwater hydrology and floodplains would remain the same.

The No-Build Alternative would have no indirect adverse impacts to downstream hydrology and flooding because there would be no construction associated with the project.

Alternatives 2 and 4

Under Alternative 2, new drainage facilities for onsite drainage would be included as part of the realignment and roadway improvements. Box culverts are proposed at nine locations under the new roadway. Two detention/retention basins are proposed for locations in the area west of Valley View Road and south of the new alignment and in the area just west of Lenwood Road, between the existing SR-58 and this new alignment. Additional detention basins are proposed at the southwest quadrant of the grade separations at Somerset and Hinkley roads at the following locations:

- east of Valley View Road at PM R21.7,
- east of Valley View Road PM R22.8,
- between Indian Wells Road and Valley Wells Road at PM R25.5,
- PM R26.4 at Hinkley Road, and
- PM R27.4 at Mountain View Road.

Based on the hydrology analysis performed for this alternative, all anticipated 100-year storm flows could be conveyed under the proposed highway alignment, utilizing detention basins in some cases, without adversely affecting the surface hydrology of the project area. Due to the flat topography in the eastern portion of the project, generalized ponding of water on each side of the highway embankment could occur. The use of culverts would act as pressure equalizers, thus alleviating the ponding effect.

Groundwater hydrology is not expected to be adversely affected or to adversely affect the proposed project. However, groundwater could occur as perched water, where water collects on impermeable layers in the subsurface strata. Within the cut sections of the alignment, groundwater may be perched, or may become perched, on contact between rock and alluvium. It is possible that, upon completion of the cuts in this area, water flowing along the bedrock/soil contact may seep out and flow down slope toward the proposed roadway. Seepage out of the cut face is not expected to be a permanent condition, as there is not enough rainfall to create year-round flow. This condition would only occur after periods of heavy rainfall and would be minimized by drainage improvements proposed as part of the project.

Neither Alternative 2 nor Alternative 4 is located within an area classified as Zone D; therefore, neither is located in a mapped flood hazard area as defined by FEMA and flooding potential is undetermined. However, based on the drainage studies conducted for the project, there is no historical or empirical evidence of flooding within the project area (Caltrans 2010d). Through the use of project design features such as detention basins and culverts, 100-year storm flows would be conveyed, and would not result in flooding. Neither Alternative 2 nor Alternative 4 would result in an increase in the base (100-year) floodplain elevation (BFE).

Neither Alternative 2 nor Alternative 4 would result in a “significant encroachment” to a floodplain as defined by 23 CFR 650.105. It would not result in the interruption or termination of a transportation facility that is needed for emergency vehicles or that provides the community’s only evacuation route; it would not result in a significant risk to life or property; nor would it result in impacts to natural and beneficial floodplain values.

Neither Alternative 2 nor Alternative 4 would result in indirect permanent impacts to the hydrology or flooding of adjacent areas.

Alternative 3—Existing Alignment

Under Alternative 3, new drainage facilities for onsite drainage would be included as part of the realignment and roadway improvements. Proposed drainage features would be the same as described above, under Alternative 2.

Based on the hydrology analysis performed for the project, all anticipated 100-year storm flows could be conveyed under the proposed highway utilizing detention basins, without adversely affecting the surface hydrology of the project area.

Groundwater hydrology is not expected to be adversely affected or to adversely affect the proposed project. However, groundwater could occur as perched water, where water collects on impermeable layers in the subsurface strata. Within the cut sections of the alignment, groundwater may be perched, or may become perched, on contact between rock and alluvium. It is possible that, upon completion of the cuts in this area, water flowing along the bedrock/soil contact may seep out and flow down slope toward the proposed roadway. Seepage out of the cut face is not expected to be a permanent condition, as there is not enough rainfall to create year-round flow. This condition would only occur after periods of heavy rainfall and would be minimized by drainage improvements proposed as part of the project.

Alternative 3 is not located in a mapped flood hazard area as defined by FEMA, but it is located in a zone in which flooding potential is undetermined. Based on the drainage study conducted for the project, there is no historical or empirical evidence of flooding within the project area (Caltrans 2010d). However, as discussed above, Alternative 3 could result in flooding to adjacent properties if no additional drainage structures are constructed. Since Alternative 3 will increase the number of culverts from the 3 to 22, Alternative 3 would not result in a "significant encroachment" to a floodplain as defined by 23 CFR 650.105. It would not result in the interruption or termination of a transportation facility that is needed for emergency vehicles or that provides the community's only evacuation route; it would not result in a significant risk to life or property; nor would it result in impacts to natural and beneficial floodplain values.

3.9.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

Alternative 1 would not involve any construction, and no direct or indirect adverse hydrology and floodplain impacts would occur.

Build Alternatives 2, 3, and 4

Temporary hydrologic impacts associated with construction activities could occur as a result of stormwater runoff. Construction BMPs identified in the Stormwater Pollution Prevention Plan (SWPPP), and discussed in Section 3.10, would minimize the potential for hydrologic and flood impacts during construction.

3.9.4 Avoidance, Minimization, and/or Mitigation Measures

The following measures shall be incorporated into the design of the project to avoid and minimize hydraulic and flooding impacts:

- **HF-1:** The project shall be designed so that storm water flows shall not overtop the roadway section.
- **HF-2:** In several locations identified under Alternatives 2 and 4, detention basins shall be constructed to reduce peak discharge to the point where it will not overtop the road and be adequate at conveying the 100-year design flood.

- **HF-3:** Channels and ditches shall be used to collect and convey flows into one main flow, or into a detention basin, which may have a single outlet or multiple outlets, before it crosses the road.
- **HF-4:** For maintenance considerations, culverts shall never be less than 36 inches in diameter. Circular culverts shall be used whenever possible, as box culverts are more susceptible to sediment deposition in the flow line.
- **HF-5:** Culverts in the part of the project area, where it is very flat and there are no flow lines that approach the new alignment, may require training dikes to concentrate flow into the inlet. Exact size and location will be determined during the project's final design phase in the final drainage report.
- **HF-6:** All culverts shall be constructed with their inverts on natural ground approximating the gradient flow line they are to serve. Placement in such a manner helps prevent bed load deposition in the culvert.
- **HF-7:** All culverts shall be designed for the 100-year Antecedent Moisture Condition (AMC) II storm. The project area is entirely within a desert area.
- **HF-8:** With the inclusion of 22 culverts that will disperse the water pressure and concentration of flows, water velocities at the culvert outlets are expected to be limited to ten feet per second in order to prevent excessive scour. Exact size and location will be determined during the project's final design phase in the final drainage report.

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3.10 Water Quality and Stormwater Runoff

This section describes the environmental and regulatory setting associated with water quality and stormwater runoff in the project area. This section also describes the impacts of project implementation on water resources.

3.10.1 Regulatory Setting

3.10.1.1 Federal Regulations

Clean Water Act

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.), from any point source unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permits to conduct any activity, which may result in a discharge to waters of the U.S., to obtain certification from the State that the discharge will comply with other provisions of the act. [Most frequently required in tandem with a Section 404 permit request]. (See below)
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administers this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

USACE issues two types of 404 permits: Standard and General permits. There are two types of General permits, Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404 (b)(1) Guidelines (U.S. EPA CFR 40 Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA), to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

3.10.1.2 State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just Waters of the U.S., like groundwater and surface waters not considered Waters of the U.S. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are then state- listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

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

National Pollution Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water dischargers, including Municipal Separate Storm Sewer Systems (MS4s). The U.S. EPA defines an MS4 as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water. The SWRCB has identified Caltrans as an owner/operator of an MS4 by the SWRCB. This permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 Permit, under revision at the time of this update, contains three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);
2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and
3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs) and other measures.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed Project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Part of and appended to the SWMP is the Storm Water Data Report (SWDR) and its associated checklists. The SWDR documents the relevant storm water design decisions made regarding project compliance with the MS4 NPDES permit. The preliminary information in the SWDR prepared during the Project Initiation Document (PID) phase will be reviewed, updated, confirmed, and if required, revised in the SWDR prepared for the later phases of the project. The

information contained in the SWDR may be used to make more informed decisions regarding the selection of BMPs and/or recommended avoidance, minimization, or mitigation measures to address water quality impacts.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites which result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with Caltrans' Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water body must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

3.10.2 Affected Environment

The following discussion is based on information contained in the *Hydrology and Water Quality Technical Report—State Route 58 Hinkley Expressway Project* (Caltrans 2011d).

3.10.2.1 Climate

The proposed project is located in the Mojave Desert, which experiences a Mediterranean climate with hot, dry summers and cooler winters. The California Department of Water Resources (DWR) manages the California Irrigation Management Information System (CIMIS), which monitors precipitation at various locations throughout California. Data collected from the Victorville CIMIS station from 1994 to 2008 indicates that the average annual precipitation near the project area is less than a half-inch, with some years having no precipitation (California Department of Water Resources 2008).

3.10.2.2 Surface Water

The project area is in the Northern Mojave hydrologic basin; specifically, in the Mojave watershed (U.S. Geological Survey [USGS] hydrologic unit code (HUC) 180902), Mojave Subbasin (HUC 18090208) and Coyote-Cuddeback Lakes Subbasin (HUC 18090207), Daggett Wash-Mojave River Watershed (HUC 1809020811), Unnamed Watershed (HUC 1809020710) and Harper Lake Watershed (HUC 180902711). The Mojave hydrologic basin has a surface area of Watershed encompasses approximately 4,500 square miles (San Bernardino County 2003), and is located entirely within the County of San Bernardino. Drainage in these watersheds and in the project area generally occurs in washes and flood-flow channels during infrequent major winter rain events (San Bernardino County 2006).

Perennial and intermittent streams are very rare (San Bernardino County 2006) and there are no defined surface waters in or near the proposed project. The nearest significant watercourse is the Mojave River, which is approximately 15 miles southeast of the proposed project. Most of the Mojave River flows subterranean, and surfaces between the cities of Barstow and Victorville.

3.10.2.3 Groundwater

The Harper Valley Groundwater Basin, which underlies the proposed project, has a total surface area of approximately 640 square miles.

The boundaries are as follows:

- **East:** Fremont Peak, Black Mountain, the Gravel Hills, and the Mud Hills;
- **West:** surface drainage divides; portions of the Harper, Kramer Hills, and Lockhart faults; and other low-lying basement hills;
- **South:** subsurface drainage patterns and Mount General, Iron Mountain, and the Waterman Hills; and
- **North:** portions of the Rand Mountains.

Many ephemeral streams drain the basin towards Harper Dry Lake (California Department of Water Resources 2006).

Harper Valley Groundwater Basin has storage capacity of approximately 6,975,000 acre-feet (af) and stored approximately 101,500 af in 1990.[1] Recharge to the basin generally occurs through infiltration of rainfall and percolation of surface water runoff through alluvial fans around the edges of the valley. Other sources of recharge to the basin include groundwater underflow from the Middle Mojave River Valley and Harper Valley groundwater basins. Groundwater flows predominantly run toward Harper Dry Lake and have remained steady, though groundwater levels in some wells have fluctuated (California Department of Water Resources 2006).

Groundwater level data in or near the project area is limited. However, available data indicate groundwater depths may range from approximately 170 to 310 feet below the ground surface (California Department of Water Resources 2007).

The RWQCB, Lahontan Region is the responsible agency under CEQA and has responsibility for the CWA Section 401 certification and NPDES permitting, which includes construction stormwater permitting under Caltrans' general permit.

Within the proposed project area there are numerous groundwater monitoring wells and treatment wells. As a result of hexavalent chromium discharges at the Pacific Gas and Electric Company (PG&E) Hinkley Compressor Station, groundwater is generally contaminated in the area between Summerset Road and Mountain View Road in the area of the proposed expressway project. The RWQCB is requiring PG&E to investigate and cleanup the contaminated groundwater. As a result, there are multitudes of monitoring, extraction, and injection wells in the area of the proposed project.

3.10.2.4 Surface and Groundwater Quality

As described above, there are no defined surface waters in the project area; however, minor surface waters in the Mojave River hydrologic basin generally have beneficial uses of agriculture supply; municipal and domestic supply; groundwater recharge; contact and non-contact recreation; cold and warm freshwater habitat; commercial and sport fishing; wildlife; and rare, threatened, or endangered species (RWQCB, Region 6 1994). According to the CWA Section 303(d) List, no surface waters in the project area are impaired (State Water Resources Control Board 2006). The Mojave River is also not listed as impaired (State Water Resources Control Board 2006). However, RWQCB, Lahontan Region has developed a watershed management initiative with a special focus on the Mojave River watershed as a result of the hydrologic basin's non-point source issues relating to overdraft of groundwater, including impacts on wetlands and springs, water quality impacts from confined animal facilities, and potential water quality effects of urban and construction-related runoff (RWQCB, Region 6 2006).

Based on the highway stormwater runoff data collected by the Caltrans Stormwater Research and Monitoring Program, pollutants that are expected to be found in roadway runoff include conventional constituents (biochemical oxygen demand, calcium carbonate, chemical oxygen demand, total dissolved solids, total organic carbon, total suspended solids, and total volatile suspended solids, etc.); hydrocarbons; metals; microbial agents; nutrients; volatile and semi-volatile organics; pesticides; and herbicides. Pollutants are usually deposited on the roadway as a

[1] California Department of Water Resources. 2004. California's Groundwater Bulletin 118. Harper Valley Groundwater Basin. Available: http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/6-47.pdf. Last revised: February 27, 2004.

result of fuel combustion processes, lubrication system losses, tire and brake wear, transportation load losses, paint from infrastructure, and atmospheric fallout. Sources of specific pollutants are outlined in Table 3.10-1.

Groundwater quality in the Harper Valley Groundwater Basin is generally too poor to support irrigation and domestic uses. The basin's groundwater type varies by location with a primarily sodium sulfate-bicarbonate in the north, sodium chloride in the west, and calcium-sodium sulfate in the south. Boron, fluoride, and sodium concentrations are very high in this basin. No other impairments were detected in the four wells sampled (California Department of Water Resources 2006).

Table 3.10-1: Known Roadway Pollutants

Constituents	Primary Sources
Particulates	Pavement wear, vehicles, atmosphere, maintenance, snow/ice abrasives, sediment disturbance
Nitrogen, Phosphorus	Atmosphere, roadside fertilizer application, sediments
Lead	Auto exhaust, tire wear, lubricating oil and grease, bearing wear, atmospheric fallout
Zinc	Tire wear, motor oil, grease
Iron	Auto body rust, steel highway structures, moving engine parts
Copper	Metal plating, bearing and bushing wear, moving engine parts, brake lining wear, fungicide and insecticide application
Cadmium	Tire wear, insecticide application
Chromium	Metal plating, moving engine parts, brake lining wear
Nickel	Diesel fuel and gasoline, lubricating oil, metal plating, bushing wear, brake lining wear, asphalt paving
Manganese	Moving engine parts
Bromide	Exhaust
Cyanide	Anticake compound used to keep deicing salt granular
Sodium, Calcium	Deicing salts, grease
Chloride	Deicing salts
Sulphate	Roadway bed, fuel, deicing salts
Petroleum	Spills, leaks or blow-by of motor lubricants, antifreeze and hydraulic fluids, asphalt leachate
PCBs, Pesticides	Spraying of highway rights-of-way, atmospheric deposition, PCB catalyst in synthetic tires
Pathogenic Bacteria	Soil litter, bird droppings, trucks hauling livestock/stockyard waste
Rubber	Tire wear
Asbestos*	Clutch and brake lining wear
Source: U.S. Department of Transportation. Federal Highway Administration. Publication No. FHWA-PD-96-032. June 1996. * Runoff does not contain mineral asbestos; however, some breakdown products of asbestos have been measured.	

3.10.3 Environmental Consequences

3.10.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, there would be no changes made to SR-58. There would be no increase in impermeable surfaces and therefore no anticipated potential to increase runoff or adversely affect water quality in the area.

Build Alternatives 2, 3, and 4

Widening and realigning SR-58 under all of the build alternatives would increase the amount of impervious surface in the area which would increase stormwater runoff. Increases in stormwater runoff volume could accelerate soil erosion and increase the transport of pollutants to waterways. Alternative 2 would increase the amount of impervious surface by approximately 0.17 square mile (107 acres), Alternative 3 by approximately 0.23 square mile (149 acres), and Alternative 4 by approximately 0.22 square mile (142 acres). The amount of lubricants, sloughed tire and brake material, and other contaminants associated with motorized vehicles and roadways would be similar to existing conditions and would not be expected to have a considerable effect on the local water quality. The proposed project would construct proper drainage facilities so that runoff would not disturb pollutants or sediment and cut grooves in the soil surface.

The existing drainage patterns could potentially be altered by the project; however, it is unlikely that the change would be substantial enough to cause adverse effects to water quality. Because there are several other locations in the watershed for groundwater recharge, the proposed project’s increase in impervious surface would not result in a considerable loss of groundwater recharge and would not affect groundwater levels. The proposed project would be designed so that the drainage flows into a dirt swale (or similar water quality treatment measure) adjacent to the highway. The dirt swale or water quality treatment measure would be designed to act as an infiltration trench to collect runoff, sediment, and trash during the final design phase.

Consistent with the Caltrans’ NPDES permit and the Construction General Permit, BMPs would be incorporated into the proposed project to reduce the discharge of pollutants during construction and operation to the maximum extent practicable. These BMPs are described below under “Avoidance, Minimization, and/or Mitigation Measures.”

Alternatives 2 through 4 of the proposed expressway project would likely impact the monitoring well network for PG&E's Central Area In-Situ Remediation Project. The alternatives would also impact pipelines for both clean and contaminated water that will traverse the expressway route.

For Alternatives 2 through 4, coordination with the Lahontan Regional Water Quality Control Board (RWQCB) and PG&E is ongoing and would be required to continue in order to minimize impacts to the groundwater remediation efforts.

3.10.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, there would be no changes made to SR-58. As such, there would be no potential for construction-associated impacts to adversely affect water quality in the area.

Build Alternatives 2, 3, and 4

Construction to realign and widen SR-58 under Alternative 2 would disturb approximately 1.16 square miles (742 acres) of soil. The widening under Alternative 3 would disturb approximately 1.18 square miles (757 acres) of soil. Alternative 4 would disturb approximately 1.14 square miles (728 acres) of soil. Disturbed soil could cause potential erosion and sediment control issues. In general, the severity of temporary, construction-related water quality impacts depends on soil erosion potential; construction practices; the frequency, magnitude, and duration of precipitation events; and the proximity of construction to stream channels or water bodies. Disturbed or loosened soils exposed to rainfall, runoff, and wind have the potential to be transported to waterways and settle out as sediment, and to “carry” pollutants (e.g., hydrocarbons, metals, certain pesticides), via adsorption, to nearby surface waters. Sediment is considered a pollutant by the RWQCB. Standard measures would be employed to control erosion during construction thereby minimizing or avoiding sediment-related water quality impacts. As such, there would be no substantial adverse effects under any of the build alternatives.

Construction of the proposed project would involve the use of construction equipment and associated fuels, solvents, lubricants, and other petroleum-based pollutants. There is the potential for accidental direct or indirect release of these substances into the environment where they may adversely affect surface and/or groundwater. In addition, concrete, soap, trash, and sanitary wastes are other common sources of potentially harmful materials on construction sites that could be accidentally introduced into a nearby waterway. The impact of toxic, construction-related materials on water quality varies depending on the duration and time of activities. A SWPPP will be developed and implemented to address discharges of stormwater runoff. The SWPPP includes a sampling and analysis plan for non-visible pollutants (contaminants). (See Section 13-3.01B(2)(d)).

The project would comply with the provisions of Statewide NPDES permit, issued to Caltrans by the SWRCB, Order No. 99-06-DWQ. The BMPs as described in Section 3 of the Caltrans’ Statewide SWMP (Caltrans 2003b), Caltrans’ Statewide Stormwater Management Plan (Caltrans 2003b), and the Project Planning and Design Guide (Caltrans 2010), would be evaluated prior to completion of the Project Approval and Environmental Document phase and incorporated into the final design. Design pollution prevention BMPs are selected to reduce post-construction discharges. Treatment BMPs are designated to remove certain pollutants. Construction Site BMPs are incorporated in the SWPPP and implemented during the construction period. The SWPPP would also include post-construction erosion control measures such as re-vegetation of disturbed soil areas.

Caltrans would identify the location of post-construction BMPs in the contract plans. The contractor would be responsible for preparing a SWPPP according to Caltrans’ standards, incorporating all BMPs in the contract plans, and amending the SWPPP during the course of

construction as necessary. Caltrans' resident engineer (Resident Engineer) reviews and approves the SWPPP. The contractor would also implement, inspect, and maintain all measures, with oversight by the Resident Engineer.

3.10.4 Avoidance, Minimization, and/or Mitigation Measures

- **WQ-1:** As described previously, the project would comply with the provisions of Statewide NPDES permit. The BMPs, as described in Section 3 of the Caltrans' Statewide SWMP (Caltrans 2003b), and the Project Planning and Design Guide, would be evaluated prior to completion of the Project Approval and Environmental Document phase and incorporated into the project's engineering plans and specifications. Design pollution prevention BMPs are selected to reduce post-construction discharges. Treatment BMPs are designated to remove certain pollutants. Construction site BMPs would be incorporated in the SWPPP and implemented during the construction period.
- **WQ-2:** The contractor would be responsible for preparing a SWPPP according to Caltrans' standards, incorporating all BMPs in the contract plans, and amending these plans during the course of construction as necessary. The Resident Engineer would review and approve the SWPPP. The general contractor would also implement, inspect, and maintain all measures with oversight by the Resident Engineer.
- **WQ-3:** To minimize potential impacts on water quality, BMPs would be implemented as outlined in the project's engineering plans and specifications. All necessary BMPs would be implemented so that the construction practices avoid excessive erosion and sedimentation, prevent off-site contamination by construction materials, reduce stormwater discharges from the construction site, and reduce impacts on waterways once the proposed project is completed.
- **WQ-4:** Table 1-1 of the Caltrans' Construction Site Best Management Practices Manual (Caltrans 2003b) and/or the Caltrans' Storm Water Quality Handbooks, Project Planning and Design Guide (July 2010) include the following BMPs:
    - temporary soil stabilization,
    - temporary sediment control,
    - tracking control,
    - non-stormwater management,
    - waste management, and
    - materials pollution control.

    At a minimum, the contractor would implement all of the appropriate BMPs under the minimum requirement column of Table 1-1 of the Caltrans' Construction Site Best Management Practices Manual (Caltrans 2003b) and/or the Caltrans' Storm Water Quality Handbooks, Project Planning and Design Guide (Caltrans 2010h). Upon completion of the final engineering and design plans, specific BMPs would be identified and implemented to protect water quality. Such BMPs would be implemented by the contractor through the SWPPP. The plan would also include post-construction erosion control measures such as re-vegetation of disturbed soil areas.

- **WQ-5:** Coordination with the Lahontan Regional Water Quality Control Board (RWQCB) and PG&E is ongoing and would continue in order to minimize impacts to the groundwater remediation efforts.

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3.11 Geology/Soils/Seismic/Topography

3.11.1 Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under CEQA. This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Caltrans' Office of Earthquake Engineering is responsible for assessing the seismic hazard for Department projects. Structures are designed using Caltrans' Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see Caltrans' Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria available at http://www.dot.ca.gov/hq/esc/techpubs/manual/othermanual/other-engin-manual/seismic-design-criteria/sdc.html.

3.11.1.1 State Regulations

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code Section 2621 et seq.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (referred to as earthquake fault zones). It defines criteria for identifying active faults, giving legal weight to terms such as active, and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones. It also encourages and regulates seismic retrofits of some types of structures.

Seismic Hazards Mapping Act of 1990

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6) is intended to avoid or reduce damage resulting from earthquakes. While the Alquist-Priolo Earthquake Fault Zoning Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction,[1] and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Earthquake Fault Zoning Act (i.e., the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped seismic hazard zones).

[1] *Liquefaction* is a phenomenon in which the strength and stiffness of a soil are reduced by earthquake shaking or other rapidly applied loading. Liquefaction and related types of ground failure are of greatest concern in areas where well-sorted sandy unconsolidated sediments are present in the subsurface and the water table is comparatively shallow.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within seismic hazard zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

3.11.2 Affected Environment

Unless otherwise noted, the information from this section was synthesized from the Preliminary Geotechnical Report prepared for the proposed project (Caltrans 2002) and memo to Mr. Dat Wong dated January 5, 2009, Geotechnical Recommendations for Additional Alternatives (Caltrans 2009b). References used in the Preliminary Geotechnical Report are not carried over into this section. This Preliminary Geotechnical Report is based on site reconnaissance, limited subsurface exploration (due to restriction of right-of-entry on private properties and difficulty of obtaining permits from the BLM), laboratory testing of on-site materials, literature review of geotechnical reports of adjacent properties, and local geological and geotechnical information. This report does not present final design recommendations for use during the design phase of the proposed project. Final geotechnical investigations are typically conducted, and final recommendations made, after the completion of the Project Approval and Environmental phase.

The project limits or geologic study area as defined in the geotechnical study are between PM R22.2 and PM R31.1, extending from approximately 3.3 miles west of Hidden River Road and connecting to the current terminus of the existing four-lane SR-58 expressway 1.2 miles east of Lenwood Road. It should be noted that the Preliminary Geotechnical Report includes preliminary geotechnical studies for the main alignment, and the existing BNSF Railroad, a noise barrier foundation, and an earth-retaining structure foundation. The report did not include geotechnical studies for bridge foundations or culverts. These types of investigations are typically conducted during final design – after completion of the Project Approval and Environmental Document phase.

Regional Geology

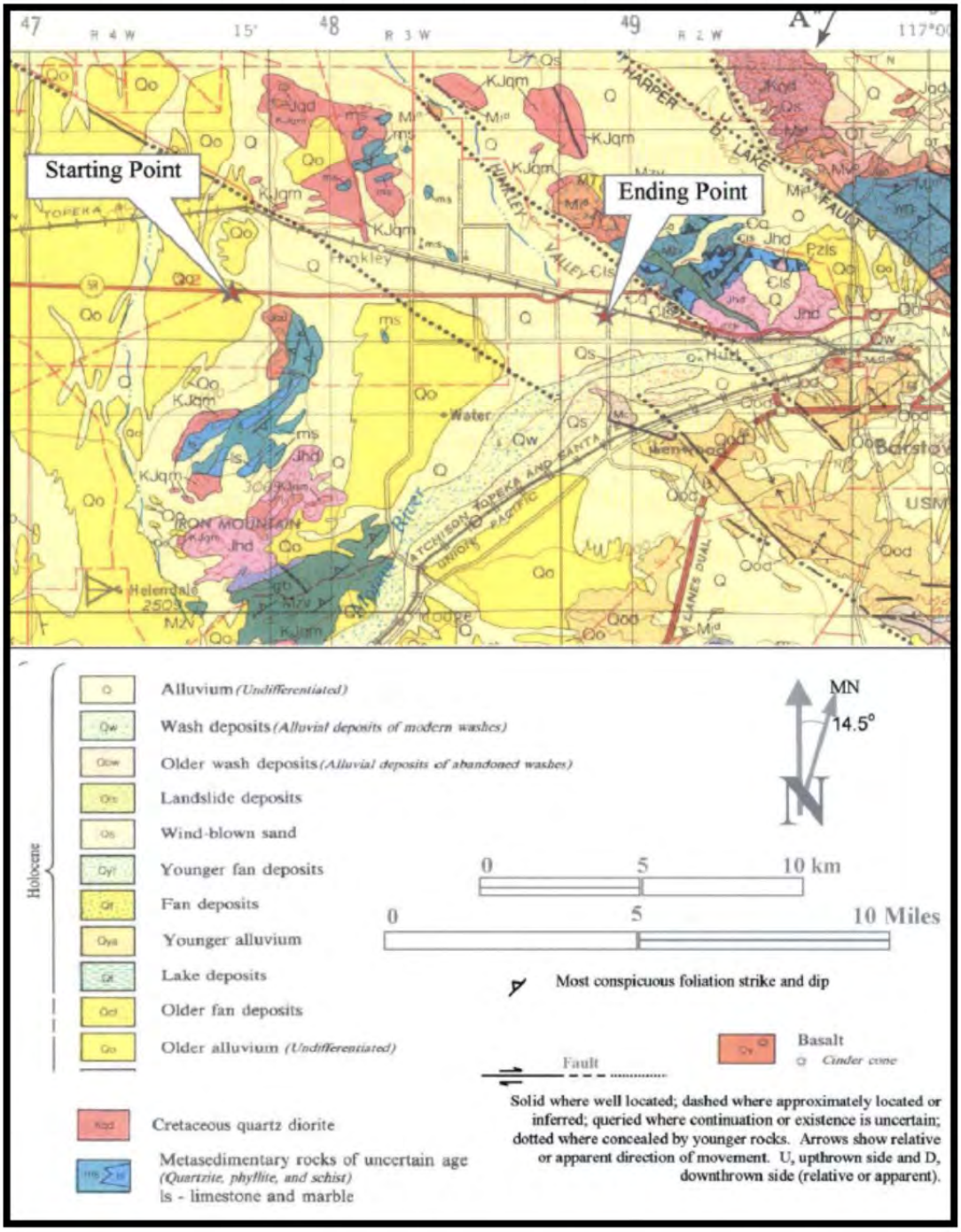
The project site lies within the Mojave Block geomorphic province. This province is characterized by isolated mountain ranges with broad coalescing alluvial fans terminating at dry lakebeds (playas). There are two topographic trends within this province, a northwest southeast trend controlled by the San Andreas fault on the southwest border of the province, and a secondary east-west trend controlled by the Garlock fault, which is the northern boundary of the province.

Site Geology

Between PM 22.1 and PM 23.1, the proposed alignment passes through undifferentiated older Quaternary Alluvium (Qo). This material is composed of various sand, silt, gravel, and clay combinations and is shown on the geologic map of the San Bernardino Quadrangle (see Figure 3.11.1).

Between PM 23.1 and PM 23.8 of the proposed alignment, bedrock is at or near the surface and is composed of Jurassic Quartz Diorite (Jqd) and marble (MS) of uncertain age. On the flanks of the hill between the above stationing, bedrock is covered by a thin veneer of

Figure 3.11.1: Geologic Map



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alluvium[2] (Q) and colluvium[3] (undifferentiated) of Quaternary[4] age, tapering from seven to 17 feet thick closer to the valley floor to zero feet thick at the hilltop. Alluvium and Colluvium are composed of weathered fragments of bedrock ranging in size from sand to cobbles.

Topography and Surface Drainage

The existing topography of the site is relatively flat to gently rolling terrain; the proposed alignment would traverse a series of coalescing alluvial fans, sloping down to the northeast. The elevation for the area between the project's western limit (PM R22.2) and Valley View Road (PM R24.4) is high compared to the proposed alignment east of Valley View Road. The elevation for the area ranges from 2,356 feet to 2,251 feet above sea level, with rock outcrops between PM 23.5 and PM 24.5, where deep cuts for the proposed project are anticipated. Towards the eastern limits of the project, the topography is generally flat with a gradient of 16± feet per mile (descending to the northeast). The surface elevations of the future expressway would change from 2,300 feet (PM 22.2) at the western portion of the alignment to 2,175 feet (PM 31.1) at the eastern end of the alignment.

Within the project limits (PM 22.2 to Lenwood Street), existing SR-58 is an AC paved, conventional two-lane highway with approximately12 foot wide lanes and shoulders ranging from 6 to 8 feet wide. From the western most point of the proposed improvements to 0.5 miles east of Summerset Road, the existing alignment follows the natural contour of the land. This part of SR-58 has no longitudinally directed AC dikes or ditches for water control runoff. No culverts cross below the pavement or drainage gullies. Following a sheet flow drainage pattern, surface runoff from higher terrain south of the highway generally flows across the traveled way. Runoff does concentrate to a degree and flows across the highway through several existing dips at the west part of the alignment. No major creeks or tributaries crossing the proposed alignment have been identified, but four unnamed washes transect the western portion of the proposed alignment at STA 367+50, 371+00, 388+00, 395+50.

Groundwater

Groundwater was not encountered during the preliminary site exploration conducted for the preliminary geotechnical study. Supplemental groundwater information was obtained through the Department of Water Resources, DPLA reveals that the shallowest groundwater measurements in their database was 36.3 feet bgs in March 1958 and 274.4 feet bgs in April 1999 near the eastern end of the project study area. Based on readings from two observation wells adjacent to the project limits, groundwater levels have fluctuated over time, but exhibit a general decrease in elevation since the mid-1990s. Groundwater can occur as perched water, where water collects on impermeable layers in the subsurface strata. These perched water conditions vary seasonally, depending on rainfall and local recharge conditions.

[2] Alluvium is loose, unconsolidated (not cemented together into a solid rock), soil or sediments, eroded, deposited, and reshaped by water in some form in a non-marine setting.
[3] Colluvium is the name for loose bodies of sediment that have been deposited or built up at the bottom of a low-grade slope or against a barrier on that slope, transported by gravity.
[4] The Quaternary Period is the most recent of the three periods of the Cenozoic Era in the geologic time scale. The Cenozoic Era is the most recent of the three classic geological eras and covers the period from 65.5 million years ago to the present.

Seismicity

The study area is located in a high seismically active area as is most of southern California. Seismic events that are likely to produce the greatest bedrock accelerations could be a moderate or large event on the active Lockhart fault zone or a large event on another more distant fault. A fault is considered by the State of California to be active if geologic evidence indicates that movement on the fault has occurred in the last 11,000 years, and potentially active if movement is demonstrated to have occurred in the last two millions years.

The closest active fault to the project site is the Lockhart fault, a strike-slip fault that crosses the proposed alignment near the intersection of Hinkley Road. An Alquist-Priolo Earthquake Fault Zoning Act map for this area has not yet been completed by the California Geologic Survey (CGS); however, referenced material describes the southeastern portion of the fault as being active. According to the 1996 Caltrans California Seismic Hazard Map, the MCE would be a 7.25 magnitude earthquake on the Lockhart fault zone. The project site falls within the 0.6g peak bedrock acceleration contour on the 1996 Caltrans California Seismic Hazard Map and utilizing the curve by Maulchin (1992) for estimating the acceleration factor, the peak site acceleration would be estimated to be in excess of 0.5g. Refer to Figure 3.11.2 for the location of the project site in relation to the nearest active faults.

Liquefaction, Ground Shaking, and Surface Rupture

The potential for liquefaction is relatively low based on the reported groundwater depths and generally dense nature of the subsurface granular soils as defined by SPT blowcounts. Ground shaking is expected to occur at the site due to the predicted magnitude of peak ground accelerations for earthquakes along nearby faults.

Surface rupture has been documented as having occurred on the southeast portion of the Lockhart fault during the Quaternary period. However, surface rupture has not been studied in detail where the trend of the Lockhart fault intersects the proposed alignment between Stations 400+00 and 450+00.

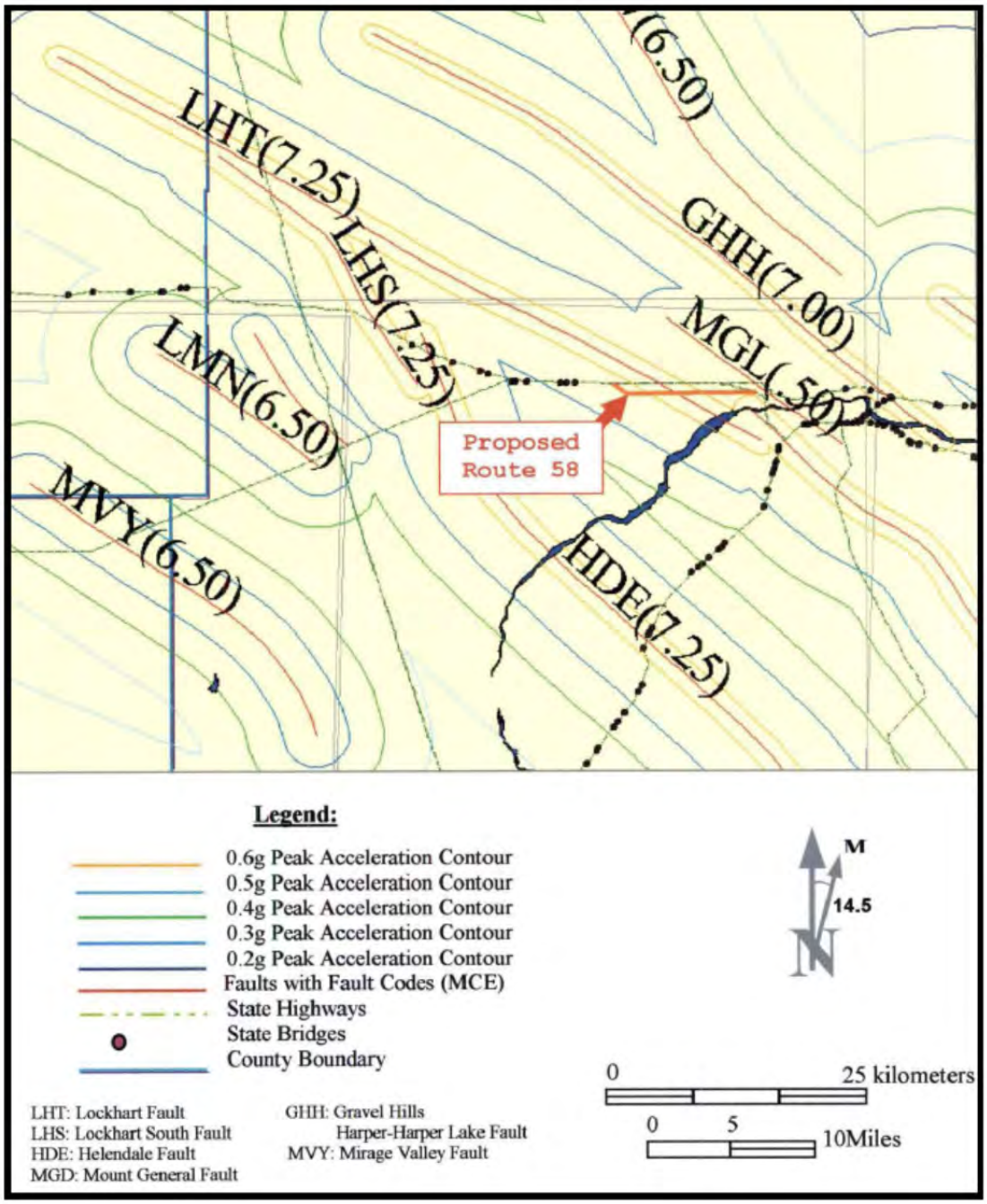
Scour

No perennially flowing creek or stream was observed within the limits of the proposed project during site reconnaissance. Arroyos winding through the west part of the proposed project are dry year-round, except for during moderate to heavy rainfall. The climatic conditions within the region are arid and normally precipitation is negligible, however flash floods do occur and are unpredictable in their intensity. Therefore, scour may be an issue with regards to culverts.

Landslides

Landslides are not a major problem because the topography in the site region is subdued.

Figure 3.11.2: Geologic Map – Seismic Hazards Map



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3.11.3 Environmental Consequences

3.11.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no permanent effects involving geology, erosion, soils, seismicity, topography, or mineral resources would occur.

Build Alternatives 2, 3, and 4

Liquefaction, Ground Shaking, and Surface Rupture

Neither ground shaking, nor fault rupture can be avoided in the design of highways crossing actives faults; however, placing the proposed highway either at natural grade or in low cuts or on low embankments limits the potential for, and consequences of, failure in the cuts and fills. This allows the highway to be restored to service with comparative minimum of maintenance or re-construction effort following a seismic event. Accordingly, the currently proposed design for each alignment are favorable for accommodating future ground shaking or surface rupture. Compliance with Caltrans' procedures regarding seismic design, as detailed in Section 19 Earthwork of Caltrans' Standard Specifications 2010 Manual, is also anticipated to prevent any adverse effects related to seismic ground shaking. Seismic design would also meet County requirements for near-source design parameters under the UBC.

Groundwater

Groundwater is not expected to affect the proposed alignments.

Within the cut sections of the alignments, however, groundwater may be perched, or may become perched, on the contact between rock and alluvium. It is possible, that upon completion of the cuts in this area, water flowing along the bedrock/soil contact may seep out along the line of intersection between the cut face and the aforementioned geologic contact. In this case water may seep out and flow down slope toward the proposed roadway. Seepage out of the cut face is not expected to be a permanent condition, as there is not enough rainfall to create year round flow.

3.11.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no temporary effects involving geology, erosion, soils, seismicity, topography, or mineral resources would occur.

Build Alternatives 2, 3, and 4

Soils

Due to the sandy nature of the on-site soils, the soils are easily erodible, and erosion could occur during construction. Development of the roadway would cause groundbreaking and vegetation removal during construction. As a result, soil could be exposed to rain and wind, potentially

causing accelerated erosion and deposition from the project site. Federal and state jurisdictions require that an approved SWPPP be prepared for projects that involve greater than one acre of disturbance. A SWPPP specifies BMPs that would prevent construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters. Earthwork in the project area would be performed in accordance with Section 19 Earthwork of the Caltrans' Standard Specifications 2010 Manual and/or the requirements of applicable government agencies, and recommendations from the Preliminary Geotechnical Report (Caltrans 2002), which follow:

1. Cut slope

   Cut slope ratio for this project shall be 1.5:1 (Horizontal: Vertical) or flatter. For planning purposes, the earthwork factor is 1.3 for rock cuts, and 1.05 for cut in alluvium.

2. Embankment

   Embankment slope shall be 2:1 (H: V) or flatter. Where the future embankment will be constructed across natural drainage courses, 1.5 feet of alluvium shall be sub-excavated (over-excavated) from the embankment culvert foundation area and replace as compacted fill.

3. Excavation Technique

   Excavation can be accomplished by conventional technique for this project, except for the cut sections from the rock area on western part of the proposed project. This crystalline rock mass contains a weathered horizon that appears rippable to a depth of 7 feet below the top of the rock. At depth between 7 feet to 46 feet, the rock will require difficult ripping and/or light blasting. Rock excavated below 46 feet will likely require blasting.

Settlement

Immediate settlement due to the self-weight of the embankment fill and compression is expected to occur during placement of the embankment during construction. Subsidence is estimated to be approximately 1.2 inches. According to the subsurface investigation, secondary settlement from soil collapse under future embankment loading is not anticipated. No adverse effects are anticipated.

If there are any developed properties along any of the proposed Build Alternatives that include on-site septic disposal systems, they would need to be removed prior to construction. Excavations created during that process would be backfilled with fill compacted under Caltrans inspection.

3.11.4 Avoidance, Minimization, and/or Mitigation Measures

To minimize potential impacts related to geology and soils, the following measures will be implemented:

- **GEO-1:** Earthwork in the project area shall be performed in accordance with the latest edition of Caltrans' Standard Specifications.
- **GEO-2:** During grading and site preparation, all onsite earthwork would be performed in accordance with the recommendations contained in Section 12.0, Geotechnical Considerations and Section 15.0 Preliminary Recommendations of the Preliminary Geotechnical Report, Caltrans' Standard Specifications, which include the following:

1. Cut slope. Cut slope for this project shall be 1:1.5 (V:H) or flatter. For planning purposes, the earthwork factor is 1.3 for rock cuts, and 1.05 for cut in alluvium.
2. Grading Factor. A value of 1.3 for earthwork factor in the rock cuts and a value of 1.05 for cuts in alluvium are recommended. These values may be adjusted based on further field exploration and laboratory testing.
3. Embankment. Embankment slope shall be 1:2 (V:H) or flatter. Where the future embankment will be constructed across natural drainage courses, 0.5 feet of alluvium shall be sub-excavated (over-excavated) from the embankment culvert foundation area and replace as compacted fill. Embankment foundations shall be prepared in accordance with Section 19 of the Standard Specifications. Where embankment foundations cross existing cultivated land, the embankment foundation shall be subexcavated 2.6 feet and restored to grade with compacted fill. The recommendation may be modified or deleted based on supplement exploration and testing for the Geotechnical Design Report. Embankment foundations areas disturbed by building demolition or basement backfilling operations should be overexcavated and restored with compacted fill.
4. Excavation Technique. Excavation can be accomplished by conventional technique for this project, except for the cut sections from the rock area on western part the proposed project. This crystalline rock mass contains a weathered horizon that appears rippable to a depth of seven feet below the top of the rock. At depths between seven feet and 46 feet, the rock will require difficult ripping and/or light blasting. Rock excavated below 46 feet will likely require blasting.
5. Structure Foundations

    a. Retaining wall. The wall foundation soils should be sub-excavated and restored as compacted fill; either a Type 1 or Type 2 Standard Plan retaining wall can be used. Alternatively a Mechanically Stabilized Embankment (MSE) wall could be used. The MSE walls are more tolerable to settlement and subexcavation and recompaction of the foundation soils would be significantly reduced or eliminated. For planning purposes, assume no subexcavation for an MSE wall.

    b. During preparation of the Geotechnical Design Report, bulk samples will be taken from the proposed sub-excavated area for laboratory compaction, remolded, direct shear, sieve analysis, and sand equivalent testing. This data will be used to analyze the bearing capacity, external stability, and suitability of on-site soils as structure backfill.
6. Erosion.

    a. Vegetate and mulch the slope surface and include the use of erosion protection coverings. Specifications would require the embankment construction to be done in phases, with completed slopes covered following each phase of grading. The Preliminary Geotechnical Report defers to the District Landscaping Section for techniques, specifications, and materials in vegetating slopes.

    b. Time the embankment construction to minimize soil exposure. Precipitation is a key factor in slope erosion. If possible, it would be best not to perform embankment construction during the relatively wet season. Embankment could be constructed during late spring to early summer months and vegetated/mulched prior to the rainy season.

c. Divert runoff away from slope surface. Use a combination of pavement cross-slope and AC dikes to prevent flow over the toe of the slope.

d. Roughen the slope surface by applying salvaged topsoil (with vegetation) from the clearing and grubbing operation. This would reduce the runoff velocity and enhance the growth of native vegetation.

e. Armor the slope using rock fragments derived from blasting/cutting the cut slopes section on the west side of the proposed alignment.

f. Build "zoned" embankments such that the sides of the embankments are equipment width "shells" of rock fill derived from cutting the hard rock segments of the projects.

7. Hazardous Wastes. Water required for construction purposes would not be taken from existing or constructed groundwater wells within the project limits due to the presence of Hexavalent Chromium (Chrom VI) in the groundwater and soils.

8. Excavation Techniques. Excavations can be accomplished by conventional techniques for this project, except for the section of Alternative 2 between PM 23.0 and PM 24.1 where rock excavated below a depth of 46 feet will likely require blasting. If blasting is not viable, then realignment may be considered.

9. Settlement. Consolidation tests to further review the primary consolidation estimates for the higher embankment as well as the potential for collapsible soils will be needed.

The recommendations, which are considered preliminary, may be revised based on actual conditions encountered during earthwork and grading. In addition, they will be revised if the project design is modified.

3.12 Paleontology

3.12.1 Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects. (e.g., Antiquities Act of 1906 [16 USC 431-433], Federal-Aid Highway Act of 1960 [23 USC 305]), and the Omnibus Public Land Management Act of 2009 [16 USC 470aaa]). Under California law, paleontological resources are protected by CEQA.

3.12.2 Affected Environment

The information from this section was synthesized from the final paleontological identification report and paleontological evaluation report (PIR/PER) prepared for the proposed project (Caltrans 2010g) and Errata PIR/PER (Caltrans 2012c). References used in the PIR/PER are not carried over into this section.

The proposed project site is situated within the northwestern corner of the Mojave Desert Geomorphic Province. Large scale faults, mountains, and valleys parallel the San Andreas Fault Zone and the Garlock Fault Zone along the western and northern boundaries respectively. Numerous smaller scale features are perpendicular to the main fault alignment (Wagner 2002). Because of the motion of the Pacific Plate (toward the northwest) relative to the "fixed" North American Plate, and how the Pacific Plate "catches" on the North American Plate in the Transverse Range Province, the Mojave Province has been pulled to the west. This has resulted in an extensional terrain of playas and mountains. Thinned crust in the province allowed for volcanism in much of the Mojave Province including the Newberry-Barstow volcanic complex, Amboy and Pisgah Craters, and other volcanic areas.

3.12.2.1 Stratigraphy

Research and mapping has shown that the project area is underlain by the following geologic units: Precambrian or Paleozoic Waterman Gneiss (250 million to 2.8 billion year old), Mesozoic quartz diorite (qd, 248 to 65 million years old), Cretaceous or Jurassic aplite dike [145.5 and 65.5 million years old (Cretaceous) but may be as old as 199 million years (Jurassic)], Quaternary older alluvium (126,000 to 11,000 years old), and Quaternary alluvium [Holocene (less than 11,000 years old)].

Because of high heat and deformation of rocks below surface, there is no chance of fossils being recovered from the Precambrian or Paleozoic Waterman Gneiss, and Cretaceous or Jurassic aplite dike geologic units. However, there is a chance of recovering fossils from Quaternary older alluvium and Quaternary alluvium deposits.

Quaternary older alluvium is comprised of middle to late Pleistocene silts, sands, and gravels are subrounded, massive to poorly sorted, and poorly bedded. Because of the arid nature of the southwest and the lack of surface water during most of the year, most alluvium is deposited by flash flood events. Washes coming off the local hillsides are common and the coarsest sediments are found there and at the base of the hills. Valley centers accumulate rainwater and pluvial lakes after heavy rains.

During the Pleistocene (between 1.8 million to 11,000 years ago) many of these valleys supported lakes year-round. The past 11,000 years of the current interglacial has seen gradual desiccation of this region and water is a scarce commodity in the region. In, areas where these sediments were deposited by water with substantial annual flow, fossils are possible. The proposed project boundaries are very near the Mojave River and the ancient shoreline of Lake Harper. The proximity of the project to the Mojave River and Lake Harper greatly increases the chance of encountering older alluvium sediments that were deposited in a water environment, thereby increasing the chance of recovering fossils.

Quaternary alluvium sediments are similar to the Quaternary older alluvium above with the exception that they are younger and usually less consolidated. Surface sediments of this age away from lakebeds are primarily sands and gravels with variable amounts of oxidation. Deposits of this age are unlikely to contain the remains of extinct animals; however they do overlie older, potentially sensitive sediments. The depth of the sensitive sediments below the present surface is variable and cannot be determined by a surface study.

3.12.2.2 Records Search and Field Reconnaissance

A search for paleontological records within the project area was completed using online databases and published materials. These listings are not comprehensive due to the incomplete and limited number of databases present online. The search yielded that no fossil localities have been previously collected from the Project Study Area. Five localities are known 5 miles southeast of Hinkley in the Quaternary Older Alluvium. Fossils recovered from these localities include small vertebrates, turtle, snake, bird, coyote, and bighorn sheep. Several additional localities in late Pleistocene (120,000 - 11,000 years old) sediments about 20 miles away from the project, at Kramer Junction, have produced a large array of extinct and extant taxa. Notably the extinct taxa include: an extinct horse and a llama-like camel from Kramer. These Pleistocene sediments occur at the surface as Quaternary Older Alluvium and at an unknown depth below the Quaternary alluvium mapped over the project surface.

A paleontological reconnaissance of the Project Study Area was conducted on April 12, 2009. The survey consisted of a windshield survey with intensive pedestrian inspection of open ground surface areas of high sensitivity formations and lithologies. Formations of minimal sensitivity were given only a cursory inspection. The project location and some detailed features were photographed to document the condition of the proposed Project Study Area and can be found in the PIR/PER (Caltrans 2010g).

Potentially sensitive units mapped in the 9.3-mile Project Study Area included Quaternary alluvium of Holocene age and Quaternary older alluvium of Pleistocene age. Along SR 58, most of the project area was previously modified by construction activities and the southern alignment was either unmodified or modified by farming activities. Much of the proposed alternate route south of SR 58 and east of Hinkley Road is actively in use as either agricultural or dairy land and is so modified at the surface that it was not useful for the paleontological reconnaissance.

Quaternary alluvium sediments present east of Fairview road consist primarily of sands that were reworked into modern sand dunes at the surface. These unconsolidated sands are consistent with the proximity of this area to the ancient shoreline of Lake Harper and the modern Mojave River.

To the west of Valley Wells Road, the Quaternary alluvium was not reworked into modern dunes at the surface; otherwise, they were very similar to the Quaternary alluvium sediments on the east end of the project.

Quaternary older alluvium consists of silts and sands with approximately 15% pebbles. No fossils were observed during the survey in any of the formations examined.

3.12.3 Environmental Consequences

Paleontological resources are considered to be significant if they provide new data on fossil animals, distribution, evolution or other scientifically important information as stated previously. Caltrans uses a tripartite scale to characterize paleontological sensitivity (see Table 3.12-1).

Table 3.12-1: Paleontology Sensitivity Scale

Potential	Description
High	Rock units which, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate or significant plant fossils. These units include sedimentary formations that contain significant nonrenewable resources anywhere within the geographical extent.
Low	Rock units that are not known to have produced significant fossils in the past but possess a potential to contain fossils or those that yield common fossil invertebrates.
No	Rock units with no potential to contain fossils. This includes most rocks of igneous origin or metamorphosed transformation.
Source: Caltrans 2003.	

3.12.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

The No Build Alternative would not result in permanent impacts to paleontological resources.

Build Alternatives 2, 3, and 4

The study area for paleontology covers an area within the northwestern corner of the Mojave Desert and the adjacent ancient shoreline of Lake Harper. The area is defined as such due to the project's proximity to the Mojave River and Lake Harper, which in antiquity were most likely to deposit alluvial sediments increasing the chance of recovering fossils in the present day. Permanent impacts under any of the build alternatives would be expected to be indiscernible and impacts are therefore discussed collectively.

The fact that no fossils were observed during the paleontological reconnaissance is typical since most fossils are subsurface. Existing fossil localities nearby in the same rock units present within the Project Study Area have produced significant vertebrate paleontological resources. On this basis, the Quaternary older alluvium has a high sensitivity or potential to produce significant fossils. This sensitivity increases with increasing depth below the ground surface. In addition, some areas mapped as Quaternary (younger) alluvium are underlain by older alluvium which may be impacted by deep excavations. Therefore all three alternatives 2, 3, and 4 will have less than significant impact with mitigation in paleontological resources.

The greatest potential impacts occur near the west end of the project area and between Valley Wells and Summerset roads in Hinkley, because they are closest to the Mojave River and Harper Lake. The rest of the route consists of younger formations that may overly older fossiliferous sediments.

A Paleontological Mitigation Plan (PMP), discussed under Section 3.12.4, would be required and shall be completed during final project design.

3.12.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

The No Build Alternative would not result in temporary impacts to paleontological resources.

Build Alternatives 2, 3, and 4

Any impacts to paleontological resources are permanent and irreparable; therefore, there would be no temporary impact for any of the build alternatives.

3.12.4 Avoidance, Minimization, and/or Mitigation Measures

- **PA-1:** Grading, excavation and other surface and subsurface excavation in the RSA have potential to impact significant nonrenewable fossil resources of Pleistocene age. A PMP shall be prepared, during final project design, by a qualified paleontologist. The PMP will detail the measures to be implemented in the event of paleontological discoveries. The PMP shall include, at a minimum, the following elements:
- **PA-1.1:** Required 1-hour preconstruction paleontological awareness training for earthmoving personnel, including documentation of training such as sign in sheets, and hardhat stickers, to establish communications protocols between construction personnel and the Principal Paleontologist.
- **PA-1.2:** A signed repository agreement with the San Bernardino County Museum to establish a curation process in the event of sample collection.
- **PA-1.3:** Monitoring, by a Principal Paleontologist, of Quaternary Older Alluvium of the Pleistocene Epoch during excavation.
- **PA-1.4:** Field and laboratory methods that meet the curation requirements of the San Bernardino County Museum will be implemented for monitoring, reporting, collection, and curation of collected specimens. Curation requirements are available for the public review at the San Bernardino County Museum.
- **PA-1.5:** All elements of the PMP will follow the PMP Format published in the Caltrans Standard Environmental Reference (Caltrans 2003).
- **PA-1.6:** A Paleontological Mitigation Report discussing findings and analysis will be prepared by a Principal Paleontologist upon completion of project earthmoving. The report will be included in the Environmental project file and also submitted to the curation facility.

3.13 Hazardous Waste/Materials

3.13.1 Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

3.13.1.1 Federal Regulations

Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992,
- Clean Water Act,
- Clean Air Act,
- Safe Drinking Water Act,
- Occupational Safety and Health Act (OSHA),
- Atomic Energy Act,
- Toxic Substances Control Act (TSCA), and
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

3.13.1.2 State Regulations

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires clean-up of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean-up of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is encountered, disturbed during, or generated during project construction.

3.13.2 Affected Environment

Unless otherwise noted, the information from this section was synthesized from the Initial Site Assessment (ISA) prepared for the proposed project (Caltrans 2008). References used in the ISA are not carried over into this section. The purpose of the ISA is to identify recognized environmental conditions (RECs) associated with the acquisition of new right-of-way as defined by American Standard Testing Methods (ASTM) Standard Practice E1527-00. According to this ASTM Standard, a REC is defined as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property, even if those substances are present under conditions in compliance with environmental laws. The environmental "footprint" or study area evaluated in the ISA comprises approximately 10 square miles of land located along SR-58. The width of the environmental footprint extends approximately 0.50 mile north of Alternative 4 and approximately 0.50 mile south of Alternative 2.

The ISA identified several facilities and/or parcels within the study area that are considered RECs; they include: dairies, construction businesses, properties with solid waste, electrical transformers, domestic wells and septic tanks, aerially deposited lead, underground storage tanks (USTs), and PG&E's hexavalent chromium ground water plume.

Lead has been detected in earth material in unpaved areas of the highway. Lead is present in earth material within the project limits at average concentrations below 1,000 mg/kg total lead and below 5 mg/l soluble lead. Levels of lead found within the project limits range from less than 1.0 to 26 mg/kg total lead with an average concentration of 3.0 mg/kg total lead as analyzed by EPA Test Method 6010 or EPA Test Method 7000 series and based upon a 95% Upper Confidence Limit. Levels of lead found within the project limits have a predicted average soluble concentration of 1.3 mg/l as analyzed by the California Waste Extraction Test and based upon a 95% Upper Confidence Limit.

According to the County of San Bernardino Hazard Overlap Maps, the project site is not within or adjacent to a high fire hazard area (San Bernardino County 2007).

3.13.2.1 Site Reconnaissance

As part of the ISA, a site reconnaissance of the environmental footprint was conducted on January 30, 2007, to assess and photograph present site conditions. The majority of the environmental footprint is structurally undeveloped with several telephone poles and associated pole mounted transformers located throughout the town of Hinkley. The environmental footprint also contains segments of the existing SR-58 highway, a PG&E natural gas pipeline, and the BNSF railroad tracks. The reconnaissance was limited to observations made from the public right-of-way and no attempts were made to enter private property. Notable improvements noted within the environmental footprint include:

- Approximately 120 residences;
- Hinkley Gas & Liquor (two USTs);
- Hinkley Fire Department (two aboveground storage tanks [ASTs]);
- Central Metal Inc. (auto dismantling);
- A suspected former gasoline station;

- Several hundred acres of agricultural land;
- Propane ASTs;
- Paved and unpaved streets and highways;
- Underground utilities;
- Ground monitoring wells; and
- Water ASTs.

Several of the observed properties store or appear to store hazardous materials. The majority of these hazardous material storage areas appeared to contain petroleum related products or fluids from dismantled vehicles. No substantial surface staining or discolored soils were observed from the public right-of-way.

Propane tanks, water storage ASTs, and water supply wells were observed at many of the residential properties within the environmental footprint. In addition, groundwater monitoring wells were observed with a large majority of them located between Mountain View Road and Summerset Road. These groundwater monitoring wells appear to be associated with the PG&E hexavalent chromium groundwater plume.

Alternative 2 Site Conditions

The following describes the environmental observations made along the proposed Alternative 2 right-of-way:

- Power lines or transformers: Power lines run parallel to Wagner, Lakeview, Valley Wells, Hinkley, Livingston, Summerset, and Dixie roads within the affected study area.
- Agricultural land: The area east of Mountain View Road consists of current and historical agricultural land; therefore, the historical use of pesticides is likely in this area.
- Residential: Approximately 11 residences are located within the proposed right-of-way, but are not generally considered to be an environmental concern in terms of hazardous waste/materials for the proposed construction of the project; however, it is likely that each residential property is expected to have propane AST, water storage AST, a water supply well, and a septic tank system.
- Construction business and residence (36586 Hinkley Road): This property consists of two sheet metal buildings and a private residence. The remainder of the property is open and used for parking large construction equipment. Identification of any tanks or hazardous material storage areas from the public right-of-way was not possible at the time of the survey.
- Dairy: The proposed right-of-way for Alternative 2 encroaches near the northeast corner of a dairy located on the west side of Dixie Road, north of Community Boulevard. The proposed right-of-way crosses fields where dairy waste appear to have been tilled into or discharged to surface soils. A private residence and other structures related to the dairy operations (cow shades, processing buildings, smaller unidentified associated structures, and auxiliary diesel generator) were observed. No staining was observed around the generator. USTs or ASTs were not observed from the public right-of-way but are likely to be present since they are often used to support generators and heavy farm equipment.

Alternative 3 Site Conditions

The following describes the environmental observations made along the proposed Alternative 3 right-of-way:

- Power lines or transformers: Power lines run parallel to the existing SR-58 right-of-way, Lake View, Valley Wells, Flower, Hinkley, Livingston, Summerset, and Dixie roads, as well as several unnamed unpaved roads.
- Agricultural land: The area east of Mountain View Road consists of current and historical agricultural land; therefore, the historical use of pesticides is likely.
- Residential: Approximately 30 residences, a mobile home park, and Lucie's Market are located within the proposed Alternative 3 right-of-way and are not generally considered to be an environmental concern in terms of hazardous waste/materials; however, each residential property is expected to have propane AST, water storage AST, a water supply well, and a septic tank system.
- Dairies: Two dairy properties were observed within the proposed Alternative 3 right-of-way. One dairy is located at the northwest corner of Livingston Road and SR-58 and the other is a former dairy located at the northwest corner of Mountain View Road and SR-58. The proposed right-of-way crosses fields where dairy waste appear to have been tilled into or discharged to surface soils. Further, the former dairy located at Mountain View and SR-58 was used by PG&E in their water contamination remediation efforts.[1] A private residence and other structures related to the dairy operations (cow shades, processing buildings, smaller unidentified associated structures, and auxiliary diesel generator) were observed. No staining was observed around the generator. USTs or ASTs were not observed from the public right-of-way, but cannot be discounted since they are often used to support generators and heavy farm equipment.
- Properties with solid waste: Abandoned vehicles, 55-gallon drums of unknown contents, and large amounts of solid waste (trash) were observed on several residential properties. Identification of any hazardous material storage or stained soil from the public right-of-way was not possible at the time of the site survey.

Alternative 4 Site Conditions

The following describes the environmental observations made along the proposed Alternative 4 right-of-way:

- Power lines or transformers: Power lines run parallel to the existing SR-58 right-of-way, Lake View, Valley Wells, Flower, Hinkley, Livingston, Summerset, and Dixie roads, as well as several unnamed unpaved roads.
- Agricultural land: The area east of Mountain View Road consists of current and historical agricultural land; therefore, historical use of pesticides is likely.

[1] Lahontan RWQCB 2012. *Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County.* San Francisco, CA: ICF International.

- Residential: Approximately 40 residences, a mobile home park, bar, and Lucie's Market are located within the Alternative 4 right-of-way and are not generally considered to be an environmental concern in terms of hazardous waste/materials; however, each residential property is expected to have a propane AST, water storage AST, a water supply well, and a septic tank system.
- Dairies: The proposed right-of-way appears to encroach onto three dairy properties. One dairy appears to be active and is located at the northwest corner of Livingston Road and SR-58. The second dairy is located at 37192 Hinkley Road and the third dairy, which is a former dairy, was observed at the northwest corner of Mountain View Road and SR-58. The proposed alignment intersects fields where dairy waste appears to have been tilled into or discharged to surface soils. Further, the former dairy located at Mountain View and SR-58 was used by PG&E in their water contamination remediation efforts.[1] From the public right-of-way, the dairy properties consisted of private residences and structures related to the operations of a dairy (cow shades, processing buildings, and smaller unidentified associated structures). An auxiliary diesel generator was observed at the active dairy property. No staining was observed on the ground around the generator. USTs and ASTs were not observed from the public right-of-way, but cannot be discounted since they are often used to support generators and heavy farm equipment.
- Properties with solid waste: Abandoned vehicles, 55-gallon drums of unknown contents, and large amounts of solid waste (trash) were observed on several residential properties. Identification of any hazardous material storage or stained soil from the public right-of-way was not possible.

Other Observations/Issues

In addition to the facilities described above, the following additional potential environmental concerns were observed on several residential properties:

- Several hundred acres of agricultural land located on the eastern half of the town of Hinkley where pesticides may have been applied.
- Dumped piles of soil of unknown origin were observed along SR-58 between Summerset and Anson Roads.
- Domestic wells and groundwater monitoring wells were observed throughout the environmental footprint. Figures 3.13.7 thru 3.13.9 indicate type and location of wells.
- ASTs were observed in several locations throughout the footprint.
- The BNSF railroad runs through the northeastern section of the footprint.
- A number of properties with dumped solid waste were observed throughout the footprint.
- Septic systems were observed at several locations.

[1] Lahontan RWQCB 2012. *Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County*. San Francisco, CA: ICF International.

Polychlorinated Biphenyls

Electrical transformers, hydraulic capacitors, fluorescent light fixtures, and similar equipment may contain polychlorinated biphenyls (PCBs) in the hydraulic fluid or dielectric insulating fluids within the units. Power lines and associated pole-mounted electrical transformers are located throughout the study area. Overall, most of the pole-mounted transformers appeared old but in good condition, no rusting, cracking or staining was observed; however, the soils beneath the several cracked/stained units will be evaluated for the presence of PCBs. Soil surveys will determine presence of PCBs in soils and any required remediation will be implemented in conjunction with utility relocation coordination during final design.

Lead-Based Paint

Given the pre-1978 construction of the structures within the environmental footprint, the presence of lead-based paint (LBP) should be anticipated.

Aerially Deposited Lead

An Aerially Deposited Lead (ADL) survey was completed in November 10, 2010. The soils along the existing right-of-way are considered non-hazardous with respect to lead. Nevertheless, soils within the right-of-way will be tested for ADL before the Project Approval and Environmental Document phase of the Project is completed.

Hexavalent Chromium

Soils within the right-of-way will be tested for hexavalent chromium before the Project Approval and Environmental Document phase of the Project is completed.

Asbestos-Containing Materials

It is anticipated that structures within or nearby the selected alternative alignments would require demolition. Given the pre-1978 construction of many site structures, asbestos-containing materials (ACMs) should be anticipated.

Solid Waste Disposal

Many of the residential properties located within the environmental footprint contained substantial amounts of solid waste in the form of non-operation vehicles, old equipment, and household debris. A large amount of stockpiled soil was observed along the southern side of SR-58, east of Summerset Road. The stockpiled soil is located approximately 0.25 mile north of any of the proposed alternative alignments; therefore, it is unlikely that these offsite properties have affected the environmental conditions at the project site.

Central Metal Inc. is located north of the proposed alternative alignments at 24399 Santa Fe Road (between Lenwood Road and Dixie Road) and consists of approximately 60 acres of discarded and dismantled heavy construction machinery, buses, and scrap metal. Given the distance of the site to the study area (0.25 mile north of any of the proposed alternatives) it is unlikely that this offsite property has affected the environmental conditions at the project site.

Figure 3.13.1: Properties with Hazardous Substance Release

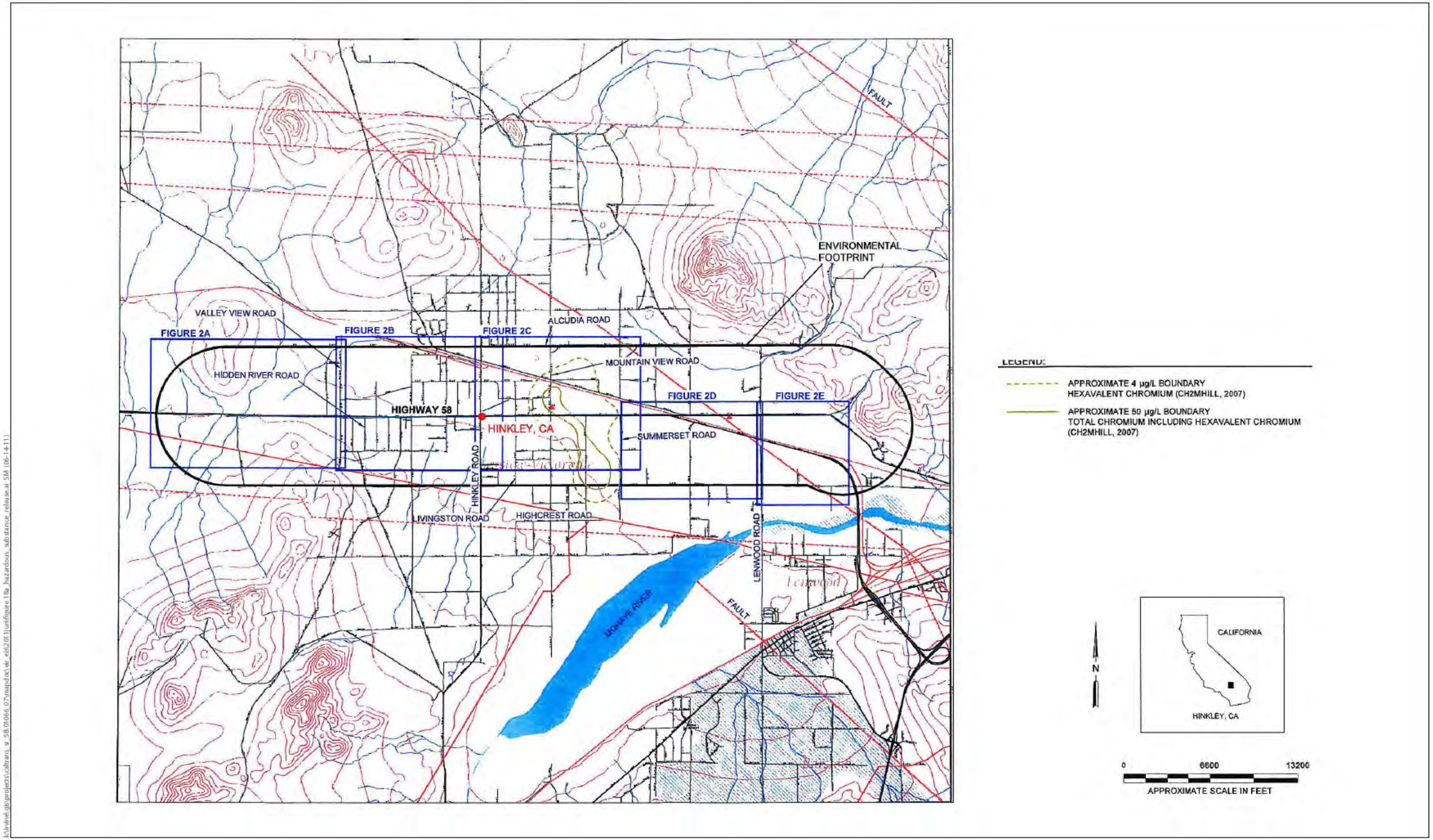

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Figure 3.13.2: Properties with Hazardous Substance Release

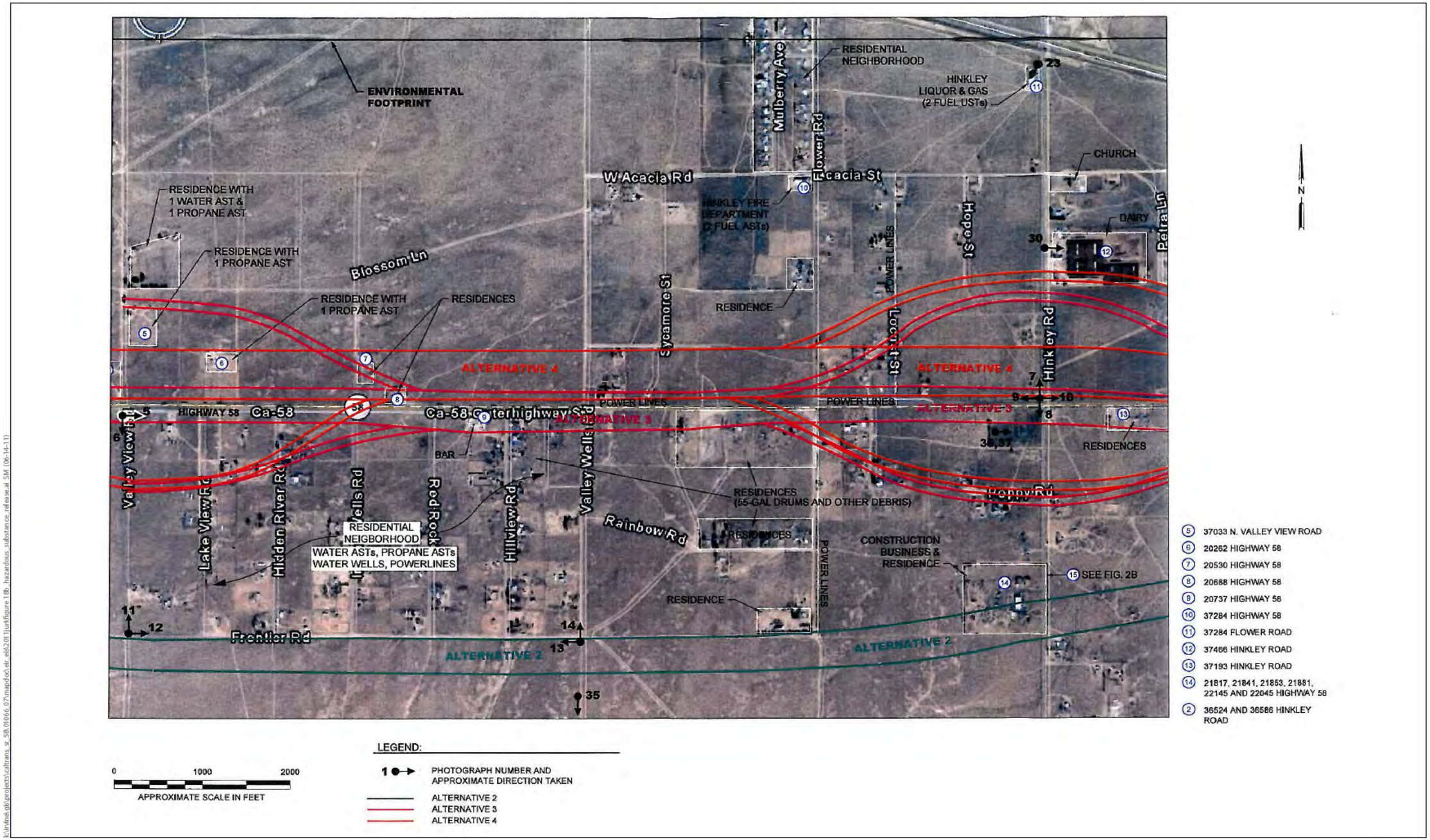

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Figure 3.13.3: Properties with Hazardous Substance Release

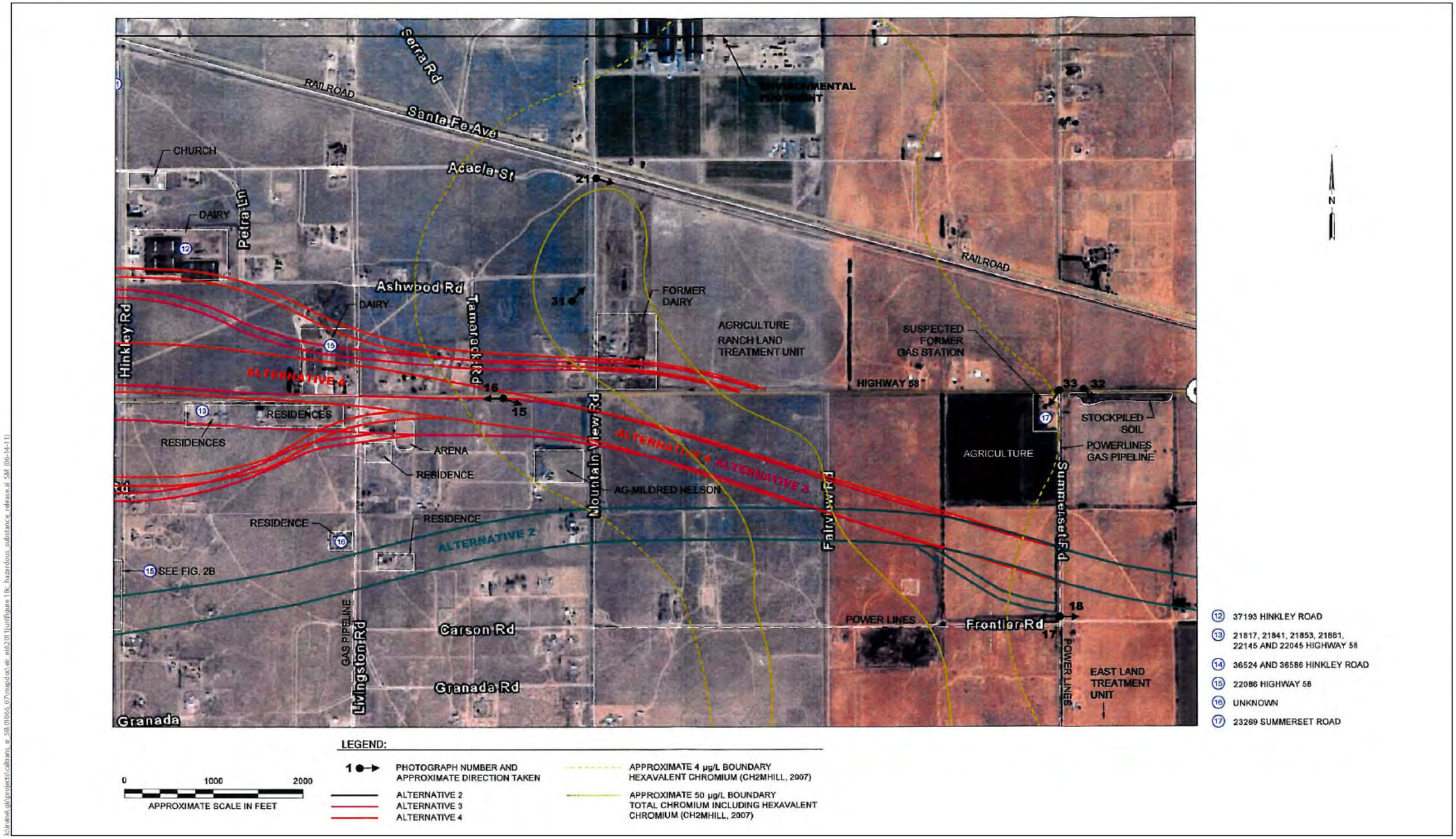

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Figure 3.13.4: Properties with Recorded Hazardous Substance Release

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Figure 3.13.5: Properties with Recorded Hazardous Substance Release

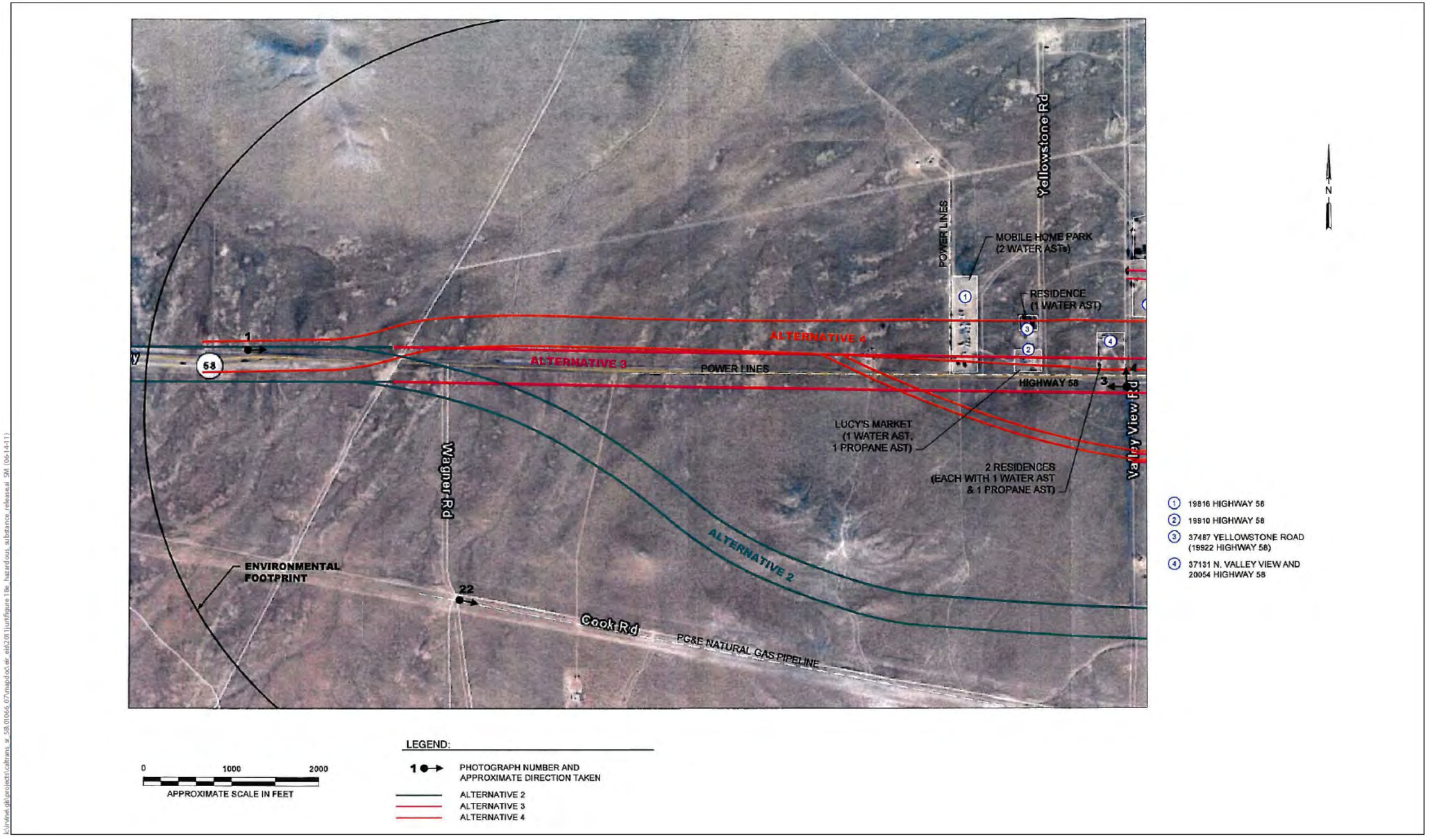

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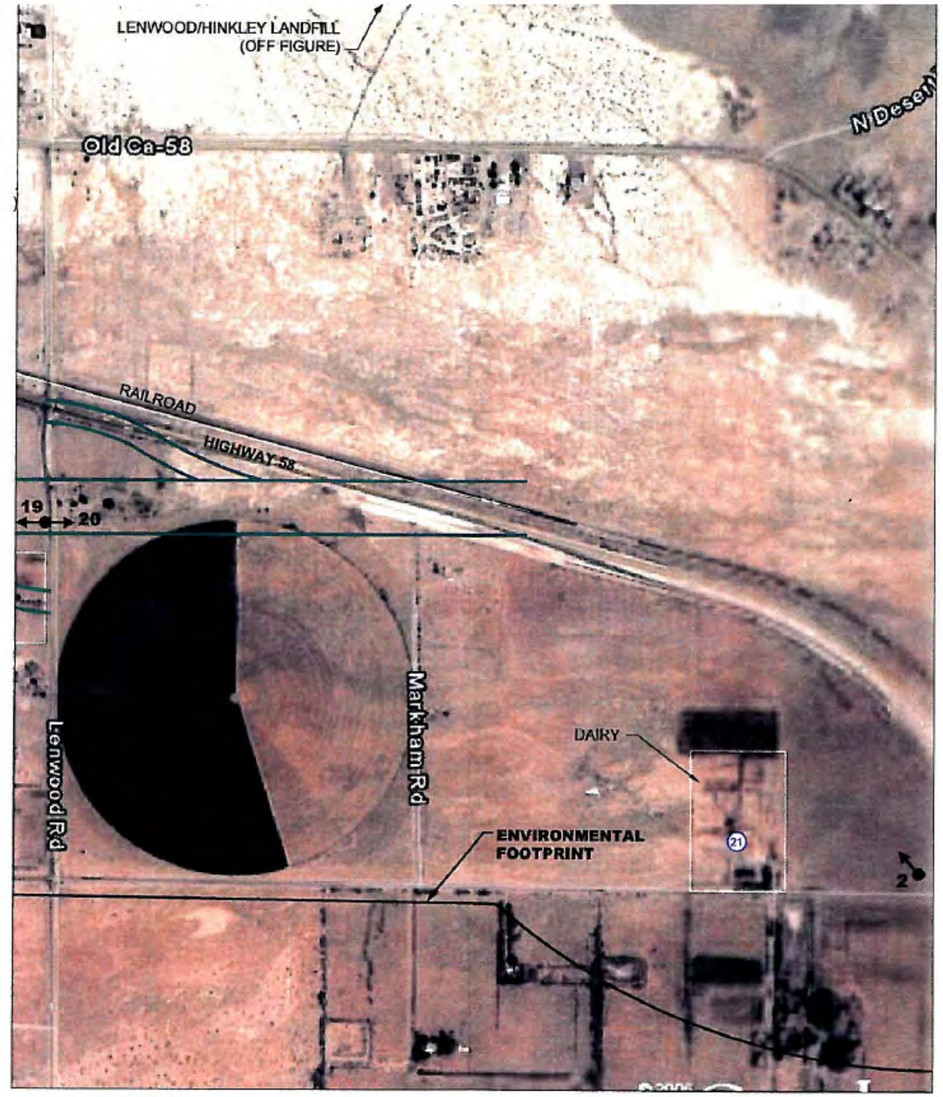
Figure 3.13.6: Properties with Recorded Hazardous Substance Release



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APPROXIMATE SCALE IN FEET

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ALTERNATIVE 2

ALTERNATIVE 3

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Figure 3.13.7: Well Locations Alternative 2 Southerly Alignment (Identified Preferred Alternative)

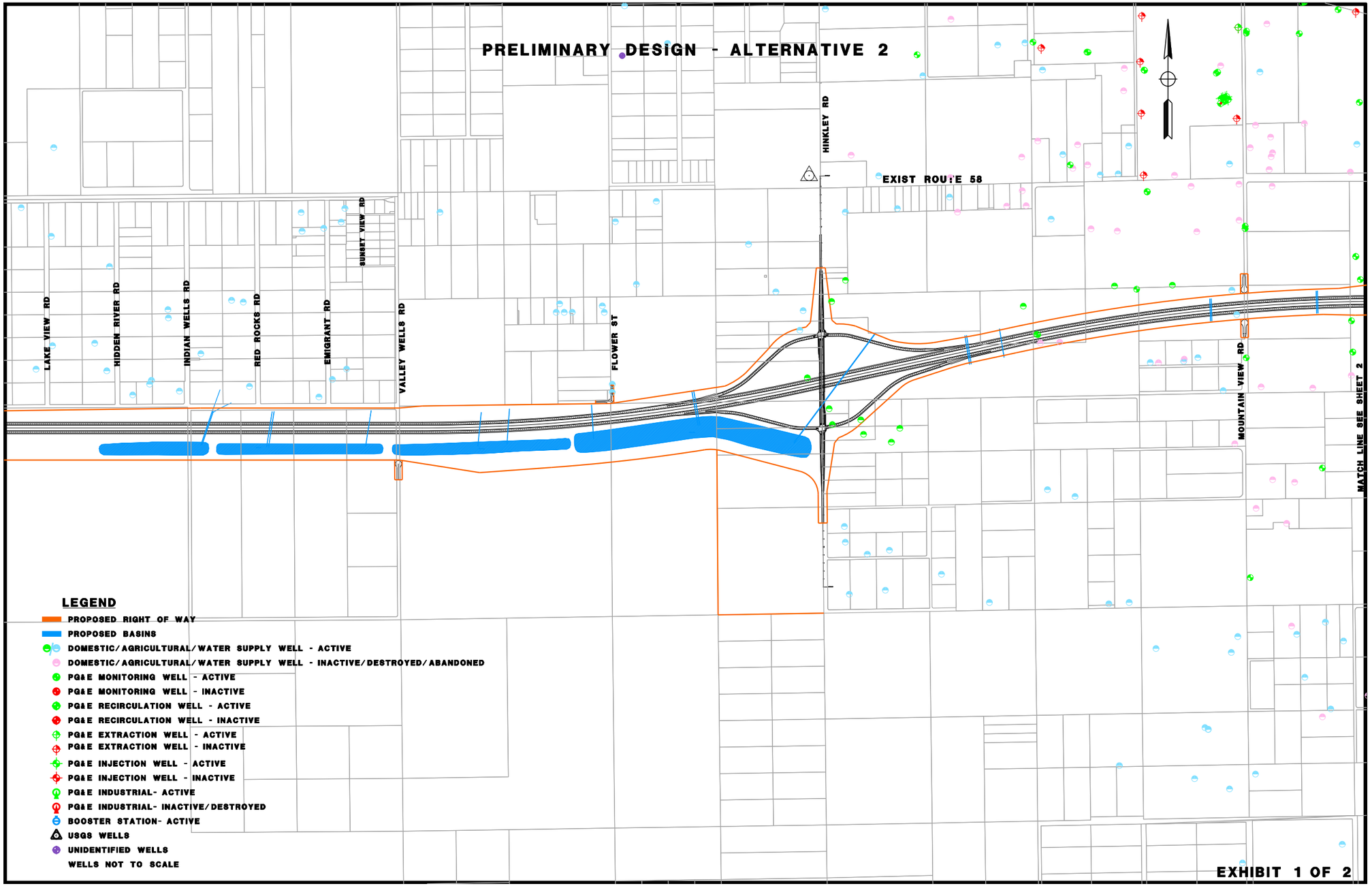

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Figure 3.13.7: Well Locations Alternative 2 Southerly Alignment (Identified Preferred Alternative)

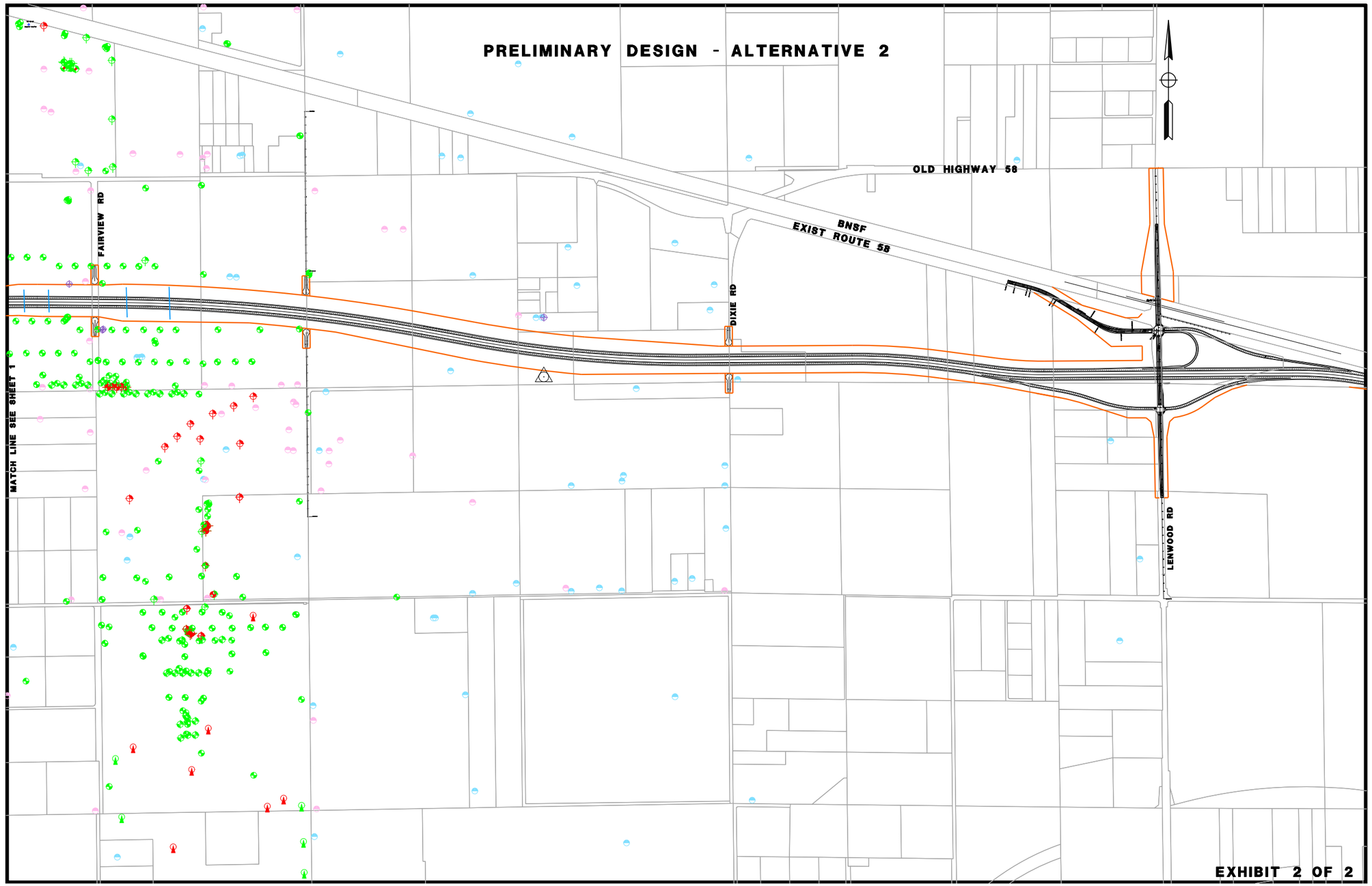

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Figure 3.13.8: Well Locations Alternative 3 Existing/Center Alignment

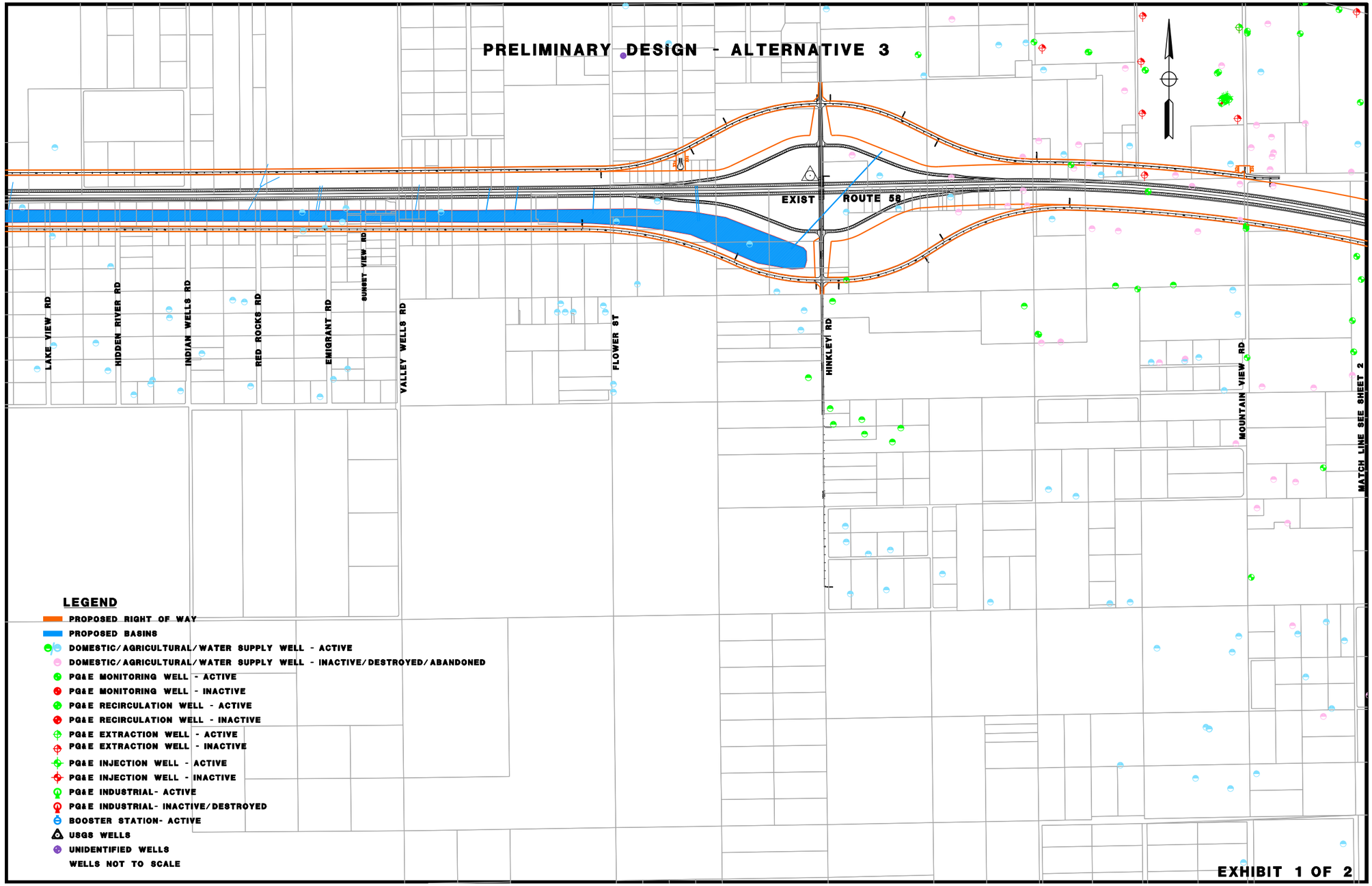

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Figure 3.13.8: Well Locations Alternative 3 Existing/Center Alignment

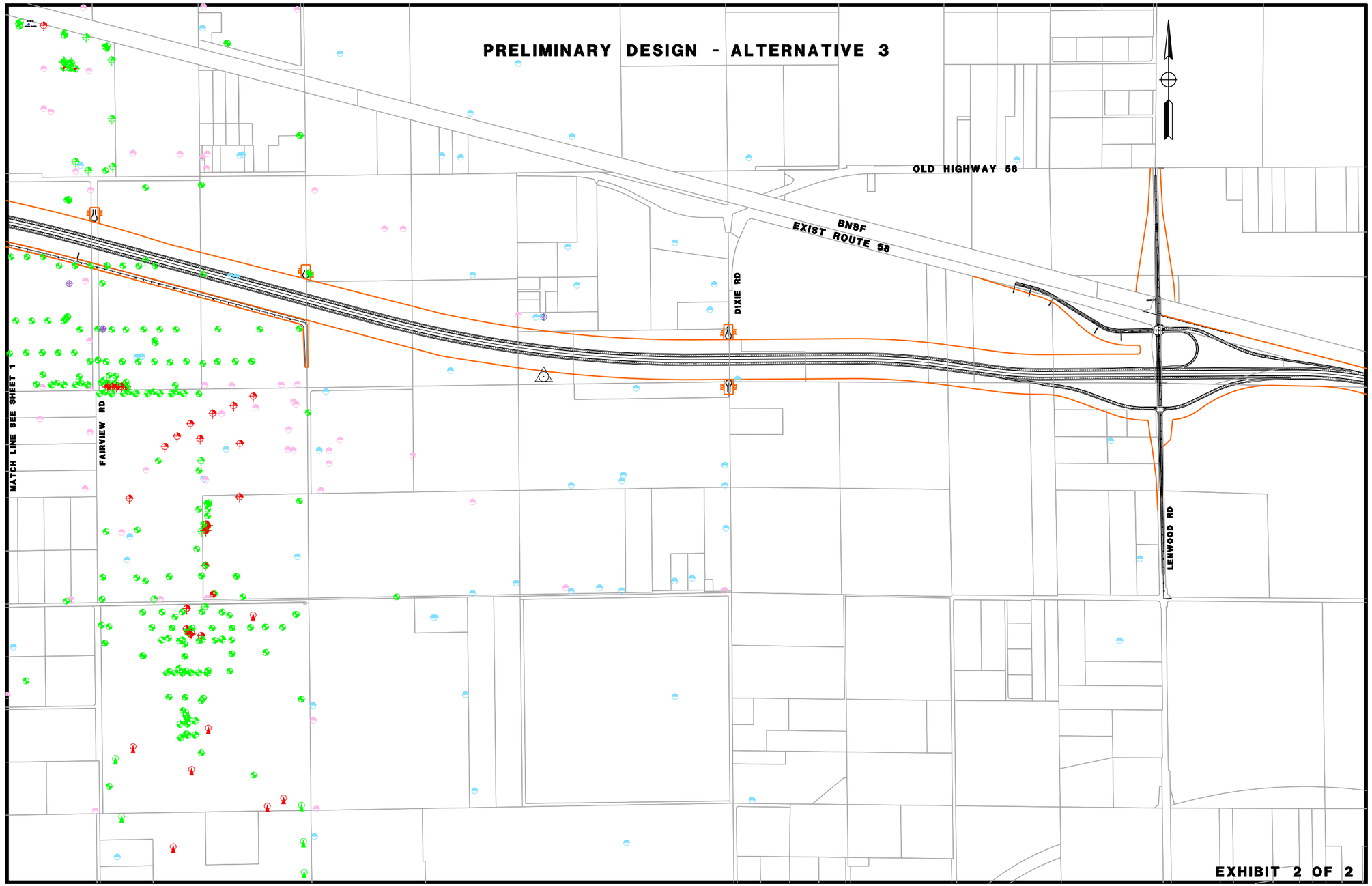

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Figure 3.13.9: Well Locations Alternative 4 Northerly Alignment

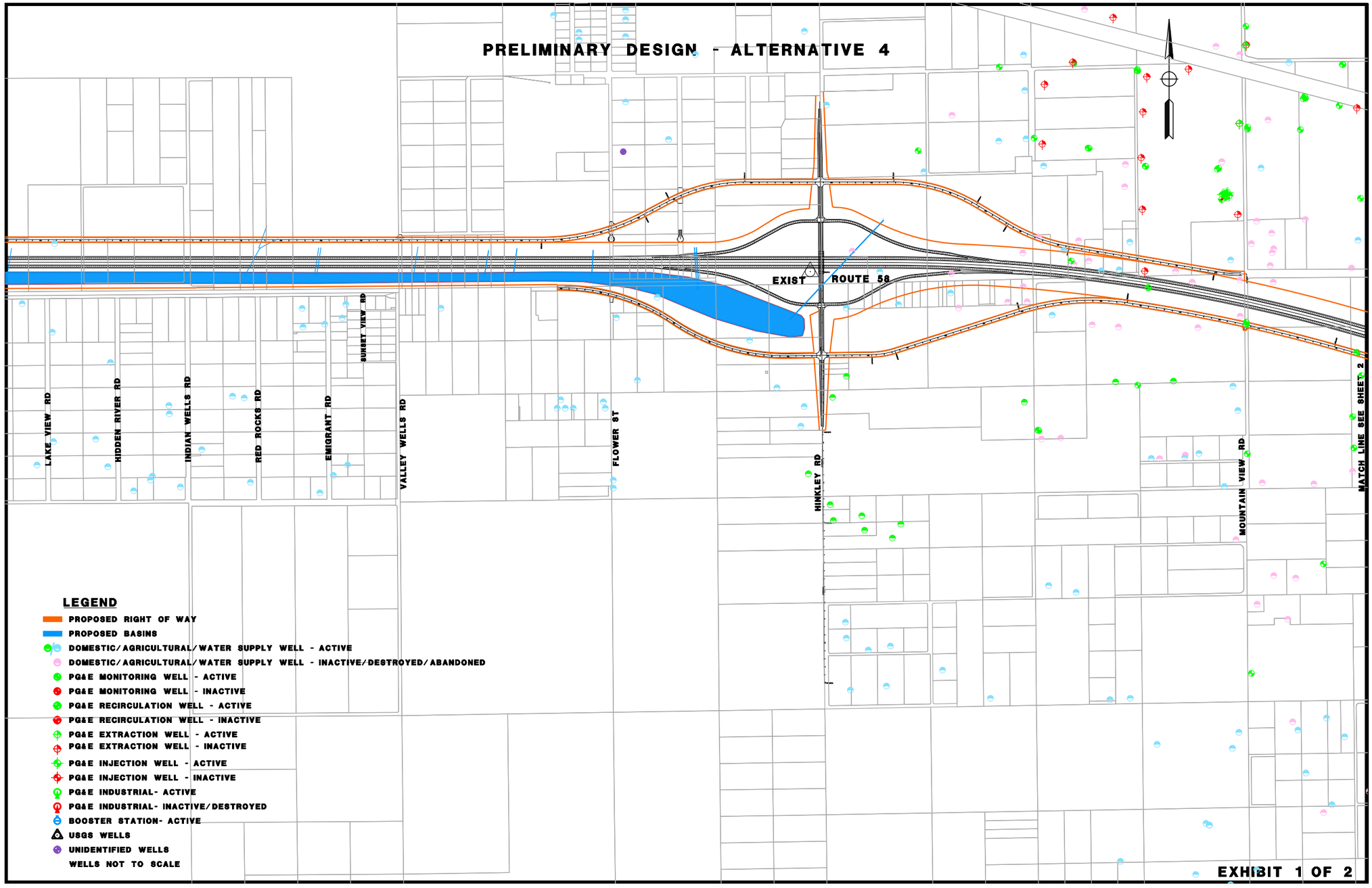

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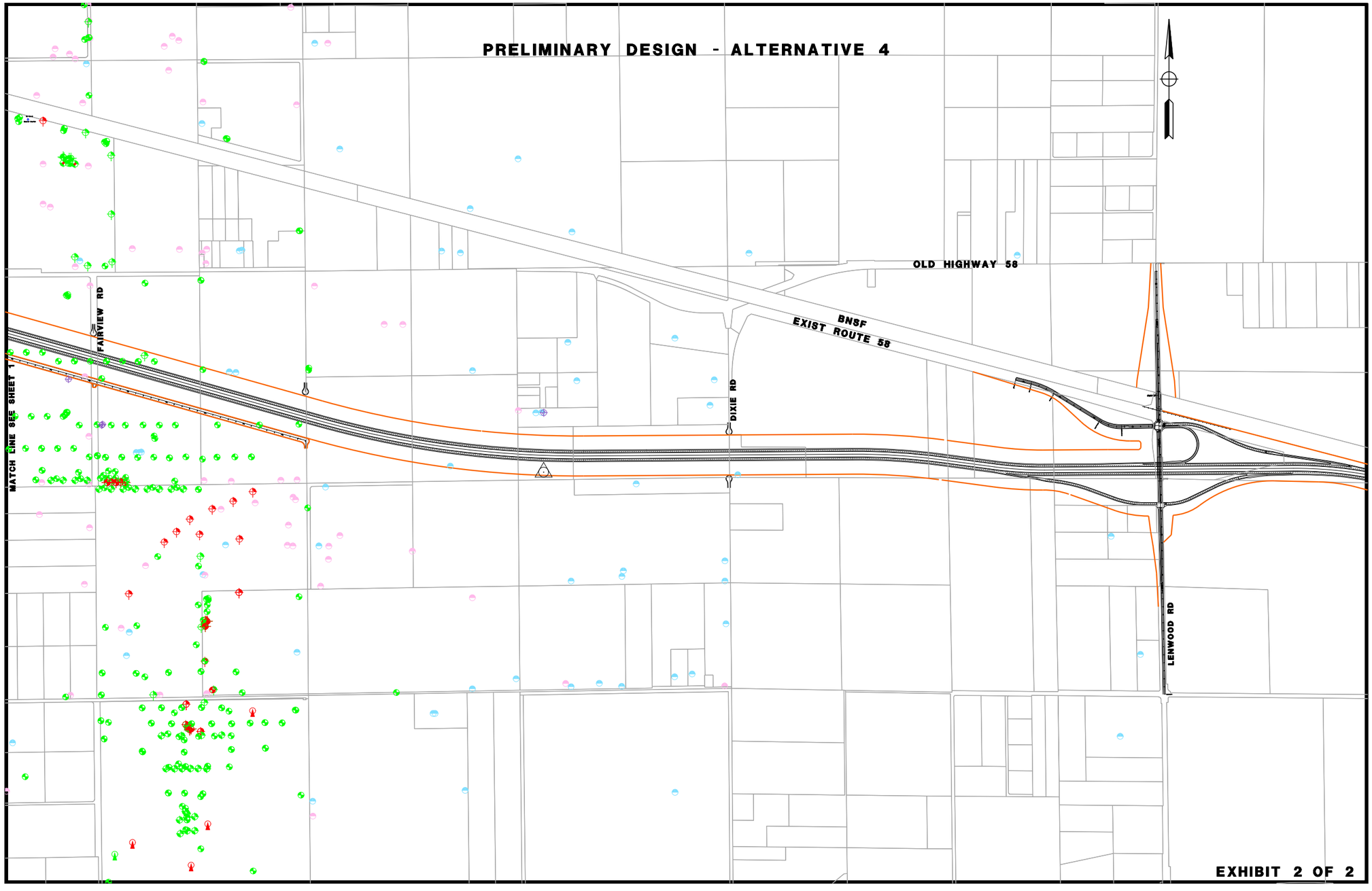
Figure 3.13.9: Well Locations Alternative 4 Northerly Alignment



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Pesticides

Based on the field reconnaissance conducted of the environmental footprint and on the historical research, properties located south of SR-58, between Mountain View Road and Lenwood Road, appear to have been utilized for agricultural operations. Residual pesticides may be present in near surface soils in the areas of Alternatives 2, 3, and 4 in the southeastern portion of the environmental footprint.

Groundwater Monitoring Wells

A Groundwater Background Study Report conducted in February 2007 revealed the locations of groundwater monitoring wells installed throughout the town of Hinkley. According to the study, approximately 200 monitoring wells are located in Hinkley with the majority of the wells located between Hinkley and Dixie roads. There are groundwater monitoring wells located within each alternative and will require removal and relocation of each affected well by PG&E. Alternative 2 contains the least number of affected wells (see Table 3.13-1). The monitoring wells appear to be associated with the characterization and monitoring of PG&E's hexavalent chromium groundwater plume.

Radon Gas

Given that no buildings are planned to be constructed during the widening/realignment of SR-58, radon is not considered to be a concern within the environmental footprint.

3.13.2.2 Environmental Database Search

A computerized, environmental information database search was performed by Environmental Data Resources, Inc. (EDR) on June 12, 2007, for the environmental footprint. The search included federal, state, and local databases. The review was conducted to evaluate whether the site or properties within the vicinity of the project site have been reported as having experienced substantial unauthorized releases of hazardous substances or other events with potentially adverse environmental effects. Three properties were identified within the environmental footprint and are described below. Recorded properties are shown in Figures 3.13.9.1 through 3.13.9.6.

Avalon Storage is located at 24399 SR-58, between Dixie and Lenwood roads and is more than 0.25 mile north of the proposed alternative alignments. The site was identified during the site reconnaissance as Central Metal, Inc. The facility is listed as having a 1,000-gallon UST installed in 1970 and used for regular fuel. Because of the distance from the proposed alternative alignment, it is unlikely that this offsite property has affected the environmental conditions at the project site.

The Lenwood/Hinkley Landfill is located northeast of the Lenwood Road and Old Highway 58 intersection, approximately 0.50 mile north of the proposed alternative alignments. It is identified as a Notify 65 location and is listed as a landfill. No other information is provided in the EDR report. Due to the distance from the proposed build alignments, it is considered unlikely to interfere with construction of the proposed project.

AG-Mildred Nelson, located at 36975 Mountain View Road, is adjacent to Alternatives 3 and 4 and was identified in the EDR database search as having permits issued by the San Bernardino County Fire Department, Hazardous Materials Division. The facility is listed as having three

UST ownership permits and a hazardous materials handling permit. EDR does not report this facility as having historically had a release, and it is not listed in the Leaking Underground Storage Tank (LUST) or Spills, Leaks, Investigations, and Cleanups (SLIC) databases. It is therefore unlikely that it has affected the environmental conditions at the project site.

3.13.2.3 Environmental Regulatory Agency Inquiries

Local regulatory agencies were contacted for reasonably ascertainable and practically reviewable documentation regarding environmental conditions present at the subject site and adjacent facilities. Based on the specifics of the project site, the following agencies were contacted for documentation:

- The San Bernardino County Building and Safety Department provided four permits associated with Assessor Parcel Number 494-312-27, a property located within the Alternative 2 right-of-way. None of the permits indicated a potential environmental concern.
- The San Bernardino County Department of Environmental Health was contacted on April 23, 2007. According to department personnel, records for USTs and hazardous materials are maintained by San Bernardino County Fire Department, Hazardous Materials Division, and Certified Unified Program Agency (CUPA).
- San Bernardino County Fire Department, Hazardous Materials Division (CUPA) – a certified record search request was submitted to the CUPA in March 2007. The following three addresses were provided, all in the town of Hinkley:
    - 36588 Hinkley Road (Construction Business and Residence) – The certified record search indicated that no records exist.
    - 24399 Santa Fe Road (Central Metal Inc. or Avalon Salvage Inc.) – The facility is located approximately 0.25 mile from the proposed alignments for Alternatives 2, 3, and 4. The record search indicated that the facility holds active permits as a Hazardous Material Handler and Generator and inactive permits for a Hazardous Waste Generator and a UST. This facility is listed as having one regular gasoline 1,000-gallon UST installed in 1970. No other information was provided by CUPA. Due to the distance from the proposed build alignments, it is unlikely that the site has affected the environmental conditions at the project site.
    - 37466 Hinkley Road (Hinkley Liquor & Gas) – The record search indicated that the site actively holds permits for Hazardous Material Handler and USTs. A permit to remove/install two USTs was issued on December 21, 1998. Remediation took place and a “case closed” was granted on June 6, 2001. A permit was issued October 6, 2005, to “Modify EVR-2.” No additional information was available to explain the purpose of this latest permit. Due to the distance from the proposed build alignments and the closed case status, it is unlikely that the site has affected the environmental conditions at the project site.
- California Regional Water Quality Control Board (RWQCB, Region 6) files were reviewed through the GeoTracker web site. The GeoTracker database included records for the following sites including the Hinkley School, Hinkley Market, Luz Harper Lake, Whiting Brothers, AG-Mildred Nelson, and Hinkley Compressor Station.

- AG-Mildred Nelson – listed as having a permitted UST with no additional information provided.
- Hinkley School – listed with a clean-up status of "case closed as of 8/16/1999."
- Hinkley Market – listed with a clean-up status of "case closed as of 6/6/2001."
- Luz Harper – listed with a clean-up status of "case closed as of 9/8/1993."
- Whiting Brothers – listed with a clean-up status of "open – remediation as of 8/1/1993" with a potential contaminant of concern as "gasoline." No additional information in the form of reports was available for the site.
- Hinkley/PG&E Compressor Station – groundwater contamination from the PG&E Compressor Station, built in 1952, was reported in 1987. The hexavalent chromium plume is generally located west of Summerset Road, east of Livingstone Road, south of Alcudia Road, and north of Highcrest Road and is considered a REC. According to the California Regional Water Quality Control Board's, Lahontan Region Draft Environmental Impact Report DEIR for the *Comprehensive Groundwater Cleanup Strategy for Historical Chromium Discharges from PG&E's Hinkley Compressor Station, San Bernardino County* the plume was *about 1.3 miles wide* and extended *two miles to the north of the Compressor Station* in 2008. In 2011, however, the plume was measured at *approximately 5.4 miles in length and up to 2.4 mile wide* (RWQCB 2012, p. ES-2).

  Historically agricultural areas in the environmental footprint were irrigated with water pumped from the local groundwater. These areas are referred to as agricultural treatment units (AUs) and involved the use of contaminated water. There are three AUs in the environmental footprint. The East AU, located at the northwest corner of Community Blvd and Summerset Road, began in 1991 at the Mojave Dairy and used a center pivot system that sprayed the water. The Ranch AU, located along the north side of SR-58 between Fairview Road and Mountain View Road, began in 1997 and used a subsurface drip irrigation system to disperse the water. Treatment at these two AUs was discontinued in 2011; however, soil contamination at these locations is a possibility. A third AU at the Desert View Dairy which uses a *central-pivot irrigation system with attached drag-drip lines*, located on Mountain View Road north of Santa Fe Ave – outside any of the proposed build alternatives – became active in 2004 (RWQCB 2012).

  Although no longer in operation, the Ranch AU would be affected by Alternative 3 and 4. Neither the East AU nor the active Desert View Dairy would be affected by any of the alternatives.

  A number of wells are also found in areas that could be affected by the proposed build alternatives. The quantity and type of wells is identified by alternative in Section 3.13.3 Environmental Consequences in Table 3.13-1 and depicted in Figures 3.13.7 thru 3.13.9.
- Department of Conservation Division of Oil, Gas, and Geothermal Resources – Oil fields maps were reviewed to determine if the environmental footprint is located within an active oil or gas field. There are no oil wells located within the boundaries of the proposed alternative alignments or within the environmental footprint. The wells closest to the project site are located approximately five miles northwest of the westernmost end of the environmental footprint. These oil wells are considered unlikely to represent an environmental concern that would affect proposed construction activities.

3.13.3 Environmental Consequences

Alternative 1—No-Build Alternative

Under the No-Build Alternative, the project site would not be disturbed and no effects involving hazardous materials would occur.

Alternative 2—Southerly Alignment

According to the ISA, there are known or suspected hazardous material sources, such as USTs, ASTs, contaminated soil, and groundwater within the proposed Alternative 2 alignment. Several electrical transformers within the proposed alternative limits would require soil testing for presence of PCB's; agricultural land within proposed alternative limits would be tested for pesticides, herbicides, chromium and ADL; one construction business and one dairy farm would require a site investigation for presence of UST's and AST's and hazardous materials associated with the use of the property.

The potential to encounter PCBs during construction activities is considered high due to the presence of several cracked and stained transformers found on the power lines within the environmental footprint. The potential to encounter PCBs in the soils beneath the cracked/stained units is also considered high.

Residual pesticides may be present in near surface soils in the southeastern portion of the environmental footprint due to the presence of current and former agricultural activities. The possible pesticide use is considered a REC.

As shown in Table 3.13-1, under Alternative 2 the proposed project has the potential to impact the least number of wells associated with PG&E's cleanup program. Under this alternative seven active and two inactive domestic/agricultural supply wells and four active monitoring wells may be impacted. Figure 3.13.7 shows the locations and type of wells. Efforts to minimize or avoid disruption of PG&E's cleanup program will require continuing coordination with PG&E and the Lahontan Regional Water Quality Control Board (RWQCB).

Approximately 13 residences located within the Alternative 2 right-of-way would likely require demolition. These residences are expected to have a propane AST, water storage AST, water supply well, and a septic tank system. A site investigation will be performed at each property to determine if hazardous waste/materials are present.

In addition, given the pre-1978 construction, ACMs and lead-based paint should be anticipated during demolition.

There is a construction business within the proposed right-of-way for Alternative 2 that would likely require demolition. The construction business consists of two sheet metal buildings, a private residence, and the remainder of the property is open land and used for parking large construction equipment. Identification of any tanks or hazardous material storage areas from the public right-of-way was not possible during the site survey and there is a high possibility that USTs used for fueling vehicles and equipment would be encountered during demolition. Site investigations would be performed on each property where there is potential to encounter RECs associated with this business.

The proposed right-of-way for Alternative 2 encroaches near a dairy located on the west side of Dixie Road, north of Community Boulevard. As a result there is the potential to encounter contaminated soils, USTs, ASTs, and hazardous wastes during demolition and excavation activities. In addition, given the pre-1978 construction of many of the site structures, ACMs should be anticipated during demolition of structures. A site investigation would be performed due to the potential to encounter RECs associated with the operation of the affected dairy.

Yellow thermoplastic traffic strip used prior to 2006 may exceed hazardous waste criteria under Title 22 California Code of Regulations (CCR) and require disposal at a Class I disposal site. Because the traffic striping on existing SR-58 is likely older striping, elevated lead concentrations within the yellow striping paint along the highway may be present.

This alternative may include handling earth material containing aerially deposited lead (ADL). Earth material within the project limits will be tested for ADL and hexavalent chromium to determine proper handling, reuse, and/or disposal of soils.

Alternative 3—Existing Alignment

According to the ISA, there are known or suspected hazardous material sources, such as USTs, ASTs, contaminated soil, and groundwater within the Alternative 3 alignment. Several electrical transformers located within the proposed alternative limits would require soil testing for presence of PCB's; agricultural land within the proposed alternative limits would be tested for pesticides, herbicides, chromium and ADL; two dairy farms that will require a site investigation for presence of UST's and AST's and hazardous materials associated with the use of the property.

The potential to encounter PCBs during construction activities is considered high due to the presence of several cracked and stained transformers found on the power lines in environmental footprint. The potential to encounter PCBs in the soils beneath the cracked/stained units during construction is also considered high.

Residual pesticides may be present in near surface soils in the environmental footprint due to the presence of current and former agricultural activities. The potential use of pesticides is considered a REC.

Surface soils may also be contaminated with hexavalent chromium as a result of the historic irrigation of agricultural land with groundwater pumped from the PG&E hexavalent chromium plume at the Ranch AU. The plume bisects the alternative between Mountain View Road and Summerset Road and is estimated to be located at approximately 100 feet below ground surface. As shown in Table 3.13-1, under Alternative 3 the proposed project has the potential to impact a number of wells associated with PG&E's cleanup effort. Under this alternative 21 active and 13 inactive domestic/agricultural supply wells and 11 active monitoring wells may be impacted. Unlike Alternative 2, however, Alternative 3 would also impact one active and one inactive extraction well. Figure 3.13.8 shows the locations and type of wells. Coordination with PG&E and the RWQCB will determine measures to minimize disruption of PG&E's cleanup effort.

Approximately 42 residential properties, seven mobile homes, and Lucie's Market are located within the Alternative 3 right-of-way and would likely require demolition. These residences are expected to have a propane AST, water storage AST, water supply well, and a septic tank system. A site investigation will be performed at each property to determine if hazardous waste/materials are present.

In addition, given the pre-1978 construction, ACMs and lead-based paint should be anticipated during demolition.

Two dairy properties are located within the proposed Alternative 3 alignment. UST's and AST's were often present at such facilities to support generators and heavy farm equipment. As a result there is the potential to encounter contaminated soils, USTs, ASTs, and hazardous wastes during demolition. In addition, given the pre-1978 construction, ACMs and lead-based paint should be anticipated during demolition of structures within the proposed right-of-way. Site investigations would be performed due to the potential to encounter RECs associated with the operation of the affected dairies.

Yellow thermoplastic traffic strip used prior to 2006 may exceed hazardous waste criteria under Title 22 California Code of Regulations (CCR) and require disposal at a Class I disposal site. Because the traffic striping on existing SR-58 is likely older striping, elevated lead concentrations within the yellow striping paint along the highway may be present.

This alternative may include handling earth material containing aerially deposited lead (ADL) and/or hexavalent chromium.

Earth material within the project limits will be tested for ADL and hexavalent chromium to determine proper handling, reuse, and/or disposal of soils.

Alternative 4—Northerly Alignment

According to the ISA, there are known or suspected hazardous material sources, such as USTs, ASTs, contaminated soil, and groundwater within the Alternative 4 alignment. Several electrical transformers located within the proposed alternative limits would require soil testing for presence of PCB's; agricultural land within the proposed alternative limits would be tested for pesticides, herbicides, chromium and ADL; three dairy farms that will require a site investigation for presence of UST's and AST's and hazardous materials associated with the use of the property.

The potential to encounter PCBs during construction activities is considered high due to the presence of several cracked and stained transformers found on the power lines in environmental footprint. The potential to encounter PCBs in the soils beneath the cracked/stained units during construction is also considered high.

Residual pesticides may be present in near surface soils in the environmental footprint due to the presence of current and former agricultural activities. The possible pesticide use is considered a REC.

Surface soils may also be contaminated with hexavalent chromium as a result of the historic irrigation of agricultural land with groundwater pumped from the PG&E hexavalent chromium plume at the Ranch AU. The plume bisects the alternative between Mountain View Road and Summerset Road and is estimated to be located at approximately 100 feet below ground surface. As shown in Table 3.13-1, under Alternative 4 the proposed project has the potential to impact a number of wells associated with PG&E's cleanup effort. Under this alternative 14 active and 14 inactive domestic/agricultural supply wells and 19 active monitoring wells may be impacted. As with Alternative 3, Alternative 4 would also impact one active and one inactive extraction well. In addition, and unlike Alternative 2 and Alternative 3, Alternative 4 may impact two USGS wells. Figure 3.13.9 shows the locations and type of wells. Coordination with PG&E, the RWQCB, and the USGS will determine measures to avoid or minimize disruption of PG&E's cleanup effort.

Approximately 33 residential properties, 23 mobile homes, a bar, and Lucie's Market are located within the Alternative 4 right-of-way and would likely require demolition. These residences are expected to have a propane AST, water storage AST, water supply well, and a septic tank system. A site investigation will be performed at each property to determine if hazardous waste/materials are present.

In addition, given the pre-1978 construction, ACMs and lead-based paint should be anticipated during demolition. Abandoned vehicles, 55-gallon drums of unknown contents, and large amounts of solid waste (trash) were observed at several of the residential properties in the environmental footprint. Therefore, there is the potential to encounter hazardous waste or contaminated soil during demolition and excavation activities associated with the construction of Alternative 4. Access to the affected residences is necessary to further assess whether there are recognized environmental concerns associated with the properties.

Three dairy properties are located within the proposed Alternative 4 alignment. UST's and AST's were often present at such facilities to support generators and heavy farm equipment. As a result there is the potential to encounter contaminated soils, USTs, ASTs, and hazardous wastes during demolition and excavation activities. In addition, given the pre-1978 construction, ACMs and lead-based paint should be anticipated during demolition of structures within the proposed right-of-way. Access to the affected dairies is necessary to further assess whether there are recognized environmental concerns associated with the operation of the affected dairies.

Yellow thermoplastic traffic strip used prior to 2006 may exceed hazardous waste criteria under Title 22 California Code of Regulations (CCR) and require disposal at a Class I disposal site. Because the traffic striping on existing SR-58 is likely older striping, elevated lead concentrations within the yellow striping paint along the highway may be present.

This alternative may include handling earth material containing ADL and/or hexavalent chromium. Earth material within the project limits will be tested for ADL and hexavalent chromium to determine proper handling, reuse, and/or disposal of soils.

Table 3.13-1: Wells Potentially Impacted by Alternative

Well Type	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Domestic/Agricultural Supply Well (Active)	--	7	21	14
Domestic/Agricultural Supply Well (Inactive)	--	2	13	14
PG&E Monitoring Well (Active)	--	4	11	19
PG&E Monitoring Well (Inactive)	--	--	--	--
PG&E Extraction Well (Active)	--	--	1	1
PG&E Extraction Well (Inactive)	--	--	1	1
USGS Well	--	--	--	2
Source: Caltrans District 08 Design & PG&E 2012 Well Location Data Files				

3.13.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of the following avoidance, minimization, and mitigation measures, some of which are standard practice on all Caltrans projects, would ensure that impacts affecting hazards and hazardous materials would not be adverse.

- **HAZ-1:** Proper removal and disposal of all stained pole-mounted transformers and evaluation of all soil beneath the cracked/stained units prior to project construction will be conducted.
- **HAZ-2:** All soil excavations conducted on-site will be monitored by the construction contractor for visible soil staining, odor, and the possible presence of unknown hazardous-material sources, such as buried 55-gallon drums and underground tanks.
- **HAZ-3:** For structures within the proposed right-of-way that require demolition, an Asbestos Pre-Demolition Survey will be completed prior to the disturbance of building materials to determine the asbestos content. A certified asbestos contractor will be retained to abate any identified ACM in accordance with all applicable laws, including OSHA guidelines.
- **HAZ-4:** In the event that ACM not identified in the asbestos study are uncovered during demolition/renovation activities, the contractor must stop work and have these materials tested for asbestos content. Any demolition or renovation of a structure will require notification and submittal of fees to the Mojave Desert Air Quality Management District (MDAQMD) at least 10 days prior to proceeding with demolition work; failure to do so may result in being fined for regulatory non-compliance.
- **HAZ-5:** Prior to demolition, a geophysical survey of affected properties will be conducted in order to investigate the potential for underground features and hazardous materials storage.
- **HAZ-6:** Shallow soil sampling for petroleum, volatile organic compounds, metals, and PCBs will be conducted near identified drum storage and debris covered areas within the environmental footprint to determine if the need for special handling and disposal of soil is needed.
- **HAZ-7:** Soil sampling for chromium will be conducted within the identified preferred alternative right-of-way, prior to completion of the Project Approval and Environmental Document phase, to determine if the need for special handling and disposal of soil is needed.
- **HAZ-8:** Due to the possible presence of elevated lead concentrations within the yellow thermoplastic and yellow-painted traffic stripes along the existing highway, it is recommended to include special provisions to require the Contractor to properly manage removed stripe and pavement markings as a hazardous waste and to have and implement a lead compliance plan prepared by a Certified Industrial Hygienist (CIH).
- **HAZ-9:** Caltrans Waste Management and Materials Pollution Control BMPs—Material Delivery and Storage and Material Use. Thermoplastic waste will be disposed of in accordance with Standard Specification 7-1.13. Environmental Rules and Requirements as outlined in the Caltrans Construction Manual—7-103D (1) Caltrans & Contractor Designated Disposal, Staging, and Borrow Sites—will be followed and/or implemented.
- **HAZ-10**: A Site Safety Plan, which addresses the management of potential health and safety hazards to workers and the public, will be prepared and implemented prior to initiation of the proposed construction activities. Instructions, guidelines, and requirements for handling

hazardous materials to ensure employee safety as provided in Chapter 16, "Hazardous Materials Communication Program," of the Caltrans' Safety Manual will be included in the Site Safety Plan.

- **HAZ-11**: Wastes and petroleum products used during construction will be collected, transported, and removed from the project site in accordance with RCRA regulations, federal/OSHA standards, including: Waste Management and Materials Pollution Control BMPs- Spill Prevention and Control, Materials and Waste Management BMP, Hazardous Waste Management. All hazardous waste will be stored, transported, and disposed as required in Title 22, CCR, Division 4.5 and 49 CFR 261-263, and Caltrans requirements as stated in Section 7-109 Solid Waste Disposal and Recycling Reporting Caltrans Construction Manual.
- **HAZ-12**: As shown in Table 3.13-1, the number and type of wells associated with the PG&E hexavalent chromium cleanup effort that could be impacted varies with each alternative. Caltrans will coordinate with PG&E and the Lahontan Regional Water Quality Control Board (RWQCB) to determine all aspects associated with the abandonment and reinstallation of affected wells prior to completion of the Project Approval and Environmental Document phase.
- **HAZ-13:** A Lead Compliance Plan shall be prepared under Section 7-1.07 of Caltrans' Standard Specifications. The Lead Compliance Plan shall include provisions regarding use of earth material. If earth material will be relinquished to the Contractor, concentration levels of lead and depth of earth material in which lead has been detected will be disclosed. If earth material will not be relinquished to the contractor, all excavated earth material with lead, typically found within the top two feet of material in unpaved areas of the highway, will be reused within the project limits.
- **HAZ-14:** Earth material containing lead will be handled according to all applicable laws, rules, and regulations, including those of the following agencies: (1) Cal/OSHA**,** (2) California Regional Water Quality Control Board, Region 6 – Lahontan and (3) California Department of Toxic Substances Control.
- **HAZ-15**: If earth material is disposed of: (1) It shall be disposed of under Section 7-1.13 of Caltrans' Standard Specifications, "Disposal of Material Outside the Highway Right of Way." (2) Lead concentration of the earth material will be disclosed to the receiving property owner when obtaining authorization for disposal on the property. (3) The receiving property owner's acknowledgment of lead concentration disclosure in the written authorization for disposal shall be obtained. (4) Contractor is responsible for any additional sampling and analysis required by the receiving property owner.
- **HAZ-16**: If a commercial landfill will be used to dispose earth material: (1) Earth material will be transported to a Class III or Class II landfill appropriately permitted to receive the material and (2) Contractor is responsible for identifying the appropriately permitted landfill to receive the earth material and for all associated trucking and disposal costs including any additional sampling and analysis required by the receiving landfill. If hazardous waste material is discovered during construction, such material must be transported under manifest to a permitted Class 1 disposal facility.

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3.14 Air Quality

3.14.1 Regulatory Setting

The Federal Clean Air Act (FCAA) as amended in 1990 is the federal law that governs air quality. The California Clean Air Act of 1988 is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency (U.S. EPA) and California Air Resources Board (ARB), set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and State ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns. The criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM, broken down for regulatory purposes into particles of 10 micrometers or smaller – PM_{10} and particles of 2.5 micrometers and smaller - $PM_{2.5}$), lead (Pb), and sulfur dioxide (SO_2). In addition, State standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and State standards are set at a level that protects public health with a margin of safety, and are subject to periodic review and revision. Both State and Federal regulatory schemes also cover toxic air contaminants (air toxics). Some criteria pollutants are also air toxics or may include certain air toxics within their general definition.

Federal and State air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). In addition to this type of environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

FCAA Section 176 (C) prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs, or projects that are not first found to conform to State Implementation Plan (SIP) for achieving the goals of Clean Air Act requirements related to the NAAQS. "Transportation Conformity" Act takes place on two levels: the regional, or planning and programming, level, and the project level. The proposed project must conform at both levels to be approved. Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 CFR 93 govern the conformity process.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the standards set for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas sulfur dioxide (SO_2). California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead. However, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all of the transportation projects planned for a region over a period of at least 20 years for the RTP, and 4 years for the FTIP. RTP and FTIP conformity is based on use of travel demand and, air quality models to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that requirements of the

Clean Air Act and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO) and Federal Highway Administration (FHWA), and Federal Transit Administration (FTA), make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and open to traffic schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires "hot spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide (CO) and/or particulate matter (PM_{10} or $PM_{2.5}$). A region is "nonattainment" if one or more of the monitoring stations in the region measures violation of the relevant standard, and U.S. EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by the U.S. EPA, and are then called "maintenance" areas. "Hot spot" analysis is essentially the same, for technical purposes, as CO or particulate matter analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a hot spot analysis. In general, projects must not cause the "hot spot"-related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. If a known CO or particulate matter violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

3.14.2 Affected Environment

The information in this section is based on the Air Quality Report (AQR) for the SR-58 Hinkley Expressway Project (Caltrans 2011a). The findings of that report are summarized in this section. The methodologies and assumptions for the air quality analysis are described in the AQR (Caltrans 2011a).

3.14.2.1 Topography and Climate

The project site is located in San Bernardino County, in the western portion of the Mojave Desert Air Basin (Basin). Most of the Basin is commonly referred to as the high desert because elevations range from approximately 2,000 to 5,000 feet above sea level. The Basin is characterized by extreme temperature fluctuations, strong seasonal winds, and clear skies. With respect to ozone, the greatest air pollution impacts throughout the Basin occur from June through September. This condition is generally attributed to the large amount of pollutant transport from within the South Coast Air Basin and San Joaquin Valley Air Basin to the Mojave Desert Air Basin.

The most representative climate monitoring station within the project vicinity that has accurately recorded and complete monitoring data is located in Barstow, which is the same general area as the project site. At the Barstow climate monitoring station, the average minimum and maximum January temperatures are 31 and 60 degrees Fahrenheit, respectively, while the July average minimum and maximum temperatures increase to 67 and 102 degrees Fahrenheit, respectively. The annual average precipitation is four inches.

3.14.2.2 Monitored Air Quality

Existing air quality conditions in the project area can be characterized in terms of the ambient air quality standards that the State of California and the federal government have established for several different pollutants. For some pollutants, separate standards have been set for different measurement periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). Table 3.14-1 shows the state and federal standards for a variety of pollutants. The Mojave Desert Air Quality Management District (MDAQMD) administers air quality regulations developed at the federal, state, and local levels in the Basin.

The monitoring station located closest to the project site is the Barstow station (California Air Resources Board [CARB] Station No. 36155) located approximately six miles east of the project site at 1301 West Mountain View Street, Barstow. The Barstow station monitors major criteria pollutants, including CO, NO2, particulate matter less than 10 microns in diameter (PM10), and O3. The closest monitoring station that monitors the remaining pollutant, PM2.5, is the Victorville – Park Avenue station (CARB Station No. 36306) located approximately 29 miles south of the project site at 14306 Park Avenue, Victorville. The existing air quality conditions in the area of the proposed project can be characterized by monitoring data collected at these stations. Table 3.14-2 presents air monitoring data from the Barstow and Victorville monitoring stations.

Table 3.14-1: State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State [9] Standard	Federal [9] Standard	Principal Health and Atmospheric Effects	Typical Sources	Attainment Status
Ozone (O_3) [2]	1 hour 8 hours 8 hours (conformity process [5])	0.09 ppm 0.070 ppm ---	--- [4] 0.075 ppm [6] 0.08 ppm (4th highest in 3 years)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NO_x) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes.	Federal: Nonattainment, Moderate State: Nonattainment, Moderate

Pollutant	Averaging Time	State [9] Standard	Federal [9] Standard	Principal Health and Atmospheric Effects	Typical Sources	Attainment Status
Carbon Monoxide (CO)	1 hour 8 hours	20 ppm 9.0 ppm [1]	35 ppm 9 ppm ---	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Federal: Attainment/ Unclassified State: Attainment
Respirable Particulate Matter (PM_{10}) [2]	24 hours Annual	50 µg/m^3 20 µg/m^3	150 µg/m^3 --- [2]	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).	Federal: Nonattainment, Moderate State: Nonattainment
Fine Particulate Matter ($PM_{2.5}$) [2]	24 hours Annual 24 hours (conformity process [5])	--- 12 µg/m^3 ---	35 µg/m^3 15.0 µg/m^3 (4th highest in 3 years)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO_x, sulfur oxides (SO_x), ammonia, and ROG.	Federal: Attainment/ Unclassified State: Nonattainment

Pollutant	Averaging Time	State [9] Standard	Federal [9] Standard	Principal Health and Atmospheric Effects	Typical Sources	Attainment Status
Nitrogen Dioxide (NO_2)	1 hour Annual	0.18 ppm .030 ppm	0.100 ppm [7] (98th percentile over 3 ears)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain. Part of the "NO_x" group of ozone precursors.	Motor vehicles and other mobile sources; refineries; industrial operations.	Federal: Attainment/ Unclassified State: Attainment
Sulfur Dioxide (SO_2)		0.25 ppm --- 0.04 ppm ---	0.075 ppm [8] (98th percentile over 3-)0.5 ppm 0.14 ppm[10] 0.030 ppm[10]	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	Federal: Attainment/ Unclassified State: Attainment
Lead (Pb)[3]	Monthly Quarterly Rolling 3-month average	1.5 µg/m^3 --- ---	--- 1.5 µg/m^3 0.15 µg/m^3	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from gasoline may exist in soils along major roads.	Federal: Attainment/ Unclassified State: Attainment
Sulfate	24 hours	25 µg/m^3	---	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	State Only: Attainment (entire state)
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	---	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	State Only: Unclassified

Pollutant	Averaging Time	State [9] Standard	Federal [9] Standard	Principal Health and Atmospheric Effects	Typical Sources	Attainment Status
Visibility Reducing Particles (VRP)	8 hours	Visibility of 10 miles or more at relative humidity less than 70%	---	Reduces visibility. Produces haze. NOTE: not related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas.	See particulate matter above.	State Only: Unclassified
Vinyl Chloride[3]	24 hours	0.01 ppm	---	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes	State Only: Unclassified (entire state)

Based on the California ARB Air Quality Standards chart (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf).

Notes: ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; ppb=parts per billion (thousand million)

1 Rounding to an integer value is not allowed for the State 8-hour CO standard. Violation occurs at or above 9.05 ppm. Violation of the Federal standard occurs at 9.5 ppm due to integer rounding.

2 Annual PM_{10} NAAQS revoked October 2006; was 50 $\mu g/m^3$. 24-hr. $PM_{2.5}$ NAAQS tightened October 2006; was 65 $\mu g/m^3$. In 9/09 U.S. EPA began reconsidering the $PM_{2.5}$ NAAQS; the 2006 action was partially vacated by a court decision.

3 The ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM_{10} and, in larger proportion, $PM_{2.5}$. Both the ARB and U.S. EPA have identified lead and various organic compounds that are precursors to ozone and $PM_{2.5}$ as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong. Lead NAAQS are not required to be considered in Transportation Conformity analysis.

4 Prior to 6/2005, the 1-hour NAAQS was 0.12 ppm. The 1-hour NAAQS is still used only in 8-hour ozone early action compact areas, of which there are none in California. However, emission budgets for 1-hour ozone may still be in use in some areas where 8-hour ozone emission budgets have not been developed.

5 The 65 $\mu g/m^3$ $PM_{2.5}$ (24-hr) NAAQS was not revoked when the 35 $\mu g/m^3$ NAAQS was promulgated in 2006. Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for the newer NAAQS are found adequate or SIP amendments for the newer NAAQS are completed.

6 As of 9/16/09, U.S. EPA is reconsidering the 2008 8-hour ozone NAAQS (0.075 ppm); U.S. EPA is expected to tighten the primary NAAQS to somewhere in the range of 60-70 ppb and to add a secondary NAAQS. U.S. EPA plans to finalize reconsideration and promulgate a revised standard by August 2010.

7 Final 1-hour NO_2 NAAQS published in the Federal Register on 2/9/2010, effective 3/9/2010. Initial nonattainment area designations should occur in 2012 with conformity requirements effective in 2013. Project-level hot spot analysis requirements, while not yet required for conformity purposes, are expected.

8 U.S. EPA finalized a 1-hour SO_2 standard of 75 ppb in June 2010.

9 State standards are "not to exceed" unless stated otherwise. Federal standards are "not to exceed more than once a year" or as noted above.

10 For certain areas.

Table 3.14-2: Ambient Air Quality Monitoring Data Collected from the Barstow (CARB Station No. 36155) and Victorville (CARB Station No. 36306) Monitoring Stations

Pollutant Standards	2007	2008	2009
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.099	0.104	0.095
Maximum 8-hour concentration (ppm)	0.088	0.096	0.086
Number of Days Standard Exceeded			
CAAQS 1-hour (> 0.09 ppm)	2	5	1
NAAQS 8-hour (> 0.075 ppm)	25	7	5
Carbon Monoxide (CO)			
Maximum 8-hour concentration (ppm)	0.70	1.23	0.89
Number of Days Standard Exceeded			
NAAQS/CAAQS 8-hour (> 9.0 ppm)	0	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.073	0.081	0.060
Annual average concentration (ppm); CAAQS = 0.030 ppm	0.020	0.019	0.016
Number of Days Standard Exceeded			
NAAQS 1-hour (> 0.100 ppm)	0	0	0
Particulate Matter (PM10)			
National maximum 24-hour concentration ($\mu g/m^3$)	202	93	76
National second-highest 24-hour concentration ($\mu g/m^3$)	103	56	65
State maximum 24-hour concentration ($\mu g/m^3$)	194	88	72
State second-highest 24-hour concentration ($\mu g/m^3$)	98	54	59
National annual average concentration ($\mu g/m^3$)	29.8	26.1	NA
State annual average concentration ($\mu g/m^3$)	NA	NA	25
Number of Days Standard Exceeded			
CAAQS 24-hour (>50 $\mu g/m^3$)	5	2	2
NAAQS 24-hour (>150 $\mu g/m^3$)	1	0	0
Particulate Matter (PM2.5)			
National maximum 24-hour concentration ($\mu g/m^3$)	28	17	20
National second-highest 24-hour concentration (μg/m3)	19	16	17
State maximum 24-hour concentration ($\mu g/m^3$)	28	19	20
State second -highest 24-hour concentration ($\mu g/m^3$)	20	17	17
National annual average concentration ($\mu g/m^3$)	9.6	NA	8.9
State annual average concentration ($\mu g/m^3$)	9.7	NA	9.3
Number of Days Standard Exceeded			
NAAQS 24-hour (> 35 $\mu g/m^3$)	0	0	0

Notes:
CAAQS = California ambient air quality standards.
NAAQS = National ambient air quality standards.
NA = Insufficient data available to determine the value/Data not available.
Source: California Air Resources Board; compiled by ICF International, January 2011.

As shown in Table 3.14-2, both the one-hour and eight-hour O_3 concentrations have exceeded state and federal standards multiple times during the three-year reporting period. PM10 concentrations have also exceeded state and federal standards. CO, NO_2, and PM2.5 concentrations remained below state and federal standards during the three-year reporting period.

If a pollutant concentration is lower than the state or federal standard, the area is classified as being in attainment for that pollutant. If a pollutant violates the standard, the area is considered a nonattainment area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated unclassified. The State of California has designated the western portion of the Basin as being a nonattainment area for ozone, PM2.5, and PM10. The federal EPA has designated this area as being a nonattainment area (Moderate) for both ozone (eight-hour standard) and PM10 (see Table 3.14-1).

3.14.2.3 Description of Pollutants

Ozone

Ozone is a respiratory irritant that increases susceptibility to respiratory infections. It is also an oxidant that can cause substantial damage to vegetation and other materials.

Ozone, which is a regional pollutant, is not emitted directly into the air but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include ROG and NOX, react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. In addition, photochemical reactions take time to occur, so high ozone levels often occur downwind of the emission source.

The EPA revoked the federal 1-hour ozone standard on June 15, 2005; however, the new federal 8-hour ozone standard was promulgated effective from that same date. A state standard for ozone has been established for the 1-hour and 8-hour averaging times. The state 1-hour and 8-hour ozone standards are 0.09 parts per million (ppm) and 0.070 ppm, respectively, not to be exceeded. The federal 8-hour ozone standard is 0.075 ppm and is not to be exceeded more than three times in any 3-year period.

On April 15, 2004, EPA released its list of 8-hour ozone nonattainment areas, together with the deadline for each nonattainment area to attain the standard. The designation and classification became effective on June 15, 2004 and the 8-hour ozone attainment year for western portion of the Basin is year 2010. Areas with the highest 8-hour concentrations and the greatest number of days exceeding the new standard were given the longest time to reach attainment. The Basin is classified as moderate. The current Classification for 8-hours Ozone Standard in Western portion of MDAB is non-attainment Moderate.

Inhalable Particulate Matter

Particulates can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulates also reduce visibility and corrode materials. Particulate emissions are generated by a wide variety of sources, including industrial emissions, dust suspended by vehicle

traffic and construction equipment, and secondary aerosols formed by reactions in the atmosphere. The federal and state AAQS for particulate matter apply to two classes of particulates: PM2.5 and PM10.

The federal PM2.5 standards are 35 micrograms per cubic meter ($\mu g/m^3$) for the 24-hour averaging period,[1] and 15 $\mu g/m^3$ for the annual average concentration. On June 20, 2002, California adopted an annual PM2.5 standard of 12 $\mu g/m^3$.[2] EPA released its final nonattainment area designations for PM2.5 on January 5, 2005 (70 FR 943). The first federal conformity determination for PM2.5 (for the 2004 SCAG RTP) was issued on March 30, 2006. The Basin's current federal PM2.5 designation is unclassifiable/attainment. With respect to PM10, the federal and state standards for the 24-hour averaging period are 150 $\mu g/m^3$ and 50 $\mu g/m^3$, respectively. In addition, the state has an annual average PM10 standard of 20$\mu g/m^3$. For State PM2.5 Standard, the portion of MDAB where the project is located is classified as non-attainment and for Federal standard the portion of MDAB is classified as Attainment/Unclassified.

Carbon Monoxide

CO is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. CO can cause health problems such as fatigue, headache, confusion, dizziness, and even death.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when a period of light winds, combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

State and federal CO standards have been set for 1-hour and 8-hour averaging times. The state 1-hourstandard is 20 ppm by volume, whereas the federal 1-hour standard is 35 ppm. Both the state and federal standard for the 8-hour averaging period is 9 ppm.

Nitrogen Dioxide

Nitrogen oxides are a family of highly reactive gases that are primary precursors to the formation of ground-level ozone, reacting in the atmosphere to form acid rain. NO_X is emitted from the use of solvents and combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NO_2 is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

NO_X can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. The effects of short-term exposure are still unclear, but continued or frequent exposure to concentrations that are typically much higher than those normally found in the ambient air may cause increased incidence of acute respiratory illness in children. Health effects

[1] Based on 2004 –2006 monitoring data, the US EPA revised the Federal PM2.5 24-hour standard from 65 micrograms per cubic meter (μg/m3) to 35 μg/m3. This change became effective on April 5, 2010. States must attain this revised standard by year 2020 (71 FR 61216).
[2] California does not have a 24-hour concentration standard.

associated with NO_X are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation along with pulmonary dysfunction. NO_X can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NO_X can also impair visibility. NO_X is a major component of acid deposition in California. NO_X may affect both terrestrial and aquatic ecosystems. NO_X in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduces the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

Sulfur Oxides

SO_X gases are a family of colorless, pungent gases, which include SO_2 and are formed primarily by combustion of sulfur-containing fossil fuels (mainly coal and oil), metal smelting, and other industrial processes. SO_X can react to form sulfates, which significantly reduce visibility. SO_X is a precursor to particulate matter formation, which is in nonattainment in the project area.

The major health concerns associated with exposure to high concentrations of SO_X include effects related to breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease. Major subgroups of the population that are most sensitive to SO_X include individuals with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema), as well as children and the elderly. Emissions of SO_X also can damage the foliage of trees and agricultural crops. Together, SO_X, and NO_X are the major precursors to acid rain, which is associated with the acidification of lakes and streams and accelerated corrosion of buildings and monuments.

The state standards are 0.25 ppm for the 1-hour averaging period and 0.04 ppm for the 24-hour averaging period. The federal standard is 0.075 ppm for the 1-hour averaging period (75 FR 35520). The Basin is designated as an attainment area for both the 1- and 24-hour state standards; and unclassified for the federal 1-hour standard.

Lead

Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used several decades ago to increase the octane rating in automotive fuel. Since gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels and the use of leaded fuel has been mostly phased out, the ambient concentrations of lead have dropped dramatically. Short-term exposure to high levels of lead can cause vomiting, diarrhea, convulsions, coma, or even death. However, even small amounts of lead can be harmful, especially to infants, young children, and pregnant women. Symptoms of long-term exposure to lower lead levels may be less noticeable but are still serious. Anemia is common, and damage to the nervous system may cause impaired mental function. Other symptoms are appetite loss, abdominal pain, constipation, fatigue, sleeplessness, irritability, and headache. Continued excessive exposure, as in an industrial setting, can affect the kidneys.

Lead exposure is most serious for young children because they absorb lead more easily than adults and are more susceptible to its harmful effects. Even low-level exposure may harm the intellectual development, behavior, size, and hearing of infants. During pregnancy lead can cross the placenta and affect the fetus, especially in the last trimester. Pregnant female workers exposed to high levels of lead have more miscarriages and stillbirths.

Toxic Air Contaminants

Although AAQS exist for criteria pollutants, no ambient standards exist for toxic air contaminants (TACs). Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, the ARB has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risk each presents. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor, called a Hazard Index, is used to evaluate risk.

In the early 1980s, the ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (Assembly Bill [AB] 1807) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) is present in approximately 44 of California's 58 counties. Asbestos is often found in serpentine rock and ultramafic rock near fault zones. Asbestos is a human health hazard when airborne. Asbestos fibers can be inhaled into lungs, causing inflammation and respiratory ailments and cancers. *A General Location Guide for Ultramafic Rock in California* indicates that there is no naturally occurring asbestos located on or near the project site. For this reason no analysis is required. Refer to Section 3.13, Hazardous Waste/Materials for additional information on NOA and/or see Appendix E HAZ-3.

3.14.3 Environmental Consequences

3.14.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

The No Build Alternative is the baseline for the comparison of air quality impacts. Under this alternative, local air quality would deteriorate due to increased vehicular congestion in the project area.

Build Alternatives 2, 3, and 4

Regional Air Quality Conformity

The proposed project is fully funded and is in the SCAG Final programmed financially constraint 2011 Federal Transportation Improvement Program (FTIP) Amendment #24 to 31 (Project Number 4351), which was found to conform by FHWA on June 4, 2012.[3] The proposed project is also included among the listing of the modeled projects in the SCAG RTP (Project Number 4351). The project is targeted to be constructed by the year 2018. (See Attachment I for 2012 RTP/2011 FTIP Amendment #24 Project Listings). As such, it can be concluded that the project's operational emissions (which include the ozone precursors reactive organic gases [ROG] and NO_X) meet the transportation conformity requirements imposed by the EPA and MDAQMD. Although the proposed project is a conforming project for regional emissions, it requires both CO and PM2.5/PM10 hot-spot analyses to determine any localized emissions effects. The potential for adverse local impacts for both pollutants is assessed below.

Project-Level Conformity

Carbon Monoxide

CO is used as an indicator of a project's direct and indirect impact on local air quality because CO does not readily disperse in the local environment in cool weather when the wind is fairly still. Caltrans' *Transportation Project-Level Carbon Monoxide Protocol* (Caltrans 1997b) was used to assess the project's impact on the local CO concentrations. Based on this protocol, a screening analysis was conducted to determine whether the proposed project would result in any CO hot spots. Localized emissions of CO may increase with implementation of the proposed project. However, as described in detail in the AQR (Caltrans 2011a) and indicated in Table 3.14-1, the Basin is classified as a federal attainment (i.e. through analysis it was determined that the project does not increase Carbon monoxide (CO) concentration)/unclassified area for CO and California attainment area for CO. Because project implementation would not result in higher CO concentrations than those existing within the region at the time of attainment demonstration, on the basis of protocol analysis methodology, no further analysis is needed.

Particulate Matter (PM10 and PM2.5)

The Basin is classified as a federal nonattainment (Moderate) area and California nonattainment area for PM10 (Table 3.14-1). In regard to PM2.5, the Basin is classified as federal attainment/unclassified area and California nonattainment area. Therefore, a qualitative PM10 and PM2.5 conformity review was conducted. The qualitative PM2.5 and PM10 conformity review was based on the March 2006 EPA guidance provided below.

The availability of two new EPA guidance documents was announced in the Federal Register (Volume 75, No.243, Monday, December 20, 2010 Notices [79370]) for completing PM2.5 and PM10 hot-spot analyses. EPA approved both the latest version of MOVES (MOVES2010a) and EMFAC (EMFAC2007). Further it was announced that a two year grace period is allowed before EMFAC 2007 is required to be used for quantitative PM hot-spot analyses for project-level

[3] Project described in Final 2011 FTIP as "SR58 Expressway-realign and widen from 2-4 lane expressway. New interchanges at Lenwood Rd and Hinkley Rd 2.8 miles west of Hidden River Rd. to 0.7 miles east of Lenwood Road -- realign and widen to 4 lane expressway (2-4 lanes) (phase 2).

conformity determination in California. As such, the qualitative PM2.5 and PM10 conformity review was conducted based on the EPAs 2006 *Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*.

The qualitative conformity review found that the proposed project would not be considered a Project of Air Quality Concern, as defined by 40 CFR 93.123(b)(1). Therefore, PM10 and PM2.5 hot-spot evaluations are not required. It is unlikely that the proposed project would generate new air quality violations, worsen existing violations, or delay attainment of national ambient air quality standards for PM10 and PM2.5. The SCAG Transportation Conformity Working Group (TCWG) concurred with this determination on July 27, 2010. A copy of this finding, as well as the particulate matter Conformity Hot-Spot Analysis Project Summary Form for Interagency Consultation completed for the project, is provided in the AQR (Caltrans 2011a). Clean Air Act, 40 CFR Part 93.116, requirements are met without any explicit hot-spot analysis; and as such, the proposed project can be screened from further analysis.

Mobile Source Air Toxics

With respect to the proposed project, the projected annual average daily traffic (AADT) volumes at horizon year 2040 of 24,100 (See Table 3.6-1) would be well below the 140,000 to 150,000 AADT criterion established by FHWA for projects considered to have higher potential for mobile-source air toxics (MSAT) effects. As such, the proposed project is considered a project with low-potential MSAT effects.

Assuming that other variables such as fleet mix are the same, comparison of MSAT emissions is proportional to VMT, which, in turn, is the product of AADT and the route length.[4] The AADT for Horizon year 2040 for all Alternatives is 24,100 vehicles and the project length is approximately 8.9 miles. Therefore, the estimated VMT for all Alternatives is 214,490. The 2011 baseline VMT is calculated at 107,690. Compared to the VMT for the Build and No-Build alternatives, in 2040, this means a VMT increase of 99.2%.

Although VMT is expected to increase by 2040 to an estimated 214,490, this increase is predicted to be the same as that of the No-Build Alternative because the AADT is expected to increase regardless of the Project and the route length is the same as the build Alternatives.

Another factor that may increase VMT for Projects that relieve congestion is the existence of alternative routes in the vicinity because the traffic that historically used those routes may alter their preferences because the new facility may be less congested. With this Project, there are no practicable alternative routes for travel that currently exist in the area.

Overall, since VMT under all Alternatives, including the no-build Alternative, are the same there's not much difference in MSAT emissions and any increase is not attributable to the Project. Proposed facility improvements would simply relieve congestion when compared to the No-Build Alternative, as LOS is predicted to improve from D to A at horizon year 2040 as a result of proposed improvements.

Because the estimated VMT under each of the alternatives are the same, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. In addition, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year (2040) as a result of EPA's national control programs that are projected

[4] MSAT Interim-Guidance dated September 30, 2009 p. 3.

to reduce annual MSAT emissions by 72% between 1999 and 2050 (See Figure 1 of MSAT Interim-Guidance dated September 30, 2009). The magnitude of the EPA-projected reductions is so great that even after accounting for VMT growth MSAT emissions in the study area are likely to be lower in the future.

The realignment or addition of travel lanes, contemplated as part of the proposed build alternatives, would move some traffic closer to a number of dwelling units: the breakdown is approximately 25 units under Alternative 2, 39 under Alternative 3, and 40 under Alternative 4. The existing SR-58 facility has approximately 37 units adjacent to the facility. As such, under each alternative there may be localized areas where ambient concentrations of MSATs could be higher under certain build alternatives than the existing facility and the No-Build Alternative. In addition, there appears to be no schools, hospitals, or elderly care centers within 500 feet of any of the three Build alternatives. Nevertheless, as detailed in Appendix C of the MSAT Interim Guidance dated September 30, 2009~~,~~ which discusses 40 CFR Section 1502.2 (Prototype Language for Compliance with 40 CFR 1502.22), the magnitude and the duration of these potential increases compared to the No-Build Alternative cannot be accurately quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts, which can't be determined due to lack of thresholds for pollutant to compare with.

In sum, when a highway is widened and/or re-aligned, the localized level of MSAT emissions for the build alternatives could be higher relative to the existing conditions or No-Build Alternative at some locations, but this could be offset with increased speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT emissions would be lower in other locations when traffic shifts away from them. In any case, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be substantially lower than today.

3.14.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

Under the No Build Alternative the proposed improvements would not be implemented and there would be no construction related air quality impacts.

Build Alternatives 2, 3, and 4

The project proposes to widen – and to realign for Alternatives 2 and 4 – SR-58 from a two-lane conventional highway to a four-lane expressway/freeway. Construction related emissions would result from earthmoving activities and the use of heavy equipment, as well as land clearing, ground excavation, cut-and-fill operations, and the construction of roadways. Dust emissions would vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather. A major portion of dust emissions for the proposed project would likely be caused by construction traffic on temporary construction roads. Caltrans' policy is to reduce construction-period emissions by the greatest extent feasible and requires implementation of effective and comprehensive avoidance and minimization measures, as identified below.

Exhaust Emissions

The project would conform to Caltrans construction requirements, as specified in the Caltrans Standard Specifications, Section 7-1.01F (Air Pollution Control): "The Contractor shall comply with all air pollution control ordinances and statutes which apply to any work performed pursuant to the contract, including any air pollution control rules, regulations, ordinances and statutes, specified in Section 11017 of the Government Code." Implementation of exhaust emission control measures outlined below would avoid and/or minimize any impacts on air quality.

Particulate Emissions

The MDAQMD has adopted Rule 403.2 (Fugitive Dust Control for the Mojave Desert Planning Area [MDPA]). The proposed project would be required to implement control measures for each source of PM10 emissions, as specified in the rule. Implementation of these measures would avoid and/or minimize any impacts to air quality.

Diesel Particulate-Related Health Risk during Construction

MDAQMD does not consider diesel-related cancer risks from construction equipment to be an issue due to the short-term nature of construction activities. Construction activities associated with the proposed project would be sporadic, transitory, and short-term in nature. The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period, construction of the proposed project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction.

3.14.4 Avoidance, Minimization, and/or Mitigation Measures

Most of the construction impacts to air quality are short-term in duration and, therefore, would not result in adverse or long-term conditions. Implementation of the following measures would reduce any air quality impacts resulting from construction activities:

- **AQ-1:** Caltrans will require implementation of effective and comprehensive avoidance and minimization measures, as detailed in Caltrans' Standard Specifications, Section 7-1.01F (Air Pollution Control), and MDAQMD Rule 403.2 (Fugitive Dust Control).

  Measures to reduce exhaust emissions specified in Section 7-1.01F (Air Pollution Control) may include but are not limited to the following:

  a) General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would have their engines turned off when not in use, to reduce vehicle emissions. Construction emissions should be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts.

  b) All equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

  c) Use electricity from power poles, rather than temporary diesel or gasoline powered generators if or where feasible.

d) Use on-site mobile equipment powered by alternative fuel sources (i.e., methanol, natural gas, propane, or butane) as feasible.

e) Develop a construction traffic management plan that includes, but is not limited to: (1) consolidating truck deliveries; (2) providing a rideshare or shuttle service for construction workers; and (3) providing dedicated turn lanes for movement of construction trucks and equipment on-and off-site.

Measures to reduce exhaust emissions specified in MDAQMD Rule 403.2 (Fugitive Dust Control) include the following.

The owner or operator of any construction/demolition source shall:

a) Use periodic watering for short-term stabilization of disturbed surface area to minimize visible fugitive dust emissions. For purposes of this rule, use of a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes shall be considered sufficient to maintain compliance;

b) Take actions sufficient to prevent project-related trackout onto paved surfaces;

c) Cover loaded haul vehicles while operating on publicly maintained paved surfaces;

d) Stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than 30 days, except when such a delay is due to precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions;

e) Clean-up project-related trackout or spills on publicly maintained paved surfaces within 24 hours; and

f) Reduce nonessential earth-moving activity under high wind conditions. For purposes of this rule, a reduction in earth-moving activity when visible dusting occurs from moist and dry surfaces due to wind erosion shall be considered sufficient to maintain compliance.

3.14.4.1 Climate Change

Climate change is analyzed in Chapter 4. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has promulgated explicit guidance or methodology to conduct project-level greenhouse gas analysis. As stated on FHWA's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders regarding climate change, the issue is addressed in the California Environmental Quality Act chapter of this environmental document and may be used to inform the National

Environmental Policy Act decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

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3.15 Noise and Vibration

3.15.1 Regulatory Setting

3.15.1.1 Federal Regulations

NEPA and CEQA provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

National Environmental Policy Act and 23 CFR 772

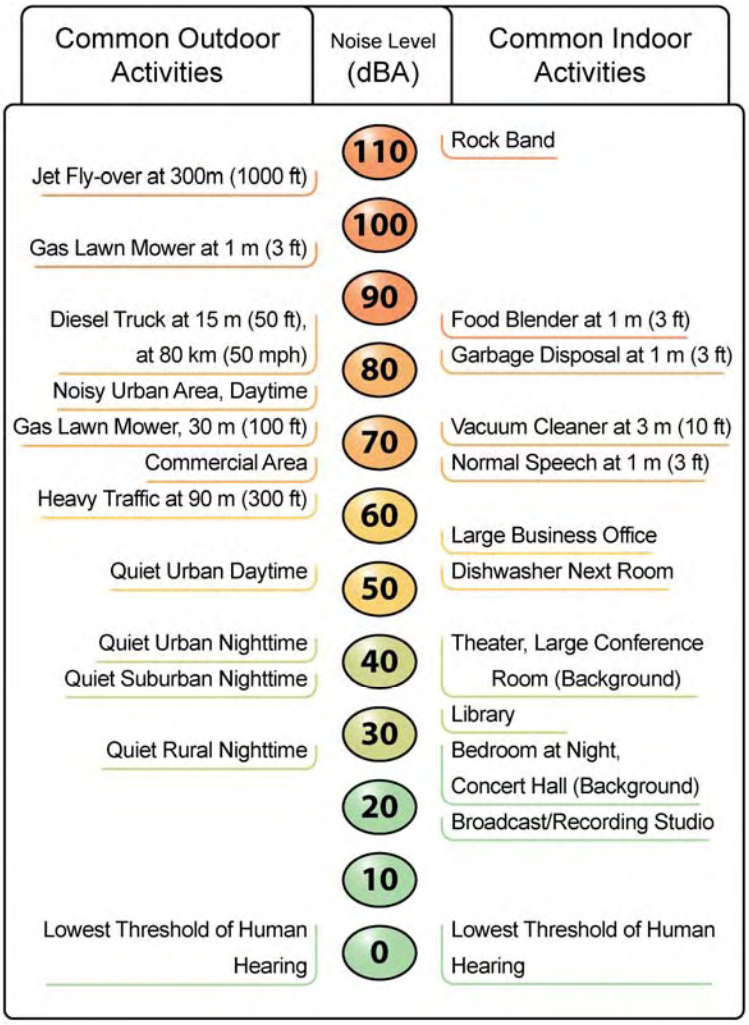
For highway transportation projects with FHWA (and Caltrans, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following table lists the noise abatement criteria for use in the NEPA-23 CFR 772 analysis. The Noise Study Report was approved before the Protocol 2011 applied; therefore, this project falls under the 2006 Protocol.

Table 3.15-1: Noise Abatement Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level, dBA L_{eq}(h)	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above.
D	–	Undeveloped lands.
E	52 Interior	Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Table 3.15-2 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels discussed in this section with common activities.

Table 3.15-2: Noise Levels of Common Activities



In accordance with Caltrans' *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, August 2006*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 5 dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access

requirements, other noise sources, and safety considerations. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents acceptance, the cost per benefited residence, the absolute noise level, build versus existing noise, environmental impacts of abatement, public and local agencies input, and newly constructed development versus development pre-dating 1978.

3.15.1.2 State Regulations

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible. The rest of this section will focus on the NEPA-23 CFR 772 noise analysis; please see Chapter 4 of this document for further information on noise analysis under CEQA.

Section 216 of the California Streets and Highways Code

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA L_{eq}(h) in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. This requirement does not replace the approach or exceed NAC criterion for FHWA Activity Category E for classroom interiors and other indoor sensitive uses, but it is a requirement that must be addressed in addition to the requirements of 23 CFR 772.

If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA L_{eq}(h). If the noise levels generated from freeway and non-freeway sources exceed 52 dBA L_{eq}(h) prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

3.15.2 Affected Environment

The following discussion is synthesized from the *Noise Study Report—State Route 58 via Hinkley Widening and Realignment Project* (Caltrans 2010f) and the *Final Noise Abatement Decision Report - State Route 58 via Hinkley Widening and Realignment Project* (Caltrans 2010c).

Sound, Noise, and Decibels

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound that interferes with normal activities. Sound levels are measured and expressed in decibels (dB). The human ear does not respond uniformly to sounds at all frequencies, being less sensitive to low and high

frequencies than to medium frequencies, which correspond with human speech. In response, the A-weighted noise level (or scale) has been developed. This A-weighted sound level is called the "noise level," which is referenced in units of dBA. Noise is measured on a logarithmic scale; a doubling of sound energy results in a three-dBA increase in noise levels. The human ear, however, does not typically notice changes in noise levels of less than three dBA.

Noise Descriptors

Noise in our daily environment fluctuates over time. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors most commonly used in traffic noise analysis.

- Equivalent Sound Level (L_{eq}): L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The one-hour A-weighted equivalent sound level (L_{eq}) is the energy average of A-weighted sound levels occurring during a one-hour period, and it is the basis for noise abatement criteria (NAC) used by Caltrans and FHWA.
- Percentile-Exceeded Sound Level (L_{xx}): L_{xx} represents the sound level exceeded for a given percentage of a specified period (e.g., L10 is the sound level exceeded 10% of the time, and
- Maximum Sound Level (L_{max}): L_{max} is the highest instantaneous sound level measured during a specified period.
- Day-Night Level (L_{dn}): L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during nighttime hours between 10 p.m. and 7 a.m.
- Community Noise Equivalent Level (CNEL): Similar to Ldn, CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10 dB penalty applied to A-weighted sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m., and a five dB penalty applied to the A-weighted sound levels occurring during evening hours between 7 p.m. and 10 p.m.

Land Uses

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. Land uses in the project area were categorized by land use type, activity category as defined in Table 3.15-1, and the extent of frequent human use. As stated in the protocol, although all developed land uses are evaluated in this analysis, the focus is on locations of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards, school athletic fields/playgrounds, and parks.

Land uses in the project area are identified in Figures 3.1.1 and 3.1.2 and include:

- North of SR-58: Land uses include single-family residences with undeveloped areas in between; industrial; and agricultural uses. However, the majority of land is undeveloped.
- South of SR-58: Land uses include single-family residences with undeveloped areas in between.

In addition to existing land uses, potential undeveloped land uses that have been planned, programmed, and designed were investigated by contacting San Bernardino County Land Use Services staff. Based on the information provided by County staff and a search of their online services website, there are no planned, programmed, or designed uses in the vicinity of the project involving noise-sensitive land uses.

Existing Noise Environment

To establish the existing noise environment, short-term and long-term noise measurements were taken between July 15 and 16, 2008. Short-term monitoring was conducted at nine locations (ST-1 to ST-9) selected to represent the various noise-sensitive land use types within the project area. A minimum of two consecutive but separate measurements (each 10 minutes in duration) were taken at each site using a Larson Davis Type 1 (Precision grade) sound level meter. Dominant noise sources and other relevant measurement conditions were identified and logged. SR-58 was determined to be the dominant contributor to noise levels. Traffic on SR-58 was classified and counted during the short-term measurements. The locations of the short-term monitoring sites are shown in Figures sets 3.15.1 to 3.15.21. Each figure set (3.15.1 to 3.15.7, 3.15.8 to 3.15.14, and 3.15.15 to 3.15.21) represents one of the build alternatives and also depicts the long-term measurement locations and considered noise barrier locations. It should also be noted that not all measurement stations are part of every alternative. Some stations were too far from an alternative to provide a meaningful noise reading. Each of the short-term monitoring sites are described below:

- ST-1: Single-family residence (36530 Indian Wells Road). Average noise level measured was 39.4 dBA L_{eq}.
- ST-2: Single-family residence (Sunrise Mobile Home Park 19816 SR-58). Average noise level measured was 65 dBA L_{eq}.
- ST-3: Single-family residence (20121 SR-58). Average noise level measured was 63.7 dBA L_{eq}.
- ST-4: Single-family residence (36644 Hinkley Road). Average noise level measured was 49.5 dBA L_{eq}.
- ST-5: Single-family residence (36816 Hillview Road). Average noise level measured was 52 dBA L_{eq}.
- ST-6: Single-family residence (36528 Hillview Road). Average noise level measured was 39.2 dBA L_{eq}.
- ST-7: Single-family residence (3700 Locust Street). Average noise level measured was 45.2 dBA L_{eq}.

- ST-8: Single-family residence (36636 Mountain View Road). Average noise level measured was 40.5 dBA L_{eq}.
- ST-9: Single-family residence (Sommerset Road). Average noise level measured was 39.6 dBA L_{eq}.

Long-term monitoring was conducted at two locations[1] (LT-1 and LT-2). The purpose of these measurements is to describe variations in sound levels throughout the day, as well as characterize the noise levels at the specific location being measured. The long-term sound level data was collected over a 24-hour period beginning July 15, 2008 and ending July 16, 2008. The long-term monitoring locations are shown in Figures 3.15.2.1 to 3.15.2.20 and described below.

- LT-1: Single-family residence (20121 SR-58) located on the south side of SR-58; approximately 100-feet from the centerline. The average noise level measured was 66 dBA Leq(h) during the 11 a.m. and 5 p.m. hours.
- LT-2: Single-family residence (36530 Indian Wells Road), south of SR-58. This location was used to quantify the noise level away from SR-58. The average-hour noise level measured was 59 dBA Leq(h) during the 6 p.m. hour.

In order to make sure the TNM 2.5 modeling represents actual conditions, the model was calibrated by comparing measured traffic noise levels to the model's estimate of existing noise levels at field measurement locations. Table 3.15-3 compares measured and modeled noise levels for existing traffic conditions.

[1] The number and location of monitoring sites may change depending on Caltrans' Noise Division review.

Figure 3.15.1: Alternative 2: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment a)

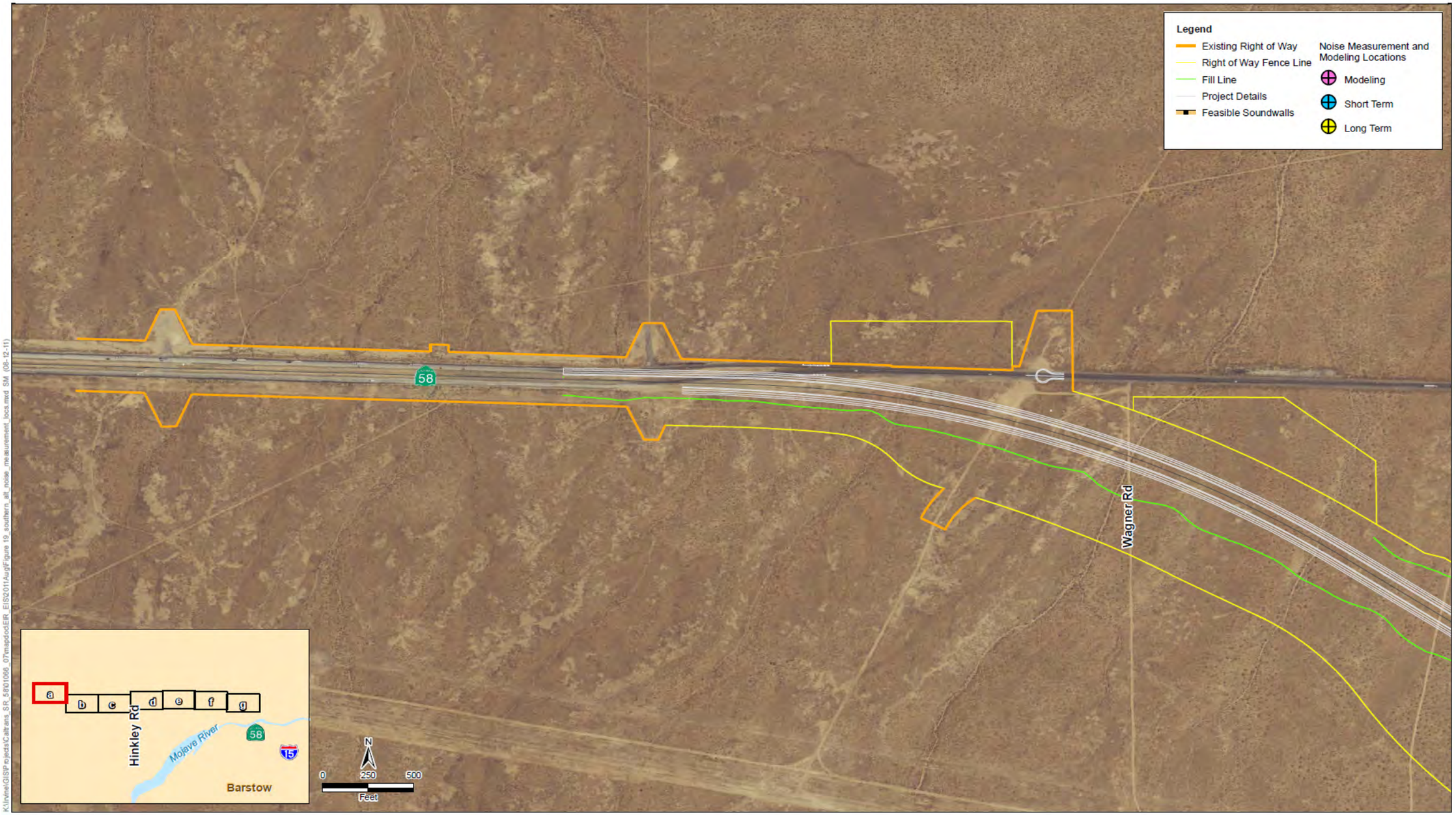


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Figure 3.15.2: Alternative 2: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment b)

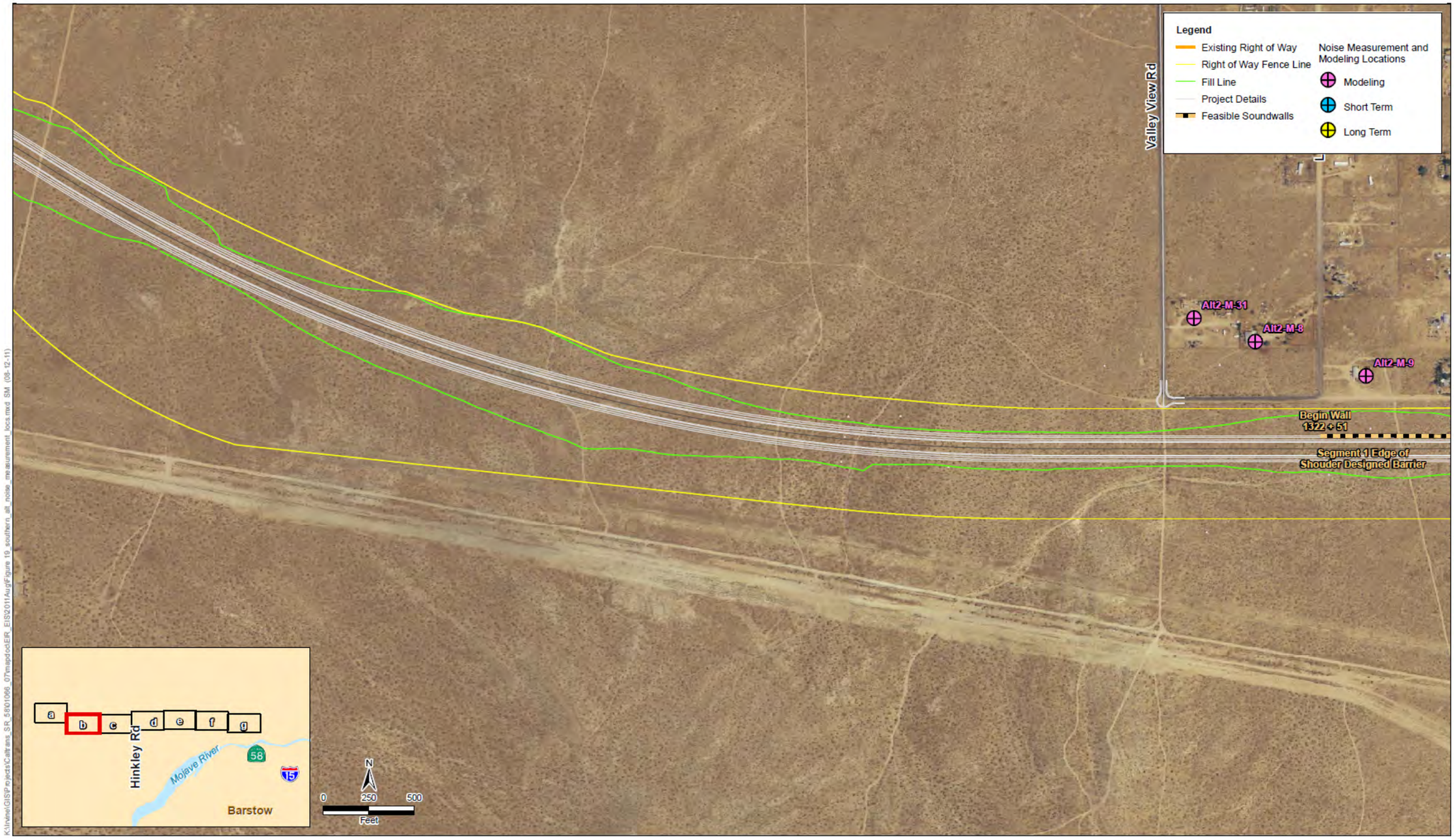

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Figure 3.15.3: Alternative 2: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment c)

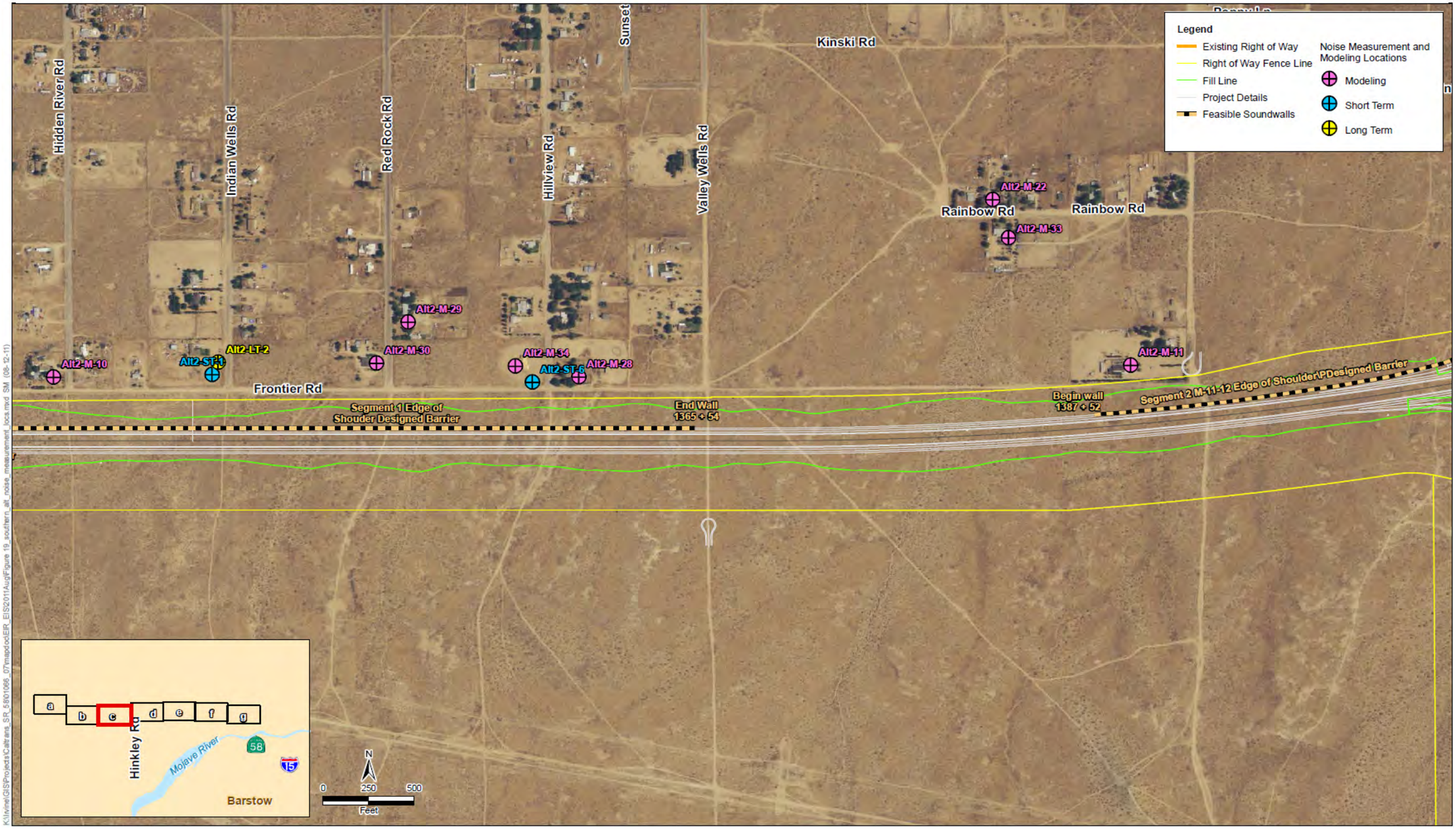

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Figure 3.15.4: Alternative 2: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment d)

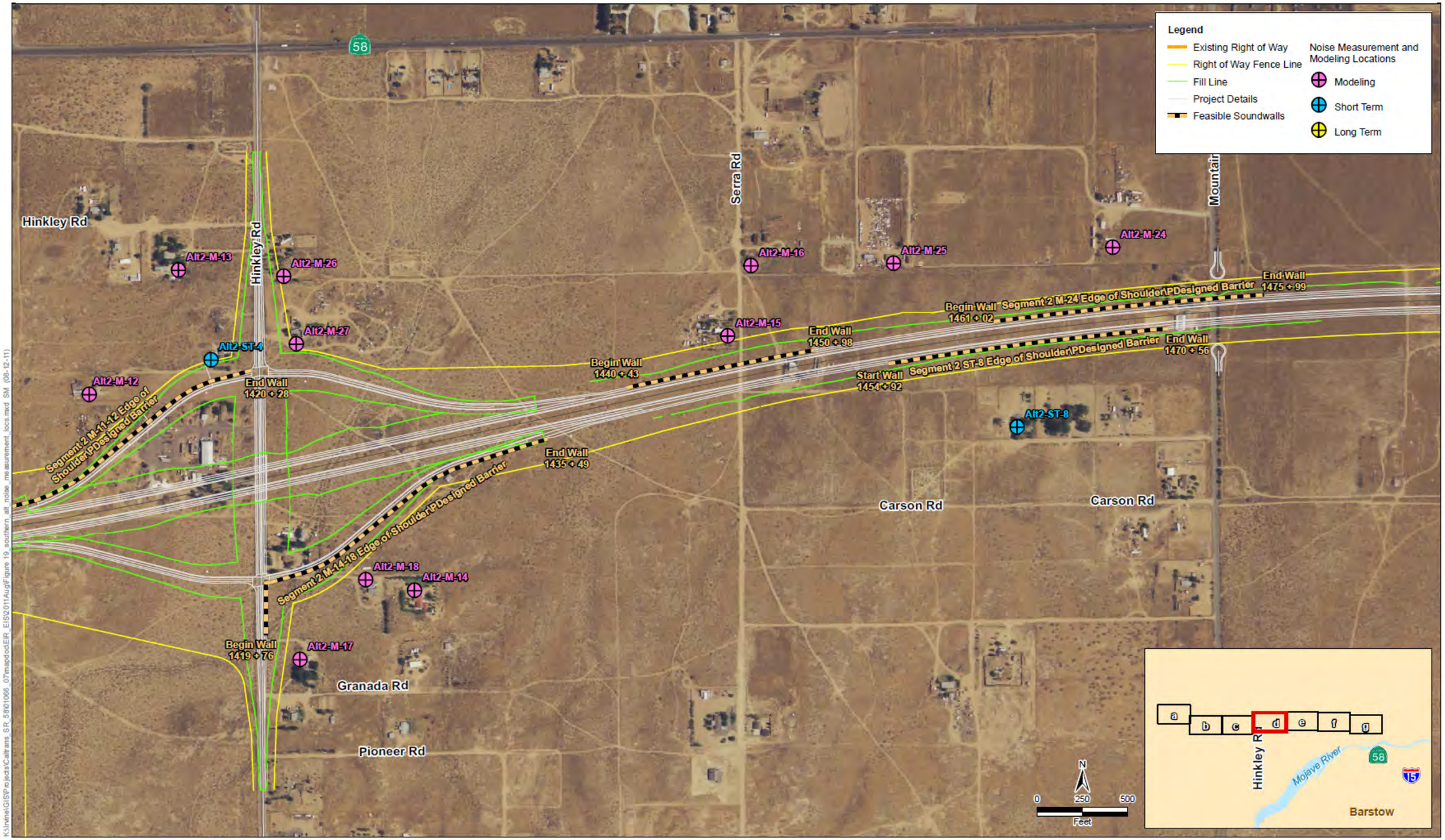

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Figure 3.15.5: Alternative 2: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment e)

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Figure 3.15.6: Alternative 2: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment f)

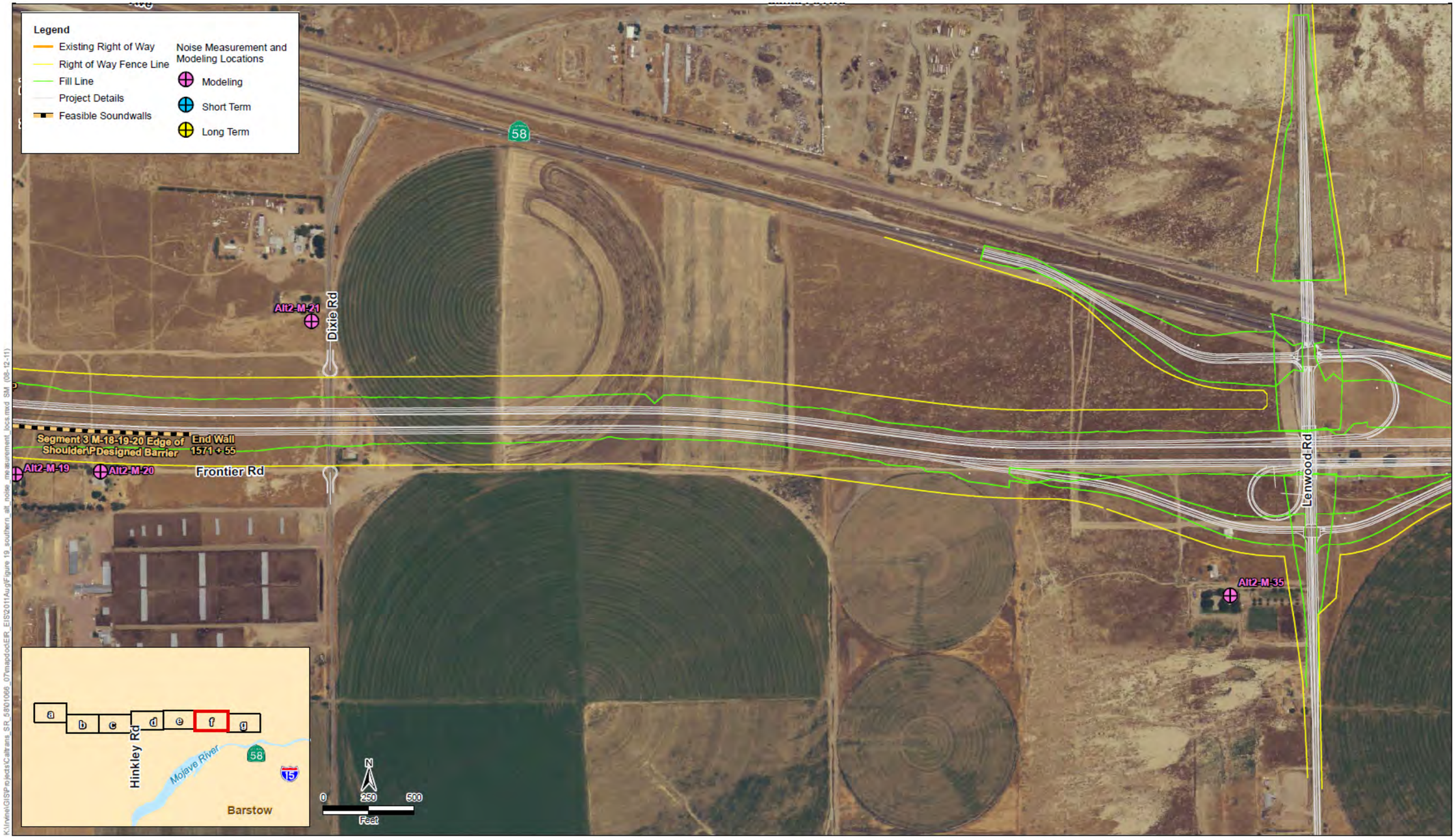

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Figure 3.15.7: Alternative 2: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment g)

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Figure 3.15.8: Alternative 3: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment a)

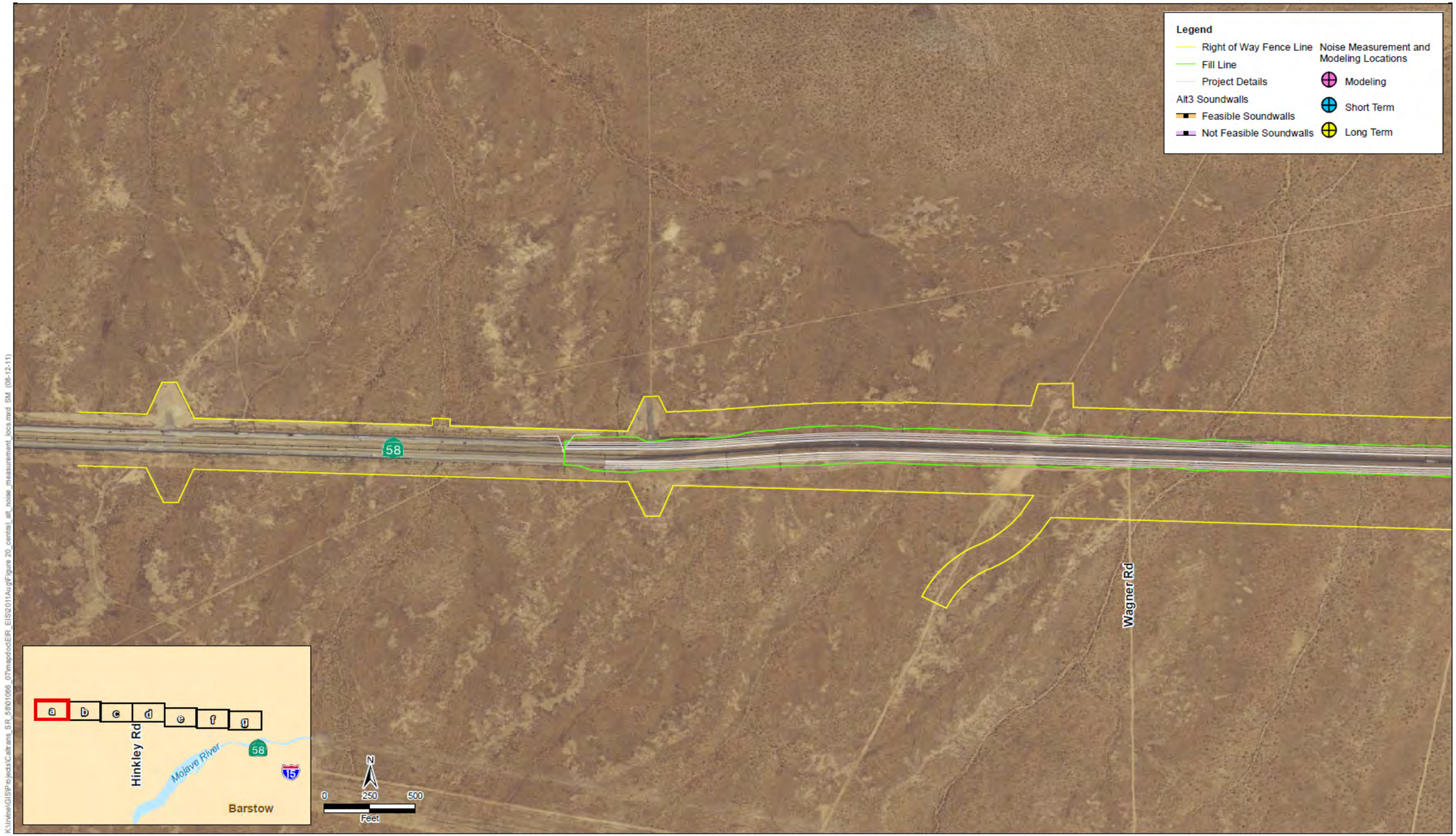

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Figure 3.15.9: Alternative 3: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment b)

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Figure 3.15.10: Alternative 3: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment c)

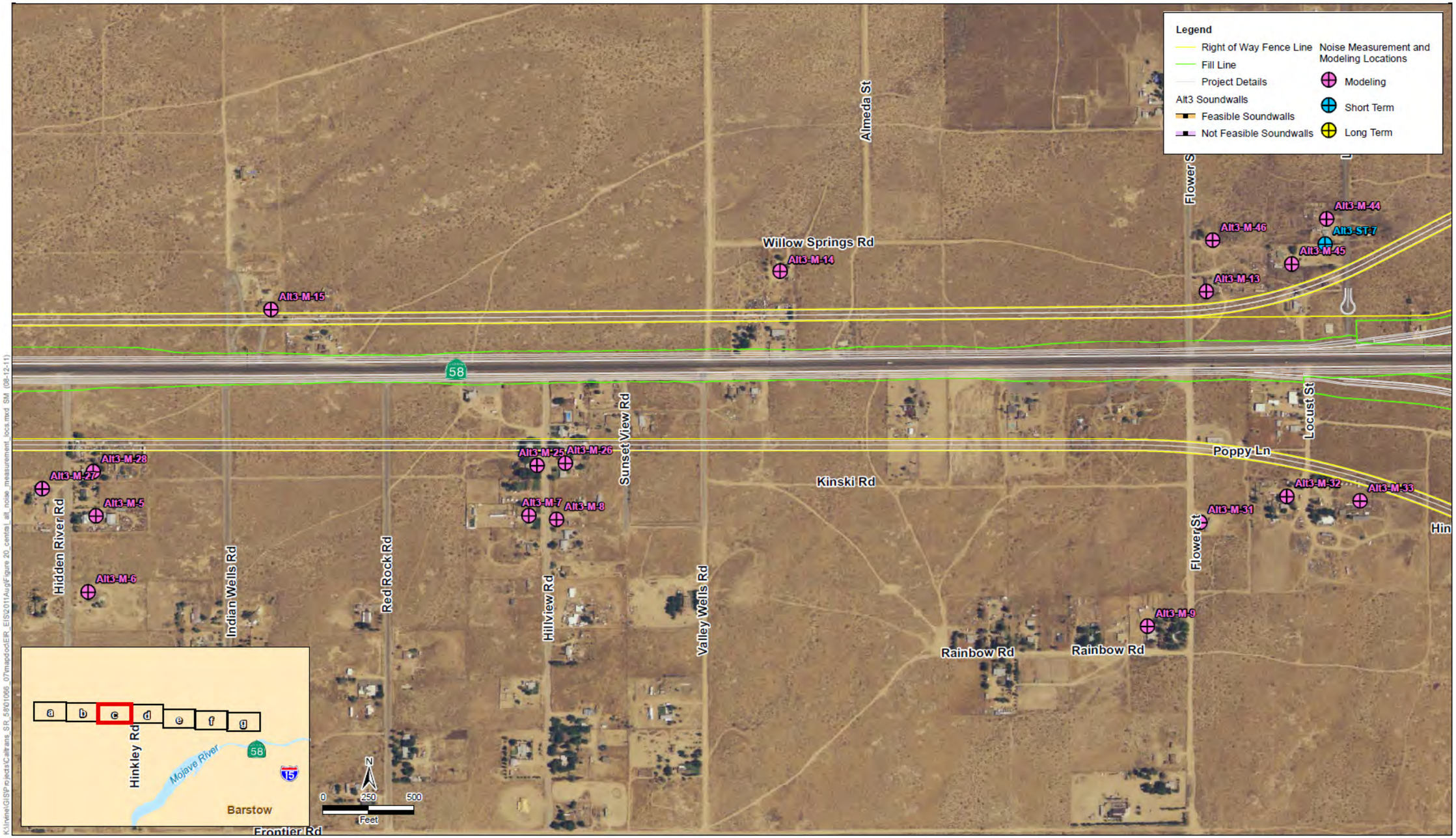

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Figure 3.15.11: Alternative 3: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment d)

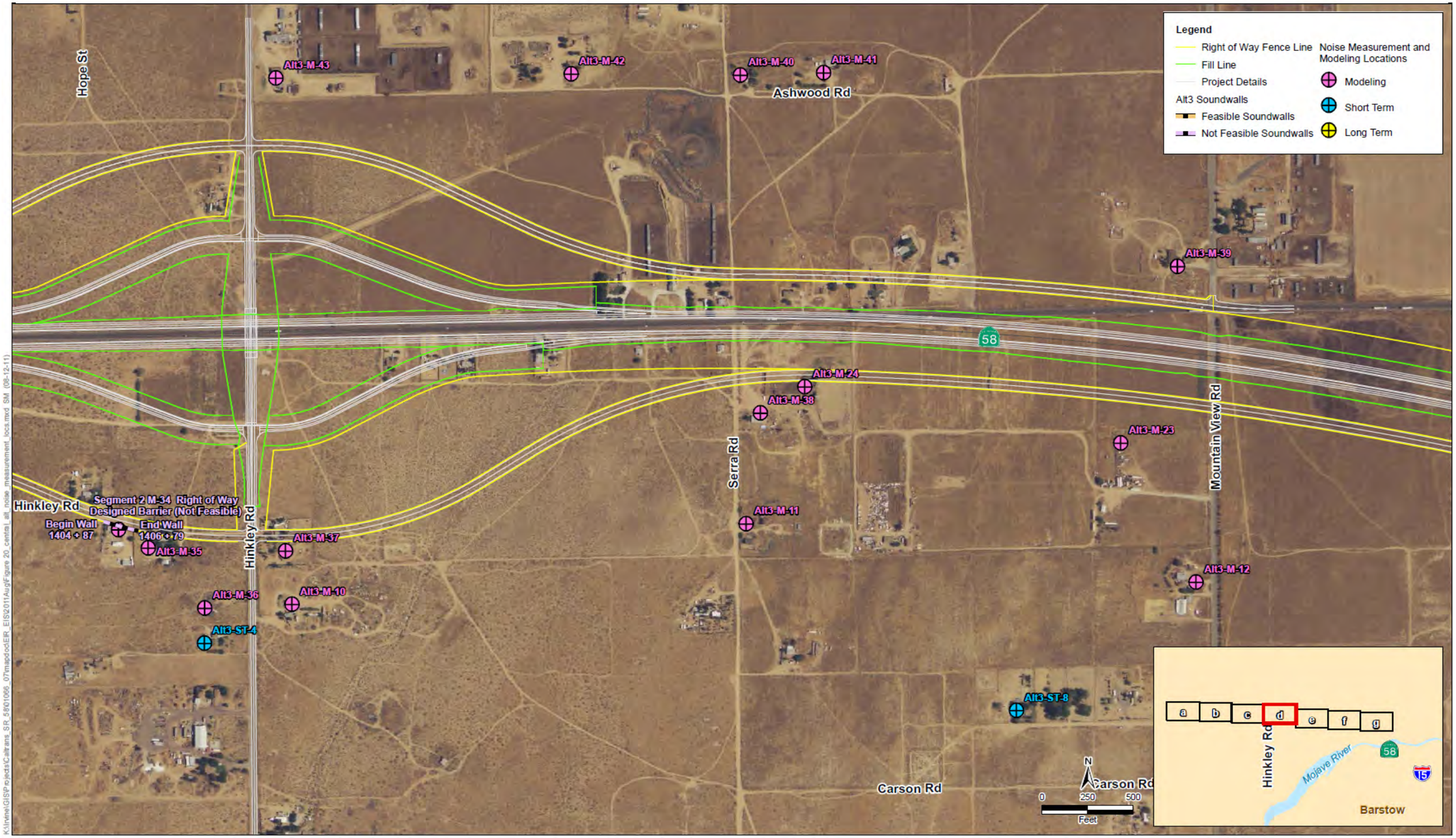

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Figure 3.15.12: Alternative 3: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment e)

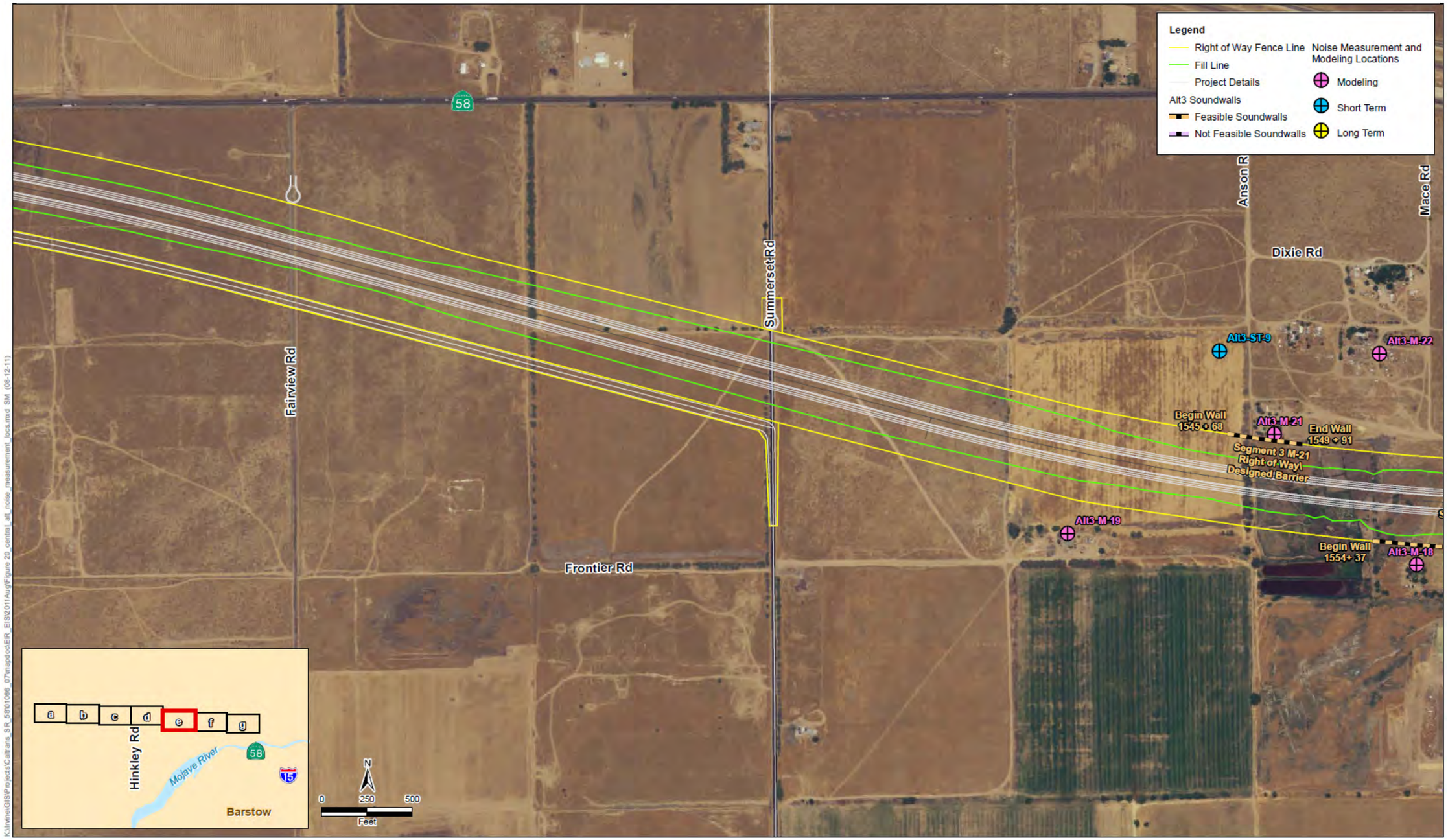

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Figure 3.15.13: Alternative 3: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment f)

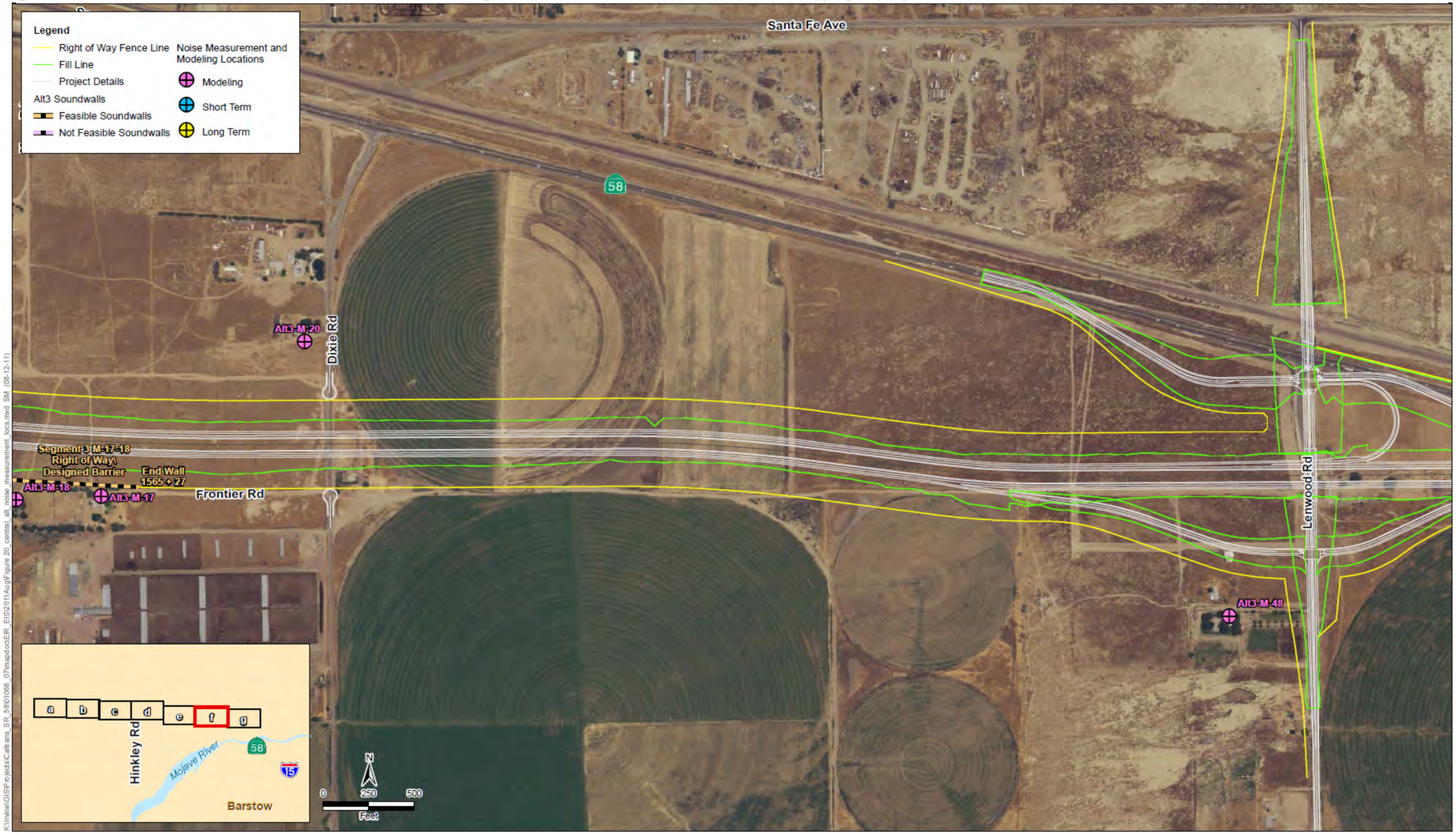

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Figure 3.15.14: Alternative 3: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment g)

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Figure 3.15.15: Alternative 4: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment a)

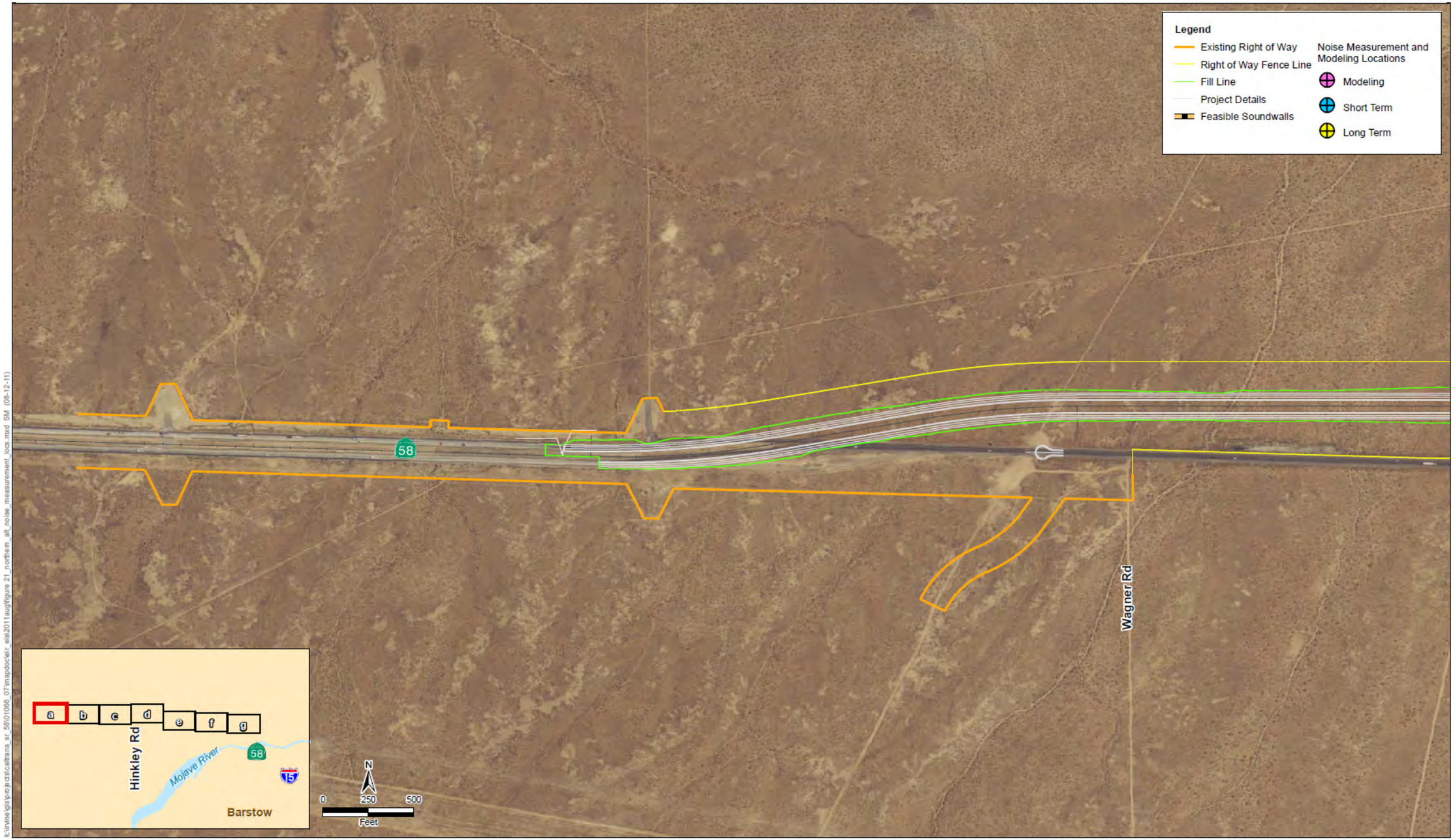

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Figure 3.15.16: Alternative 4: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment b)

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Figure 3.15.17: Alternative 4: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment c)

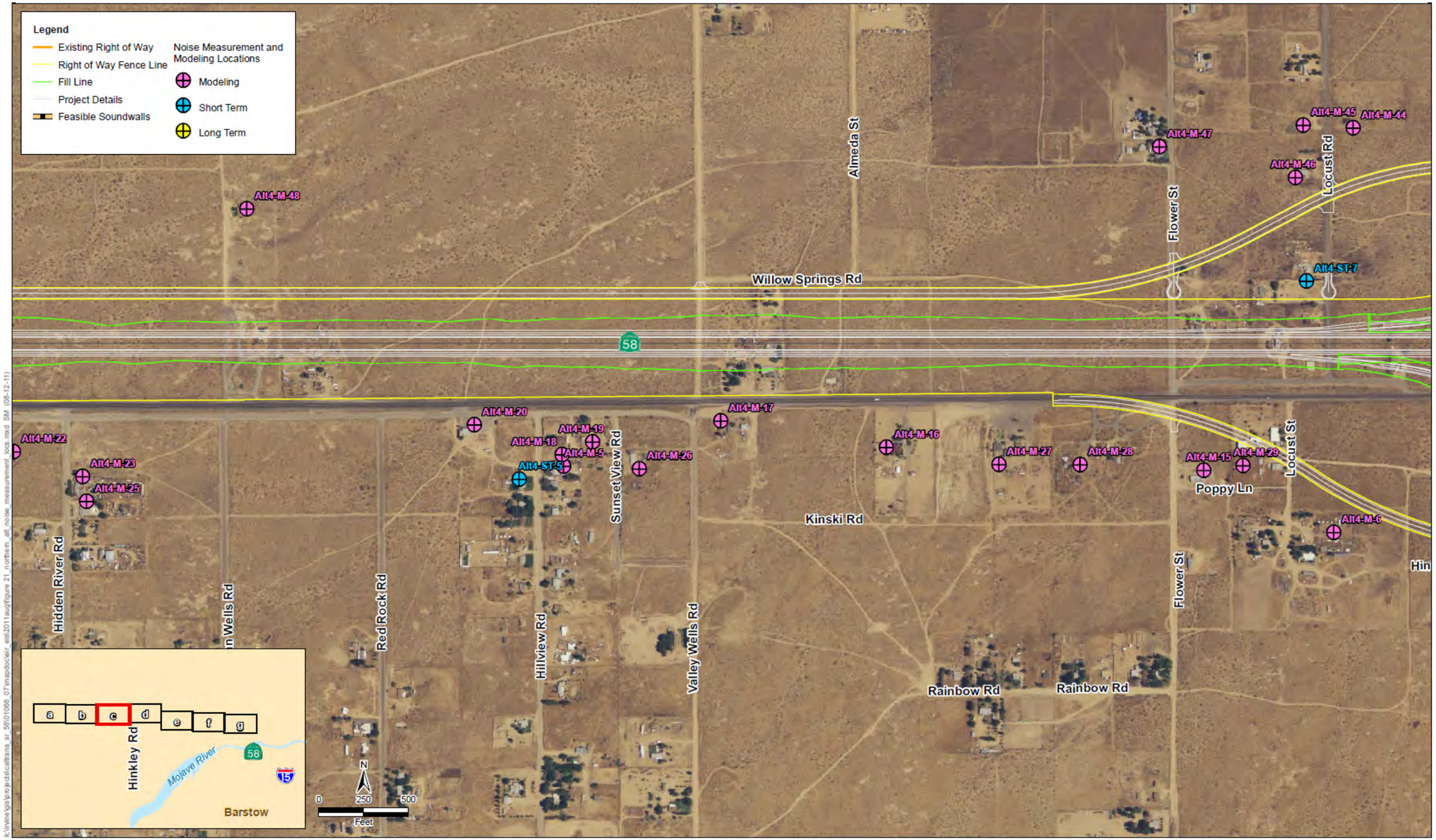

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Figure 3.15.18: Alternative 4: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment d)

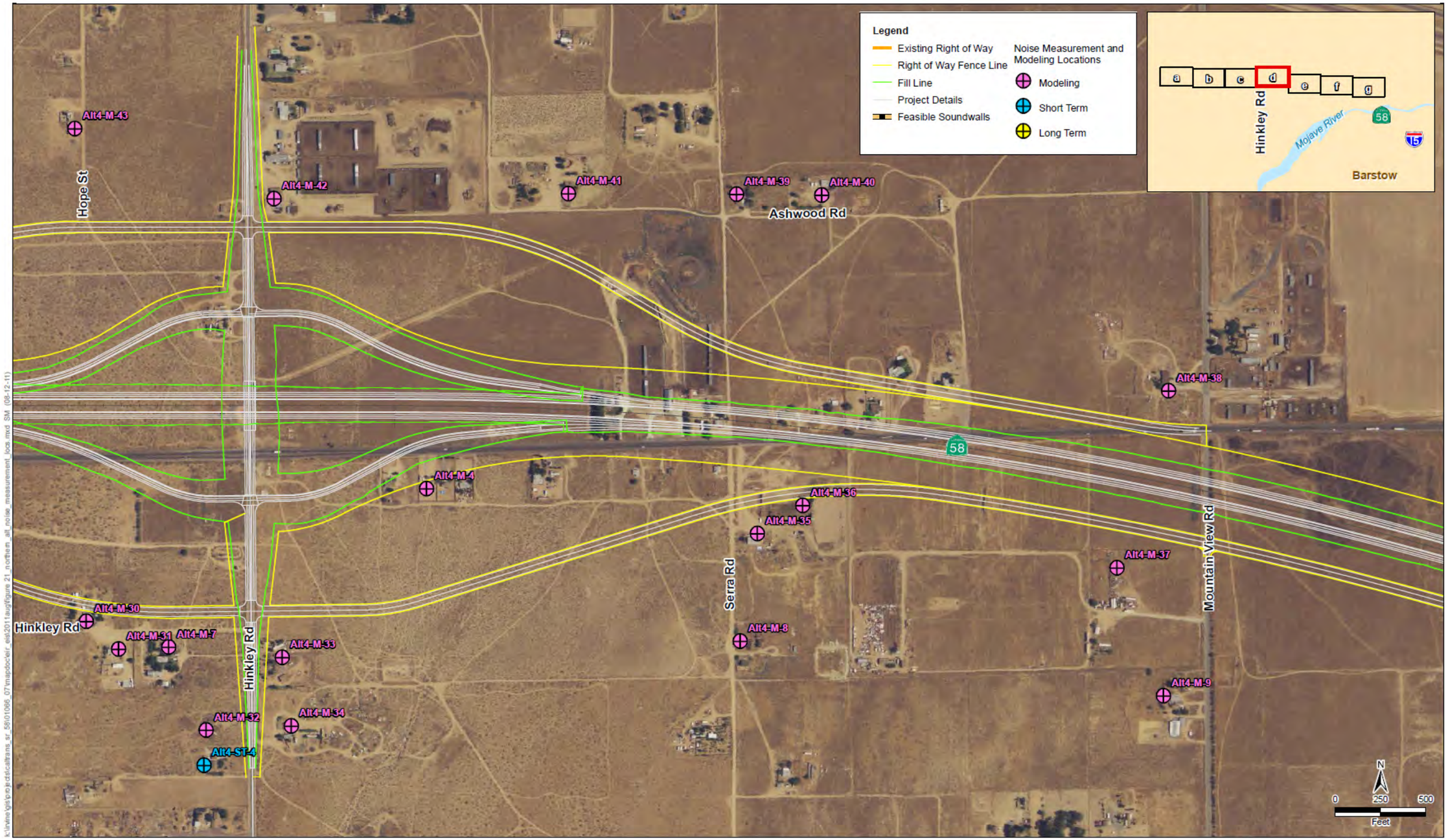

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Figure 3.15.19: Alternative 4: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment e)

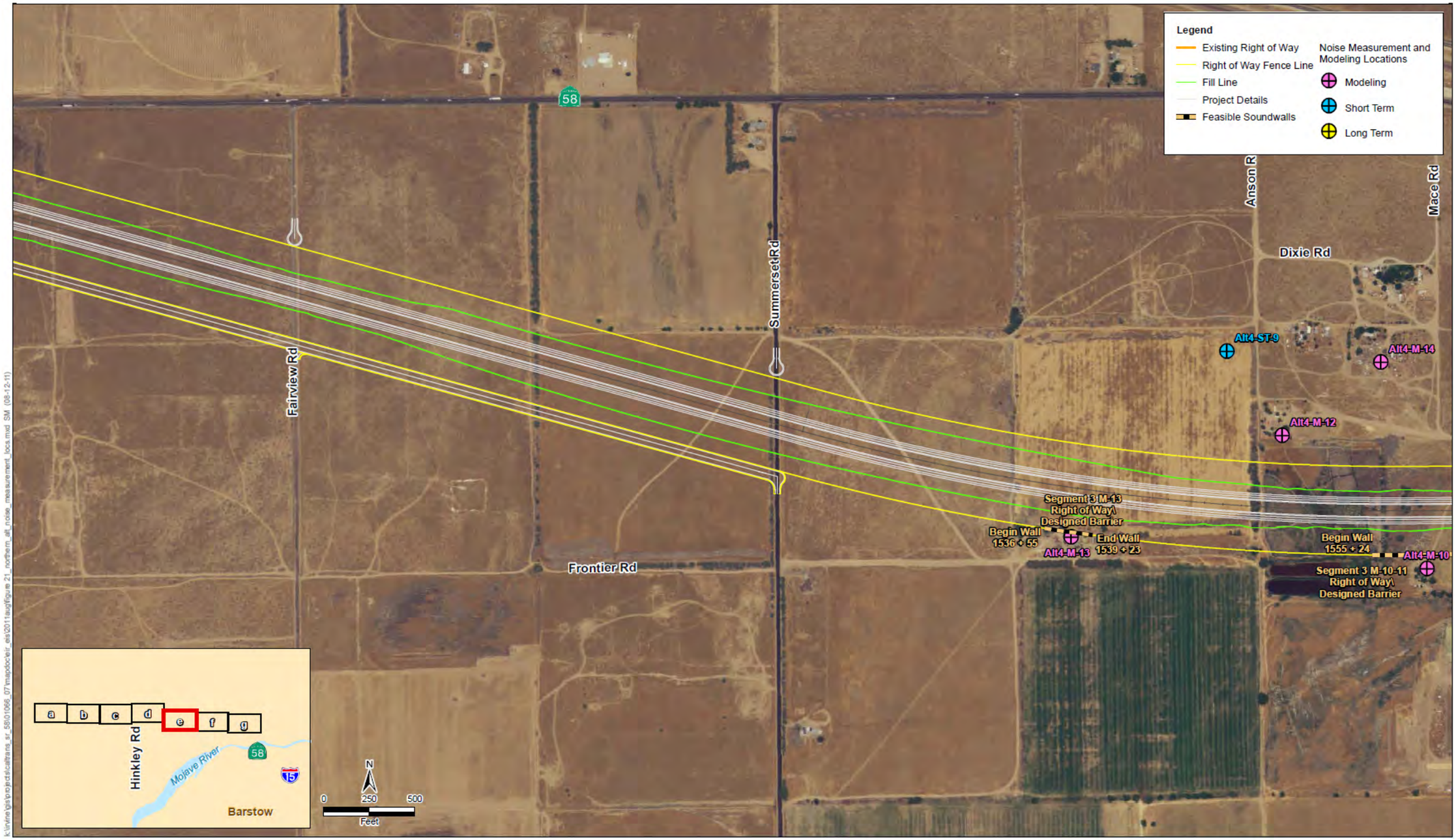

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Figure 3.15.20: Alternative 4: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment f)

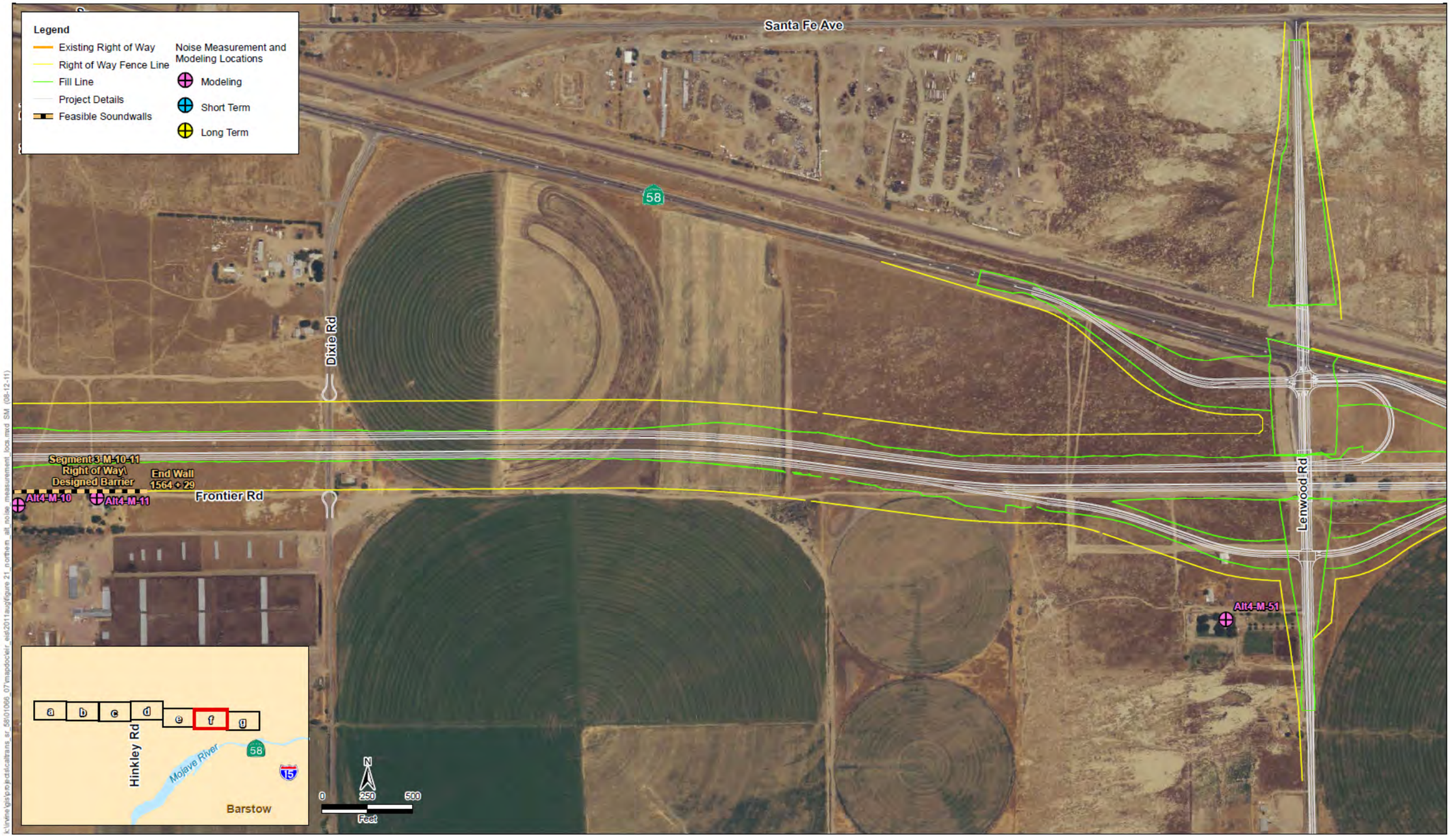

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Figure 3.15.21: Alternative 4: Noise Measurement and Modeling Locations and Considered Noise Barriers (segment g)

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Table 3.15-3: Comparison of Measured Sound Levels with Predicted Sound Levels in the TNM Model

Measurement Position	Measured Sound Level (dBA)	Predicted Sound Level (dBA)	Measured minus Predicted (dB)
ST-2	65	65.2	-0.2
ST-3	63.7	69.5	-5.8
ST-5	51	58	-7
ST-7	45.2	54.5	-9.3
ST-9	39.6	46.5	-6.9
Source: Noise Study Report, Caltrans 2010.			

This could be the reason for large deviation from the measured noise levels. Four other receivers were measured during field measurements, (ST-1, ST-4, ST-6, and ST-8). These field measurements locations were located substantial distances away (greater than 500 feet) from the centerline and were used to gather ambient noise levels at sensitive receivers located to the south, along the Alternative 2 alignment. Therefore these receivers were not used in calibration.

A “K” or Calibration factor would normally be accounted for in the analysis; however, per Caltrans’ Technical Noise Supplement, “highways constructed along new alignments and profiles do not lend themselves to model calibration” (Caltrans 2009c). Therefore no K factor will be incorporated.

3.15.3 Environmental Consequences

3.15.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

As shown in Tables 3.15.4, 3.15.5 and 3.15.6, under the No Build Alternative, future noise levels would not approach or exceed the NAC of 67 dBA Leq(h); nor would they increase 12 dBA or greater. Therefore, no noise impacts are anticipated to occur.

Alternative 2—Southerly Alignment

Alternative 2 (the southern alignment alternative) would reroute SR-58 to the south of the existing alignment and the existing residences to the south. Noise measurements were taken at locations along Alternative 2 in order to determine the existing ambient noise. Table 3.15-4 shows existing noise levels at sensitive receptors along the southern alignment. The potential influence background noise on future project noise levels was determined to be negligible (i.e., more than 10 decibels below the SR-58 traffic noise) due to the lack of traffic at the existing residences.

If the Alternative 2 alignment is constructed, many of the modeled receivers would experience substantial reductions in traffic noise levels as a result of the proposed alignment moving to the south of the existing alignment. Twenty modeled receivers included in Table 3.15-4 would experience substantial noise increases of 12 dBA or greater due to the new proposed alignment being located in close proximity.

The traffic noise modeling results in Table 3.15-4 indicate that traffic noise levels at the affected residences along Alternative 2 are predicted to range from 50 to 64 dBA Leq(h) in the design year with the project. The results also indicate that the increase in noise between existing conditions and the design year is predicted to be 3 to 27 dBA. The traffic noise level in the design year is not predicted to approach or exceed the NAC of 67 dBA Leq(h); however, traffic noise levels at 20 representative receivers are expected to increase above the 12 dBA threshold. Therefore, traffic noise impacts are predicted to occur at these locations and noise abatement must be considered. For the other receivers, noise abatement was not considered because the NAC was not exceeded nor was there a substantial noise increase.

A detailed modeling analysis was conducted to measure the noise level reduction associated with the construction of barriers located at the right-of-way, fill line, and edge of shoulder. Modeled barriers for affected receivers were measured from 8 feet to 14 feet. Figure 3.15.1 to 3.15.7 shows the locations of modeled barriers. The proposed barrier locations along the proposed edge of shoulder that have the noise level reduction of 5 dBA or greater were determined "feasible." Therefore, they were carried forward for the reasonableness allowance calculations for Alternative 2 (reasonable allowance calculation worksheets are contained in Appendix C of the Noise Study Report, 2010). In addition to a Base Allowance[2], the following factors are considered in the reasonable allowance calculations:

1. Absolute/Future (Build) Noise Levels
2. Build vs. Existing Noise Levels
3. Achievable Noise Reduction
4. Either New Construction or Pre-date 1978?

No barriers for Alternative 2 are considered reasonable because the projected abatement cost would exceed the reasonableness allowance for each barrier considered. For purposes of this EIS/EIR, only a summary table of the edge of shoulder analysis is included as Table 3.15-4. Tables containing detailed results for all three barrier locations are included in the NADR (Caltrans 2010c).

[2] Base Allowance – The 2006 base allowance of $32,000 is based on the published Caltrans annual 2005 Construction Price Index (CPI). (Traffic Noise Analysis Protocol, 2006)

Table 3.15-4: Summary of Noise Impact Analysis – Alternative 2

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, L_{eq}(h), dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)				Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus Existing Conditions L_{eq}(h), dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	
Alt2-ST-1	43	46	61	15	18	Yes	60	59	57 [T]	54	No
Alt2-ST-6"	42	45	61	16	19	Yes	59	59	55 [T]	53	No
Alt2-M-2"	45	48	48	0	3	No	'--	'--	'--	'--	N/A
Alt2-ST-4"	46	49	56	7	10	No	'--	'--	'--	'--	N/A
Alt2-ST-8"	43	46	56	10	13	Yes	56	56	55	51 [T]	No
Alt2-ST-9"	46	49	54	5	8	No	'--	'--	'--	'--	N/A
Alt2-M-8"	46	49	56	7	10	No	'--	'--	'--	'--	N/A
Alt2-M-9"	45	48	59	11	14	Yes	57	57	55 [T]	52	No
Alt2-M-10"	44	47	61	14	17	Yes	59	59	57 [T]	54	No
Alt2-M-11"	42	46	60	14	18	Yes	58	58	54 [T]	52	No
Alt2-M-12"	44	47	56	9	12	Yes	54	54	53 [T]	51	No
Alt2-M-13"	47	51	52	1	5	No	'--	'--	'--	'--	N/A
Alt2-M-14"	41	45	55	10	14	Yes	54	53	53 [T]	51	No

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, L_{eq}(h), dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)				Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus Existing Conditions L_{eq}(h), dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	
Alt2-M-15"	45	48	64	16	19	Yes	61	61	58 [T]	57	No
Alt2-M-16"	47	50	56	6	9	No	'--	'--	'--	'--	N/A
Alt2-M-17"	44	47	54	7	10	No	'--	'--	'--	'--	N/A
Alt2-M-18"	42	45	58	13	16	Yes	56	55	53 [T]	52	No
Alt2-M-19"	42	45	61	16	19	Yes	59	58	57 [T]	53	No
Alt2-M-20"	42	45	62	17	20	Yes	60	59	57 [T]	55	No
Alt2-M-21"	42	45	57	12	15	Yes	57	57	56	52 [T]	No
Alt2-M-22"	44	47	62	15	18	Yes	61	60	58 [T]	55	No
Alt2-M-23"	46	50	56	6	10	No	'--	'--	'--	'--	N/A
Alt2-M-24"	47	50	59	9	12	Yes	58	57	56 [T]	53	No
Alt2-M-25"	47	50	57	7	10	No	'--	'--	'--	'--	N/A
Alt2-M-26"	49	52	58	6	9	No	'--	'--	'--	'--	N/A
Alt2-M-27"	46	50	56	6	10	No	'--	'--	'--	'--	N/A
Alt2-M-28"	42	46	60	14	18	Yes	59	58	55 [T]	53	No

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, L_{eq}(h), dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)				Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus Existing Conditions L_{eq}(h), dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	
Alt2-M-29"	44	47	55	8	11	No	'--	'--	'--	'--	N/A
Alt2-M-30"	43	46	59	13	16	Yes	58	57	56 [T]	52	No
Alt2-M-31"	45	48	54	6	9	No	'--	0	'--	'--	N/A
Alt2-M-32"	46	49	53	4	7	No	'--	0	'--	'--	N/A
Alt2-M-33"	42	46	50	4	8	No	'--	0	'--	'--	N/A
Alt2-M-34"	42	45	59	14	17	Yes	57	57	55 [T]	52	No
Alt2-M-35"	36	39	52	13	16	Yes	51	51	51	51	No
Alt2-M-36"	33	37	60	23	27	Yes	59	58	57 [T]	53	No
Source: Noise Study Report, Caltrans 2010.											

T - Minimum height required to block the line-of-sight from the receptor to truck exhaust stacks.

Alternative 3—Existing Alignment

Alternative 3 (the central alignment alterative) would widen SR-58 along the existing SR-58 existing centerline. Noise measurements were taken at locations along Alternative 3 in order to determine the existing ambient noise. Table 3.15-5 shows existing noise levels at sensitive receptors along the Alternative 3 alignment. Background noise was determined to be negligible (i.e., more than 10 decibels below the SR-58 traffic noise) due to the lack of traffic at the existing residences.

The traffic noise modeling results in Table 3.15-5 indicate that traffic noise levels at the affected residences along Alternative 3 are predicted to range from 45 to 62 dBA L_{eq}(h) in the design year with the project. The results also indicate that the increase in noise between existing conditions and the design year is predicted to be 0 to 27 dBA. The traffic noise level in the design year is not predicted to approach or exceed the NAC of 67 dBA L_{eq}(h); however, traffic noise levels at seven representative receivers are expected to increase above the 12 dBA threshold. Therefore, noise abatement must be considered. Table 3.15-5 is a summary of all of the representative receivers analyzed. A detailed modeling analysis was conducted to measure the noise level reduction associated with the construction of barriers located at the right-of-way and fill line. Modeled barriers for affected receivers were measured from 8 feet to 16 feet. Figure 3.15.8 to 3.15.14 shows the locations of modeled barriers. Barrier locations along the proposed right of way at two locations (M-17 - 18 Segment 3 ROW and M-21 Segment 3 ROW) and one location along the fill line (M-47 Segment 3 Cut) were determined “feasible.” These feasible barriers were carried forward for the reasonableness allowance calculations for Alternative 3. No barriers for Alternative 3 are considered reasonable based on the reasonable criteria because the projected abatement cost would exceed the reasonableness allowance for each barrier considered. Three other sensitive receivers, (Alt3-M-19, Alt3-M-24, and Alt3-M-48), would experience a substantial increase of 12 dBA or more. However, walls would not be feasible at any of these locations due to driveway access constraints or the incapability of any wall to achieve a 5 dBA reduction; therefore, they were not modeled and reviewed for reasonableness.

Table 3.15-5: Summary of Noise Impact Analysis – Alternative 3

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, L_{eq}(h), dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus Existing Conditions L_{eq}(h), dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	16-foot Wall	
Alt3-M-1	54	57	56	-1	2	No	--	'--	--	'--	'--	N/A
Alt3-M-2"	56	59	58	-1	2	No	--	'--	--	'--	'--	N/A
Alt3-ST-7"	52	56	55	1	3	No	--	'--	--	'--	'--	N/A
Alt3-ST-4"	45	49	50	1	5	No	--	'--	--	'--	'--	N/A
Alt3-ST-8"	43	46	45	-1	2	No	--	'--	--	'--	'--	N/A
Alt3-ST-9"	46	49	54	5	8	No	--	'--	--	'--	'--	N/A
Alt3-M-4"	51	54	52	-2	1	No	--	'--	--	'--	'--	N/A
Alt3-M-5"	52	55	52	-3	0	No	--	'--	--	'--	'--	N/A
Alt3-M-6"	49	52	49	-3	0	No	--	'--	--	'--	'--	N/A
Alt3-M-7"	52	55	53	-2	1	No	--	'--	--	'--	'--	N/A
Alt3-M-8"	52	55	53	-2	1	No	--	'--	--	'--	'--	N/A
Alt3-M-9"	45	49	46	-3	1	No	--	'--	--	'--	'--	N/A
Alt3-M-10"	47	50	53	3	6	No	--	'--	--	'--	'--	N/A

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, L_{eq}(h), dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus Existing Conditions L_{eq}(h), dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	16-foot Wall	
Alt3-M-11"	48	51	51	0	3	No	--	'--	--	'--	'--	N/A
Alt3-M-12"	45	49	50	1	5	No	--	'--	--	'--	'--	N/A
Alt3-M-13"	57	60	59	-1	2	No	--	'--	--	'--	'--	N/A
Alt3-M-14"	55	58	57	-1	2	No	--	'--	--	'--	'--	N/A
Alt3-M-15"	59	62	62	0	3	No	--	'--	--	'--	'--	N/A
Alt3-M-16"	56	59	58	-1	2	No	--	'--	--	'--	'--	N/A
Alt3-M-17"	42	45	61	16	19	Yes	58 R 61 F	56 R 60 F	56 R 57 F	55 R 56 F	54 R 55 F	No
Alt3-M-18"	42	45	60	15	18	Yes	60 R 60 F	58 R 60 F	56 R 60 F	55 R 58 F	54 R 56 F	No
Alt3-M-19"	42	45	58	13	16	Yes	59 R 58 F	59 R 59 F	58 R 59 F	56 R 58 F	55 R 58 F	No
Alt3-M-20"	46	50	56	6	10	No	'--	'--	'--	'--	'--	N/A
Alt3-M-21"	42	45	62	17	20	Yes	59 R 62 F	57 R 62 F	56 R 62 F	54 R 61 F	54 R 60 F	No
Alt3-M-22"	46	49	53	4	7	No	--	--	--	--	--	N/A
Alt3-M-23"	52	55	58	3	6	No	--	--	--	--	--	N/A
Alt3-M-24"	58	61	61	0	3	No	--	--	--	--	--	N/A

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, L_{eq}(h), dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus Existing Conditions L_{eq}(h), dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	16-foot Wall	
Alt3-M-25"	55	58	58	0	3	No	--	--	--	--	--	N/A
Alt3-M-26"	53	56	56	0	3	No	--	--	--	--	--	N/A
Alt3-M-27"	54	57	56	-1	2	No	--	--	--	--	--	N/A
Alt3-M-28"	55	58	58	0	3	No	--	--	--	--	--	N/A
Alt3-M-29"	54	57	55	-2	1	No	--	--	--	--	--	N/A
Alt3-M-30"	60	63	62	-1	2	No	--	--	--	--	--	N/A
Alt3-M-31"	49	52	51	-1	2	No	--	--	--	--	--	N/A
Alt3-M-32"	51	54	55	1	4	No	--	--	--	--	--	N/A
Alt3-M-33"	51	54	57	3	6	No	--	--	--	--	--	N/A
Alt3-M-34"	48	51	60	9	12	Yes	54 R 0 F	53 R 0 F	53 R 0 F	53 R 0 F	52 R 0 F	No
Alt3-M-35"	47	50	55	5	8	No	--	--	--	--	--	N/A
Alt3-M-36"	44	47	48	1	4	No	--	--	--	--	--	N/A
Alt3-M-37"	48	51	56	5	8	No	--	--	--	--	--	N/A
Alt3-M-38"	55	58	58	0	3	No	--	--	--	--	--	N/A

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, L_{eq}(h), dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus Existing Conditions L_{eq}(h), dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	16-foot Wall	
Alt3-M-39"	61	64	59	-5	-2	No	--	--	--	--	--	N/A
Alt3-M-40"	45	48	47	-1	2	No	--	--	--	--	--	N/A
Alt3-M-41"	46	49	48	-1	2	No	--	--	--	--	--	N/A
Alt3-M-42"	46	49	48	-1	2	No	--	--	--	--	--	N/A
Alt3-M-43"	44	47	48	1	4	No	--	--	--	--	--	N/A
Alt3-M-44"	49	52	52	0	3	No	--	--	--	--	--	N/A
Alt3-M-45"	54	57	57	0	3	No	--	--	--	--	--	N/A
Alt3-M-46"	52	55	54	-1	2	No	--	--	--	--	--	N/A
Alt3-M-47"	33	37	60	13	27	Yes	60 R 59 F	59 R 58 F	57 R 55 F	55 R 53 F	54 R 52 F	No
Alt3-M-48"	36	39	53	14	17	Yes	53 R 53 F	53 R 52 F	53 R 52 F	52 R 52 F	52 R 51 F	No
Alt3-M-49"	53	56	57	1	4	No	--	--	--	--	--	N/A

Source: Noise Study Report, Caltrans 2010.
R –Noise measurement modeled for barrier at right-of-way.
F- Noise measurement modeled for barrier at fill line.

Alternative 4—Northerly Alignment

Alternative 4, the northern alterative, would realign SR-58 to the north of the existing alignment. Noise measurements were taken at locations along the proposed Alternative 4 in order to determine the existing ambient noise. Table 3.15-6 shows existing noise levels at sensitive receptors along the Alternative 4 alignment. Background noise was determined to be negligible (i.e., more than 10 decibels below the SR-58 traffic noise) due to the lack of traffic at the existing residences.

The traffic noise modeling results in Table 3.15-6 indicate that traffic noise levels at the affected residences along the Alternative 4 alignment are predicted to range from 46 to 63 dBA L_{eq}(h) in the design year with the project. The results also indicate that the variation in noise between existing conditions and the design year is predicted to be a decrease of 11 dBA to an increase of 27 dBA. The traffic noise level in the design year is not predicted to approach or exceed the NAC of 67 dBA L_{eq}(h); however, traffic noise levels at six representative receivers are expected to increase above the 12 dBA threshold. Therefore, noise abatement must be considered. Table 3.15-6 is a summary of all of the representative receivers analyzed. A detailed modeling analysis was conducted to measure the noise level reduction associated with the construction of barriers located at the right-of-way and fill line. Modeled barriers for affected receivers were measured from 8 feet to 16 feet in height. Figure 3.15.15 to 3.15.21 shows the locations of modeled barriers. Barrier locations along the proposed right-of-way at two locations (M-13 Segment 3 ROW and M-10 - 11 Segment 3 ROW), and one location along the fill line (M-52 Segment 3 Cut), were determined “feasible.” Therefore, these feasible barriers were carried forward for the reasonableness allowance calculations for Alternative 4. Only noise barrier M-13 was found to be reasonable. The other barriers considered were not found to be reasonable because the projected abatement cost would exceed the reasonableness allowance.

Table 3.15-6: Summary of Noise Impact Analysis – Alternative 4

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, $L_{eq}(h)$, dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions $L_{eq}(h)$, dBA	Design Year Noise Level with Project Minus Existing Conditions $L_{eq}(h)$, dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	16-foot Wall	
Alt4-ST-3	69	72	58	-14	-11	No	'--	'--	'--	'--	'--	N/A
Alt4-M-2"	57	60	53	-7	-4	No	'--	'--	'--	'--	'--	N/A
Alt4-ST-5"	57	60	55	-5	-2	No	'--	'--	'--	'--	'--	N/A
Alt4-ST-7"	53	56	60	4	7	No	'--	'--	'--	'--	'--	N/A
Alt4-ST-4"	45	49	49	0	4	No	'--	'--	'--	'--	'--	N/A
Alt4-ST-9"	46	49	52	3	6	No	'--	'--	'--	'--	'--	N/A
Alt4-M-4"	65	68	57	-11	-8	No	'--	'--	'--	'--	'--	N/A
Alt4-M-5"	57	61	55	-6	-2	No	'--	'--	'--	'--	'--	N/A
Alt4-M-6"	51	54	53	-1	2	No	'--	'--	'--	'--	'--	N/A
Alt4-M-7"	48	52	53	1	5	No	'--	'--	'--	'--	'--	N/A
Alt4-M-8"	48	51	50	-1	2	No	'--	'--	'--	'--	'--	N/A
Alt4-M-9"	46	49	50	1	4	No	'--	'--	'--	'--	'--	N/A
Alt4-M-10"	42	45	61	16	19	Yes	60	57 [T]	56	55	54	No

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, L_{eq}(h), dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus Existing Conditions L_{eq}(h), dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	16-foot Wall	
Alt4-M-11"	42	45	62	17	20	Yes	57	56	55	54	53	No
Alt4-M-12"	44	47	59	12	15	Yes	60	60	59	57	55	No
Alt4-M-13"	42	45	63	18	21	Yes	58 [T]	56	55	54	53	Yes
Alt4-M-14"	46	49	53	4	7	No	'--	'--	'--	'--	'--	N/A
Alt4-M-15	57	60	57	-3	0	No	'--	'--	'--	'--	'--	N/A
Alt4-M16"	60	63	57	-6	-3	No	'--	'--	'--	'--	'--	N/A
Alt4--17"	68	71	60	-11	-8	No	'--	'--	'--	'--	'--	N/a
Alt4-M-18"	58	61	54	-7	-4	No	'--	'--	'--	'--	'--	N/A
Alt4-M-19"	61	64	56	-8	-5	No	'--	'--	'--	'--	'--	N/A
Alt4-M-20"	69	72	58	-14	-11	No	'--	'--	'--	'--	'--	N/A
Alt4-M-21"	54	57	50	-7	-4	No	'--	'--	'--	'--	'--	N/A
Alt4-M-22"	62	65	56	-9	-6	No	'--	'--	'--	'--	'--	N/A
Alt4-M-23"	58	61	53	-8	-5	No	'--	'--	'--	'--	'--	N/A
Alt4-M-24"	56	59	51	-8	-5	No	'--	'--	'--	'--	'--	N/A

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, L_{eq}(h), dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus Existing Conditions L_{eq}(h), dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	16-foot Wall	
Alt4-M-25"	54	57	50	-7	-4	No	'--	'--	'--	'--	'--	N/A
Alt4-M-26"	54	57	52	-5	-2	No	'--	'--	'--	'--	'--	N/A
Alt4-M-27"	57	60	55	-5	-2	No	'--	'--	'--	'--	'--	N/A
Alt4-M-28"	58	61	57	-4	-1	No	'--	'--	'--	'--	'--	N/A
Alt4-M-29"	57	61	58	-3	1	No	'--	'--	'--	'--	'--	N/A
Alt4-M-30"	43	46	52	6	9	No	'--	'--	'--	'--	'--	N/A
Alt4-M-31"	48	51	52	1	4	No	'--	'--	'--	'--	'--	N/A
Alt4-M-32"	43	47	46	-1	3	No	'--	'--	'--	'--	'--	N/A
Alt4-M-33"	48	51	54	3	6	No	'--	'--	'--	'--	'--	N/A
Alt4-M-34"	46	50	52	2	6	No	'--	'--	'--	'--	'--	N/A
Alt4-M-35"	55	58	56	-2	1	No	'--	'--	'--	'--	'--	N/A
Alt4-M-36"	58	61	59	-2	1	No	'--	'--	'--	'--	'--	N/A
Alt4-M-37"	52	55	58	3	6	No	'--	'--	'--	'--	'--	N/A
Alt4-M-38"	62	65	58	-7	-4	No	'--	'--	'--	'--	'--	N/A

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, L_{eq}(h), dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus Existing Conditions L_{eq}(h), dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	16-foot Wall	
Alt4-M-39"	45	48	49	1	4	No	'--	'--	'--	'--	'--	N/A
Alt4-M-40"	46	49	50	1	4	No	'--	'--	'--	'--	'--	N/A
Alt4-M-41"	46	49	51	2	5	No	'--	'--	'--	'--	'--	N/A
Alt4-M-42"	44	47	51	4	7	No	'--	'--	'--	'--	'--	N/A
Alt4-M-43"	44	47	50	3	6	No	'--	'--	'--	'--	'--	N/A
Alt4-M-44"	45	48	52	4	7	No	'--	'--	'--	'--	'--	N/A
Alt4-M-45"	45	48	52	4	7	No	'--	'--	'--	'--	'--	N/A
Alt4-M-46"	46	49	54	5	8	No	'--	'--	'--	'--	'--	N/A
Alt4-M-47"	45	48	51	3	6	No	'--	'--	'--	'--	'--	N/A
Alt4-M-48"	48	51	55	4	7	No	'--	'--	'--	'--	'--	N/A
Alt4-M-49"	45	48	50	2	5	No	'--	'--	'--	'--	'--	N/A
Alt4-M-50"	53	56	63	7	10	No	'--	'--	'--	'--	'--	N/A
Alt4-M-51"	36	39	53	14	17	Yes	53	53	52	52	52	No
Alt4-M-52"	33	37	60	23	27	Yes	60	59	57 [T]	55	54	No

Receptor #	Existing Noise Level (dBA)	Future Peak Hour Noise Levels, L_{eq}(h), dBA				Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)					Reasonable and Feasible
		Design Year Noise Level without Project (dBA)	Design Year Noise Level with Project (dBA)	Design Year Noise Level with Project Minus Design year no project Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus Existing Conditions L_{eq}(h), dBA		8-foot Wall	10-foot Wall	12-foot Wall	14-foot wall	16-foot Wall	
Alt4-M-53"	68	71	59	-12	-9	No	--	--	--	--	--	N/A
Alt4-M-54"	68	71	62	-9	-6	No	--	--	--	--	--	N/A
Alt4-M-55"	54	57	62	5	8	No	--	--	--	--	--	N/A

Source: Noise Study Report, Caltrans 2010.
[R] –Noise measurement modeled for barrier at right-of-way.
[F]- Noise measurement modeled for barrier at fill line.

3.15.3.2 Temporary Impacts

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Caltrans provisions in Section 14-8.02, "Noise Control" of the Draft 2010 Standard Specifications and Special Provisions (SSP S5-310). The SSP would be edited specifically for this project during the PS&E phase.

The Caltrans Traffic Noise Analysis Protocol establishes a process for assessing the reasonableness and feasibility of noise abatement. Noise abatement is considered to be acoustically feasible if it provides noise reduction of at least 5 dBA at receivers subject to noise impacts. Other non-acoustical factors relating to geometric standards (e.g., sight distances), safety, maintenance, and security can also affect feasibility.

Table 3.15-7 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 3.15-7: Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82
Source: Federal Transit Administration 1995	

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with applicable local noise standards and Caltrans' Standard Specification in Section 14-8.02 (2010), "Noise Control," which mandates that noise not exceed 86 dBA Lmax at 50 feet from the job site activities from 9 p.m. to 6 a.m. Also it requires that internal combustion engines be equipped with the manufacturer-recommended muffler, and that no internal combustion engines are operated on the job site without the appropriate muffler.

Further, implementing the following measure would further minimize the temporary noise impacts from construction:

As directed by Caltrans, the contractor would implement appropriate additional noise minimization measures, such as, changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

3.15.4 Avoidance, Minimization, and/or Mitigation Measures

23 CFR 772 requires that noise abatement measures that are reasonable and feasible and are likely to be incorporated into the project be identified before adoption of the final environmental document.

The preliminary reasonableness determination is made by calculating an allowance that is considered to be a reasonable amount of money, per benefited residence, to spend on abatement. The overall reasonable abatement is determined by considering factors such as cost; absolute predicted noise levels; predicted future increase in noise levels; expected noise abatement benefits; build date of surrounding residential development along the highway; environmental impacts of abatement construction; opinion of affected residents; input from the public and local agencies; and social, legal and technological factors. This reasonable allowance is then compared to the engineer's cost estimate for the abatement. If the engineer's cost estimate is less than the allowance, the preliminary determination is that the abatement is reasonable. If the cost estimate is higher than the allowance, the preliminary determination is that abatement is not reasonable.

The barriers determined "feasible" for all three alternatives were carried forward for further analysis to determine their reasonableness. The detailed analysis and calculations are available in the *Final Noise Abatement Decision Report* (Caltrans 2010c).

As discussed above in Section 3.15.3 and shown in Tables 3.15-4 and 3.15-5, Alternatives 2 and 3 would have feasible noise barriers; however, upon review, none of the noise barriers would meet the reasonableness determination under Caltrans criteria. Therefore, no noise barriers are proposed for Alternatives 2 and 3.

Only one noise barrier, M-13 Segment 3 under Alternative 4 (see Table 3.15-6), would be both feasible and reasonable to construct, based on Caltrans criteria.

Based on the studies completed to date, Caltrans intends to incorporate noise abatement in the form of a barrier at: M-13 Segment 3, with a length of 268 feet and height of 8 feet. Calculations based on preliminary design data indicate that the barrier will reduce noise levels by 5 dBA for one residence at a cost of $44,512.00. If during final design, conditions have substantially changed, noise abatement may not be necessary. The final decision of the noise abatement will be made upon completion of the project design and the public involvement processes.

To avoid and minimize construction noise impacts the following measures will be implemented. If necessary, a project-specific Standard Special Provision, determined during final design, will also be implemented.

- **NOI-1:** To reduce noise levels from construction to the extent that is technically feasible and avoid unnecessary annoyance from construction noise, the construction noise control measures listed below will be implemented.
    a. To the extent practicable, avoid using construction equipment or any other activity that could generate high noise levels near homes. If nighttime construction is required, the community will be advised.

b. Place maintenance yards, batch plants, haul roads, and other construction-oriented operations in locations that would be the least disruptive to the community.

c. Hold community meetings to explain to area residents the construction work, time involved, and control measures to be taken to reduce the impact of construction work, as appropriate.

d. Schedule the timing and duration of construction activities to minimize noise impacts at noise-sensitive locations.

e. As practicable, use noise-attenuating "jackets" or portable noise screens to provide shielding for pavement breaking, jack hammering, or other similar activities when work is close to noise-sensitive areas.

f. Comply with Caltrans' Standard Specification 14-8.02A (2010):

   Do not exceed 86 dBA Lmax at 50 feet from the job site activities from 9 p.m. to 6 a.m.

   Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.

- **NOI-2:** If, after circulation of the DEIR/DEIS, Alternative 4 is selected as the Preferred Alternative, Noise Barrier M-13 Segment 3 would be installed. Details related to this noise barrier would be determined during Final Design of the project.

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3.16 Energy

3.16.1 Regulatory Setting

3.16.1.1 Federal Regulations

NEPA requires the identification of all potentially significant impacts to the environment, including energy impacts.

3.16.1.2 State Regulations

CEQA Guidelines, Appendix F, Energy Conservation, states that EIRs are required to include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

3.16.2 Affected Environment

California is the most populous state in the nation and its total energy demand is second only to Texas. Although California is a leader in the energy-intensive chemical, forest products, glass, and petroleum industries, the state has one of the lowest per capita energy consumption rates in the country. The California energy efficiency programs and moderate climate have contributed to low per capita energy consumption.

Driven by high demand from California's many motorists, major airports, and military bases, the transportation sector is the state's largest energy-consumer. Roughly half of the energy Californians consume is for transportation. In 2007, Californians consumed an estimated 20 billion gallons of gasoline and diesel fuel on the state's roads, an increase of nearly 50% over the last 20 years. More motor vehicles are registered in California than in any other state, and worker commute times are among the longest in the country. The nearly 26 million registered vehicles operating in California produce approximately 40% of the state's GHG emissions (California Energy Commission [CEC 2010]).

The consumption of energy in the SCAG region is summarized in Table 3.16.1 for the most recent year that data is available by category of consumption and fuel type.

Nonrenewable energy products derived from crude oil (e.g., gasoline, diesel, kerosene, and residual fuel) provide most of the energy consumed for transportation purposes by on-road motor vehicles (i.e., automobiles and trucks), locomotives, aircraft, and ships. In addition, energy is consumed in connection with construction and maintenance of transportation infrastructure, such as streets, highways, freeways, locomotives, and airport runways. Trends in transportation-related technology indicate increased use of electricity and natural gas in transportation vehicles in the future (SCAG 2008).

Table 3.16-1: Annual Transportation Energy Consumption in the SCAG Region for Base (years as indicated)

Category	Fuel Type	Year	Consumption	Units
Motor Vehicles[1]	Gasoline/diesel	2005	8,524,639	Thousand gallons
	Natural gas[2]	2004	22,630	Million cubic feet
	Hydrogen[2]	2006	0.02	Million kilograms
	Ethanol[2]	2006	23	Million barrels
On BTU Basis				
Motor Vehicles	Gasoline/diesel	2005	1,193,449,460[1]	Million BTUs
	Natural gas	2004	23,761,500[1]	Million BTUs
	Hydrogen[1]	2006	2,684[3]	Million BTUs
	Ethanol[1]	2006	1,945,800[3]	Million BTUs

[1] SCAG (2008) Draft 2008 RTP PEIR.
[2] Natural Gas, Hydrogen, and Ethanol fuel use is for entire state of California.
[3] Source: Oak Ridge National Laboratory. 2008. Transportation Energy Data Book. Edition 29.
BTU = British thermal unit.

The majority of transportation energy is currently derived from a wide variety of petroleum products. Automobiles and trucks consume gasoline and diesel fuel. The transportation sector consumes relatively minor amounts of natural gas or electricity but, propelled mainly by air quality laws and regulations, technological innovations in transportation are expected to increasingly rely on compressed natural gas and electricity as energy sources. Biodiesel, which is derived from plant sources such as vegetable oils, is a small but growing source of transportation fuel. Vehicles powered by fuels other than gasoline or diesel are referred to as alternative fuel vehicles (SCAG 2008).

Energy consumption by on-road motor vehicles reflects the types and numbers of vehicles, the extent of their use (typically described in terms of VMT), and their fuel economy (typically described in terms of miles per gallon [mpg]). Trends in energy consumption by on-road motor vehicles generally follow trends in population and per capita income as well as trends in land use development patterns. For example, diffuse land use development patterns can result in an imbalance between jobs and housing, which can lead to longer average commute trips.

3.16.2.1 Existing Energy Supplies

Economic conditions and population growth are the primary drivers of transportation energy demand. The California Department of Finance forecasts that California's population is expected to grow at approximately 1.2% annually from 2008 until 2020. For comparison, statewide population grew an average of 1.4% annually from 1990 to 2008. The declining growth rates over the forecast horizon reflect lower rates of fertility and immigration as the population of California and other regions age. The CEC forecasts that the average household size will increase only by 0.14% by 2020, so that total households grow at a slower rate than the population. The number of households is forecast to increase at an average rate of 1.09% per year from 2010 to 2020. The CEC analysis assumes that real personal income will grow over the next ten years at an average annual rate of approximately 2.75%, which is somewhat higher than the 2.49% annual growth rate for the previous 20 years, and the 1.77% growth rate for the previous 10 years (2000–2010) (CEC 2009).

The VMT for light-duty vehicles (LDVs) is expected to increase from 316 billion miles in 2005 to between 473 and 500 billion miles in 2030, for a growth rate of between 1.51% and 1.85% per year. LDVs account for approximately 95% of the total VMT of all on-road vehicles. The CEC

forecasts that the number of on-road vehicles in California will reach approximately 37.7 million by 2030, up from approximately 26.1 million in 2005. This reflects an average growth rate of 1.5% per year. LDVs constitute approximately 97% of the on-road vehicles. Primarily because of the continued growth in cross utility vehicles, light trucks are projected to increase as a fraction of LDV stock in California from 42% in 2003 to over 52% by 2025. Despite this growth, the LDV fleet average fuel economy is forecast to increase by approximately 11% from 20.2 mpg in 2005 to up to 27.63 mpg in 2030, based on key assumptions as described in the CEC report. The CEC predicts that fleet fuel economy will increase at a faster pace than was seen the previous decade (CEC 2007).

Diesel demand is projected to increase from 3.4 billion gallons in 2010 to 5.4 billion gallons by 2030, which translates to an average annual increase of 1.5%, based on a future "high demand price" scenario (CEC 2010).

Consistent with the zero emission vehicle (ZEV) program adopted by the Air Resources Board, the number of electric hybrid vehicles are projected to increase from 103,738 vehicles in 2005 to 279,788 in 2007 to 6,685,566 vehicles by 2030 (approximately 18% of total automobile sales). For diesel LDVs, the number of vehicles is projected to reach 316,910 vehicles in 2010, 3,055,165 vehicles by 2020, and 5,027,790 vehicles by 2030 (approximately 13% of sales). By 2030, the fleet penetration of hybrids and diesel LDVs is forecast to reduce gasoline demand projections by up to 1.9 billion gallons per year (assuming high fuel prices and GHG standards) (CEC 2007).

Transportation electricity demand, used primarily for plug-in hybrid and full electric vehicles as well as urban public transit, is projected to increase from 835 gigawatt-hours (GWhs) in 2007 to 856 GWhs in 2010 and increasing up to 9,838 GWhs in 2030, which translates to an average annual increase of up to 11.3%. During the same period, the CEC forecasts that the demand for natural gas in vehicles will increase from 150 to up to 270 million therms per year. This translates into an average annual increase of up to 2.6% (CEC 2010).

3.16.3 Environmental Consequences

3.16.3.1 Methodology

This energy analysis is based on Caltrans' Standard Environmental Reference, Volume 1, Chapter 13, Energy, updated November 2008. The energy analysis addresses two elements: direct and indirect energy consumption. Direct energy refers to the fuel consumed by vehicles using the highway facility. Indirect energy refers to the energy associated with the construction and operation of the facility.

Direct transportation energy consumption was estimated for the proposed project using traffic data for the proposed project (System Metric Group 2010) and the EMFAC2007 air quality model, which provides estimated gasoline and diesel fuel consumption for existing conditions as well as the No-Build Alternative and build alternatives. Estimated energy consumption in 2040 is expected to represent the highest energy consumption because population and employment are projected to be higher in this year than in any earlier year. Also, the 2040 estimate is a conservative estimate because it does not factor in the effect of energy efficiency and conservation measures that are likely to be adopted by 2040 and are anticipated to result in lower energy consumption (e.g., new fuel economy standards).

Implementation of the proposed project would affect the use of indirect energy resources in the San Bernardino County and SCAG regions. Three main areas of impact have been identified: (1) energy demands for construction; (2) energy demands for operation of the regional transportation system as of 2035; and (3) the cumulative impacts of the growing energy demand associated with implementation of the proposed project and other projects in the region.

3.16.3.2 Permanent Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, the capacity and condition of SR-58 would remain the same as current conditions. Although, SR-58 is currently operating at LOS E based on the 50% increase in Average Daily Traffic (ADT) by the Design Horizon Year of 2040, this portion of SR-58 will operate at LOS F by 2040. According to the 2000 Highway Capacity Manual, LOS F translates into very congested traffic with traffic jams, especially in areas where vehicles have to merge. Such congested traffic conditions could contribute to higher-than-necessary energy consumption as vehicles use extra fuel while idling in stop-and-go traffic or moving at slow speeds.

Build Alternatives 2, 3, and 4

Local energy demand for transportation projects typically is dominated by vehicle fuel usage. The Build Alternatives would allow more capacity and an improvement in traffic flow. Based on the traffic analysis, the SR-58 Hinkley Expressway Project would increase the VMT in the study area and improve the traffic flow, with improved average vehicle speed in 2020 but no change in vehicle speed in 2040. Thus, while the enhanced traffic flow conditions would minimize vehicle delay and reduce congestion, the project would not improve vehicle fuel efficiency – which is tied to vehicle speeds – in 2040. Table 3.16-2 lists the daily fuel consumption and fuel costs in the study area associated with the vehicle trips for the existing condition and for each project alternative.

By the year 2020, as shown in Table 3.16.2, fuel consumption will increase by 50.82% if no project – the No-Build Alternative – is selected. Implementation of any of the proposed build alternatives would result in an additional increase of 7.16% when compared to the existing conditions, or a 4.75% increase when compared to the no-build condition in 2020. This increase is attributable, in part, to the Project’s purpose of congestion relief. While the optimal fuel efficiency varies by vehicle, generally the lowest fuel economy is in the 0 to 25 mph range, and the optimal range is 45–55 mph, with a steady decline in efficiency occurring as speeds exceed 55 mph. With construction of the proposed improvements to SR-58 it is possible that drivers may exceed the upper limit of the optimal speed range.

In 2040, the No-Build Alternative and each of the Build Alternatives would result in an increase in fuel consumption of 141.87% when compared to the existing conditions. Since the increase would occur regardless of the Project it is not attributable to the Project.

Table 3.16-2: Study Area Daily Fuel Consumption Comparison

Alternative	VMT	VHT	Average Speed[1]	Fuel Consumption (gallons)	Fuel Cost[2]	Percent Change from Existing	Percent Change from No-Build
Existing	107,452	2,066	51	7,967	$23,838.09	N/A	N/A
2020 No-Build (Alt 1)	148,707	3,035	49	12,016	$35,888.34	+50.82%	N/A
2020 Alternative 2	148,707	2,478	60	12,587	$37,650.80	+57.98%	+4.75%
2020 Alternative 3	148,707	2,478	60	12,587	$37,650.80	+57.98%	+4.75%
2020 Alternative 4	148,707	2,478	60	12,587	$37,650.80	+57.98%	+4.75%
2040 No-Build (Alt 1)	223,702	4,863	46	19,270	$58,628.67	+141.87%	N/A
2040 Alternative 2	223,702	4,863	46	19,270	$58,628.67	+141.87%	+0.00%
2040 Alternative 3	223,702	4,863	46	19,270	$58,628.67	+141.87%	+0.00%
2040 Alternative 4	223,702	4,863	46	19,270	$58,628.67	+141.87%	+0.00%

Source: EMFAC2007 modeling by ICF 2010; System Metrics Group 2010.
[1] Average speed for the 2020 build scenarios is assumed to be the posted speed limit.
[2] Fuel cost was calculated using a gasoline cost of $3.12 per gallon and diesel cost of $3.02 per gallon (average for August 2009 through August 2010 for the Los Angeles and California region) from the U.S. Energy Information Administration: http://tonto.eia.doe.gov/dnav/pet/pet_pri_gnd_dcus_nus_w.htm. Accessed September 21, 2010.
N/A = not applicable; VMT = vehicle miles traveled; VHT = vehicle hours traveled.

3.16.3.3 Temporary Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no new construction would occur and consequently no additional energy would be consumed.

Build Alternatives 2 and 4—Southerly and Northerly Alternatives

The construction of the proposed project is expected to involve the use of diesel-powered heavy equipment, portable diesel generators, and other battery-operated support equipment, as well as electricity from the existing grid. There would be an irreversible impact from the consumption of diesel fuel (and other fuels) related to these construction activities.

Alternative 3—Existing Alignment

The construction of the proposed project is expected to involve the use of diesel-powered heavy equipment, portable diesel generators, and other battery-operated support equipment, as well as electricity from the existing grid. There would be an irreversible impact from the consumption of diesel fuel (and other fuels) related to any construction activities.

3.16.4 Avoidance, Minimization, and/or Mitigation Measures

Energy consumption would increase under all alternatives, including the No-Build Alternative. The difference in energy consumption between the No-Build and any of the proposed build alternatives in 2020 is 4.75% and due to the Project's purpose of congestion relief. The relationship of carbon emission and energy consumption in the transportation sector is described in the avoidance, minimization, and mitigation measures of Section 3.14, *Air Quality*. Because the increase in energy consumption is not substantial, no avoidance, minimization, and/or mitigation measures are proposed.

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3.17 Natural Communities

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

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Section 3.21, Threatened and Endangered Species. Wetlands and other waters are discussed in Section 3.18.

3.17.1 Affected Environment

Unless otherwise noted, the information from this section was synthesized from the Natural Environment Study (NES) prepared for the proposed project (Caltrans 2010e). References used in the NES are not carried over into this section.

No natural communities of special concern (as listed in the CNNDB or any species designated critical habitat) are present within the project footprint. Only Creosote scrub and Atriplex scrub are present. A discussion of creosote scrub and atriplex scrub is provided in Section 3.19, Plant Species.

There are no known migration corridors present within the project limits. The Mojave River east of the project site acts as a migration corridor for wildlife. The area affected by the proposed project is already fragmented by the railroad, existing SR-58, and the existing community of Hinkley. Culverts that are proposed as part of this project should offset this impact and could act as wildlife crossings.

There are existing storm water culverts along SR-58 serving as corridors for wildlife such as desert tortoise, and various small mammals. These culverts provide safe corridors and connectivity for wildlife populations across the highway.

3.17.2 Environmental Consequences

Because there are no natural communities of special concern, no temporary or permanent impacts would occur as a result of Alternatives 1 through 4.

3.17.3 Avoidance, Minimization, and/or Mitigation Measures

Avoidance, minimization, and/or mitigation measures are not proposed.

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3.18 Wetlands and Other Waters

3.18.1 Regulatory Setting

3.18.1.1 Federal Regulations

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act [CWA (33 USC 1344)], is the primary law regulating wetlands and surface waters. The CWA regulates the discharge of dredged or fill material into waters of the United States (U.S.), including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (U.S. EPA).

USACE issues two types of 404 permits: Standard and General. Nationwide permits, a type of General permit, are issued to authorize a variety of minor project activities with no more than minimal effects. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 CFR Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a LEDPA to the proposed discharge that would have less effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as FHWA and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

3.18.1.2 State Regulations

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game (CDFG), the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCB). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG Local Regulations

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications for impacts to wetlands and waters in compliance with Section 401 of the CWA. Please see Section 3.10, Water Quality for additional details.

3.18.2 Affected Environment

Unless otherwise noted, the information from this section was synthesized from the NES prepared for the proposed project (Caltrans 2010e) and the Jurisdictional Delineation (JD) prepared for the project (Caltrans 2011e) and approved by USACE on August 3, 2012. References used in the NES and JD are not carried over into this section. The proposed project is situated within the southern portion of the Mojave Desert, which is typified by highly variable climatic extremes. Lowland areas receive average about five inches of precipitation per year. High temperatures and low precipitation are present during the summer with highs regularly exceeding 100 degrees Fahrenheit. Most precipitation is in the form of rainstorms during the winter, when low temperatures often drop below freezing. The Mojave Desert is a transition zone between the Sonoran Desert and the Great Basin, and is known for its floral and faunal species diversity, and unique corresponding habitat types.

Topographic relief within the project area is generally minimal, situated within the relatively flat lands associated with the Hinkley Valley. Conversely, the southwestern portion of the project area supports the most topographic relief, associated with the northern end of the Iron Mountain range. Other hills and knolls occur outside of the project area to the north, and Mount General occurs approximately two miles northeast of the project area. The predominant landform within the project area consists of broad alluvial floodplains with scattered remnant playa deposits.

The project area supports two vegetation communities: creosote bush scrub and Atriplex scrub. These two desert shrub communities occur with varying levels of disturbance and intergrade frequently within the project area. There are also disturbed and developed areas within the project area.

According to the NRCS, there are 13 soil types within the project area. These are deep, well-drained soils, typical of terraces and alluvial fan areas, are composed principally of granitic material. The two most extensive soil types present in the project area are Cajon loamy sand (0%–2% slopes) and Norob-Halloran complex (0%–5% slopes), which encompass approximately 28% and 40% of the project area, respectively. Of this group of soils, several are considered hydric: Cajon sand, Cajon loamy sand, Norob-Halloran complex, Victorville sandy loam, Victorville Variant sand, Villa loamy sand, and Villa loamy sand, hummocky. These soils are associated with playas, fan remnants, and floodplains. Soils derived from playas are considered potentially hydric because they are flooded for long duration during the growing season. Soils within fan remnants and floodplains are considered potentially hydric because the water table in such areas is typically close to the ground surface. The two most dominant soil types, Cajon loamy sand and Norob-Halloran complex, are both playa soils. No playa habitat areas were recorded within any of the project alignments. There were various swale-like areas and bare ground areas that were examined for wetland characteristics, due to their resemblance to playa habitat, but these areas were not found to support proper hydrology or vegetation for wetland habitats.

The project area is within the Mojave and Harper Valley/undefined watersheds, and specifically within four subwatersheds (See Resource Study Area in the Cumulative Impact 3.25 Wetlands Section). The Mojave watershed extends from the foothills of the San Bernardino Mountains, through the town of Victorville and northeast towards the town of Baker, where the river terminates at Silver and Soda dry lakes. The Mojave River is the primary receiving water body for this watershed, and is typically considered jurisdictional by the USACE. Most of the Mojave River is of an intermittent or ephemeral nature. Portions of the Mojave River are perennial and navigable through the San Bernardino Mountain foothills and within the towns of Victorville and Apple Valley. The project area is within a highly developed portion of the Mojave River watershed.

The Harper Valley watershed encompasses a large land area trending from lands near Kramer Junction and much of the town of Hinkley northeast towards Death Valley. This watershed contains several receiving bodies within its boundaries, each associated with multiple subwatersheds. Primary receiving water bodies include Harper, Superior, Goldstone, Coyote and Cuddeback dry lakes. Harper Dry Lake, approximately 13 miles north of the project area, within Schweitzer Well-Harper Lake subwatershed, is the receiving body for most of the project area.

All washes affected by all the alternatives for this project are located within the limits of the Harper Valley/undefined watershed. No washes are affected by the project alternatives within the Mojave watershed. The areas that contain all the washes drain in a northerly direction towards Harper Dry Lake, which is isolated from interstate waters. The ephemeral drainages within this portion of the project area are intrastate waters and do not connect outside of the state.

A field survey to identify wetlands and waters of the United States within the three alternatives was conducted in June 2009 by ECORP biologists. The surveyors walked the entire project site and all alternatives to determine the location and extent of potential jurisdictional features to state and federal agencies. Due to project scope changes, additional field work to verify new project areas was conducted by Caltrans' associate biologists Juan Lopez Torres, Zackry West,

and Jason Bill on August 10, 2010, resulting in the addition of one ephemeral wash. A field meeting took place with Veronica Chan (USACE) on March 29, 2011 and Caltrans' biologists Juan Lopez Torres, Zackry West, and Kenneth Holmes, resulting in the addition of other washes and abandoned v-ditches. Results of the field surveys are summarized below.

3.18.2.1 Waters of the United States

Based on the results of the field delineation, no potential waters of the United States were mapped within the project area. The ephemeral streams located in the project area are tributary to several unnamed drainages of various sizes and ultimately to Harper Dry Lake. These ephemeral streams are not considered jurisdictional to the USACE due to their lack of connectivity with interstate waters, lack of connectivity with a Traditional Navigable Waters or other USACE jurisdictional areas, and lack of connection with interstate commerce and are therefore not subject to regulation under Section 404 of the Clean Water Act. A Final JD was submitted to USACE on June 16, 2011 to obtain final determination. USACE issued an Approved JD on August 3, 2012 (See Appendix H) in which they found that there are no waters of the United States jurisdiction over any waters on the site, and declined to take jurisdiction.

3.18.2.2 CDFG Jurisdiction

The CDFG jurisdiction within the project area varies by alternative and is comprised entirely of ephemeral streams. The extent of CDFG jurisdiction was mapped in the field according to the ordinary high water mark, the extent of riparian vegetation, and flood plain indicators such as debris lines, topographic changes, sediment deposits, among other indicators.

All of the streams located in the study area are considered to be ephemeral. The majority of the ephemeral streams were unvegetated, and those with any vegetation contained weedy species that were not indicative of hydrology. Other indicators of hydrology recorded in the field for these features were positive and included riverine sediment deposits, riverine drift deposits, and riverine drainage patterns. Limits for the ephemeral streams were mainly determined by defined bed and bank, as well as distribution of the aforementioned hydrologic indicators, in addition to changes in natural vegetation.

An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round such that detained groundwater is not a significant source of water for the stream in a particular growing season. Direct runoff from rainfall is the primary source of water for stream flow. Vegetation in larger ephemeral streams tends to be lacking due to seasonal scouring events, with only annual vegetation typically able to take root.

Streambeds within the project area are all located to the west of Hinkley Road, and the majority of those are located west of Valley View Road. The character of the streams recorded within the project area is determined by the surrounding topography. Generally, the majority of the project area is flat and these areas have less and weaker stream evidence. The areas with greater topographic relief, particularly near the Iron Mountain range, contained the most well-defined features.

3.18.2.3 National Wetland Inventory

There are no National Wetland Inventory (NWI) features mapped within or in the immediate vicinity of the project area.

3.18.3 Environmental Consequences

3.18.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no permanent impacts on wetland and other waters would occur.

Build Alternatives 2, 3, and 4

CDFG Jurisdiction

There are no perennial water sources in the project area. Washes in the study area are not considered to constitute waters of the United States due to their lack of connectivity with Traditional Navigable Waters. It was determined, through coordination with CDFG, that they are protected under Section 1600 of the CDFG code and under regulations of the RWQCB. It would therefore be necessary to obtain a 1600 Permit from CDFG and a waste discharge permit from the RWQCB, Lahontan Region.

The project design used to calculate impacts to the waters for the JD is based on the preliminary project design; therefore, the impacts may need to be recalculated prior to submittal of the permits required for this project. Submittal for required permits cannot occur prior to completion of the Project Approval and Environmental Document phase.

As determined in the JD, Alternative 2, 3, and 4 have the potential to permanently affect CDFG jurisdictional waters, as shown in Table 3.18-1.

Table 3.18-1: California Department of Fish and Game Jurisdictional Waters within the Proposed Project Area (JD, June 2011)

Alignment Alternative	Impact Area[1] (Acres)
Alternative 2	2.815
Alternative 3	0.625
Alternative 4	0.707

[1]Acreages are based on preliminary design and Jurisdictional Delineation dated December 2011. After the environmental document is approved and an alternative is selected, final design of the selected alternative would occur and acreage may be revised.

Coordination with CDFG and RWQCB, Lahontan Region, would be required to complete the permitting process. Final issuance of permits for the proposed project would be determined by these agencies during the design phase of the project.

3.18.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no temporary effects to wetlands and other waters would occur.

Build Alternatives 2, 3, and 4

During construction, there is increased risk for indirect temporary impacts, such as changes in hydrology, to the adjacent jurisdictional waters. The avoidance and minimization measures identified below are expected to address these potential temporary indirect effects.

3.18.4 Avoidance, Minimization, and/or Mitigation Measures

In order to minimize impacts to state streambeds the following measures would be implemented.

- **W-1:** Avoidance and minimization efforts to be utilized in order to protect aquatic resources during the course of the project will include the implementation of BMPs (Caltrans 2003b) and the SWPPP (Caltrans 2003b) during all phases of construction, which will include the following:
    a. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into washes or culverts that cross the project area. The SWPPP and NPDES will contain specific methods for meeting this requirement.
    b. Raw cement/concrete or washing thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic-life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering washes or culverts that cross the project area as defined through compliance with the contractor's SWPPP.
    c. No equipment maintenance/parking or fueling shall be done within or near any drainages or washes depicted in the JD, where petroleum products or other pollutants from equipment shall enter these areas under any flow condition.
- **W-2:** An Environmentally Sensitive Area (ESA) fence will be installed along washes within the right-of-way that will not be directly affected by the project.
- **W-3:** A biological construction monitor will coordinate with the RE to ensure that construction activities will not have an impact on washes limited by the ESA fencing. No grading or fill activity of any type will be will be permitted within the ESA's. The monitor, in coordination with the RE, will be operated in a manner so as to present accidental damage to nearby preserved areas.
- **W-4:** Project impacts to the California Department of Fish and Game (CDFG) jurisdictional waters will be mitigated at a minimum 2:1 ratio, either through onsite restoration and/or offsite acquisition, through coordination with CDFG and RWQCB during the permitting process for the 1602 and 401 permits, respectively.

3.19 Plant Species

3.19.1 Regulatory Setting

3.19.1.1 Federal and State Regulations

The U.S. Fish and Wildlife Service (USFWS) and CDFG have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species Section 3.21 in this document for detailed information regarding these species.

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

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

3.19.2 Affected Environment

Unless otherwise noted, the information from this section was synthesized from the NES prepared for the proposed project (Caltrans 2010e). References used in the NES are not carried over into this section. Plant species in California that have special regulatory or management status were evaluated for potential to occur within the study area. In order to comply with the provisions of various state and federal environmental statutes and executive orders, the potential impacts to natural resources of the region were investigated and documented. A list of species and habitats within the project region was developed based on information compiled by the USFWS, the California Natural Diversity Database (CNDDB), and current publications. The project site was field reviewed to identify habitat types, potential wetlands, potential for rare species, sensitive water quality receptors, and potential problem areas for the study.

The project area supports two vegetation communities with varying levels of disturbance (See Figures 3.19-1 through 3.19-3): Creosote bush scrub and Atriplex scrub. In addition, the project area supports disturbed and developed areas. The Creosote bush scrub community is characterized by fairly open areas that are dominated by creosote bush (*Larrea tridentata*). Typically, this community occurs on well-drained sandy soils below 4,000 feet above mean sea level (amsl). Associated shrubs included cheesebush (*Hymenoclea salsola*), shadscale (*Atriplex*

confertifolia), and goldenbush (*Ericameria* species). Associated understory species included rice grass (*Achnatherum hymenoides*), Mediterranean grass (*Schismus* species), checker fiddleneck (*Amsinckia tessellata*), California dandelion (*Malacothrix californica*), small flowered blazing star (*Mentzelia albicaulis*), yellow pepper-weed (*Lepidium flavum* var. *flavum*), Fremont's pincushion (*Chaenactis fremontii*), tansy mustard (*Descurainia pinnata*), and California mustard (*Guillenia lasiophylla*).

The Atriplex scrub community within the project area is dominated by shadscale. The shrubs are typically less than three feet in height with low cover and open ground between the shrubs. This community is often found in alkaline or saline soils, especially at the margins of dry lake beds in desert areas. Understory species within the project area are similar to those found in Creosote bush scrub community.

Disturbed and developed areas encompass all residential, commercial, and utility developments that entail conversion of ground surface to pavement. Several paved roads are also included within this designation, as well as active agricultural fields. Disturbed areas are those areas that have been cleared of vegetation mechanically or otherwise. They include dirt roads, cleared fields, roadway shoulders, and other areas that have been physically altered but have an earthen substrate.

The project area includes and is adjacent to a portion of the existing SR-58 and, as such, portions of the project area consist of weedy, disturbed areas, and areas devoid of vegetation due to periodic maintenance, weed abatement, and/or long-term compaction. Non-native grasses occur with greater frequency in these areas. Red-stemmed filaree, ripgut brome (*Bromus diandrus*), and red brome (*B. madritensis* ssp. *rubens*) are common species in these areas. Irrigated agricultural fields are also categorized as disturbed. These irrigated and fallow fields are especially common in the eastern end of the project area.

A focused plant survey of the Biological Study Area (BSA) was conducted by ECORP botanists Daria Snider, Tara Collins, and Debra Sykes; and ECORP biologists Margaret Bornyasz, Brad Haley, Alicia Pool, Manna Warburton, and Brian Zitt in accordance with the CNPS Botanical Survey Guidelines. For this project the BSA is defined by the right-of-way line of each alternative. The focused plant surveys were scheduled to coincide with the bloom periods of target species, and were conducted on April 6, 7, and 8, 2009. A list of all plant species observed during the focused rare plant surveys is included in Appendix A of the NES. The focused field surveys consisted of:

- walking pedestrian transects spaced 33 feet apart for the entire BSA, including an additional 33 feet area outside of the proposed impact footprint;
- recording detailed characterization of vegetation communities present within the BSA;
- maintaining a cumulative list of all plants species observed;
- using plant identification keys when necessary;
- recording GPS coordinates of any sensitive plant species observed; and
- taking digital reference photographs throughout the BSA.

Figure 3.19.1: Plant Species

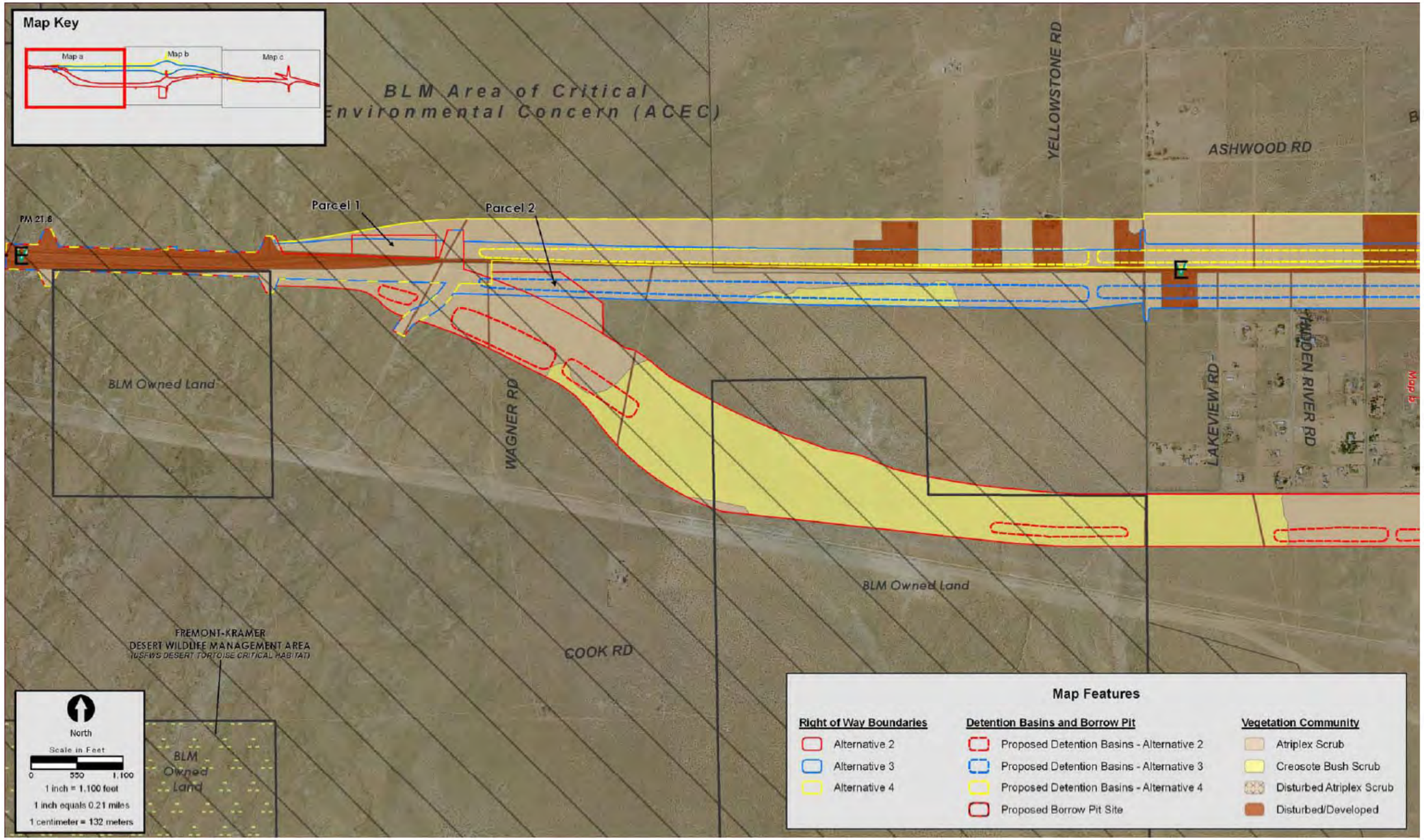

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Figure 3.19.2: Plant Species

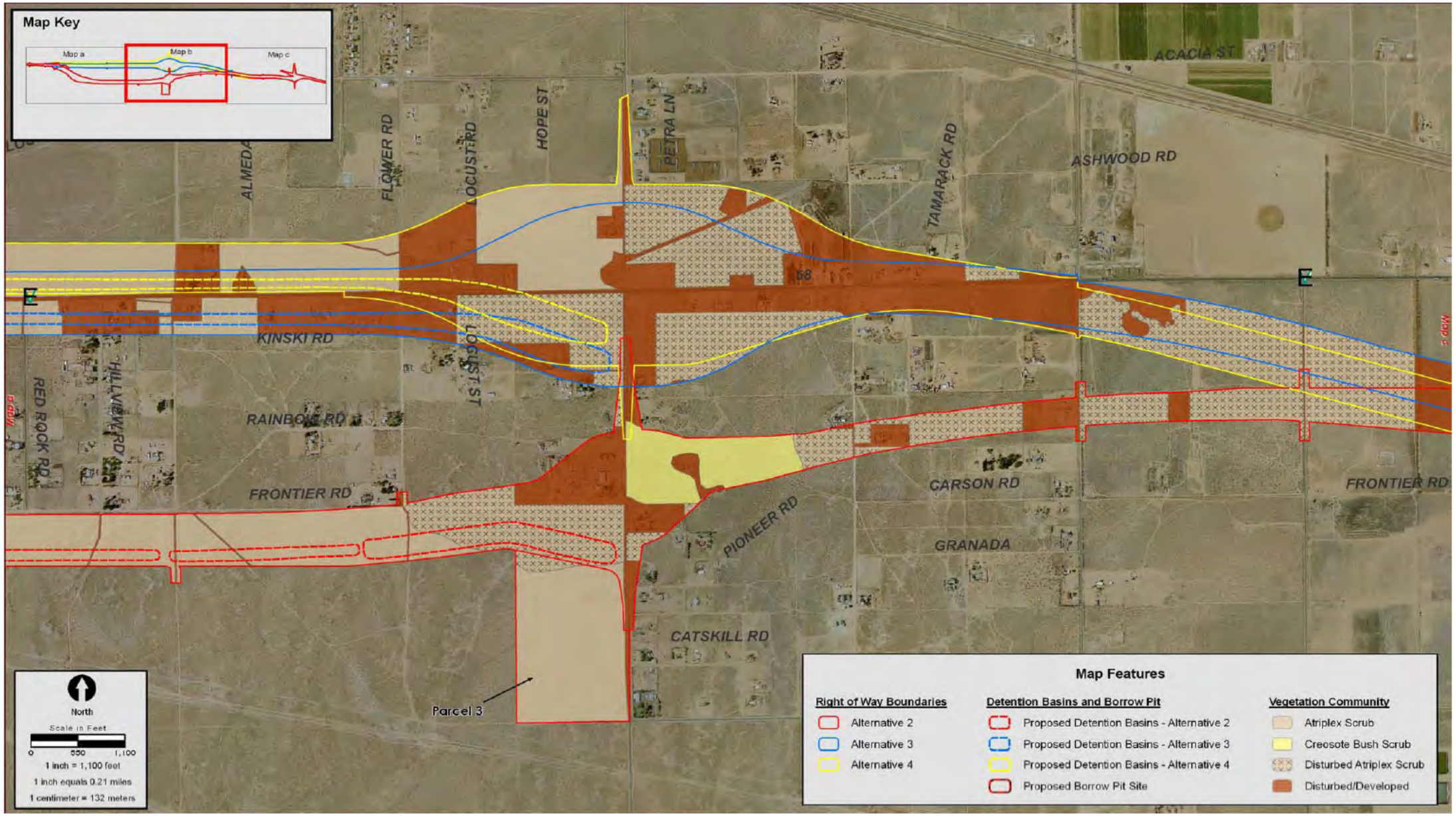

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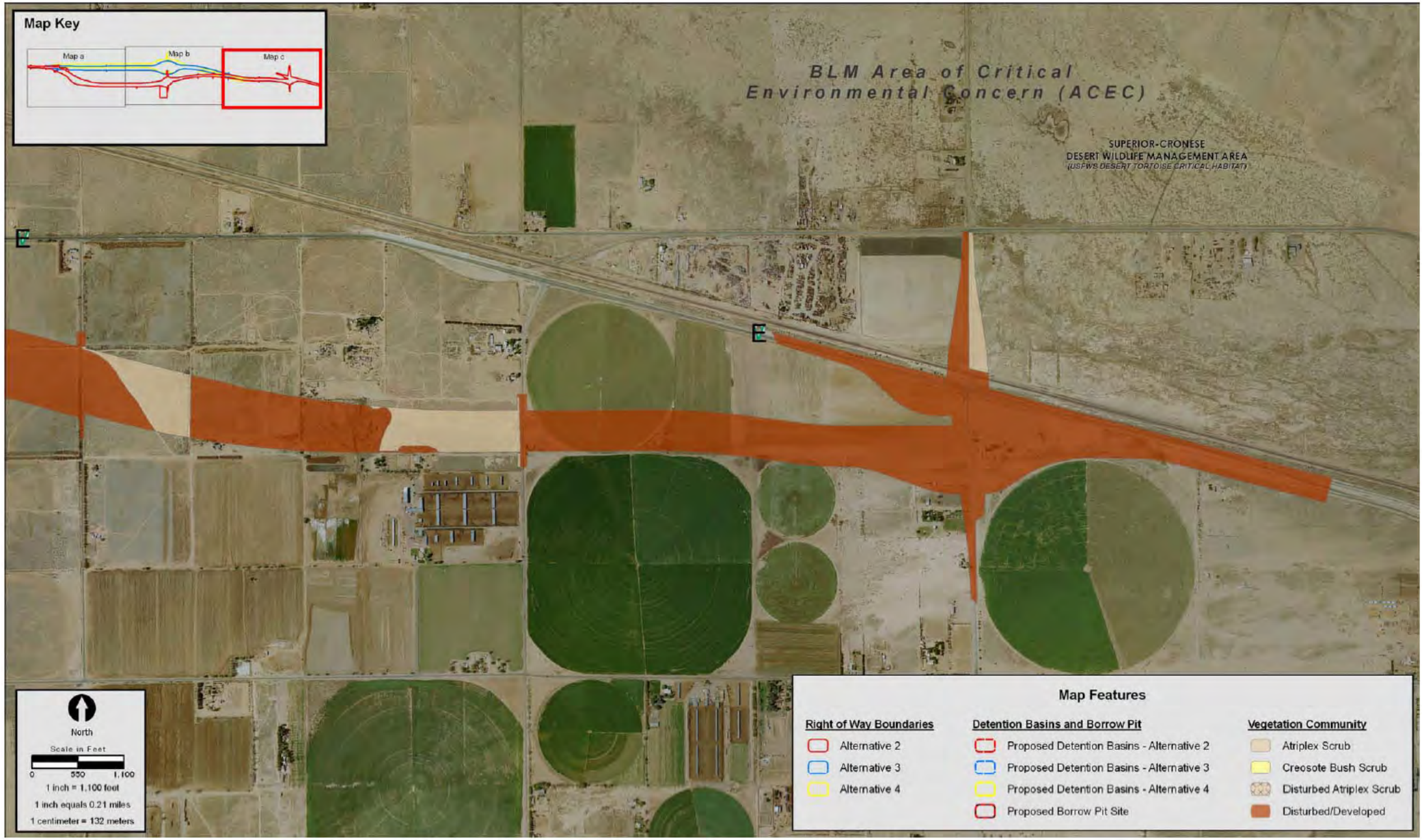
Figure 3.19.3: Plant Species



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The survey areas included a 33-foot buffer zone around each of the alternative footprints, as defined in early 2009 at the time the rare plant survey was conducted. Due to reconfiguration of the interchanges complete surveys were not done for rare plant species at Hinkley Rd. In addition, due to the scope change to include the detention basins, the July 2009 plant surveys did not cover effects by the proposed detention basin locations. Preconstruction surveys will be conducted for any areas not surveyed during the 2009 rare plants surveys that may contain suitable habitat for sensitive species to minimize impacts.

The BSA is almost entirely in use as open space with the exception of development and agriculture in the eastern portion of the BSA (east of Mountain View). The BNSF railroad runs parallel with SR-58 from about one mile west of Lenwood Road east to the end of the BSA. A high pressure gas line runs approximately parallel with the southern boundary of the BSA from the west end of the BSA for approximately five miles. Human disturbance is prevalent throughout the eastern portion of the BSA, including off-highway vehicle (OHV) use, evidence of livestock grazing, active farms (both dairy and crop), and trash dumping.

Several documented occurrences of special-status species were documented in the vicinity of the BSA. These special-status species were documented within the Barstow, Barstow SE, Hinkley, Hodge, Lockhart, Mud Hills, Twelve Gauge Lake, Water, and Wild Crossing USGS 7.5-minute topographical quadrangles and are presented below in Tables 3.19-1 and 3.19-2.

Table 3.19-1: Special-Status Plant Species Occurring or Known to Occur in the Project Area

Scientific Name Common Name	Status		Habitat Present (P)/ Absent (A)	Rationale
Plants				
Abronia villosa var. aurita Chaparral sand-verbena	Fed: CA: CNPS: BLM:	None None 1B.1 None	P/Chaparral, coastal scrub, desert dunes, sandy areas; 262 to 5,248 feet.	Potential suitable habitat exists and two records are within 1 mile of the BSA (CDFG 2009). Surveys did not find this species.[1]
Astragalus preussii var. laxiflorus Lancaster milk-vetch	Fed: CA: CNPS: BLM:	None None 1B.1 None	P/Atriplex scrub; 2,296 feet.	Potential suitable habitat exists but the closest record is 11 miles north of the BSA in the Mud Hills (Calflora 2009). Surveys did not find this species.[1]
Cryptantha clokeyi Clokey's cryptantha	Fed: CA: CNPS: BLM:	None None 1B.1 None	P/ Mojavean desert scrub; 2,624 to 4,200 feet.	Potential suitable habitat exists and the closest records are 3.5 miles east of the eastern terminus of the BSA (Calflora 2009). Surveys did not find this species.[1]
Chorizanthe spinosa Mojave spineflower	Fed: CA: CNPS: BLM:	None None 4.2 None	Atriplex scrub, Joshua tree woodland, Mojavean desert scrub; 20 to 4,264 feet.	Potential suitable habitat exists and the closest records are 0.5 miles north of the western terminus of the BSA (Calflora 2009). Surveys yielded the presence of this species.

Scientific Name Common Name	Status		Habitat Present (P)/ Absent (A)	Rationale
Cymopterus deserticola Desert cymopterus	Fed: CA: CNPS: BLM:	None None 1B.2 SEN	P/ Joshua tree woodland and Mojavean desert scrub which contains well-drained fine to coarse, loose, sandy soils; 2,050 to 2,985 feet.	Potential suitable habitat exists and the closest record is 5.5 miles northwest of the western terminus of the BSA (CDFG 2009). Surveys did not find this species.[1]
Eriophyllum mohavense Barstow woolly sunflower	Fed: CA: CNPS: BLM:	None None 1B.2 SEN	P/ Atriplex scrub, Mojavean desert scrub, desert playas (open, silty or sandy areas) 1,640 to 2,952 feet.	Potential suitable habitat and a record exists approximately 0.6 mile east of the western terminus of the BSA (CDFG 2009). Surveys did not find this species.[1]
Mentzelia tridentata Creamy blazing star	Fed: CA: CNPS: BLM:	None None 1B.3 None	A/ Mojavean desert scrub (rocky, gravelly, sandy soils); 2,296 to 3,805 feet.	Potential suitable habitat exists and the closest records are 5 miles east of the eastern terminus of the BSA (CDFG 2009). Surveys did not find this species.[1]
Mimulus mohavensis Mojave monkey flower	Fed: CA: CNPS: BLM:	None None 1B.2 SEN	P/ Joshua tree woodland, Mojavean desert scrub (sandy or rocky); 1,968 to 3,854 feet.	Potential suitable habitat exists and the closest records are 5 miles east of the eastern terminus of the BSA (CDFG 2009). Surveys did not find this species.[1]
Muilla coronata Crowned muilla	Fed: CA: CNPS: BLM:	None None 4.2 None	P/ Atriplex scrub, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland; 2,509 to 6,429 feet.	Species found during surveys.
Phacelia parishii Parish's phacelia	Fed: CA: CNPS: BLM	None None 1B.1 SEN	P/Mojavean desert scrub, playas (alkaline flats, slopes, or clay soils); 1,759 to 3,936 feet.	Potential suitable habitat exists with the closest records are 3.5 miles east of the eastern terminus of the BSA (Calflora 2009). Surveys did not find this species.[1]
Sarcornia utahensis Utah glasswort	Fed: CA: CNPS: BLM:	None None 2.2 None	P/Atriplex scrub and playas (alkaline soils); 1,050 feet.	Suitable habitat exists, however one of only two recorded occurrences in California are at Harper Dry Lake east of BSA (CDFG 2009). Surveys did not find this species.[1]

Federal Designations (Federal Endangered Species Act, USFWS): END: federal-listed, endangered THR: federal-listed, threatened SOC: USFWS Species of Concern

State Designations: (California Endangered Species Act, CDFG) END: state-listed, endangered THR: state-listed, threatened, CSC California Species of Concern, WL Watch List, FP fully protect.

California Native Plant Society (CNPS)) Designations*:*
**Note: according to CNPS [Skinner and Pavlik 1994], plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code. This interpretation is inconsistent with other definitions. (See text to the right)*

1A: Plants presumed extinct in California.
1B: Plants rare and endangered in California and throughout their range.
2: Plants rare, threatened, or endangered in California but more common elsewhere in their range.
3: Plants about which need more information; a review list.
4: Plants of limited distribution; a watch list.

Scientific Name Common Name	Status	Habitat Present (P)/ Absent (A)	Rationale
		Plants 1B, 2, and 4 extension meanings: .1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat) .2 Fairly endangered in California (20%–80% occurrences threatened) .3 Not very endangered in California (< 20% of occurrences threatened or no current threats known)	

Potential for Occurrence Criteria:
Present: Species was observed on site during a site visit or focused survey.
High: Habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been recorded within 5 miles of the site.
Moderate: Either habitat (including soils and elevation factors) for the species occurs on site and a known occurrence occurs within the database search, but not within 5 miles of the site; or a known occurrence occurs within 5 miles of the site and marginal or limited amounts of habitat occurs on site.
Low: Limited habitat for the species occurs on site and a known occurrence occurs within the database search, but not within 5 miles of the site, or suitable habitat strongly associated with the species occurs on site, but no records were found within the database search.
Unlikely: Species was found within the database search, but habitat (including soils and elevation factors) do not exist on site or the known geographic range of the species does not include the survey area.
Source: ECORP, 2010.

Table 3.19-2: Rare Plant Survey Summary

Species	Data Type	Population Range	Alternative 2	Alternative 3	Alternative 4	Total within BSA[3]
Crowned muilla	Point	1	3	1	2	6
Mojave spineflower	Point	1–10[1]	4	4	3	9
	Point	11–100[1]	4	0	1	5
	Point	101–1,000[1]	2	0	1	3
	Point	1,000+[1]	4	0	1	5
	polygon	Acres[2]	10.9	51.4	42.1	103.3

[1] These numbers reflect the amount of times that a certain population range occurs within the original alternative.
[2] Polygons were recorded where the method to estimate population ranges did not apply.
[3] Because the original alternatives overlap in several areas, the sum of Alternatives 2, 3, and 4 may or may not add up. Also, the BSA consists of all the original alternatives together, in addition to a 33-foot buffer.
Source: ECORP, 2010.

Suitable habitat for 11 special-status plant species is present within the BSA, two of which, the crowned muilla and Mojave spineflower were observed within the BSA. Both have limited distribution, are currently listed on the CNPS watch list (List 4.2), and are discussed individually below. The Barstow woolly sunflower (*Eriophyllum mohavense*) had been previously recorded; six species were determined to have high potential to occur, two had moderate potential to occur, and two species had low potential to occur in the BSA prior to the focused surveys (Table 3.19-1).

Table 3.19-2 contains the population sizes for each species within each original alternative alignment.

There is no potential for federally or State listed plants within the project limits.

3.19.2.1 Crowned muilla

Crowned muilla is a CNPS List 4.2 species, which includes plants of limited distribution, a watch list species that is fairly endangered in California with 20% to 80% of occurrences being threatened. It has no formal listing with USFWS, CDFG, or BLM. It is a bulbiferous herb that occurs in Atriplex scrub, Joshua tree woodland, Mojavean desert scrub, and pinyon-juniper woodland from 2,510 to 6,430 feet amsl. This species blooms from March through April.

Six individuals of crowned muilla were observed within the BSA. Most of these individuals were observed in the western portion of the BSA. Three individuals were observed in the original Alternative 2; one in the original Alternative 3; and two in the original Alternative 4 survey area (refer to Table 3.19-2).

3.19.2.2 Mojave spineflower

Mojave spineflower is a CNPS List 4.2 California endemic annual herb species. This species is found in sandy or gravelly soils in Chenopod scrub, Joshua tree woodland, and Mojavean desert scrub at elevations ranging from 18 to 3,900 feet amsl. Mojave spineflower blooms from March through July. Twenty-one discrete populations of Mojave spineflower were documented within the project area. In addition, a large area was mapped on the western end in which numerous individuals of this species were observed scattered throughout. This area mapped represented over 1,000 Mojave spineflower plants.

Five historical occurrences for Mojave spineflower were discovered and collections made within the vicinity of the proposed project area. Three of the five historical Mojave spineflower locations were discovered in 1977 on Edwards Air Force Base. The other two locations were in the vicinity of Kramer Junction and were discovered in 1987 and 1988.

Twenty-two discrete populations, where size of population could be estimated, and 103.3 acres, where polygons were created, of Mojave spineflower were documented within the BSA. The original Alternative 3 contained the most amount of Mojave spineflower occupied habitat, with 51.4 acres, followed by the original Alternative 4 with 42.1 acres (refer to Table 3.19-2). Although the original Alternative 2 contained the most discrete populations among the four classes of population ranges, it contained the least amount of occupied habitat with 10.9 acres. The Mojave spineflower polygons within the original Alternatives 3 and 4 spanned approximately two miles. These populations are primarily concentrated near low spots or seeps found within the atriplex scrub communities, and characterized by poorly drained soils with high salinity and/or alkalinity.

It is anticipated that the crowned muilla and Mojave spineflower populations found within each of the respective alternative alignments would also be present within the unsurveyed areas in similar population sizes if further plant surveys were conducted. More specifically, the Mojave spineflower populations, shared by Alternatives 3 and 4 west of Valley View Road, would extend south into the updated footprints.

3.19.3 Environmental Consequences

3.19.3.1 Permanent Impacts

Overall for all alternatives, 718.4 acres of suitable habitat have been surveyed and 833.3 acres of suitable habitat have not been surveyed for plant species. Therefore, approximately 46% of the proposed project area that contains habitat for rare plant species has been surveyed. Permanent impacts to the plant species present within the project footprint are not expected to lead to a trend toward listing due to the nature of the impacts based on the abundance of plants found throughout the region. Mojave spineflower populations found in the respective alternative alignments would also be present within the unsurveyed areas in similar populations based on the high number of plants found throughout the region.

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no permanent impacts to plant species would occur.

Alternative 2—Southerly Alternative

As shown on Table 3.19-2, although Alternative 2 had the smallest area occupied by Mojave spineflower (10.9 acres) that could potentially be affected, it had the most individual Mojave spineflower plants. Implementation of Alternative 2 would result in the most individuals impacted, but impacts would be concentrated at fewer locations. Three individuals of crowned muilla were observed in the original Alternative 2 study area. Potential habitat for this species which includes marginal habitats are atriplex scrub, creosote bush scrub, and disturbed atriplex scrub which would also be affected; impacts to these vegetation communities by acreage are summarized below.

Table 3.19-3: Alternative 2 Vegetation Acreages Potential Impacts

Vegetation Community	Alternative 2 (acres)		
	East	West	Total
Atriplex Scrub	32.71	232.95	265.66
Creosote Bush Scrub	30.10	154.88	184.98
Disturbed Atriplex Scrub	57.43	41.68	99.11
Total	**120.24**	**429.51**	**549.75**

As shown in the above table and in comparison with tables 3.19-4 and 3.19-.5, Alternative 2 would result in the greatest amount of impacts to these vegetation communities.

Alternative 3—Existing Alignment

As shown on Table 3.19-2, the surveyed portions of Alternative 3 had the fewest individual Mojave spineflower plants but the greatest acreage that could potentially be affected (51.4 acres). Alternative 3 contains the highest amount of potential habitat for this sensitive special-status

plant. One individual of crowned muilla was observed in the original Alternative 3 study area. Potential habitat for this species which includes marginal habitats are atriplex scrub, creosote bush scrub, and disturbed atriplex scrub which would also be affected; impacts to these vegetation communities are summarized below.

Table 3.19-4: Alternative 3 Vegetation Acreages Potential Impacts

Vegetation Community	Alternative 3 (acres)		
	East	West	Total
Atriplex Scrub	33.13	231.04	264.17
Creosote Bush Scrub	0.00	12.26	12.26
Disturbed Atriplex Scrub	99.93	33.26	133.19
Total	**133.05**	**276.56**	**409.62**

Nevertheless, as shown in the above table, and in comparison with tables 3.19-3 and 3.19-5, Alternative 3 would result in the least amount of impacts to these vegetation communities.

Alternative 4—Northerly Alternative

Alternative 4 had the second most individual plants (see table 3.19-2) recorded and the second-largest Mojave spineflower areas recorded (42.1 acres). Two individuals of crowned muilla were observed in the original Alternative 4 study area. Potential habitat for this species which includes marginal habitats are atriplex scrub, creosote bush scrub, and disturbed atriplex scrub would also be affected; impacts to these vegetation communities are summarized below:

Table 3.19-5: Alternative 4 Vegetation Acreages Potential Impacts

Vegetation Community	Alternative 4 (acres)		
	East	West	Total
Atriplex Scrub	29.61	249.62	279.23
Creosote Bush Scrub	0.24	0.06	0.30
Disturbed Atriplex Scrub	116.96	30.82	147.78
Total	**146.81**	**60.5**	**427.31**

3.19.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no temporary impacts to plant species would occur.

Build Alternatives 2, 3, and 4

Construction activities such as increase of traffic in the area could temporarily impact some populations located close to or within the project vicinity by increasing dust in the area. No temporary access roads or staging areas outside the proposed right-of-way would be required for this project. All construction activities would be limited to the ultimate right-of-way where the permanent desert tortoise and right-of-way fences would be installed. Populations within the project footprint would be mapped prior to project construction and avoided if feasible through the installation of Environmentally Sensitive Area (ESA) fencing and construction monitoring. Due to the implementation of all the avoidance and minimization measures listed for these species, temporary impacts would be minimal.

3.19.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would be implemented to protect the plant species that could be present:

- **BIO-1:** Pre-construction surveys for rare plants will be conducted to determine where rare plants are for ESA purposes, during the appropriate blooming period.
- **BIO-2:** The project design will avoid impacts to rare plants to the maximum extent possible.
- **BIO-3:** ESA fencing will be established around the rare plants and sensitive species that are to be protected in place as determined by the biologist.
- **BIO-4:** A qualified biological construction monitor will monitor construction activities to avoid and/or minimize impacts to species.
- **BIO-5:** All temporary staging areas, storage areas, and access roads involved with this project will occur within the permanent impact area (future pavement, median, on- and off-ramps, interchanges etc.). Access to the project site will be gained from the existing SR-58. No new access roads will be built as part of this project.

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3.20 Animal Species

3.20.1 Regulatory Setting

3.20.1.1 Federal and State Regulations

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), and the California Department of Fish and Game (CDFG) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 3.21 below. All other special-status animal species are discussed here; including CDFG fully protected species and species of special concern, and USFWS or NOAA Fisheries Service candidate species (see Appendix H).

Federal laws and regulations pertaining to wildlife include the following:

- NEPA
- Migratory Bird Treaty Act (MBTA): Protects migratory birds, their nests, and eggs from destruction or take, migratory birds may nest within the trees and shrubs that are present within the desert wash habitat within the project area. To
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- CEQA
- Sections 1600 – 1603 of the Fish and Game Code
- Section 4150 and 4152 of the Fish and Game Code

3.20.1.2 Local Regulations

The West Mojave Plan is a habitat conservation plan and federal land use plan amendment that (1) presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel (MGS) and over 100 other sensitive plants and animals and the natural communities of which they are a part, and (2) provides a streamlined program for complying with the requirements of the CESA and FESA, respectively (BLM 2005). The West Mojave Plan was implemented by the BLM, San Bernardino County, and the City of Barstow.

The 9.4 million-acre planning area encompasses most of California's western Mojave Desert. It extends from Olancha in Inyo County on the north to the San Gabriel and San Bernardino Mountains on the south, and from the Antelope Valley on the west to the Mojave National Preserve on the east. About one third of the planning area is private land, another third is within military bases, and the final third consists of public lands managed by the BLM (BLM 2009).

Desert Wildlife Management Areas and Critical Habitat (DWMA)

As an integral part of the 1994 Recovery Plan for the Desert Tortoise, six recovery units were designated within the six million acres of habitat throughout the Mojave Desert. Within each recovery unit, one to four DWMAs were designated to promote and manage desert tortoise recovery in specific areas within the recovery units. Each recovery unit was selected based on ecological, genetic, morphological, and behavioral data collected in different desert tortoise population areas throughout the range in California, Nevada, Arizona, and Utah. Recovery units are crucial in providing the populations that are necessary for the potential recovery of the species.

3.20.2 Affected Environment

Unless otherwise noted, the information from this section was synthesized from the NES prepared for the proposed project (Caltrans 2010). References used in the NES are not carried over into this section. In order to comply with the provisions of various state and federal environmental statutes and executive orders, the potential impacts to natural resources of the region were investigated and documented. A list of species and habitats within the project region was developed based on information compiled by the USFWS, CNDDB, and other current publications. The project site was field reviewed to identify animal species, specifically desert tortoise.

The project site lies within the southwestern portion of the Mojave Desert and is typified by highly variable climatic extremes. Lowland areas of the western Mojave average about five inches of precipitation per year. High temperatures and low precipitation are present during the summer with highs regularly exceeding 100 degrees Fahrenheit. Most of the precipitation exists in the form of rain and irregular snowstorms during the winter, when low temperatures often drop below freezing. The combination of extreme temperature ranges and low precipitation rates creates a unique environment for many plants and animals in the region. This unique, sparsely vegetated transition zone between the Sonoran Desert and the Great Basin is known for its floral and faunal species diversity, and unique corresponding habitat types. The Mojave Desert hosts a number of species that exist nowhere else and is considered to be a biodiversity “hotspot.”

For this project the BSA is defined by the right-of-way line of each alternative as well as the permanent and temporary disturbance footprints, and was developed by the PDT with the goal of avoiding and/or minimizing potential impacts to the greatest extent feasible. The BNSF railroad runs parallel with SR-58 from about one mile west of Lenwood Road east to the end of the BSA. A high pressure gas line runs approximately parallel with the southern boundary of the BSA from the west end of the BSA for approximately five miles. Human disturbance is prevalent throughout the eastern portion of the BSA, including OHV use, evidence of livestock grazing, active farms (both dairy and crop), and trash dumping.

Desert tortoise mitigation ratios are partially defined by who owns the land within the study area. A portion of the western end of the BSA and Alternative 2 are within BLM-owned lands. Overall, Alternative 2 contains 112.1 acres of BLM owned lands, and Alternatives 3 and 4 contain less than three acres each. The BSA west of Valley View Road is within a BLM Area of Critical Environmental Concern (ACEC) associated with the Superior-Cronese DWMA. Overall,

Alternative 2 contains 261.5 acres of land within the BLM ACEC, Alternative 3 contains 178.1 acres, and Alternative 4 contains 129.6 acres. The BLM owned lands and ACEC boundaries are presented Figure 3.20.1.

Common vertebrates in the project area include reptiles, mammals, and birds. The most abundant vertebrate groups found in the project area are rodents and other small mammals, and small passerines (songbirds). Invertebrate species such as insects are also abundant, but were not a focus of the study effort, as no listed invertebrate species of concern were found within the study area.

Resident species are defined as those wildlife species that spend their entire life cycle within a single habitat or habitat complex onsite. Characteristic resident species include Merriam's kangaroo rat (*Dipodomys merriami*), white-tailed antelope ground squirrel (*Ammospermophilus leucurus)*, desert wood rat (*Neotoma lepida*), and cactus mouse (*Peromyscus eremicus*). Desert cottontail (*Sylvilagus audubonii*) and black-tailed jackrabbit (*Lepus californicus*) are also common. Common reptiles are represented by a variety of lizard species, including side-blotched lizard (*Uta stansburuana*), western whiptail (*Cnemidophorus tigris*), desert iguana (*Diposonsaurus dorsalis*), zebra-tailed lizard (*Urosaurus grasioisus*), and desert horned lizard (*Phrynosoma platyrhinos*). Snakes include coachwhip (*Masticophis flagellum)*, Mojave patchnose snake (*Salvadora hexalepis mojavensis*), Great Basin gopher snake (*Rhinoheilus lecontei lecontei*), Sonoran ground snake (*Sonora semiannnulata*), Mojave shovelnose snake (*Chionactis occipitalis occipitalis*), desert night snake (*Hypsiglena torquata deserticola*), Mojave Desert sidewinder (*Crotalus cerastes*), and speckled rattlesnake (*Crotalus mitchelli*).

Resident bird species typically in the project area include common raven (*Corvus corax*), house finch (*Carpodacus mexicanus*), mourning dove (*Zenaida macroura*), horned lark (*Eremophila alpestris*), rock wren (*Salpinctes obsoletes*), black-throated sparrow (*Amphispiza bilineata*), and greater roadrunner (*Geococcyx californianus*). A variety of migratory bird species also utilize the habitat communities within the project area, either during the summer breeding season or as wintering habitat. Common migratory species associated with habitats in the project area include Brewer's sparrow (*Spizella brewerii*), sage sparrow (*Amphispiza bellii*), yellow-rumped (Audubon's) warbler (*Denroica coronata audoboni*), and American pipit (*Anthis rubescens*).

The low vegetation cover and abundant prey base available within the open desert scrub habitat in the project area also provides foraging opportunities for a variety of raptors and mammalian predators, including red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), barn owl (*Tyto alba*), burrowing owl (*Athene cunicularia*), coyote (*Canis latrans*), gray fox (*Urocyon cinerecargenteus*), desert kit fox (*Vulpes macrotis*), bobcat (*Felis rufus*), and mountain lion (*Felis concolor*). These predatory species are typically associated with a mosaic of habitat types within a contiguous geographical area, and may require other habitat features, such as trees and cliffs, to fulfill habitat requirements throughout their life cycles.

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Figure 3.20.1: Western Mojave DWMA

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Table 3.20-1 identifies animals that may potentially be present and any protection status afforded to them under FESA, CESA, or the Migratory Bird Treaty Act (MBTA). The following sections also address regulatory authority of various agencies to manage sensitive species and habitat not protected by the FESA, CESA, or MBTA. This information is provided to succinctly address environmental resources and allow analysis of potential impacts to these resources. As mentioned earlier, species listed or proposed for listing as threatened or endangered are discussed in Section 3.21.

Table 3.20-1. Special-Status Species and Critical Habitat Potentially Occurring or Known to Occur in the Project Area

Scientific Name Common Name	Status		Habitat Present (P)/ Absent (A)	Rationale
BIRDS				
Accipiter cooperii Cooper's hawk	Fed: CA: CNPS: BLM:	None CSC None None	P/Nests in woodlands, typically in riparian areas and oaks.	Foraging habitat present. Observed in BSA during previous biological surveys (ECORP 2007); however, no previous records within five miles of BSA exist. (CDFG 2009)
Athene cunicularia Burrowing owl	Fed: CA: CNPS: BLM:	None CSC None SEN	P/Associated with low-lying vegetation, open scrub, grassland, and agricultural habitats.	Observed in BSA during previous biological surveys (ECORP 2007). Previous records exist within the BSA (CDFG 2009).
Elanus leucurus White-tailed kite (nesting)	Fed: CA: CNPS: BLM:	None FP None None	P/Nests in trees near marshes or other sources of water in grassland, cropland, and woodland-hardwood habitats.	Foraging habitat present. Observation recorded during previous biological surveys but no nesting habitat is present within the BSA (ECORP 2007).
Falco mexicanus Prairie falcon (nesting)	Fed: CA: CNPS: BLM:	None WL None None	P/Nests in open, dry habitats on cliffs. Often found far away from permanent water sources.	Foraging habitat present. Observed during previous biological surveys but no nesting habitat is present within the BSA (ECORP 2007).
Lanius ludovicianus Loggerhead shrike (nesting)	Fed: CA: CNPS: BLM:	None CSC None None	P/Inhabits large, open areas conducive to hunting. Nests in dense brush and shrubs.	Observed in BSA during previous biological surveys (ECORP 2007); however, no records exist within five miles of the BSA (CDFG 2009).
Pandion haliaetus Osprey (nesting)	Fed: CA: CNPS: BLM:	None WL None None	A/Nests along rivers, lakes, seacoasts and other large bodies of water in forest habitats.	Incidental observation recorded during previous biological surveys but no nesting or foraging habitat is present within the BSA (ECORP 2007).
Toxostoma lecontei Le Conte's thrasher	Fed: CA: CNPS: BLM:	None CSC None SEN	P/Requires dense, spiny shrubs for nesting. Found in a variety of desert habitats.	Observed in BSA during previous biological surveys (ECORP 2007). Previous records exist within ten miles of the BSA (CDFG 2009).

Scientific Name Common Name	Status		Habitat Present (P)/ Absent (A)	Rationale
MAMMALS				
Lasionycteris noctivagans Silver-haired bat	Fed: CA: CNPS: BLM	None None None SEN	A/Found in conifer and mixed conifer/ hardwood forests. In winter and during seasonal migrations, it may be present at lower elevations, in more xeric habitats.	No suitable habitat is present within the BSA.
Microtus californicus mohavensis Mojave river vole	Fed: CA: CNPS: BLM	None CSC None None	Occurs in wet areas along the Mojave River in weedy herbaceous areas and irrigated pastures.	No suitable habitat is present within the BSA.
Taxidea taxus American badger	Fed: CA: CNPS: BLM	None CSC None None	P/Associated with open stages of dry scrub, forest, and herbaceous habitats. Requires sufficient food, friable soils, and open uncultivated ground.	Sign observed during previous biological surveys (ECORP 2007); however, no records exist within 5 miles of the BSA (CDFG 2009).

Federal Designations (Federal Endangered Species Act, USFWS)**: END:** federal-listed, endangered; **THR**: federal-listed, threatened; **SOC**: USFWS Species of Concern

State Designations: (California Endangered Species Act, CDFG) **END**: state-listed, endangered; **THR**: state-listed, threatened; **CSC** California Species of Concern; **WL** Watch List; **FP** fully protect.

Potential for Occurrence Criteria:

Present: Species was observed on site during a site visit or focused survey.

High: Habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been recorded within 5 miles of the site.

Moderate: Either habitat (including soils and elevation factors) for the species occurs on site and a known occurrence occurs within the database search, but not within 5 miles of the site; or a known occurrence occurs within 5 miles of the site and marginal or limited amounts of habitat occurs on site.

Low: Limited habitat for the species occurs on site and a known occurrence occurs within the database search, but not within 5 miles of the site, or suitable habitat strongly associated with the species occurs on site, but no records were found within the database search.

Unlikely: Species was found within the database search, but habitat (including soils and elevation factors) do not exist on site or the known geographic range of the species does not include the survey area.

Source: California Natural Diversity Database; California Native Plant Society Electronic Inventory (CNPS 2009); Astley Rancho, Bird Spring, Boron, Boron NE, Boron NW, The Buttes, Fremont Peak, Galileo Hill, Jackrabbit Hill, Kramer Hills, Kramer Junction, Leuhman Ridge, North Edwards, Red Buttes, Rogers Lake North, Rogers Lake South, Saddleback Mountain, Twelve Gauge Lake, and Wild Crossing 7.5-minute USGS quads.

3.20.2.1 Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a state species of special concern and is protected under the MBTA. Burrowing owls historically occurred throughout much of California; however, many former populations have vanished. The burrowing owl is a year-long resident in California that inhabits open habitats, primarily grasslands and deserts, but has adapted to living on the urban fringe.

Some over-wintering burrowing owls also occur in California, but many of these do not stay and breed during the spring and summer seasons like their resident counterparts. The owls that do stay and breed in California usually lay around five to seven eggs in their underground burrows.

Burrowing owls require a burrow for roosting and nesting cover. Although they usually nest in abandoned ground squirrel burrows, they will also use other small mammal burrows, pipes, culverts, debris piles, and nest boxes, particularly where natural burrows are scarce. Threats to the burrowing owl include habitat degradation and loss due to urbanization, human-related mortality (such as vehicle collisions), pesticide poisoning, and predation.

Survey Results

A burrowing owl habitat assessment survey was completed on May 31, 2009, by ECORP biologists Don Mitchell and Brad Haley. During the habitat assessment survey, the impact area of the three proposed build alternative alignments, along with a 500-foot buffer were evaluated and mapped as one of three habitat suitability criteria (refer to Figures 24a through 24c). The survey began on the eastern end of the project area and worked west. In July 2009, the project footprint was increased with the addition of the detention basins. Most of the new project footprint was covered by the buffer zone. Areas that were not covered by the buffer zone were evaluated with aerial photographs and information of the vegetation communities obtained from other surveys. No CNDDB records of burrowing owl have been documented in the project vicinity.

The project area generally slopes north to south, generally from 0% to 5%. The survey area consisted of approximately 198 acres of suitable burrowing owl habitat. The project area consists of relatively open, desert scrub habitat. Throughout the survey area, the frequency of suitable burrows was low. California ground squirrel, badger, and coyote burrows, which burrowing owls tend to use after other animals vacate them, were also relatively low.

A total of four burrowing owls were observed within the project boundaries during the breeding season surveys. A total of five locations were recorded where suitable unoccupied owl burrows were present (see Figures 3.20.2 to 3.20.4).

The following guidelines were used to assess habitat suitability for the burrowing owl within the project area:

<u>Suitable Habitat</u>: native desert vegetation, non-native vegetation, disturbed native and non-native vegetation, debris piles (concrete and rocks), culvert pipe openings, historic agricultural fields (fallow), edges of agricultural fields, berms, edges of dirt detention basins.

<u>Marginal Habitat</u>: immediately adjacent to development (fence-line edges around buildings and yards).

<u>Unsuitable Habitat</u>: paved areas, building footprints, active agricultural fields (actual crop footprint), mechanically compacted soils, water features.

Burrows encountered during the survey were inspected for presence of owls and owl sign (feathers, whitewash, and pellets). The following table provides the habitat assessment results for each alternative alignment.

Table 3.20-2: Burrowing Owl Habitat Assessment Results

Habitat	Alternative 2 (acre)	Alternative 3 (acre)	Alternative 4 (acre)
Marginal	0.52	5.21	5.21
Suitable	740.29	661.66	686.33
Unsuitable	96.5	176.05	153.24
Grand Total	**837.31**	**842.92**	**844.78**

3.20.2.2 American Badger

American badger (*Taxidea taxus*) is listed as a state species of special concern. It is a nocturnal mammal that inhabits open grasslands and deserts. This species is a great digger and feeds mainly on rodents; ground nesting birds, and lizards. Females give birth to one to five young during the spring and take care of them in solitary.

Survey Results

Habitat for this species occurs throughout the proposed project area, specifically, undisturbed Creosote Bush Scrub and Atriplex Scrub habitat communities found throughout the BSA. However, no specific surveys were conducted for this species as they were not required because the badger is not state or federally listed. There was an incidental observation during the desert tortoise assessment.

3.20.2.3 Prairie Falcon

The prairie falcon *(Falco mexicanus)* is a California watch list species. Prairie falcons inhabit hills, canyons, and mountains of arid grasslands, and desert scrub habitats of southwestern Canada, western United States, Baja California, and northern Mexico. In the desert habitat, prairie falcons are found in all vegetation types, although sparse vegetation provides the best foraging habitat. The prairie falcon feeds primarily on small birds, small mammals, and reptiles. The prairie falcon requires sheltered cliff ledges for covered nesting sites.

Survey Results

Surveys for the prairie falcon were not conducted due to the lack of cliff edges and the marginal foraging habitat for the species within the project limits. Additionally, they were not required because prairie falcon is not state or federally listed.

3.20.2.4 Le Conte’s Thrasher

Le Conte’s thrasher (*Toxostoma lecontei*) is listed as a state species of special concern and a BLM sensitive species. Le Conte's thrasher is a widespread, but rare permanent resident in the western and southern San Joaquin Valley, upper Kern River Basin, Owens Valley, Mojave Desert, and Colorado Desert in southwestern United States. It occurs primarily in Joshua tree habitat with scattered shrubs, and may be found in desert wash, desert scrub, desert succulent shrub, and alkali desert scrub habitats.

Figure 3.20.2: Burrowing Owl Survey Area

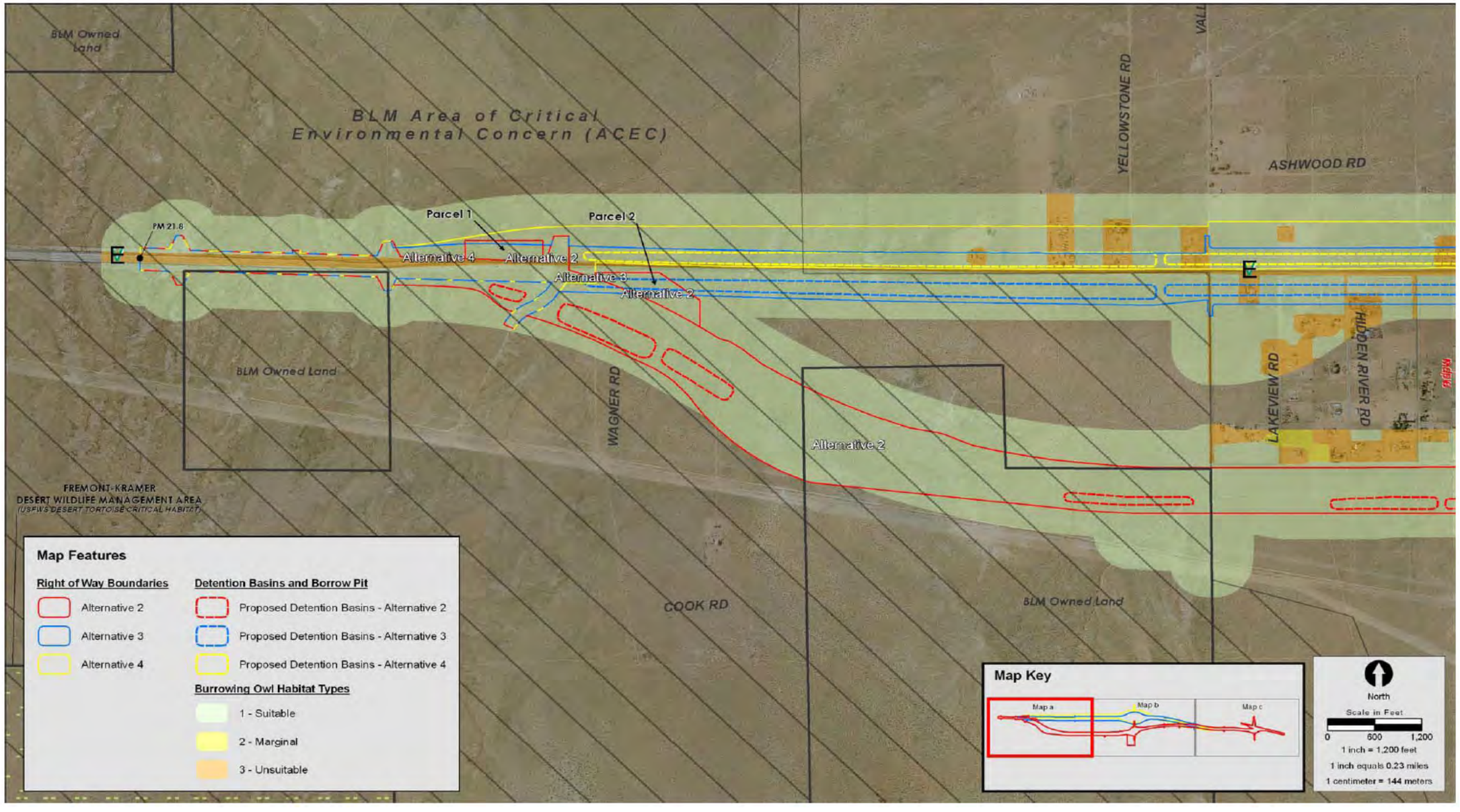

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Figure 3.20.3: Burrowing Owl Survey Area

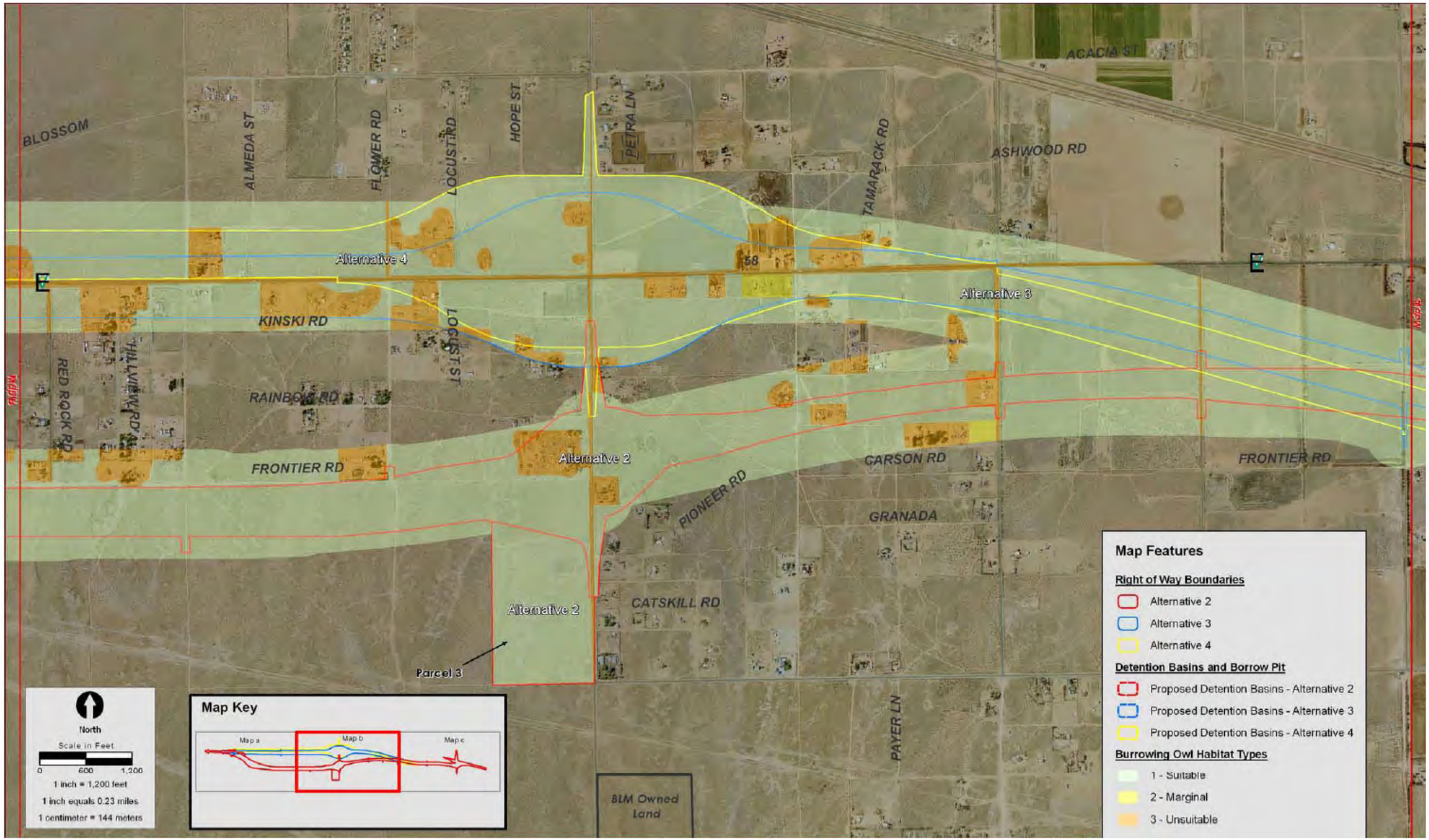

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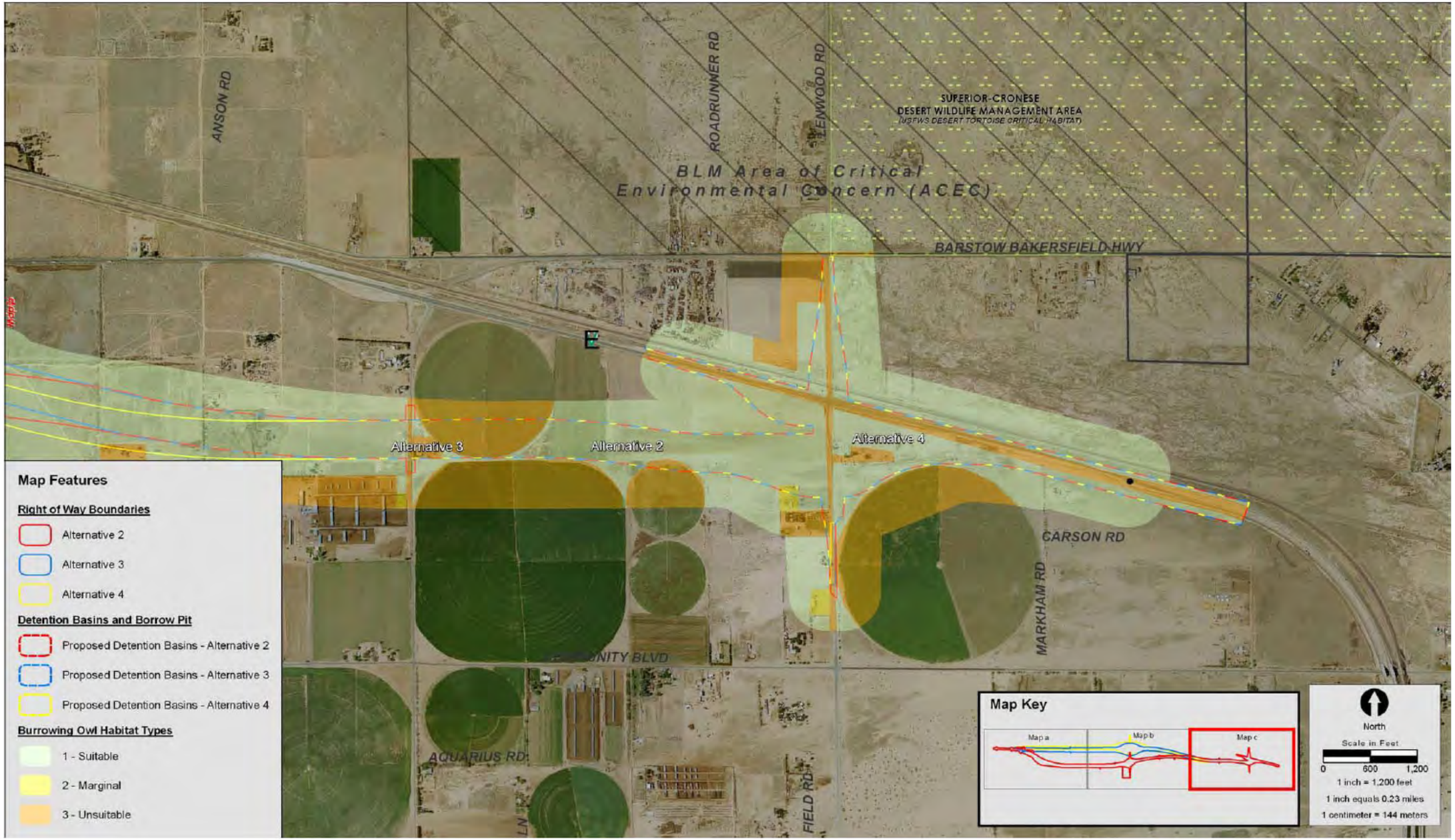
Figure 3.20.4: Burrowing Owl Survey Area



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Survey Results

No specific surveys were conducted for this species as they were not required because Le Conte's Thrashers is not state or federally listed as a threatened or endangered species. There was an incidental observation while conducting other surveys. Habitat for this species occurs throughout the proposed project area, specifically, undisturbed Creosote Bush Scrub and Atriplex Scrub habitat communities found throughout the BSA.

3.20.2.5 Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is listed as a state species of special concern. The loggerhead shrike lives in broken woodlands, savannah; pinyon-juniper, Joshua tree, and riparian woodlands, desert oasis, scrub and washes; where it feeds from small vertebrates and invertebrates that it impales on cactus.

Survey Results

No specific surveys were conducted for this species as they were not required because loggerhead shrike is not state or federally listed. There was an incidental observation while conducting other surveys for this project. Habitat for this species occurs throughout the proposed project specifically in Creosote Bush Scrub and Joshua tree woodland plant communities. This species is also known to occasionally nest in Joshua trees.

3.20.2.6 White-tailed Kite

The white-tailed kite (*Elanus leucurus*) is a California fully protected species list species. This whitish kite is a falcon shape with long pointed wings inhabits rolling foothills and valleys margins with scattered oaks and river bottomlands or marshes from upper Sacramento valley to San Diego.

Survey Results

There was an incidental observation of this species while conducting other surveys for this project. Foraging habitat for this species occurs throughout the proposed project, particularly in areas with a presence of small mammals, while nesting habitat for this species occurs in the upper portions of large trees not found within the BSA.

3.20.2.7 Cooper's Hawk

Cooper's hawk (*Accipiter cooperii*), a state species of special concern, has a black cap, with blue-gray upper parts and white under parts with fine, thin, reddish bars. This species inhabits broken woodlands, canyons, and groves. Its range is from Mexico to Canada.

Survey Results

No specific surveys were conducted for this species as they were not required because cooper's hawk is not state or federally listed. There was an incidental observation while conducting other surveys for this project. Foraging habitat for this species occurs throughout the proposed project where medium sized bird prey particularly mourning dove found throughout the BSA.

3.20.3 Environmental Consequences

3.20.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no permanent effects to special-status animal species would occur.

Build Alternatives 2, 3, and 4

Although impacts to species listed above would occur as a result of this project, these impacts are not expected to affect the species in a way that would lead the species to a trend toward listing under federal or state laws.

Burrowing Owl

Four burrowing owls were detected incidentally during the 2007 surveys. Several suitable burrow locations were detected during the habitat assessment survey as well as during the 2009 focused biological surveys. Suitable habitat for burrowing owl is present throughout the BSA, as owls inhabit various types of disturbed and native desert habitats. It is likely for burrowing owls to move into the proposed project area at various times of the year due to the migratory behavior of some burrowing owls.

Implementation of Alternative 2 would have the greatest impact on potential burrowing owl habitat since it has the greatest amount of burrowing owl habitat with 740.81 acres, followed by Alternatives 3 and 4 with 666.91 acres and 686.33 acres, respectively. All of the alternatives would result in the loss of occupied shelter and foraging habitat and/or the displacement of burrowing owls. However, with the implementation of all the applicable measures, direct affects to this species would be minimized.

American Badger

Alternative 2 has the potential to affect 549.75 acres of potential American badger habitat, followed by Alternative 4 with 427.31 acres, and Alternative 3 with 409.62 acres. Habitat fragmentation will occur with the highway widening under all alternatives, but is expected to be minimized by the installation of culverts along the project. With implementation of all applicable measures, direct affects to this species would be minimized.

Prairie Falcon

The proposed project area contains marginal foraging habitat for the prairie falcon. The terrain within the project limits is primarily flat, and lacks any mountain ranges that the prairie falcon requires for nesting and cover. Alternative 2 has the potential to affect 549.75 acres of foraging habitat, followed by Alternative 4 with 427.31 acres, and Alternative 3 with 409.62 acres. None of the build alternatives are anticipated to have a direct effect on the species.

This species will be protected under the avoidance and minimization measures in BIO-8 and BIO-9. These measures include preconstruction surveys throughout the project limits which includes construction, staging, storage, sign placement, and parking areas. If this species is found nesting, construction will stop within a minimum radius of 100 feet or as determined by the biological monitor.

Le Conte's Thrasher

Potential habitat for this species would be affected. Alternative 2 has the potential to affect 549.75 acres of potential habitat, followed by Alternative 4 with 427.31 acres, and Alternative 3 with 409.62 acres. This species will be protected under the avoidance and minimization measures in BIO-8 and BIO-9. These measures include preconstruction surveys throughout the project limits which includes construction, staging, storage, sign placement, and parking areas. If this species is found nesting, construction will stop within a minimum radius of 100 feet or as determined by the biological monitor.

Loggerhead Shrike

Potential foraging habitat for this species would be affected. Alternative 2 has the potential to affect 549.75 acres of potential habitat, followed by Alternative 4 with 427.31 acres, and Alternative 3 with 409.62 acres. This species will be protected under the avoidance and minimization measures in BIO-8 and BIO-9. These measures include preconstruction surveys throughout the project limits which includes construction, staging, storage, sign placement, and parking areas. If this species is found nesting, construction will stop within a minimum radius of 100 feet or as determined by the biological monitor.

White-tailed Kite

Nesting habitats for white-tailed kites primarily consist of oaks, river bottom lands, or marshes. There is no nesting habitat within the project limits. Potential foraging habitat for this species, which includes vegetated areas suitable for medium sized bird prey, would be affected. Alternative 2 has the potential to affect 549.75 acres of foraging habitat, followed by Alternative 4 with 427.31 acres, and Alternative 3 with 409.62 acres. This species will be protected under the avoidance and minimization measures in BIO-8 and BIO-9. These measures include preconstruction surveys throughout the project limits which includes construction, staging, storage, sign placement, and parking areas. If this species is found nesting, construction will stop within a minimum radius of 100 feet or as determined by the biological monitor.

Cooper's Hawk

There is no nesting habitat for this species within the project limits. Potential foraging habitat for this species, which includes vegetated areas suitable for medium sized bird prey, would be affected. Alternative 2 has the potential to affect 549.75 acres of potential foraging habitat, follow by Alternative 4 with 427.31 acres, and Alternative 3 with 409.62 acres. This species will be protected under the avoidance and minimization measures in BIO-8 and BIO-9. These measures include preconstruction surveys throughout the project limits which includes construction, staging, storage, sign placement, and parking areas. If this species is found nesting, construction will stop within a minimum radius of 100 feet or as determined by the biological monitor.

3.20.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no temporary effects to special-status animal species would occur.

Build Alternatives 2, 3, and 4

The proposed project would not include temporary access roads or staging areas outside the proposed project limits. All the work would be limited to the proposed fenced right-of-way. Construction activities could temporarily increase noise and dust in the area. These temporary impacts would be avoided and or minimized with the implementation of all the protective measures listed for these species. These temporary impacts to bird species would be also avoided by the implementation of the MBTA measures.

3.20.4 Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and/or mitigation measures would be applicable to Build Alternatives 2 through 4:

3.20.4.1 General Measures

- **BIO-6:** A biological monitor will monitor all construction activities to ensure that no harm to American badger will take place. All monitoring activities will be consistent with the monitoring measures listed in the avoidance and minimization measures for desert tortoise and Mohave ground squirrel.
- **BIO-7 See BIO-5:** All temporary staging areas, storage areas, and access roads involved with this project will be located in the area of permanent direct impact. Access to the project site will be gained from the existing SR-58. No new access roads will be built as part of this project. Staging areas and equipment storage will take place on existing roads or within the proposed right-of-way of the realigned SR-58.
- **BIO-8:** All measures will be taken to minimize impacts on nesting birds. A pre-construction sweep for nesting birds would be conducted prior to construction activities outside of the nesting season as well. The sweep will include areas used for construction, staging, storage, sign placement, and parking areas. If a migratory bird is detected during surveys construction will stop within a minimum radius of 100 feet or as determined by the biological monitor.

Avoidance and Minimization Measures

- **BIO-9:** A preconstruction survey of the project site for burrowing owl and other bird species protected by the MBTA will occur 30 days prior to commencing construction activities. See BIO-8 for measures required if nesting birds are identified during the preconstruction survey. Pursuant to the MBTA, and to avoid any impacts on migratory birds, vegetation removal must take place outside of the breeding season, which occurs between March 15 and September 15. If, due to construction schedules, it is necessary to remove vegetation, including trees, during this season, a biological construction monitor must perform a pre-

construction survey of each individual tree and/or of the entire area where vegetation will be removed. All measures will be taken to minimize impacts on nesting birds. A pre-construction sweep for nesting birds would be conducted prior to construction activities outside of the nesting season as well. The sweep will include areas used for construction, staging, storage, sign placement, and parking areas. If a migratory bird is detected during surveys construction will stop within a minimum radius of 100 feet or as determined by the biological monitor.

- **BIO-10:** If burrowing owls are found on site during the pre-construction sweep:
  - Occupied burrows will not be disturbed during the nesting season of February 1 to August 31, unless a biologist can verify through non-invasive methods that either the owls have not begun egg laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent flight.
  - A Burrowing Owl Mitigation and Monitoring Plan will be submitted to CDFG for review and approval prior to relocation of owls. All relocation will be approved by CDFG, and will be based on the mitigation and monitoring plan. The permitted biologist will monitor the relocated owls a minimum of three days per week for a minimum of three weeks. A report summarizing the results of the relocation and monitoring will be submitted to Caltrans within 30 days following completion of the relocation and monitoring of the owls.
  - Owls will be relocated by a qualified biologist from any occupied burrows that will be affected by project activities. Suitable habitat must be available adjacent to or near the disturbance site or artificial burrows will be provided nearby. Once the biologist has confirmed that the owls have left the burrow, burrows will be excavated using hand tools and backfilled to prevent reoccupation.

Compensatory Mitigation

If during preconstruction surveys a burrowing owl is encountered the following mitigation will be implemented:

- **BIO-11:** Replacement habitat for burrowing owl will be provided according to the ratios listed below and can be combined with the mitigation ratios required for other species, unless the land purchase under that mitigation does not comply with the conditions listed:
  - replacement of occupied habitat with occupied habitat at 1.5 times per 6.5 acres (9.95) per pair or single bird, or
  - replacement of occupied habitat with habitat contiguous with occupied habitat 2 times per 6.5 acres per pair or single bird (13), or
  - replacement of occupied habitat with suitable unoccupied habitat, as required by the mitigation plan, at 3 times per 6.5 acres (19.5) per pair or single bird.

3.20.4.2 American Badger

Avoidance and Minimization Measures

Compensatory Mitigation

The proposed project will not require compensatory mitigation for this species.

3.20.4.3 Prairie Falcon

Avoidance and Minimization Measures

No specific avoidance and minimization measures will be implemented for this species; protective measures (BIO-8 and BIO-9) will avoid any impact to this species.

Compensatory Mitigation

The proposed project will not require compensatory mitigation for this species.

3.20.4.4 Le Conte's Thrasher

Avoidance and Minimization Measures

No specific avoidance and minimization measures will be implemented for this species; protective measures (BIO-8 and BIO-9) will avoid any impact to this species.

Compensatory Mitigation

The proposed project will not require compensatory mitigation for this species.

3.20.4.5 Loggerhead Shrike

Avoidance and Minimization Measures

No specific avoidance and minimization measures will be implemented for this species; protective measures (BIO-8 and BIO-9) will avoid any impact to this species.

Compensatory Mitigation

The proposed project will not require compensatory mitigation for this species.

3.20.4.6 White-tailed Kite

Avoidance and Minimization Measures

No specific avoidance and minimization measures will be implemented for this species; protective measures (BIO-8 and BIO-9) will avoid any impact to this species.

Compensatory Mitigation

The proposed project will not require compensatory mitigation for this species.

3.20.4.7 Cooper's Hawk

Avoidance and Minimization Measures

No specific avoidance and minimization measures will be implemented for this species; protective measures (BIO-8 and BIO-9) will avoid any impact to this species.

Compensatory Mitigation

The proposed project will not require compensatory mitigation for this species.

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3.21 Threatened and Endangered Species

3.21.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC), Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the FHWA, are required to consult with the USFWS and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an Incidental Take statement. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct." (See Appendix H for USFWS Species List).

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code; Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species populations and their essential habitats. The CDFG is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

3.21.1.1 Local Regulations

Habitat Conservation Plans

The West Mojave Plan (WEMO) is a habitat conservation plan and federal land use plan amendment that (1) presents a comprehensive strategy to conserve and protect the desert tortoise, MGS, and over 100 other sensitive plants and animals and the natural communities of which they are a part, and (2) provides a streamlined program for complying with the requirements of CESA and FESA, respectively (BLM 2005). The WEMO was implemented by BLM, San Bernardino County, and the city of Barstow.

The 9.4 million-acre planning area encompasses most of California's western Mojave Desert. It extends from Olancha in Inyo County on the north to the San Gabriel and San Bernardino Mountains on the south, and from the Antelope Valley on the west to the Mojave National Preserve on the east. About one third of the planning area is private land, another third is within military bases, and the final third consists of public lands managed by the BLM (BLM 2009).

Desert Wildlife Management Areas and Critical Habitat

As an integral part of the 1994 Recovery Plan for the Desert Tortoise, six recovery units were designated within the six million acres of habitat throughout the Mojave Desert. Within each recovery unit, one to four Desert Wildlife Management Areas (DWMAs) DWMAs were designated to promote and manage desert tortoise recovery in specific areas within the recovery units. Each recovery unit was selected based on ecological, genetic, morphological, and behavioral data collected in different desert tortoise population areas throughout the range in California, Nevada, Arizona, and Utah. Recovery Units are crucial in providing the populations to support the potential recovery of the species.

The Desert Tortoise Recovery Team is comprised of many members working toward de-listing the Mojave population of desert tortoise through the WEMO. The plan divides the range of the desert tortoise into six distinct population segments, or recovery units, and recommends establishment of 14 DWMAs throughout the recovery units. Within each DWMA, the recovery plan recommends implementation of reserve level protection of Mojave Desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions. USFWS established a final ruling on Critical Habitat for the desert tortoise on February 8, 1994.

3.21.2 Affected Environment

Unless otherwise noted, the information from this section was synthesized from the NES prepared for the proposed project (Caltrans 2010). References used in the NES are not carried over into this section.

In order to comply with the provisions of various state and federal environmental statutes and executive orders, the potential impacts to natural resources of the region were investigated and documented. A list of species and habitats within the project region was developed based on information compiled by the USFWS, CNDDB, and other current publications. The project site

was field reviewed to identify habitat types, potential wetlands, potential for rare species, sensitive water quality receptors, and potential problem areas for the study. Table 3.21-1 identifies plants and animals that may potentially be present and the protection status afforded to them under the FESA and CESA. In summary, two of the listed species initially considered to have potential for occurrence were found present–desert tortoise and Mohave ground squirrel.

3.21.2.1 Desert Tortoise

The desert tortoise is listed as threatened under the CESA and FESA due to the decline of population and the threat of habitat destruction. Figures 3.21.2.1 through 3.21.2.3 show the proposed project area relative to publicly managed lands with the purpose and intent of protecting and maintaining the populations of desert tortoise in the Fremont-Kramer critical habitat area of the WEMO. The BLM and U.S. Air Force manage public lands adjacent to the proposed project site.

Desert tortoise range has declined due to several factors including: habitat loss due to human-related activities, disease caused by reintroduction efforts and other contamination by humans, illegal collection, road kills, habitat degradation by invasive plants, and predation on tortoises by dogs and juvenile tortoises by ravens. Other factors influencing the Mojave Desert populations of the desert tortoise are described by the road corridor or road-effect zone. These terms are used to describe the directly surrounding area that is influenced by the road and vehicle traffic along a travel route. The road-effect zone is defined as an area of depressed population of desert tortoise within 1,312 feet of an existing roadway. Those desert tortoises living within this distance of a roadway tend to be killed along the roadway.

Desert tortoises are associated with Mojave creosote bush scrub plant series, succulent scrub, cheesebush scrub, blackbush scrub, hopsage scrub, shadscale scrub, microphyll woodland, and Mojave saltbush-allscale scrub vegetation communities. Desert tortoises prefer loamy substrate, southwest exposures, and areas with relatively higher plant coverage. They typically inhabit flats, gently sloping terrain, valleys and bajadas, washes, rocky hillsides, and open flat desert areas with sandy to sandy-gravel soils that offer suitable substrates for burrowing and nesting ranging from an approximate elevation of 2,000 to 3,300 feet amsl, and have also have been occasionally found above approximately 4,000 feet amsl. Desert tortoise burrows may typically be found in wash areas, but the risk of flash flooding poses a threat to existence during the rainy season.

West Mojave Plan, Desert Wildlife Management Areas and Critical Habitat

The BSA lies between two DWMAs within the West Mojave Recovery Unit. The Fremont-Kramer DWMA occurs to the west, and to the northeast is Superior-Cronese DWMA, as identified in the 1994 Desert Tortoise (Mojave Population) Recovery Plan and the 2008 Draft Revised Recovery Plan for the Mojave Population of the Desert Tortoise. These critical habitat areas are also part of the West Mojave Plan planning effort for the protection of desert tortoises and other species. The BLM designates categories for desert tortoise habitat based on the quality of habitat, quantity of tortoises present, and the BLMs ability to manage the land without too many resource conflicts. The USFWS (2002) *Field Survey Protocol for Any Federal Action that May Occur within the Range of the Desert Tortoise* explicitly states that the BLM does not categorize lands that it does not manage including military reservations and private lands. Based

Table 3.21-1: Listed Species Potentially Occurring or Known to Occur in the Project Area

Scientific Name Common Name	Status		Habitat Present (P)/ Absent (A)	Rationale
REPTILES				
Gopherus agassizi Desert tortoise	Fed: CA: CNPS: BLM:	THR THR None None	P/Inhabits almost any desert habitats with friable soils for burrow and nest construction.	Observed in BSA during previous biological surveys (ECORP 2007).). Previous records exist within the BSA (CDFG 2009).).
FISH				
Gila bicolor mohavensis Mohave tui chub	Fed: CA: CNPS: BLM:	END END None None	A/Mojave River in deep pools	No suitable habitat is present within the BSA.
BIRDS				
Charadrius alexandrinus nivosus Western snowy plover	Fed: CA: CNPS: BLM:	THR CSC None None	A/Found on beaches and dry mud or salt flats around rivers, ponds, and lakes.	No suitable habitat is present within the BSA. One 1978 record exists within 10 miles of BSA at Harper Dry Lake (CDFG 2009).
Coccyzus americanus occidentalis Western yellow-billed cuckoo (nesting)	Fed: CA: CNPS: BLM:	FC END None SS	A/Prefers lower, flood-bottoms of larger river-systems with willows, cottonwoods, and dense understory of nettle, wild grape, or blackberry.	No suitable habitat is present within the BSA.
Rallus longirostris yumanensis Yuma clapper rail	Fed: CA: CNPS: BLM:	END THR/ FP None None	A/Found in fresh-water marshes or brackish stream-sides dominated by cattail or bulrush. Associated with heavy riparian and swamp vegetation.	No suitable habitat is present within the BSA.
MAMMALS				
Spermophilus mohavensis Mohave ground squirrel	Fed: CA: CNPS: BLM	None THR None None	P/Found in desert scrub, alkali scrub and Joshua tree woodland habitats with winterfat and spiny hopsage present.	Captured during focused Mohave ground squirrel trapping within the BSA (ECORP 2007). Previous records exist within 5 miles of the BSA (CDFG 2009).

Federal Designations (Federal Endangered Species Act, USFWS)**: END:** federal-listed, endangered **THR**: federal-listed, threatened **SOC**: USFWS Species of Concern

State Designations: (California Endangered Species Act, CDFG) **END**: state-listed, endangered **THR**: state-listed, threatened, **CSC** California Species of Concern, **WL** Watch List, **FP** fully protect.

Potential for Occurrence Criteria:

Present: Species was observed on site during a site visit or focused survey.

High: Habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been recorded within 5 miles of the site.

Moderate: Either habitat (including soils and elevation factors) for the species occurs on site and a known occurrence occurs within the database search, but not within 5 miles of the site; or a known occurrence occurs within 5 miles of the site and marginal or limited amounts of habitat occurs on site.

Low: Limited habitat for the species occurs on site and a known occurrence occurs within the database search, but not within 5 miles of the site, or suitable habitat strongly associated with the species occurs on site, but no records were found within the database search.

Unlikely: Species was found within the database search, but habitat (including soils and elevation factors) do not exist on site or the known geographic range of the species does not include the survey area.

Source: Caltrans 2010.

on the tortoise surveys, it is evident that the western portion of the BSA may exist as a connectivity corridor between two Category 1 DWMAs: Superior-Cronese to the east and Fremont-Kramer to the west.

A portion of the western end of the BSA and Alternative 2 are within BLM-owned lands. Overall, Alternative 2 contains 112.1 acres of BLM owned lands, and Alternatives 3 and 4 contain less than three acres each. The BSA west of Valley View Road is within a BLM ACEC associated with the Superior-Cronese DWMA. Overall, Alternative 2 contains 261.5 acres of the BLM ACEC, Alternative 3 contains 178.1 acres, and Alternative 4 contains 129.6 acres.

Survey Results

The protocol desert tortoise presence/absence Zone of Influence (ZOI) survey of Alternative 2 was conducted from May 4 to 7, 2009, by ECORP biologists according to the *Field Survey Protocol for Any Federal Action that May Occur within the Range of the Desert Tortoise* (USFWS 1992). There were no survey limitations indicated for the desert tortoise presence/absence surveys conducted in the project area in 2009, and the surveys established that desert tortoises are present in the project area. The project footprint was changed in July 2009 due to the incorporation of detention basins. The new areas were surveyed as part of the ZOI but were not surveyed following the existing desert tortoise protocol survey.

Although a new desert tortoise survey protocol was approved in 2009, the 1992 USFWS survey protocol was used in order to compare results with those of the previous surveys conducted in 2001 by AMEC and 2007 by ECORP.

The 2001 AMEC tortoise surveys of Alternative 2 were considered invalid for comparison against 2007 tortoise surveys of Alternatives 3 and 4. Special attention was required in order to remain consistent with the 2007 ECORP report as far as the methodology for calculating TCS and for presenting the survey results on maps with the 2009 survey results. This was necessary in order to fairly compare the proposed alternatives for CEQA requirements. Table 3.21-2 compares the desert tortoise survey results within each of the alternatives from the 2007 and 2009 surveys. During the protocol desert tortoise survey of Alternative 2, 16 live tortoises and 622 pieces of desert tortoise sign (e.g., scat, carcasses, and tracks) were located.[1] In addition, ten live tortoises were located incidentally during other 2009 biological surveys conducted in the BSA.

Table 3.21-2: Desert Tortoise Survey Results within each Original Alternative Footprint

	Original Alternative 2[1]	Original Alternative 3[2]	Original Alternative 4[3]
Total Sign	442	26	54
Total Corrected Sign	150	21	28
Acres Surveyed	277.5	187.3	245.5
Total Corrected Sign Per Acre[1]	0.54	0.11	0.11

[1] Total Corrected Sign (TCS)/Acre = TCS per acre
[2] Source: ECORP Consulting, Inc. 2009 in Caltrans 2010.
[3] Source: ECORP Consulting, Inc. 2007 in Caltrans 2010.

[1] In consultation with USFWS and CDFG, this number was corrected to 240 pieces of sign.

The Fremont-Kramer and Superior-Cronese DWMAs, as designated by USFWS, are located west of and east of the proposed project area, respectively. These critical habitat areas are also part of the West Mojave Plan planning effort for the protection of desert tortoises and other species.

There is a much greater presence of tortoise activity in the western half of the BSA, closest to the Fremont-Kramer DWMA, likely due to the lower levels of development and disturbance. Based on the tortoise surveys, it is evident that the western portion of the BSA may exist as a connectivity corridor between two Category 1 DWMAs: Superior-Cronese to the east and Fremont-Kramer to the west.

The 2009 survey year was a better year to conduct surveys for tortoises than 2007 because of increased rainfall and associated high growth of available food resources. When testing environmental stress levels on tortoise populations in semi-natural enclosed areas by fluctuating resource availability, this study found that tortoises will attempt to compensate for lack of water and food resources by increasing amounts of movement and feeding time while active and will decrease the length of time above ground. The results of this study may be applied to the tortoises observed during the 2007 surveys. This may have been an effort to lower metabolism and rate of water loss. Unlike the live tortoise observations in 2007, during which nine of 11 tortoises observed were inside or within ten feet of their burrows, most of the tortoises observed (10 of 16) in 2009 were foraging or traveling. Had Alternatives 3 and 4 been surveyed in 2009, more tortoises may have been observed utilizing the habitat present within each of those alternatives.

Potentially, three of the fresh mortalities observed during the 2009 focused tortoise survey may have been observed alive prior to the focused survey incidental to other surveys.

Unsurveyed Areas

It is expected that a similar density of desert tortoises found during 2007 and 2009 surveys would be present within the updated alternatives if further desert tortoise surveys were conducted, due to the similar habitat located in the updated alternatives. Within each of the alternatives, 718.4 acres of creosote bush scrub, atriplex scrub, and disturbed atriplex scrub were surveyed because they provide habitat for desert tortoise. Within the updated alternatives, 833.3 acres of suitable habitat was not surveyed at the realigned Hinkley Rd Interchange and the detention basin locations, but due to similar habitat it has been assumed that desert tortoise is present in agreement with USFWS and CDFG.

3.21.2.2 Mohave Ground Squirrel

The Mohave ground squirrel (MGS) is listed as threatened under CESA and is endemic to California, limited to a geographic range in the western Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo Counties in California. Studies indicate that the optimal habitat types for the MGS include plant communities that harbor spiny hopsage (*Grayia spinosa*) and winterfat (*Krascheninnikovia lanata*), including creosote bush scrub, xerophytic saltbush, and Joshua tree woodland communities. Mohave ground squirrels have been found at elevations ranging from 1,800 to 5,000 feet amsl. The MGS has the smallest geographic range of the seven *Spermophilus* ground squirrels in California: an estimated 7,691 square miles in the western Mojave Desert on federal, state, and private lands.

Threats to MGS populations include agricultural development, grazing, off-road vehicle use, and other human disturbances. Overall, about 10% of the habitat for MGS has deteriorated due to development (agricultural, residential, industrial, and commercial), with more of that habitat being lost as development spreads rapidly in the southern part of their range.

The northeast corner of Edwards Air Force Base (near intersection of SR-58 and U.S. 395 [Kramer Junction] is one of the identified core population areas for MGS and is located approximately 15 miles west of the project site.

Survey and Trapping Results

All MGS trapping performed along SR-58 was conducted under the *CDFG Mohave Ground Squirrel Survey Guidelines*, and the *MOU* for the project held by Don Mitchell. Grids of 100 traps were typically arranged in four lines of 25 traps each and spaced 114.8 feet apart, covering a total area of approximately 21.7 acres. Each MGS grid was 2,756 feet long by 344 feet wide.

Twelve grids were trapped during the 2007 inventory. Each grid location was maintained for five consecutive days during Sessions 1 and 2, for a total of 1,000 trap-days per grid. Throughout the project, the Memorandum of Understanding (MOU) holder Donald R. Mitchell consulted with CDFG for concurrence with the study design. In consultation with CDFG trapping was halted on grids south of SR-58 following capture of MGS.

The timeframe for conducting live-trapping inventories for MGS is typically performed within three sessions: Session 1 is held between March 15 and April 30; Session 2 is held between May 1 to May 31; and Session 3 is held between June 15 and July 15. Because it was an uncharacteristically low rainfall year during the 2006-2007 winter season, and because MGS will not reproduce and may enter aestivation as early as April or May during low rainfall years, a third trapping session was not conducted following consultation with the CDFG. Instead, more grids were surveyed than would have been required for a linear project of this size for a three session survey.

Three different species of squirrel were captured during this project: white-tailed antelope ground squirrel (AGS), Mohave (MGS), and round-tailed ground squirrel (RTGS). A total of one MGS, 393 AGS, and 25 RTGS were captured during this inventory. The western end of Grid 1 produced the only capture of an MGS on the project site. An adult female MGS was captured twice on May 4, 2007 at Traps A6 and C7. The location of the capture was in an area where all three build alternatives share the same footprint. Therefore, the presence of the MGS is associated with Alternatives 2, 3, and 4.

Weather during the study was typical to the Mojave Desert ecosystem; high temperatures and wind events. The average temperature during the first session was 63.3°F and 71.5°F in the second session. An afternoon rain event on April 20, 2007, forced MGS biologists to close the traps early. The first day that traps were closed due to excessive heat (90°F) was on April 6, 2007 for Grids 2 and 3. During most of the second session trapping, the temperatures reached 90°F by late morning. Several of the days during the first session involved high winds and associated dust storms. April 12, 2007, had winds exceed 40 mph, forcing MGS biologists to close traps during that event, then later reopen after winds had calmed down.

3.21.2.3 Federal and Resource Agency Consultation

The only federal listed species present within the project limits is the desert tortoise. All avoidance, minimization, and mitigation measures proposed in this document were coordinated with USFWS representatives. A BO was obtained on June 22, 1990. Due to project scope changes it was determined that a new BO from USFWS is needed. A Biological Assessment (BA) is currently being prepared and will be submitted to USFWS. Below is a list of project coordination milestones with USFWS:

- 02/20/1990: Biological Assessment submitted.
- 06/22/1990: Biological Opinion obtained. (An environmental document for this project, previously approved in 1990, led to a Biological Opinion from USFWS.)
- 11/08/2007: An invitation was sent to the Ventura office requesting the agency's involvement as a cooperating and/or participating agency; no response was received in return. Participating Agency status assigned.
- 08/27/2009: Meeting with Ray Bransfield (USFWS) to discuss mitigation ratios and installation of desert tortoise fencing. It was determined that desert tortoise fencing will be located outside the detention fencing.
- 09/22/2009: Meeting with Ray Bransfield (USFWS), Tonya Moore (CDFG), Eric Weiss (CDFG), and Becky Jones (CDFG): follow up discussion from previous meetings pertaining to culvert design, raven monitoring as part of the desert tortoise monitoring, and mitigation ratios for the proposed project.

Ongoing coordination with CDFG took place during the preparation of the NES. In compliance with the CESA, an incidental take permit for loss of habitat of the desert tortoise and Mohave ground squirrel will be sought through the CDFG. Mitigation agreements being proposed for this project are to mitigate impacts in all areas of the project at different mitigation ratios depending on the individual area's potential to support desert tortoise and Mohave ground squirrel; and location relative to Hinkley Road. Areas east of Hinkley road that contain desert tortoise and Mohave ground squirrel habitat are to be mitigated at a mitigation ratio of 3:1. Areas west of Hinkley road that contain desert tortoise and Mohave ground squirrel habitat are to be mitigated at a mitigation ratio of 5:1. Below is a list of project coordination milestones with CDFG:

- 03/12/1990: CDFG approval of project. An environmental document for this project, previously approved in 1990, led to CDFG approval.
- 11/14/2007: An invitation was sent to the Ontario office requesting the agency's involvement as a cooperating and/or participating agency; no response was received. Consideration as a Participating Agency has expired.
- 09/22/2009 - Meeting with Ray Bransfield (USFWS), Tonya Moore (CDFG), Eric Weiss (CDFG), and Becky Jones (CDFG): Follow up discussion from previous meetings pertaining to culvert design, raven monitoring as part of the desert tortoise monitoring, and mitigation ratios for this project.

3.21.3 Environmental Consequences

3.21.3.1 Permanent Impacts

The table below identifies the permanent impacts and mitigation requirements for the desert tortoise and Mohave ground squirrel throughout all alternatives. Further explanation for the impacts is given below by alternative.

Table 3.21-3: Impact Area/Mitigation Ratios

Alternative	Area Affected Mitigation Ratio 3:1[2] (acre)	Area Affected Mitigation Ratio 5:1[1] (acre)	Total Affected Area (acre)	Total Mitigation Area (acre)
2	120.20	429.51	549.71	2,508.27
3	133.06	276.56	409.62	1,781.98
4	146.81	280.50	427.31	1,842.93

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no permanent impacts to threatened and endangered species would occur.

Alternative 2—Southerly Alternative

Desert Tortoise

Alternative 2 would have the greatest effect on the desert tortoise population. Generally there is much less disturbance along Alternative 2, which accounts for more tortoise habitat that could be affected (refer to Table 3.21-2). Alternative 2 contains the most desert tortoise habitat with approximately 311.5 acres within the footprint that was surveyed. Project activities that may directly affect the Desert Tortoise include construction and use of temporary access roads, detour roads, work off the paved roadway, and use of staging/storage areas; 2) potential harassment through handling and relocation of individual Desert Tortoises found within the work area prior to or during construction activities; and 3) potential direct mortality resulting from Project construction activities.

Implementation of Alternative 2 would result in the installation of desert tortoise fencing along the right-of-way limits; therefore, this would result in a permanent loss of desert tortoise habitat. Table 3.21-3 summarizes the impact areas for Alternative 2 and the total mitigation area required. Of all the build alternatives, Alternative 2 has the best quality habitat for desert tortoise (habitat west of Hinkley Road).

Alternative 2 would have an impact on WEMO populations identified within the Area of Critical Environmental Concern.

Alternative 2 has the potential to increase habitat fragmentation since it would introduce a new, elevated freeway in the area. This impact would be minimized with the inclusion of culverts designed to allow the desert tortoise and other animal species go through them. Alternative 2

[2] See Section 3.21.4 for more information regarding mitigation ratios

contains areas that are wider than Alternatives 3 and 4. The Mojave River is present east of the project site; the river constitutes a natural corridor for wildlife minimizing the habitat fragmentation. Habitat fragmentation is considered to be more intense under Alternative 2 than Alternatives 3 and 4.

Although it has been documented that desert tortoises feed on certain invasive species, it is expected that introduction of these species would affect the availability of native species that are more palatable for the desert tortoise. Alternative 2 is expected to contribute more to this impact than Alternatives 3 and 4 since it is located in less disturbed habitat.

Based on the road-effect zone, Alternative 2 would have a more intense impact in this regard since it is located within less disturbed habitat and surveys detected greater presence of desert tortoise sign. Alternative 3 and 4 would have similar levels of impact since they are located close to the existing SR-58 alignment.

Alternative 2 includes the construction of two new intersections at Lenwood Road and Hinkley Road. These new intersections may induce commercial development around them. The impact is expected to be limited only to the vicinity of the interchanges and would not expand to other areas.

Mohave Ground Squirrel

Impacts to this species will be similar to the impacts described for the desert tortoise. Impact area and mitigation ratios are summarized in Table 3.21-3. Alternative 2 would have the largest permanent MGS habitat loss 2,508.27 acres, follow by Alternative 4 with 1,842.93 acres, and Alternative 3 with 1,781.98 acres. Any existing disturbances such as roads, railroad tracks, and buildings were subtracted from the total. Habitat degradation due to the introduction of invasive species is also expected to be largest for Alternative 2 than for Alternatives 3 and 4.

Since this species is more mobile it is expected that the habitat fragmentation caused by any of the build alternatives would be less severe than for desert tortoise. Proposed culverts are expected to offset this impact.

Alternative 2 is located within less disturbed habitat; therefore, potential commercial growth may be greater than Alternatives 3 and 4, which are both located in previously disturbed areas. Impacts are expected to be limited only to the vicinity of the interchanges and would not expand to other areas.

Alternative 3—Existing Alignment

Desert Tortoise

Table 3.21-3 summarizes the impact areas for Alternative 3 and the total mitigation area required. Alternative 3 would result in the least amount of impact area with a total 409.62 acres, followed by Alternative 4 with 427.31 acres. Alternatives 3 and 4 have a similar quantity of better quality habitat for this species.

Similar to Alternative 2, Alternative 3 would have an impact on WEMO Populations identified within the Area of Critical Environmental Concern. Project activities that may directly affect the Desert Tortoise include construction and use of temporary access roads, detour roads, work off the paved roadway, and use of staging/storage areas; 2) potential harassment through handling and relocation of individual Desert Tortoises found within the work area prior to or during construction activities; and 3) potential direct mortality resulting from Project construction activities.

Alternative 3 also has the potential to increase habitat fragmentation since it would introduce a new, elevated freeway in the area. This impact would be minimized with the inclusion of culverts designed to allow this and other animal species go through them. Habitat fragmentation is considered to be less intense under Alternative 3 than Alternative 2.

Although it has been documented that desert tortoises feed on certain invasive species, it is expected that introduction of these species would affect the availability of native species that are more palatable for the desert tortoise. Alternative 2 is expected to contribute more to this impact than Alternative 3 since it is located in less disturbed habitat.

Based on the road-effect zone, Alternatives 3 and 4 would have similar levels of impact since they are located close to the existing SR-58 alignment. Alternative 2 would have the most intense impact since it is located within less disturbed habitat.

All of the build alternatives include two intersections at Lenwood Road and Hinkley Road. These new intersections may induce commercial development around them. Impacts are expected to be limited only to the vicinity of the interchanges and would not expand to other areas.

Mohave Ground Squirrel

Impacts to this species would be similar to the impacts described for the desert tortoise. Impact area and mitigation ratios are summarized in Tables 3.21-3. Alternative 3 would result in the least amount of impact area with a total of 409.62 acres, followed by Alternative 4 with 427.31 acres. Any existing disturbances such as roads, railroad tracks, and buildings were subtracted from the total. Habitat degradation due to the introduction of invasive species is also expected to be less for Alternatives 3 and 4 compared to Alternative 2.

Since this species is more mobile it is expected that the habitat fragmentation caused by any of the alternatives would be less severe than for desert tortoise. Proposed culverts are expected to offset this impact.

Alternative 3 is located in previously disturbed areas, therefore, potential impacts to existing habitat from future growth would be less than Alternative 2 and similar to Alternative 4. Impacts would be expected to be limited only to the vicinity of the interchanges and would not expand to other areas.

Alternative 4—Northerly Alternative

Desert Tortoise

Table 3.21-3 summarizes the impact areas for Alternative 4 and the total mitigation area required as a result of this impact. Alternative 4 would result in the least amount of impact area with a total of 427.31 acres.

Similar to Alternatives 2 and 3, Alternative 4 would have an impact on WEMO Populations identified within the Area of Critical Environmental Concern. Project activities that may directly affect the Desert Tortoise include construction and use of temporary access roads, detour roads, work off the paved roadway, and use of staging/storage areas; 2) potential harassment through handling and relocation of individual Desert Tortoises found within the work area prior to or during construction activities; and 3) potential direct mortality resulting from Project construction activities.

Alternative 4 also has the potential to increase habitat fragmentation since it would introduce a new, elevated freeway in the area. This impact would be minimized with the inclusion of culverts designed to allow this and other animal species go through them. Habitat fragmentation is considered to be less intense under Alternative 4 than Alternative 2, but similar to Alternative 3.

Although it has been documented that desert tortoises feed on certain invasive species, it is expected that introduction of these species would affect the availability of native species that are more palatable for the desert tortoise. Alternative 2 is expected to contribute more to this impact than Alternative 4 since it is located in less disturbed habitat.

Based on the road-effect zone, Alternatives 4 and 3 would have similar levels of impact since they are located close to the existing SR-58 alignment. Alternative 2 would have the most intense impact since it is located within less disturbed habitat.

All the build alternatives include two intersections at Lenwood Road and Hinkley Road. These new intersections may induce commercial development around them. Impacts would be expected to be limited only to the vicinity of the interchanges and would not expand to other areas.

Mohave Ground Squirrel

Impacts to this species would be similar to the impacts described for the desert tortoise. Impact area and mitigation ratios are summarized in Tables 3.21-3. Alternative 4 would result in the least amount of impact area with a total of 427.31 acres. Habitat degradation due to the introduction of invasive species is also expected to be similar to Alternative 3 and less than Alternative 2.

Since this species is more mobile it is expected that the habitat fragmentation caused by any of the alternatives would be less severe than for desert tortoise. Culverts proposed for this project are expected to offset this impact.

Alternative 4 is located in previously disturbed areas, therefore, potential impacts to existing habitat from future growth would be less than Alternative 2 and similar to Alternative 3. Impacts are expected to be limited only to the vicinity of the interchanges and would not expand to other areas.

3.21.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no short-term impacts to threatened and endangered species would occur.

Build Alternatives 2, 3, and 4

All construction activities would take place within the proposed right-of-way once the project area is considered cleared of desert tortoise. No temporary roads or staging areas would be located outside the fenced right-of-way. Temporary impacts such a noise or dust would be minimized with the listed avoidance and minimization measures in Section 3.21.4 and therefore are expected to be minimal.

3.21.4 Avoidance, Minimization, and/or Mitigation Measures

3.21.4.1 Desert Tortoise

The following measures will be implemented to minimize impacts on desert tortoise habitat:

- **BIO-12:** All personnel involved in the construction project will receive desert tortoise protection training. Training will include discussion of the fragility of desert habitats, the importance of the desert tortoise to the environment, the protections afforded to the desert tortoise by FESA and CESA, and the protocols set by the CDFG and USFWS to follow should a desert tortoise be encountered.
- **BIO-13:** Copies of the biological opinion for this project and Caltrans' brochure *Protection of the Desert Tortoise* will be maintained at the worksite by the project Resident Engineer.
- **BIO-14:** Project personnel will carefully check for desert tortoises under parked vehicles or equipment before moving them. Desert tortoises found within the parking, traffic, or construction areas will be moved by an authorized handler to a location away from danger and only as specified in the Biological Opinion.
- **BIO-15:** Permanent desert tortoise exclusion fencing will be placed along the proposed project length prior to surface disturbance to prevent encounters with desert tortoise during construction activities. Pre-construction sweeps within the proposed project site will be conducted before construction, to ensure that desert tortoises are absent from the project area. Additionally, biological monitors will be on site during construction of the desert tortoise exclusion fencing. Upon completion of construction of the desert tortoise exclusion fencing, an on-call biologist will be available should desert tortoise be encountered during construction activities.
- **BIO-16:** All desert tortoises sighted within the proposed project area must be immediately reported to the project Resident Engineer, and construction activity jeopardizing the tortoise must be halted until the approved USFWS biologist is able to relocate the animal to a location away from danger and only as specified in the Biological Opinion. If a desert

tortoise is injured or killed, the Resident Engineer and authorized biologist must be notified, the injury or death documented, and the animal taken to a qualified veterinarian or the carcass removed by the authorized biologist.

- **BIO-17:** All construction activities will be confined within the project footprint. All material area, equipment storage areas, construction shacks, or other facilities related to the construction project must be within the desert tortoise–fenced project footprint. At no time will equipment or personnel be allowed within the ESA discussed in Bio-15.
- **BIO-18:** An authorized biologist must approve the borrow sites and haul roads prior to use. The contractor will demonstrate that they have obtained the required permits for borrow sites outside of the Caltrans right-of-way.
- **BIO-19:** No overnight hazards to desert tortoise will be left unfenced or uncovered; such hazards will be eliminated each day prior to the work crew leaving the site.
- **BIO-20:** Litter will be contained in containers to prevent attracting common ravens or potential predators of the desert tortoise.
- **BIO-21:** Vegetation removal will be minimized to the fullest extent possible. Any grubbing and clearing of vegetation will be monitored or inspected prior to clearing by a Caltrans biologist or qualified consultant biologist under Caltrans' direction.
- **BIO-22:** Dust will be controlled, as stipulated in CT Standards and Specifications, and discussed in section 3.14 Air Quality.
- **BIO-23:** All drainages will be designed with a flat bottom to allow desert tortoise to use them as a crossing.
- **BIO-24:** No firearms or pets will be allowed at the work area. Firearms carried by authorized security and law enforcement personnel are exempt from this term and condition.
- **BIO-25:** Pre-construction surveys will be conducted to ensure that no unexpected threatened or endangered species of animals exist within the project area. If during pre-construction surveys any listed animal species is discovered, consultation with CDFG and USFWS will be reinitiated to implement the appropriate avoidance, minimization, and/or mitigation measures.

3.21.4.2 Mohave Ground Squirrel

In addition to the measures listed above for desert tortoise, the following measures will be implemented to protect MGS:

- **BIO-26:** A biological monitor will ensure that all construction activities will not harm MGS.
- **BIO-27:** MGS awareness training will be provided prior to construction. All construction related vehicles, including private automobiles parked in staging areas, must be inspected prior to ignition to ensure that MGS have not moved underneath the parked vehicle. Inspection flags will be placed on heavy equipment at the end of the day to remind drivers to look under them prior to startup.

- **BIO-28:** If any MGS are excavated during construction, work must stop in the immediate area and the project biologist and the RE will be immediately notified.
- **BIO-29:** If any MGS are injured during the course of construction, work must stop in the immediate area and the project biologist and the RE will be immediately notified. Only the authorized biologist will handle, and transport the animal to a qualified veterinarian.
- **BIO-30:** If any MGS are killed during the course of construction, work must stop in the immediate area, the animal must be left in place as is, and the project biologist and the RE will be immediately notified.

Compensatory Mitigation

These mitigation ratios for desert tortoise and Mohave ground squirrel can be combined as long as land containing habitat for both species can be found for purchase.

Desert Tortoise

- **BIO-31:** Mitigation for loss of marginal desert tortoise habitat will be accomplished based on the quality of habitat affected. As determined through consultation with CDFG and USFWS, habitat will be compensated according to the following ratios:
  - a 5:1 ratio for impacts west of Hinkley Road; and
  - a 3:1 ratio for impacts east of Hinkley Road.

Tables 3.21-3 through 3.21-5 of the NES summarize the impact area by alternative and the mitigation habitat to be acquired. Mitigation habitat for desert tortoise by alternative would total 2,508.27 acres for Alternative 2; 1,781.98 acres for Alternative 3; and 1,842.93 acres for Alternative 4.

Mohave Ground Squirrel

- **BIO-32:** Mitigation for loss of Mohave ground squirrel habitat will be accomplished based on the quality of habitat affected according to the following ratios:
  - a 5:1 ratio for impacts west of Hinkley Road; and
  - a 3:1 ratio for impacts east of Hinkley Road.

Mitigation habitat for Mohave ground squirrel habitat per alternative would total 2,508.27 acres for Alternative 2; 1,781.98 acres for Alternative 3; and 1,842.93 acres for Alternative 4.

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3.22 Invasive Species

3.22.1 Regulatory Setting

3.22.1.1 Federal Regulations

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued August 10, 1999, directs the use of the State’s invasive species list, currently maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

3.22.1.2 State and Local Regulations

There are no state or local regulations that would be applicable to the proposed project.

3.22.2 Affected Environment

Unless otherwise noted, the information from this section was synthesized from the NES prepared for the proposed project (Caltrans 2010e). References used in the NES are not carried over into this section. Several invasive species were located while performing the plant surveys. Most of the invasive species are located around disturbed areas like existing roads, housing, and farmlands. Alternatives 3 and 4 contain more disturbed areas and more invasive species. More invasive species are present west of Hinkley Road since there is more disturbed habitat. Table 3.22-1 summarizes the invasive species present within the project limits.

Table 3.22-1: Invasive Species

Scientific Name	Common Name	CAL-IPC Category
Hordeum marinum	Seaside barley	Moderate
Avena fatua	Wild oat	Moderate
Bromus madritensis ssp. *rubens*	Foxtail chess	High
Bromus tectorum	Cheat grass	High
Hordeum marinum	Seaside barley	Moderate
Tamarix parviflora	Tamarisk	High
Salsola tragus	Russian thistle	Limited
Brassica nigra	Black mustard	High
Brassica tournefortii	Sahara mustard	High
Nerium oleander	Oleander	NA
CAL-IPC = California Invasive Plant Council		

3.22.3 Environmental Consequences

3.22.3.1 Permanent Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no permanent effects involving invasive species would occur.

Alternatives 2 and 4

Roads have been identified as potential avenues for the spread of invasive and exotic plants. Activities that would result in the spread of these species will be minimized, and measures to minimize the possible spread of invasive and exotic species will be implemented. With implementation of the minimization measures provided below, any potential indirect impacts from the introduction of invasive species is not expected to be adverse under NEPA.

Invasive species can move on vehicles and in the loads they carry. Invasive plants can be moved from site to site during maintenance operations. Weed seed can be inadvertently introduced into a new alignment corridor on equipment during construction and through the use of imported soil or gravel.

Alternative 3—Existing Alignment

The impacts for Alternative 3 would be similar to those for Alternative 2, because alternative 3 widens the existing alignment and thus creates new permanent direct and/or permanent indirect impacts that could inadvertently result in the introduction of weed seed.

3.22.3.2 Temporary Impacts

Alternative 1—No-Build Alternative

Under the No-Build Alternative, no temporary effects involving invasive species would occur.

Build Alternatives 2, 3, and 4

During construction activities, construction vehicles may transport invasive plant species from past work sites to the study area, or between work areas within the study area. The potential for adverse effects to natural open spaces from the introduction of invasive species is a possibility, and potential impacts could occur. With the implementation of the minimization measures provided below, any potential indirect impacts from the introduction of invasive species during construction is not expected to be adverse under NEPA.

3.22.4 Avoidance, Minimization, and/or Mitigation Measures

BIO-33: Measures to minimize the introduction or spread of non-native species will include cleaning all equipment and vehicles with water to remove dirt, seeds, vegetative material, or other debris before entering and upon leaving the project site and the removal and disposal offsite of existing non-native species within the project area. Landscaping and erosion control measures proposed during this Caltrans project would not contain invasive species in the plant selections or seed mixtures.

3.23 Relationship between Local Short-term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity

3.23.1 Introduction

Implementation of the State Route 58 (SR-58) Hinkley Expressway Project Build Alternatives will result in attainment of short-term and long-term transportation objectives at the expense of some long-term social, aesthetic, biological, and other land use impacts. The proposed SR-58 Hinkley Expressway transportation improvements are based on State and local comprehensive planning efforts that consider the need for present and future traffic requirements within the context of present and future land use development. As a high emphasis, focus route the SR-58 Hinkley Expressway Project is an integral component of the long-range planning for San Bernardino County conducted under the 2010 State Transportation Program (STIP) under the 20.20.025.700 Program for new highways.

3.23.2 Environmental Consequences

3.23.2.1 Build Alternatives

Short-term losses and impacts of all of the SR-58 Hinkley Expressway Project Build Alternatives include:

- Economic losses experienced by businesses from temporary displacements, relocations, or traffic detours;
- Temporary construction impacts to residents and visitors such as increased noise, impaired air quality from dust and debris, blocked viewsheds, and motorized and non-motorized traffic delays or detours; and
- Temporary loss of productivity on and near sites used as the temporary construction staging areas.

Short-term benefits of the SR-58 Hinkley Expressway Project include:

- Increased revenue for the local region generated during construction, and possibly limited temporary employment opportunities.

Long-term losses of the SR-58 Hinkley Expressway Project would include:

- Permanent impacts to plant resources, wildlife resources and open space;
- Permanent impacts to residents, such as altered viewsheds;
- Permanent impacts to community cohesion/character;
- Permanent removal of residential and nonresidential uses and a possible permanent loss of those uses in the community along the ultimate, SR-58 Hinkley Expressway alignment if they are not relocated in the immediate project vicinity;

- Permanent loss of archaeological sites and the values associated with those sites; and
- Permanent impacts to increase stormwater runoff and require new drainage facilities.

Long-term gains of the SR-58 Hinkley Expressway Project would include:

- An upgrade of the facility to a controlled access, four-lane expressway, which would match existing sections of SR-58, east and west of the proposed project area on this high emphasis, focus route;
- Congestion relief, which would provide a Level Of Service, which is consistent with what is listed in the State Route 58 Route Concept Report;
- An upgrade to the pavement structural and roadway cross-section to meet current standards to better accommodate truckloads, reducing roadway damage and maintenance costs associated with the high volume of truck traffic carrying goods on this route;
- Improved safety and operations within the project limits;
- Under all of the proposed build alternatives access to the expressway will be provided by grade-separated interchanges at Hinkley Road and Lenwood Road;
- Any other roads that would bisect the expressway will be converted to cul-de-sacs; and
- Three-way stop signs will be constructed at all the exit ramps termini.

3.23.2.2 No Build Alternative

Alternative 1 would not change the overall existing conditions of the SR-58 Hinkley Expressway Project study area as described throughout Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures. Therefore, Alternative 1 would not result in the losses/impacts described above and would not provide the benefits of the SR-58 Hinkley Expressway Project described above.

3.23.3 Conclusions

Implementation of the SR-58 Hinkley Expressway Project would result in trade-offs between addressing transportation needs and goals (short and long term) and adverse environmental impacts (short and long term). The SR-58 Hinkley Expressway Project is within a portion of the highway that is part of the ICES system,[1] providing intermodal access to centers of commerce. As part of the ICES system, it is necessary to ensure continued and undisrupted access to intermodal centers of commerce.

The SR-58 Hinkley Expressway Project would serve to improve traffic conditions within the region. The long-term benefits to the community (through transportation improvements) will be weighed against the short-term and long-term environmental impacts of the SR-58 Hinkley Expressway Project.

[1] California Department of Transportation. 2004. *Transportation Concept Report.* Available: <http://www.dot.ca.gov/dist6/planning/tcrs/sr58tcr/sr58fulldocument.pdf>.

3.24 Irreversible and Irretrievable Commitments of Resources That Would Be Involved in the Proposed Project

3.24.1 Build Alternatives

The construction of any of the Build Alternatives under analysis for the SR-58 Hinkley Expressway Project involve a commitment of various natural, physical, human, and fiscal resources. Land used in the construction of the proposed SR-58 Hinkley Expressway Project would be considered an irreversible commitment during the time period that the highway facility exists. However, if a greater need arose for use of the land or if the highway facility was no longer needed, the land could be converted to another use. There is no reason to believe such a conversion would ever be necessary or desirable within the foreseeable future.

Considerable amounts of fossil fuels, labor, public capital, and highway construction materials such as cement, aggregate, and bituminous material would be expended and would not be retrievable following construction of the SR-58 Hinkley Expressway Project. Additionally, large amounts of labor and natural resources are used in the production of construction materials, and these are generally not retrievable. However, they are not in short supply, and their use would not have an adverse effect upon continued availability of these resources.

Construction of the SR-58 Hinkley Expressway Project would require a substantial, one-time expenditure of both state and federal funds, which are not retrievable; savings in travel time and improved transportation system efficiency would offset the use of these materials, labor, resources, and funds. In addition to the costs of construction and right of way, there would be ongoing costs for roadway maintenance.

The commitment of these resources to the SR-58 Hinkley Expressway Project is based on the concept that residents, workers, travelers, and others in the immediate area, region, and state would benefit from the improved quality of the transportation system in San Bernardino County. These benefits would consist of improved accessibility, travel time, and safety, which are expected to outweigh the commitment of resources.

3.24.2 No Build Alternative

The No Build Alternative (Alternative 1) would not result in any irretrievable commitment of resources because Alternative 1 would not result in the construction of the SR-58 Hinkley Expressway Project.

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3.25 Cumulative Impacts

3.25.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under NEPA, can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

3.25.2 Resources Considered in the Cumulative Analysis

The cumulative impact analyses included in this section considers projects that are currently proposed, approved, or under construction in the general Mojave Desert region of San Bernardino County. The resource study area (RSA) boundary varies by resource due to factors unique to the human or biological ecology of each resource. The specific RSA boundaries are noted, as applicable, in the discussion below. The projects considered in this cumulative impacts analysis are shown in Figure 3.3 on page 3.1-6 and are as follows:

1. Lenwood Rd Grade Separation at BNSF Railroad Track Project

This project consists of installing a 40-foot high grade separation over the Burlington Northern Santa Fe Railroad tracks at Lenwood Road in the city of Barstow. Currently Lenwood Road is a two-lane facility; the project would include widening the facility to four lanes – two lanes in each direction. The project limits generally extend from just before Main Street and end at Jasper Road. SANBAG, the sponsor, is in the right-of-way acquisition phase and anticipates construction to begin the summer of 2013.

2. Nursery Products Hawes Compost Facility

The Nursery Products Hawes Compost Facility Project involves the development of an 80-acre site for composting of biosolids and green materials to produce agricultural grade compost. This project is located approximately six miles west of the SR-58 Hinkley Expressway Project westerly boundary. It was approved the San Bernardino Board of Supervisors on July 13, 2010 (San Bernardino County Board of Supervisors 2010), and according to the County's Building and Safety Department a grading permit was pulled on February 09, 2012 (SB County B&S Department 2012).

3. PG&E Comprehensive Groundwater Cleanup Strategy Project

This project involves strategies to clean up the groundwater impacted by the chromium discharges discovered in 1987. Although cleanup efforts through agricultural treatment and water extraction have been ongoing since 1991, the PG&E Comprehensive Groundwater Cleanup Strategy Project proposes six alternatives to contain and remediate the chromium plume found to be 5.4 miles long and 2.4 miles wide in 2011. The No Project Alternative *would not actively remediate all of the existing (or potential future expanded) plume* …. and remediation would be *close[] to 1,000 years…* (p. ES-8). The other five alternatives would require 20-32 years of in-place cleanup and 75-95 years of agricultural treatment, depending on the selected alternative (RWQCB 2012).

The Draft Environmental Impact Report (DEIR) went out for public review and comment in September 2012.

4. Abengoa Mojave Solar Project (AMSP)

This project is an approximately 1,765-ac solar electric generating facility, near Harper Dry Lake in, an unincorporated area of San Bernardino County. It is located approximately nine miles northwest of the proposed project's westerly limits. The project includes a substation, interconnection to an existing transmission line, and fiber-optic telecommunication lines. Final EA was completed in July 2011. Construction began on August 29, 2011.

The proposed Project would have no effect on timberlands, coastal zone, wild and scenic rivers, sole source aquifers, land use, growth, environmental justice, waters of the United States, energy, utilities, traffic, hydrology, air quality, animal species, geology, seismicity, or soils. Therefore, the proposed Project would not have the potential to contribute to a cumulative impact to these resources.

The proposed Project, however, would potentially have project-level direct or indirect effects on farmlands, community cohesion/character, relocations and property acquisition, cultural resources, threatened and endangered species, state streambeds, hazardous wastes/materials, noise, visual/aesthetics, hydrology, and water quality. The potential for cumulatively considerable impacts in these resource areas is discussed below. Consistent with Caltrans' EIR/EIS Annotated Outline, if the environmental impacts of the various build alternatives are similar, the discussion of the project impacts are represented by one alternative. If impacts vary substantially between the alternatives, then the alternative's potential for cumulative impacts are presented separately.

3.25.2.1 Farmlands/Timberlands

The geographic RSA for farmlands is an area generally bounded by Mount General on the north, the Mojave River on the east, the Iron Mountains on the south, and the Project limits on the west. This valley area represents the limits of recognized farmland activity within functional proximity to the community of Hinkley.

As mentioned in the HPSR (2011c), although this homestead community emerged as an agricultural settlement because of its favorably shallow water table at a depth of 5 to 20 ft in the early 1900s, agriculture in the area has been in decline due to declining water levels – at 19ft in the 1930s but 95 ft by 1965. Increased water lift costs and prolonged cycles of low rainfall in the late 1950s and 1960s caused some farmers to give up their farms. Then in the early 1970s spiraling energy costs triggered a general abandonment of alfalfa production – the area's primary agricultural crop. Overall, farmland in the area has been in decline since the 1950s.

According to the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (2010)[1], the RSA contains approximately 1,231 acres of prime farmland, 139 acres of farmland of statewide importance, and 143 acres of unique farmland. Of the total farmland contained in the RSA (1,513 acres), 64.4% is located within the Project Study Area (see Section 3.3). Alternative 2 and Alternative 4 would convert 61 acres (4.0%) of farmland within the RSA to nonagricultural uses, and alternative 3 would convert 69 acres (4.6%) of farmland within the RSA to nonagricultural uses.

This project in conjunction with PG&E's Comprehensive Groundwater Cleanup Strategy Project may contribute to cumulative impacts as farmland is converted to a nonagricultural use. PG&E's proposal involves irrigation of crops through a subsurface drip irrigation system and groundwater pumping through extraction wells. Agricultural treatment activities involve 182 acres under the No Project Alternative, and up to 1,394 acres, under Alternative 4C-4, of new or existing agricultural land (RWQCB 2012). Impacts caused by implementation of any of PG&E's proposed alternatives are subject to the same policies and regulations as the proposed SR-58 Hinkley Expressway Project and mitigation measures would be determined by appropriate agencies.

The Caltrans SR-58 Hinkley Expressway Project would convert 61 to 69 acres of farmland, which equates to a maximum of 4.6% of the total amount of farmland in the RSA. This project, however, would have a beneficial effect of terminating the irrigation of the acquired property and lessening the decline of water levels that has contributed to the abandonment of farming in the area. Overall, because of the relatively small amount of farmland conversion and a LESA score below the 160-point threshold, it is not expected that this project would substantially contribute to cumulatively adverse impacts.

3.25.2.2 Community

The primary RSA for community impacts is defined by the 72 Census blocks that are located adjacent to or span the three build alternatives. Census blocks are the smallest geographic areas for which the U.S. Census Bureau collects and tabulates decennial census data and this RSA

[1] ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/sbd10_no.pdf. Accessed 11/21/2012.

depicts the population that may be subject to project effects related to community character and cohesion. The RSA includes residences, businesses, a school, farmland, and public service buildings that would be made more or less accessible; structures that may be subject to removal or relocation; and communities, neighborhoods, streets, and railroad lines that may be affected by the proposed Project.

Character and Cohesion

The RSA is a rural community largely defined by SR-58 and the BNSF railroad, which are two existing physical barriers that shape land use in the Hinkley community. Hinkley developed as a homestead community in the early 1900s and emerged as an agricultural settlement because of its shallow water table. Increased water lift costs and prolonged cycles of low rainfall in the late 1950s and 1960s caused some farmers to give up their farms. Then in the early 1970s spiraling energy costs triggered a general abandonment of alfalfa production – the area's primary agricultural crop. Although some farms transitioned into dairies, the Hinkley Valley never achieved prominence for its contribution to California's dairy industry. Later residents and dairy farmers alike have slowly been moving out of the community since the finding of water contamination made public in the 1990s (Caltrans 2011c). Overall, the health of the community has been declining.

Nevertheless, the community that remains displays characteristics of a cohesive community. This cohesiveness is evident in the racial/ethnic homogeneity, the clustering of residences, and the community's stability index, which is moderately high due to long tenure of residents in the study area. Census data show that study area residents have lived in their neighborhoods for longer durations than other County residents. According to U.S. Census data, 45.4% of Hinkley residents have lived in the area for more than 10 years compared to only 37.4% of County residents. Also the physical layout of Hinkley and the potential for social interaction are associated with the availability of community amenities such as public facilities and local businesses. The potential for social interaction within Hinkley creates a cohesive community.

Impacts to community cohesion/character as a result of the proposed Project are potentially substantial, especially when considering PG&E's on-going property acquisitions and remediation efforts dating back to 1991 (RWQCB 2012, p. 3.1-35) due to groundwater contamination. When considering other projects in the area, especially PG&E's remediation project community cohesion impacts would be even greater. Depending on the alternative selected by the Regional Water Quality Control Board – Lahontan Region, PG&E could acquire up to 50 more residences (RWQCB 2012, p. 3.2-23) which would further impact the size of this already small community and therefore further impact community cohesion. The measures discussed in Section 3.4 and the visual measures discussed in Section 3.7 would help to minimize impacts; however, potentially substantial impacts would result.

Relocations and Real Property Acquisitions

The proposed Project's potential for impacts related to relocations, property acquisitions, and temporary construction easements is high. These impacts could be cumulatively considerable when combined with PG&E's remediation efforts which would affect the availability of relocation resource in the RSA. Contamination in the water was discovered in 1987 with the first

cleanup effort taking place in 1991. Since then, PG&E has been acquiring properties and installing testing and water injection wells throughout the community. PG&E's 2012 proposed remediation plan would require up to 50 residential acquisitions (RWQCB 2012, p. 3.2-23).

Depending on the proposed Project's selected alternative, Caltrans could acquire as few as 13 residential units (under Alternative 2) or as many as 56 (under Alternative 4). In addition, the proposed Project would require as few as two nonresidential acquisitions (under Alternative 2) and as many as six (under Alternative 3). The impacts are substantial under any build alternative but especially adverse under Alternatives 3 and 4 because of the lack of single-family rental housing and the declining health of the relocation area. Community cohesion would further be adversely impacted by relocations and real property acquisitions if those being displaced are required to move to areas, like city of Barstow and even Victorville, far from their friends and neighbors.

In order to minimize the Project's contribution to cumulative impacts, all relocation activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation assistance would be provided per Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and a business survey would be conducted to assist with the relocation of any businesses that are displaced. Relocation resources would be available to all displaces without discrimination. In addition, relocation to multi-family rental housing and the Last Resort Housing Program will be options used to reduce the Project's relocation or displacement impacts.

Noise

The RSA setting is rural in character and primarily comprised of residential land uses with one elementary school, two places of worship, farmland, undeveloped properties, and limited commercial and industrial uses. Existing noise sources are primarily generated by the SR-58 facility and the BNSF railroad. Based on the Noise Study Report (2010f) conducted for this project, current noise levels range between 41 dBA to 69 dBA from currently identified noise sources and location of future alternatives.

If the Alternative 2 alignment is constructed, 20 modeled receivers would experience substantial noise increases of 12 dBA or greater due to the new proposed alignment being located in an area where a transportation facility did not exist before. If the Alternative 3 alignment is constructed, seven representative receivers are expected to increase above the 12 dBA threshold. If the Alternative 4 alignment is constructed, six representative receivers are expected to increase above the 12 dBA threshold.

Noise abatement in the form of noise barriers was considered for the land uses found to experience a substantial noise increase – of 12 dBA or more – for the existing, future with-project, and future without-project noise levels for all alternatives. Although noise impacts are expected, analysis revealed only one barrier is considered reasonable and feasible. The results of the traffic noise analysis conclude that none of the noise-sensitive receivers within the Project area would experience noise levels approaching or exceeding the FHWA/Caltrans Noise Abatement Criteria (NAC) level of 67 dBA Leq.

One other project, the PG&E Comprehensive Groundwater Cleanup Strategy Project, lies within the community impact RSA. The DEIR for the PG&E remediation project (RWQCB 2012) reveals that both construction and operational impacts would be less than significant primarily based on the remediation project's location away from sensitive receptors. Additionally, the PG&E remediation project is not expected to exceed the County of San Bernardino's noise standards of 55 dBA in the daytime or 45 dBA in the nighttime. Because any potential cumulative increase in noise would be away from sensitive receptors, it is not expected that the SR-58 Expressway Project would contribute to cumulatively adverse noise impacts.

3.25.2.3 Visual Resources/Aesthetics

The RSA for cumulative impacts to visual resources would consist of a viewshed extending out one-mile north and south from SR-58 along the 10.7-mile length of the proposed alignment. The general terrain of the immediate project area is flat. In such flat areas mid-ground views are quickly covered by fore-ground elements such as tree masses or structures. Ground plane elements are quickly lost or diminished by the optical effect of foreshortening, and become indistinct with distance. Without sloping terrain to look down from, or up to, this one-mile limit represents a reasoned expectation of visibility for drivers and residents.

West of the RSA, and within the westernmost 1.5-mile portion of the Project viewshed, land uses consist overwhelmingly of undeveloped desert scrub land. In the westernmost 1.5- to 2-mile portion of the Project viewshed (west of Valley View Road), a very small number of residential/ranch compounds and Lucy's Market are present along the north side of SR-58. Along the remaining approximately eight-mile portion of the Project corridor, residential/ranch compounds are typically situated hundreds of feet north or south from the roadway. Finally, in the easternmost portion of the Project corridor (east of Fairview Road), and directly east of the Project limits, are scattered residential/ranch compounds that are typically situated hundreds of feet from the SR-58 roadway.

SR-58 represents the "Main Street" for the community of Hinkley. Hinkley was a thriving agricultural community until impacted by a dropping water table in the 1950s. The community has gradually reduced to a dominantly bedroom community for Barstow and nearby military logistics and training facilities. The discovery of water contamination in 1987 and remediation efforts since have further added to changes in this community. With this decline SR-58, within the RSA, has lost its original main street visual character as vacancies and relic building sites increased. Present visual character for Outer Highway 58 is a rural two-lane highway with few businesses and scattered large-lot residences set well back from the road edge. Low density and absence of concentrated development represent a Main Street with compromised visual integrity.

Under Alternative 2, residents, businesses, and community facilities would experience impacts ranging from moderate to no-impact based on their respective distance from the proposed alignment. The northern views would remain intact for most viewers.

Under Alternative 3, the quality of the view would deteriorate from east to west because of the visual encroachment of detention basins and frontage roads. Commuting and local travelers would experience an adverse change in views, because of the respectively moderate and high level of sensitivity of these groups. The residents, local businesses, and community facilities would experience a significant deterioration of foreground and mid-ground views from the

current view to the addition of proposed interchange, roadbed, and detention basins. The level of deterioration would be highest among adjacent viewers north and south of the proposed alignment, and would decrease in severity based on the distance from the Project area. The impact to these viewer groups would be potentially substantial because of the respectively high and moderate level of sensitivity of these viewers.

Under Alternative 4, the neighborhood where KOP3 is located would be more adversely affected because the Hinkley interchange would be located closer to KOP3. Impacts resulting from Alternative 4 would be the same as those in Alternative 3 for the rest of the viewer groups because the alignment footprints overlap on the eastern and western end of the Project. Viewers located south of the proposed alignment would have a primary view of the large detention basins, and then the elevated highway and interchange. Motorists would be adversely impacted by the reduction of existing views and local travelers would experience the highest level of impacts because of their high level of visual sensitivity. Residents, local businesses, and community facilities would experience a significant deterioration of the foreground and mid-ground views.

As the final gap closure between two sections of SR-58 that are currently expressways, the proposed Project would add an urbanizing element to a rural area. In conjunction with other projects within the one-mile RSA, such as PG&E's Comprehensive Groundwater Cleanup Strategy Project, other urbanizing elements are unlikely given the impacts of water contamination in the area and therefore cumulative adverse impacts are not expected. Further, with minimization and mitigation measures the proposed Project would not result in cumulatively substantial impacts. Future projects would be required to include measures to off-set any tree loss while the dominant mountain ridgelines would continue to be available with only minor highway-related obstructions, given the largely flat terrain and sweeping views characteristic of Hinkley at present.

3.25.2.4 Hazardous Materials/Wastes

The proposed Project is located in the western Mojave region of San Bernardino County. Population in this area is concentrated in rural communities such as Hinkley and Boron, approximately 28 miles to the west of the proposed Project. The RSA for hazardous materials comprises the community of Hinkley – where the population in this area is concentrated and where cumulative impacts would be manifested.

The ISA reviewed the area of potential effect up to half a mile from either side of all Project alignments, and identified several facilities that could be considered potential Recognized Environmental Conditions (RECs). These RECs include dairies, construction businesses, properties with solid waste, electrical transformers, domestic wells and septic tanks, aerially deposited lead, USTs, and PG&E's hexavalent chromium ground water plume which bisects the community of Hinkley. It should be noted, however, that not all potential RECs have been confirmed to have impacted the human health and environment of the area and further investigations would be required.

One identified contributor of hazardous materials in the area to date is the PG&E compressor station facility constructed in 1952. Groundwater contamination was reported in 1987, and remediation is ongoing and is expected to continue for several years as proposed by PG&E's

Comprehensive Groundwater Cleanup Strategy Project. According to the DEIR (RWQCB 2012) in 2008 the plume extended *two miles to the north of the Compressor Station and about 1.3 miles wide.* In 2011, however, the plume was measures at *approximately 5.4 miles in length and up to 2.4 mile wide at its widest point* (p. ES-2).

Due to the similarities in the scope and design of Alternatives 2 to 4, the potential for cumulative impacts under any of the build alternatives would be expected to be indiscernible and impacts are therefore discussed collectively. The proposed Project, in conjunction with other nearby projects such as the Lenwood Road Grade Separation Project, PG&E's Comprehensive Groundwater Cleanup Strategy Project, and the Nursery Products Hawes Compost Facility, could potentially expose the public to hazardous waste and/or materials. The Project's potential impacts are primarily due to its effects on PG&E's remediation efforts to clean up the groundwater plume (i.e. acquisition of property previously used as an AU and water well replacement or relocation). Coordination with PG&E and the Lahontan Regional Water Quality Control Board, as detailed in measure HAZ-12 of this document, would minimize these potential impacts. Any other impacts, either temporary or permanent, will be offset by the Project's avoidance, minimization, and/or mitigation measures. Therefore, the proposed Project, when combined with other projects, would not contribute to a substantial cumulative effect related to hazardous materials.

Other projects' adherence to requirements and mitigation measures as mandated by local, State, and federal regulations, would minimize exposure that could potentially affect human health and the environment.

3.25.2.5 Water Quality

The RSA is the approximately ten square miles of land which drain to the SR-58 facility within the Project limit, located in Harper Valley Hydrologic Sub-Area 628.42 and Undefined Hydrologic Sub-Area 628.30, which is located in the larger Mojave hydrologic unit. The Mojave hydrologic unit has a surface area of approximately 4,500 miles (Caltrans 2011d). The Mojave River is the nearest significant watercourse; approximately 1.5 miles southeast of the proposed Project. Most of the Mojave River flows subterranean, breaching the surface between the cities of Barstow and Victorville. The Harper Valley Groundwater Basin, with a total surface area of 410,000 acres or approximately 640 square miles, underlies the RSA.

Due to the similarities in the scope and design of Alternatives 2 to 4, the potential for cumulative impacts under any of the build alternatives would be expected to be indiscernible; impacts are therefore discussed collectively.

Water quality, with the exception of the infiltration of chromium derivatives has generally been satisfactory. Since at least 1987, when groundwater contamination by the PG&E compressor station was reported (RWQCB 2012, p. 3.1-23), water quality has been in decline. The PG&E compressor station facility was constructed in 1952; remediation is ongoing and is expected to continue for several years as proposed by PG&E's Comprehensive Groundwater Cleanup Strategy Project. According to the DEIR (RWQCB 2012) in 2008 the plume extended *two miles to the north of the Compressor Station and about 1.3 miles wide.* In 2011, however, the plume was measured at *approximately 5.4 miles in length and up to 2.4 mile wide at its widest point* (RWQCB 2012, p. ES-2).

The proposed Project would permanently increase the area of paved, impermeable surfaces in the Project site. This increase in impervious area would result in increased pollutant build up and wash-off and a greater volume and rate of stormwater runoff that could cause or contribute to erosion and off-site pollutant transport. The proposed Project, however, would be required to implement post-construction stormwater quality BMPs under the Caltrans and Regional SWMP prepared for compliance with the NPDES Permits – as discussed in Section 3.10 Water Quality and Stormwater Runoff. These BMPs, are designed to permanently control water pollution originating from the operation and maintenance of the highway. In addition, the implementation of standard measures would sufficiently handle any off-site runoff that may occur and therefore not contribute to cumulative impacts.

3.25.2.6 Threatened and Endangered Species

The RSA is located in western San Bernardino County within the southwestern portion of the Mojave Desert. General habitat for the species analyzed under cumulative impacts encompasses the Mojave Desert region in western San Bernardino County. The RSA for endangered species potentially impacted is defined as the Project limits and area within a five-mile radius of the Project limits. These RSA limits are based on the combined home ranges[2] for both the Desert tortoise and the Mojave Ground Squirrel (MGS) – the two endangered species found in the area.

The combination of extreme temperature ranges and low precipitation rates creates a unique environment for many plants and animals in the region. This unique, sparsely vegetated transition zone between the Sonoran Desert and the Great Basin is known for its floral and faunal species diversity, and unique corresponding habitat types. The Mojave Desert hosts a number of species that exist nowhere else and is considered to be a biodiversity "hotspot." Due to the similarities in the scope and design of Alternatives 2 to 4, the potential for cumulative impacts under any of the build alternatives would be expected to be indiscernible; impacts to threatened and endangered species are therefore discussed collectively below.

Desert Tortoise

The existing railroad, the current SR-58 facility, and existing buildings in the community of Hinkley are barriers for species movement expected to contribute to habitat fragmentation in the area. Further, desert tortoise range has declined due to several factors including: habitat loss due to human-related activities, disease caused by reintroduction efforts and other contamination by humans, illegal collection, road kills, habitat degradation by invasive plants, and predation on tortoises by dogs and juvenile tortoises by ravens. Other factors influencing the Mojave Desert populations of the desert tortoise are described by the "road corridor" or "road-effect zone." These terms are used to describe the directly surrounding area that is influenced by the road and vehicle traffic along a travel route.

Three other projects in the RSA, in combination with the proposed Project, are expected to contribute to cumulative impacts that may adversely affect the desert tortoise. The Lenwood Road Grade Separation Project, the Nursery Products Hawes Compost Facility, and the PG&E Comprehensive Groundwater Cleanup Strategy Project are expected to contribute to habitat

[2] Home range is defined as the maximum distance a species is expected to travel in its life time.

fragmentation in the area since they may require desert tortoise habitat. Although this project includes the installation of culverts that can be used by wildlife, the proposed Project is expected to also contribute to habitat fragmentation.

To minimize and mitigate impacts to this species, Caltrans will implement design features into the Project such as culverts that may be used as wildlife crossings; avoidance measures BIO-18 through BIO-31; and compensatory mitigation, as stated in measure BIO-37. The other projects within the RSA will also conduct desert tortoise surveys and will implement necessary measures in coordination with, and as required by, the appropriate agencies.

Mohave Ground Squirrel

As in the case of the desert tortoise, the existing railroad, the current SR-58 facility, and the existing buildings in the community of Hinkley are barriers for species movement and are expected to contribute to habitat fragmentation in the area. Overall, approximately 10% of the MGS habitat – 7,691 square miles in the western Mojave Desert – has deteriorated due to development (agricultural, residential, industrial, commercial), with more of that habitat being lost as development spreads rapidly in the southern part of their range.

MGS occupies areas where the dominant plant communities include spiny hopsage (Grayia spinosa) and winterfat (Krascheninnikovia lanata) including creosote bush scrub, xerophytic saltbush, and Joshua tree woodland communities. Within the RSA suitable MGS habitat, which supports the presence of the species, is present. Four core populations of MGS have been identified within the western Mojave Desert including Coso/Olancha Core Area (85 mi NW), Little Dixie Wash Core Area (55 mi NW), Coolgardie Mesa/Superior Valley Core Area (12.5 mi NE), and Edward Air Force Base Core Area (20 mi SE). Connectivity between core populations is important to allow genetic diversity among the population. Although the RSA supports suitable habitat and presence of MGS has been confirmed, the RSA does not fall within the range of a core area nor does it fall within a defined MGS corridor.

Other projects within the RSA, such as the Lenwood Road Grade Separation, the Nursery Products Hawes Compost facility, and the PG&E Comprehensive Groundwater Cleanup Strategy Project together with this project have the potential to contribute to cumulative impacts. These projects, however, would also be required to conduct MGS surveys and implement necessary measures in coordination with the appropriate agencies. Since all protective measures are approved by the agencies with jurisdiction on this species, the proposed Project is not expected to further jeopardize the viability of the species.

With implementation of avoidance, minimization, and mitigation measures BIO-32 through BIO-36, and BIO-38; potential impacts to the MGS would be offset.

Therefore, the proposed Project would not substantially contribute to a cumulatively considerable impact to any threatened and/or endangered species.

3.25.2.7 Wetlands and Other Waters

The RSA is located in west-central San Bernardino County within the southwestern portion of the Mojave Desert. The RSA was determined by the individual hydrological units the proposed Project intersected (HUC's 1809020811, 1809020711, and 1809020710) to ensure the inclusion of all wetlands and other waters that could be affected by the construction of this project. The RSA lies within a number of Sections of Townships 9 and 10 North, and Ranges 2, 3, 4, and 5 West, as depicted on the Barstow, California; Hinkley, California; and Twelve Gauge Lake, California, 7.5-minute topographic quadrangles. Elevations in the Project area range from 2,242 to 2,173 feet amsl. No potential waters of the United States were mapped within the Project area. Surface water throughout most of the year is scarce due to the low precipitation within the region. Historically surface water flows as flash floods as a result of thunderstorms associated with desert regions.

The proposed Project is situated within the southern portion of the Mojave Desert, which is typified by highly variable climate extremes. Lowland areas receive average about five inches of precipitation per year. High temperatures and low precipitation are present during the summer with highs regularly exceeding 100 degrees Fahrenheit. The ephemeral streams located in the Project area are tributary to several unnamed drainages of various sizes and that ultimately drain to Harper Dry Lake. These ephemeral streams are not considered by USACOE to be jurisdictional due to their lack of connectivity with interstate waters. Washes in the study area are not considered to constitute waters of the United States due to their lack of connectivity with Traditional Navigable Waters. It was determined, however, that they are protected under Section 1600 of the CDFG code and under regulations of the RWQCB.

Due to the similarities in the scope and design of Alternatives 2 to 4, the potential for cumulative impacts under any of the build alternatives would be expected to be indiscernible; impacts are therefore discussed collectively.

The proposed Project would not directly contribute to the regional loss of Waters of the United States; however, it would result in impacts to state streambeds due to the construction of a transportation facility through ephemeral streams regulated by CDFG. The proposed Project will offset potential impacts to state waters by installation of culverts where necessary. Three other projects in the RSA, in combination with the proposed Project, are expected to contribute to cumulative impacts that may adversely affect waters. The Lenwood Road Grade Separation Project, the Nursery Products Hawes Compost Facility, and the PG&E Comprehensive Groundwater Cleanup Strategy Project are expected to contribute to cumulative impacts by altering the hydrological regime of the region.

Wetland delineations would take place for these projects to determine if Waters of the United States and state streambeds would be affected. Appropriate avoidance and/or minimization measures would be implemented as needed to ensure protection of federal and/or state jurisdictional features. In addition, these projects would be required to provide compensation that fully replaces the relevant functions and values at a watershed level under the permitting processes of Section 404 of the Clean Water Act and Section 1602 of the State Streambed Alteration Program if it is determined that Waters of the United States and state streambeds are affected. With implementation of proposed measures W-1 through W-3, to minimize potential impacts, the proposed Project would not contribute to substantial adverse cumulative impacts to state streambeds.

3.25.2.8 Paleontological Resources

The Project segment of SR-58 is located in the northeastern peninsular Range Province of southern California. Igneous, Metamorphic, and sedimentary rocks are exposed throughout the province. The RSA for paleontology covers an area within the northwestern corner of the Mojave Desert and the adjacent ancient shoreline of Lake Harper. The area is defined as such due to the Project's proximity to the Mojave River and Lake Harper which in antiquity were most likely to deposit alluvial sediments increasing the chance of recovering fossils in the present day.

Paleontological resources are considered to be significant if they provide new data on fossil animals, distribution, evolution or other scientifically important information. No fossils were observed during the paleontological reconnaissance of the Project site for each build alternative, which is typical since most fossils are subsurface. The abundance of fossils previously found in this general area and their proximity to the proposed Project suggest the high paleontologic sensitivity of the region. Fossils recovered from these localities include small vertebrates, turtle, snake, bird, coyote, and bighorn sheep. Several additional localities in late Pleistocene (120,000 - 11,000 years old) sediments near the Project have produced a large array of extinct and extant taxa. Notably the extinct taxa include: an extinct horse and a llama-like camel from Kramer. These Pleistocene sediments occur at the surface as Quaternary Older Alluvium (Qoa) and at an unknown depth below the Quaternary alluvium (Qa) mapped over the Project surface.

Paleontological resources are, in general, always undergoing the effects of weathering, tectonic activity, and other formation processes which put their integrity in a natural gradual state of decline over very large periods of time. Human impacts on paleontological resources have been limited due to a relative lack of development in the area. Nevertheless, any past impacts are permanent.

Other projects that may contribute to cumulative impacts, by possible further environmental degradation, include three of the projects identified above. The Lenwood Road Grade Separation and the Abengoa Mojave Solar Project lie near the Mojave River and Harper Lake and the Kramer Junction Project. Those two projects and the PG&E remediation project will require subsurface excavation. Because paleontological resources are site-specific in nature, Caltrans will implement a Paleontological Mitigation Plan that will require monitoring and collecting resources to minimize adverse impacts in the event construction activities uncover any paleontological resources. With implementation of monitoring and collection measures the Project would not substantially contribute to cumulatively adverse impacts.

3.25.2.9 Cultural Resources

The RSA for cultural resources is located in the western Mojave Desert region of San Bernardino County. The assessment of cumulative effects to cultural resources (archaeological sites and historical structures or built environment resources) considers the direct and indirect impacts of the Project on qualifying resources and whether they contribute to cultural resources impacts within a broader cumulative RSA which in this case is the whole Hinkley Valley. This corridor has seen a general pattern of settlement including a historical transformation from vacant land to historical farmsteads to commercial agricultural pursuits and now to a rural residential community.

Results of the record search indicate that 17 area-specific cultural resources surveys and/or evaluation investigations have been conducted previously within the general Project vicinity. These investigations have resulted in the identification of 15 previously recorded cultural resources within the RSA. The cultural resources surveys conducted for the proposed Project identified 22 new cultural resources (15 archaeological resources and 7 built-environment resources). Based on the results of the archaeological literature and records search, the Archaeological Information Center (AIC) rated the sensitivity of the general Hinkley area as "high" for prehistoric archaeological resources, historical archaeological resources, and historical "built environment" resources.

Impacts to cultural resources would result from construction of any of the build alternatives. However, the level of impact remains undetermined and would be finalized prior to the completion of the Project Approval and Environmental Document phase. By limiting subsurface testing and additional study to those sites within a selected Preferred Alternative, Caltrans will avoid unnecessary impacts to sites on the other, unselected, alternatives. Once the Project impacts are determined, cumulative impacts in the RSA can be better ascertained.

This Project, in combination with the PG&E Comprehensive Groundwater Cleanup Strategy Project could contribute to cumulative impacts if its implementation was to have an adverse effect on cultural resources in the Hinkley Valley. The Draft EIR (RWQCB 2012) for the PG&E Comprehensive Groundwater Cleanup Strategy Project states that *[t]he PG&E remediation project may require demolition of historic structures that could be eligible for listing on the NRHP or CRHR* (p. 4-32). With regard to archaeological resources, *[t]he remediation project would include ground-disturbing activities that have the potential for impacts on previously known and potentially unknown prehistoric-era archaeological resource* (p. 4-33).

Caltrans, like the PG&E remediation project, would implement mitigation measures to minimize the level and contribution to possible cumulative impacts. These mitigation measures would be developed in consultation with interested Native American groups, the SHPO, and any other interested parties through the development of an MOA and prior to completion of the Project Approval and Environmental Document phase.

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Chapter 4. **California Environmental Quality Act Evaluation**

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Chapter 4. California Environmental Quality Act Evaluation

4.1 Determining Significance under CEQA

The proposed project is a joint project by Caltrans and the FHWA and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the CEQA and the NEPA. FHWA's responsibility for environmental review, consultation, and any other action required in accordance with NEPA and other applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 United States Code (U.S.C.) 327. Caltrans is the lead agency under CEQA and NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an environmental impact statement (EIS), or some lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require Caltrans to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the State CEQA Guidelines list a number of mandatory findings of significance, which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

4.2 Discussion of Significance of Impacts

This section discusses the significance of impacts in accordance with CEQA. Please see the appropriate sections in Chapter 3 of this document for a full discussion of the analysis and proposed avoidance, minimization, and mitigation measures.

Table 4-1: CEQA Significance Determination

Impact on	CEQA Significance Determination	Document Section
Land Use	Less than Significant	Section 3.1
Parks and Recreation	No Impact	Section 3.1
Growth	Less than Significant	Section 3.2
Farmlands and Timberlands	Less than Significant	Section 3.3
Community Cohesion/Character	Potentially Significant impacts	Section 3.4
Relocations	Less than Significant with Minimization	Section 3.4
Traffic	Less than Significant with Minimization (for construction impacts only)	Section 3.6
Visual/Aesthetics	Less than Significant with Mitigation	Section 3.7
Cultural Resources	Less than Significant with Minimization	Section 3.8
Hydrology and Floodplains	Less than Significant with Minimization	Section 3.9
Water Quality	Less than Significant with Minimization	Section 3.10
Geology/Soils/Seismic/Topography	Less than Significant with Minimization	Section 3.11
Paleontology	Less than Significant with Mitigation	Section 3.12
Hazardous Waste/Materials	Less than Significant with Mitigation	Section 3.13
Air Quality	Less than Significant with Minimization	Section 3.14
Noise and Vibration	Less than Significant with Minimization	Section 3.15
Energy	Less than Significant	Section 3.16
Wetlands and Other Waters	Less than Significant with Mitigation	Section 3.18
Plant Species	Less than Significant with Minimization	Section 3.19
Animal Species	Less than Significant after Mitigation for Borrowing Owls (if encountered during preconstruction survey) Less than Significant with Minimization for all other species	Section 3.20
Threatened and Endangered Species	Less than Significant after Mitigation for Desert Tortoise and Mohave Ground Squirrel	Section 3.21
Invasive Species	Less than Significant with Minimization	Section 3.22
Utilities and Service Systems	Less than Significant with Minimization	Section 3.5
Public Services	Less than Significant	Section 3.5
Cumulative Impacts	Less than Significant with Mitigation for Farmlands and Timberlands Less than Significant for all other species	Chapter 3-23
Source: CEQA Checklist (Appendix A).		

4.2.1 No Impact

A detailed discussion of project effects is provided in Chapter 3 of this document. The following would have no impact on the environment:

- **Coastal Zone**. The project is not within the State Coastal Zone.
- **Wild and Scenic Rivers**. The project is not in the vicinity of a designated Wild and Scenic River.
- **Parks and Recreation**. No parks exist within or adjacent to the alignment.
- **Mineral Resources**. There are no sites that have been designated as locally-important mineral resource recovery sites within or adjacent to the project study area.
- **Natural Landmarks or Landforms.** There are no natural landmarks or landforms that are protected under the National Natural Landmarks Program.

4.2.2 Less-than-Significant Effects of the Proposed Project

A detailed discussion of project effects is provided in Chapter 3 of this document. The following resource areas would result in a less than significant impact on the environment (without mitigation):

- **Land Use.** The proposed project does not involve any project operations that would significantly affect land use and planning. It is anticipated that zoning and land use designation amendments, permanent easements, and CUPs would occur to accommodate the proposed project.
- **Growth.** The pattern and rate of population and housing growth projected to occur under the proposed project would be consistent with that contemplated in existing plans for the region. Furthermore, no new or expanded utilities, housing, or other similar permanent physical changes to the environment would be necessary as an indirect consequence of the proposed project.
- **Farmlands and Timberlands.** The proposed project would result in the conversion of farmland that includes farmland of prime, unique, statewide, and/or local importance to nonagricultural uses. All alternatives result in a LESA score of less than 160 because the amount and type of farmland that would be converted to a transportation use is not substantial. The existing farmland units are below the average-size farming units in the county, and there are a few farm support services and suppliers within the area. Additionally, the proposed project would not exceed the state threshold of 100 acres of Williamson Act contract cancellations. Further, the total percent of farmland required per alternative is less than one percent of the total amount of County farmland; 0.47% under Alternatives 2 and 4, and 0.53% under Alternative 4 would be converted to a transportation use. For these reasons, the impact to farmland is considered less than significant.
- **Energy.** Without the project, fuel consumption is expected to increase by 50.82% by the year 2020. In 2020, when compared to the No-Build Alternative, the proposed project would result in an additional increase of 7.16% when compared to the existing conditions, or

a 4.75% increase when compared to the no-build condition in 2020. This increase is attributable, in part, to the Project's purpose of congestion relief. In 2040, the No-Build Alternative and each of the Build Alternatives would result in an increase in fuel consumption of 141.87% when compared to the existing conditions. Since the increase would occur regardless of the Project it is not attributable to the Project. The estimated increase in fuel consumption attributable to the Project is not considered significant.

- **Public Facilities.** The proposed project would not involve construction of any habitable structures, nor would it increase population growth in the project area that could significantly affect the demand for community facilities and public services. Under the proposed project, elementary school access would not substantially change. Access for students travelling from northern Hinkley would not change, and access across SR-58 for students travelling from the south would continue to be available on Hinkley Road. Because Flower Street would no longer directly connect to SR-58, the access route for the San Bernardino Fire Department (located on Flower Road) would be slightly longer (0.5 mile). The proposed project would provide some improvement in safety, traffic operations, and congestion.
- **Air Quality.** Project implementation would not result in higher CO concentrations than those existing within the region. The proposed project would not be considered a Project of Air Quality Concern, as defined by 40 CFR 93.123(b)(1). Therefore, it is unlikely that the proposed project would generate new air quality violations, worsen existing violations, or delay attainment of national ambient air quality standards for particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) and particulate matter less than 10 microns in diameter (PM_{10}). Regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by 72% between 1999 and 2050.

  The three build alternatives would require site grading, cut and fill, asphalt paving, etc. The project would conform to Caltrans' construction requirements, as specified in Caltrans Standard Specifications, Section 7-1.01F (Air Pollution Control). Avoidance and minimization measures have been incorporated into the proposed project to ensure that state and federal ambient air quality standards for PM10 will not be exceeded due to man-made sources of fugitive dust within the MDPA and the control measures contained in the MDPA Federal PM10 Attainment Plan will be implemented.

The following impacts would result in less than significant effects with the incorporation of mitigation and/or minimization measures, as detailed in Chapter 3 of this document.

- **Relocations.** The proposed project would result in acquisition and displacement of residential and non-residential properties. Available replacement resources to relocate displacees would be adequate.
- **Traffic.** The proposed project would result in an improvement in levels of service (LOS) for all three proposed alternatives. Caltrans will prepare a TMP to ensure efficient movement of local and regional traffic during construction. The TMP will detail any projected temporary street closures or expected traffic delays due to construction vehicles using the roadways and will be provided to community agencies prior to project commencement.

- **Cultural Resources**. There are nine unevaluated cultural resources in the APE. As discussed in Section 3.8, the evaluation of the significance of these cultural resources will be conducted prior to completion of the Project Approval and Environmental Document phase in order to avoid unnecessary impacts to archaeological sites by disturbing sites under an alternative that may not be selected. It is anticipated that Site AE-JS-1/H would be determined eligible for listing in the NRHP under Criterion D. If this is the case, Caltrans would seek concurrence on a finding of Adverse Effect. Mitigation would be documented in a Memorandum of Agreement (MOA) and would involve data recovery.

  In addition, the project may result in adverse impacts to previously unknown cultural resources that are discovered during construction. Therefore, minimization measures are required. The two measures (CR-1 and CR-2) in Section 3.8, describe the procedure for addressing unanticipated discoveries during construction. Any additional avoidance, minimization, and/or mitigation measures for the proposed Project will be included in the Final EIR/EIS to address any adverse effects to historic properties.

- **Hydrology and Floodplains.** There are no historical or empirical evidence of flooding within the project area. The project area is not located in a mapped flood hazard area as defined by the FEMA, but it is located in a zone in which flooding potential is undetermined. The proposed project would not result in a "significant encroachment" to a floodplain as defined by 23 CFR 650.105. It would not result in the interruption or termination of a transportation facility that is needed for emergency vehicles or that provides the community's only evacuation route; it would not result in a significant risk to life or property; nor would it result in impacts to natural and beneficial floodplain values. The proposed project would replace or install new drainage facilities to ensure adequate hydraulic capacity; therefore, operation of the proposed project would not result in flooding. Construction BMPs identified in the SWPPP would minimize the potential for flood impacts during construction.

- **Water Quality.** Widening and realigning SR-58 would increase the amount of impervious surface in the area, which would increase stormwater runoff. Increases in stormwater runoff volume could accelerate soil erosion and increase the transport of pollutants to waterways. The amount of lubricants, sloughed tire and brake material, and other contaminants associated with motorized vehicles and roadways would be similar to existing conditions and would not be expected to have a considerable effect on local water quality. The proposed project would construct proper drainage facilities so that runoff would not disturb sediment and cut grooves in the soil surface. The existing drainage patterns could potentially be altered by implementation of the proposed project; however, it is unlikely that the change would be substantial enough to cause adverse effects to water quality. Because there are several other locations in the watershed for groundwater recharge, the proposed project's increase in impervious surface would not result in a considerable loss of groundwater recharge and would not affect groundwater levels. The proposed project would be designed so that the drainage flows into a dirt swale (or similar water quality treatment measure) adjacent to the highway. The dirt swale would act as an infiltration trench to collect runoff, sediment, and trash. Consistent with Caltrans' NPDES permit and the Construction General Permit, BMPs will be incorporated into the proposed project to reduce the discharge of pollutants during construction and operation to the maximum extent practicable.

- **Geology and Soils**. The potential for liquefaction is relatively low based on the reported groundwater depths and generally dense nature of the subsurface granular soils as defined by Standard Penetration Tests (SPT) blow counts. Ground shaking is expected to occur at the site due to the predicted magnitude of peak ground accelerations for earthquakes along nearby faults. Landslides are not a major problem because the topography in the site region is subdued. Accordingly, the currently proposed design is favorable for accommodating future ground shaking or surface rupture. Compliance with Caltrans' procedures regarding seismic design would also minimize any adverse effects related to seismic ground shaking. Seismic design would also meet County requirements for near-source design parameters under the UBC.

  Due to the sandy nature of the on-site soils, the soils are easily erodible, and erosion could occur during construction. Development of the roadway would cause groundbreaking and vegetation removal during construction. As a result, soil could be exposed to rain and wind, potentially causing accelerated erosion and deposition from the project site. Federal and state jurisdictions require that an approved SWPPP be prepared for projects that involve greater than one acre of disturbance. A SWPPP specifies BMPs that would prevent construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters. Earthwork in the project area would be performed in accordance with the most current edition of Caltrans' Standard Specifications and/or the requirements of applicable government agencies, and recommendations from the Preliminary Geotechnical Design Report.

  Immediate settlement due to the self-weight of the embankment fill and compression is expected to occur during placement of the embankment during construction. On-site septic disposal systems for residences located along the proposed alignment would need to be removed prior to construction. Caltrans will assess the numbers and locations of such systems and provide for their removal as part of the right-of-way clearing process. Excavations created during that process will be backfilled with fill compacted under Caltrans' inspection.

- **Paleontology.** The project alternatives would traverse areas of Quaternary older alluvium, potentially resulting in impacts to paleontological resources. The greatest potential impacts occur near the west end of the project area and between Valley Wells and Summerset roads in Hinkley, because they are closest to the Mojave River and Harper Lake. The rest of the route consists of younger formations that may overly older fossiliferous sediments. A Paleontological Mitigation Plan (PMP) would be required and shall be completed during final project design in order to accommodate any paleontological resources during field reconnaissance and analysis. The impacts that would be discussed in the PMP are anticipated to be less than significant with mitigation. The PMP would be prepared prior to completion of the Project Approval and Environmental Document phase in order to avoid unnecessary impacts to paleontological sites by disturbing sites under an alternative that may not be selected.

- **Hazards and Hazardous Materials.** According to the ISA, there are known or suspected hazardous material sources, such as underground storage tanks (USTs), aboveground storage tanks (ASTs), contaminated soil and groundwater within the proposed build alignments. The potential to encounter polychlorinated biphenyls (PCBs) during construction activities is considered high due to the presence of several cracked and stained transformers found on the power lines within the environmental footprint. The potential to encounter PCBs in the soils

near cracked/stained transformer units is also considered high. Surface soils may also be contaminated with hexavalent chromium as a result of the historic irrigation of agricultural land with groundwater pumped from the Pacific Gas and Electric (PG&E) hexavalent chromium plume. In addition, there may be numerous monitoring wells within the proposed right-of-way. Yellow paints more than three years old may exceed hazardous waste criteria under Title 22 of the California CCR and require disposal at a Class I disposal site. Since the traffic striping on SR-58 is likely older than three years, elevated lead concentrations within the yellow striping paint along the highway may be present. The project will require demolition of buildings of pre-1978 construction; therefore, asbestos-containing materials (ACMs) should be anticipated during demolition. Implementation of avoidance, minimization, and mitigation measures during the construction period, some of which are standard practice on all Caltrans projects, would ensure that impacts are reduced to a less than significant level.

Operations of the improved expressway are not expected to result in the creation of any new health hazards or expose people to potential new health hazards since the proposed project involves improvements to an existing highway only, and the storage of toxic materials or chemicals is not a proposed component of the proposed project. Some vehicles using the highway may contain materials deemed hazardous; however, it is not anticipated to increase the potential for vehicles carrying hazardous materials to travel in the project area or increase the potential for accidents to occur in the project area. The hazards associated with vehicular transport of hazardous waste are regulated under existing programs and would not be affected by the proposed project.

According to the County of San Bernardino Hazard Overlap Maps, the project site is not within or adjacent to a high fire hazard area. The proposed project would not increase the exposure of people or structures to the risk of loss, injury, or death involving wildland fires. The Southern California Logistics Airport is located 25.50 miles south of the proposed build alignments; therefore, no safety hazards related to airports are anticipated.

- **Biological Resources.** Washes in the study area are not considered to constitute waters of the United States due to their lack of connectivity with Traditional Navigable Waters. However, they are protected under Section 1600 of the California Fish and Game Code and under regulations of the Regional Water Quality Control Board, Region 6. There would be potential permanent effects to CDFG jurisdictional waters, ranging from 0.625 acre to 2.815 acres, depending on alternative selected, requiring a 1600 Permit from CDFG and a waste discharge permit from RWQCB, Lahontan Region. Final determination would take place once the JD is approved by the USACOE, but it is not expected that USACOE would take jurisdiction over any waters on the site. During construction, there is increased risk for indirect temporary impacts to these adjacent jurisdictional waters, but avoidance and minimization measures (W-1 through W-3) would reduce these potential temporary indirect effects to a level of less than significant.

  Mojave spineflower and crowned muilla would be affected by the proposed project. Potential habitat for this species including marginal habitat (atriplex scrub, creosote bush scrub, and disturbed atriplex scrub), would also be affected. Avoidance and minimization measures (BIO-3 through BIO-5) are proposed to protect the plant species that could be present.

Temporary construction impacts to plant species may occur where habitats are temporarily disturbed during grading or other activities. Construction activities could also have a direct take on these species and could compact the soils of the area and cause direct mortality on the species. Local hydrology may also be affected by the proposed roadway facility. While some portions of the right-of-way footprint would only be temporarily disturbed during construction and would be revegetated with native plant species, it is not expected that this revegetation would fully restore the functions and values of the affected habitat.

Habitat for the following animal species would be affected by the proposed project: American Badger, Prairie Falcon, Le Conte's thrasher, Loggerhead Shrike, White-tailed Kite, Copper's Hawk, and Burrowing owl. Temporary construction impacts to animal species may occur where habitats are temporarily disturbed during grading or other activities. While some portions of the right-of-way footprint would only be temporarily disturbed during construction and would be revegetated with native plant species, it is not expected that this revegetation would fully restore the functions and values of the affected wildlife habitat. Pre-construction surveys will be conducted to ensure that no unexpected threatened or endangered species of plants exist within the project area. If during pre-construction surveys any listed animal species is discovered, consultation with the CDFG and the USFWS will be reinitiated to implement the appropriate avoidance, minimization, and/or mitigation measures (see measures BIO-6 through BIO-10). If burrowing owls are encountered during preconstruction surveys, replacement habitat for burrowing owl will be provided.

The proposed project would result in permanent loss of habitat for two threatened and endangered species, the desert tortoise and the Mohave ground squirrel. The desert tortoise is listed as threatened under the CESA and the FESA due to the decline of population and the threat of habitat destruction. The MGS is listed as threatened under the CESA and is endemic to California, limited to a geographic range in the western Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo Counties. Avoidance, minimization, and mitigation measures are proposed to minimize and mitigate the impact to the extent feasible.

Measures to minimize the introduction or spread of non-native species have been proposed as part of the project and may include cleaning all equipment and vehicles with water to remove dirt, seeds, vegetative material, or other debris before entering and upon leaving the project site and the removal and disposal offsite of existing non-native species within the project area. Proposed landscaping and erosion control measures will not contain invasive species in the plant selections or seed mixtures.

4.2.3 Significant Environmental Effects

- **Community cohesion/character.** For all of the proposed Build Alternatives, the addition of a major facility through the desert landscape and community would impact the rural community cohesion/character of the study area by adding a major, urbanizing element that divides portions of the community and displaces citizens without sufficient replacement residences in the immediate community. Although potentially substantial impacts are expected, the community and visual measures discussed in Chapter 3 would help to minimize impacts. Separate from relocation assistance for potentially displaced businesses and residences, the project would provide pedestrian design features; landscaping with native plantings, especially at detention basins and the two proposed interchanges; and soft-bottom ditches in effort to reduce urbanizing elements in the rural community. Alternatives 3 and 4

pass through the center of the community, dividing it into two, with access across the facility limited to the two interchanges. Alternative 2 also divides, but skirts the southern edge of the community.

- **Visual/Aesthetics.** Under Alternative 2, residents, businesses, and community facilities would experience impacts ranging from moderate to no-impact based on their respective distance from the proposed alignment. The northern views would remain intact for most viewers.

  Under Alternative 3, the quality of the view would deteriorate from east to west because of the visual encroachment of detention basins and frontage roads. Commuting and local travelers would experience an adverse change in views, because of the respectively moderate and high level of sensitivity of these groups. The residents, local businesses, and community facilities would experience a significant deterioration of foreground and mid-ground views from the current view to the addition of proposed interchange, roadbed, and detention basins. The level of deterioration would be highest among adjacent viewers north and south of the proposed alignment, and would decrease in severity based on the distance from the project area. The impact to these viewer groups would be potentially substantial because of the respectively high and moderate level of sensitivity of these viewers.

  Under Alternative 4, the neighborhood where KOP3 is located would be more adversely affected because the Hinkley interchange would be located closer to KOP3. Impacts resulting from Alternative 4 would be the same as those in Alternative 3 for the rest of the viewer groups because the alignment footprints overlap on the eastern and western end of the project. Viewers located south of the proposed alignment would have a primary view of the large detention basins, and then the elevated highway and interchange. Motorists would be adversely impacted by the reduction of existing views and local travelers would experience the highest level of impacts because of their high level of visual sensitivity. Residents, local businesses, and community facilities would experience a significant deterioration of the foreground and mid-ground views.

  Impacts would be avoided, minimized, and/or mitigated by the measures discussed in Chapter 3. These measures primarily involve the effort to reduce urbanizing elements where feasible.

4.2.4 Unavoidable Significant Environmental Effects

Under all of the proposed build alternatives, even with incorporation of the proposed mitigations/ minimization/avoidance measures, impacts would remain potentially significant for community cohesion/character and visual resources.

4.2.5 Significant Irreversible Environmental Changes

Uses of any nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and secondary impacts generally commit future generations to similar uses. The following resources would be converted: wildlife habitats, farmlands, homes, businesses, and visual/aesthetics.

4.2.5.1 Mitigation Measures

Mitigation Measures for Significant Impacts under CEQA

Supporting documentation of CEQA resource evaluation is provided in Chapter 3 of this Draft EIR/EIS. Discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate resource headings in Chapter 3. Under CEQA, for community cohesion/character and visual resources, implementation of these measures would not reduce significant impacts to below a level of significance.

4.2.6 AB 32 Compliance/Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988, has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light duty trucks, other trucks, buses, and motorcycles make up the largest source (second to electricity generation) of GHG emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change. "Greenhouse Gas Mitigation" is a term for reducing GHG emissions in order to reduce or "mitigate" the impacts of climate change. “Adaptation," refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).[1]

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing the growth of vehicle miles traveled (VMT), 3) transitioning to lower GHG emitting fuels, and 4) improving vehicle technologies. To be most effective all four strategies should be pursued cooperatively. The following Regulatory Setting section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

[1] http://climatechange.transportation.org/ghg_mitigation/

4.2.6.1 Regulatory Setting

State

With the passage of several pieces of legislation including State Senate and Assembly Bills and Executive Orders, California launched an innovative and pro-active approach to dealing with GHG emissions and climate.

Assembly Bill 1493 (AB 1493), Pavley. Vehicular Emissions: Greenhouse Gases, 2002: requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the United States Environmental Protection Agency (U.S. EPA) Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles beginning with model year 2009. California agencies will be working with federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger cars model years 2017-2025.

Executive Order (EO) S-3-05: (signed on June 1, 2005, by former Governor Arnold Schwarzenegger) the goal of this EO is to reduce California's GHG emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by the 2020, and 3) 80 percent below the year 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

AB 32, the Global Warming Solutions Act of 2006, Núñez and Pavley: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan (which includes market mechanisms) and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (signed on October 18, 2006 by former Governor Arnold Schwarzenegger) further directs state agencies to begin implementing AB 32, including the recommendations made by California's Climate Action Team.

Executive Order S-01-07: (signed on January 18, 2007 by former Governor Arnold Schwarzenegger) set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least ten percent by the year 2020.

Senate Bill 97 (SB 97), Chapter 185, 2007: required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Caltrans Director's Policy 30 (DP-30) Climate Change (approved June 22, 2012): is intended to establish a department policy that will ensure coordinated efforts to incorporate climate change into departmental decisions and activities. This policy contributes to Caltrans' stewardship goal to preserve and enhance California's resources and assets.

Federal

Although climate change and GHG reduction is a concern at the federal level; currently there are no regulations or legislation that have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has promulgated explicit guidance or methodology to conduct project-level GHG analysis. As stated on FHWA's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the state has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in the growth of vehicle hours travelled.

Climate change and its associated effects are being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles, which was published on September 15, 2009[2]. On May 7, 2010 the final Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.[3]

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO_2) per mile, (the equivalent to 35.5 miles per gallon [MPG] if the automobile industry were to meet this CO_2 level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On November 16, 2011, U.S. EPA and NHTSA issued their joint proposal to extend this national program of coordinated greenhouse gas and fuel economy standards to model years 2017 through 2025 passenger vehicles.

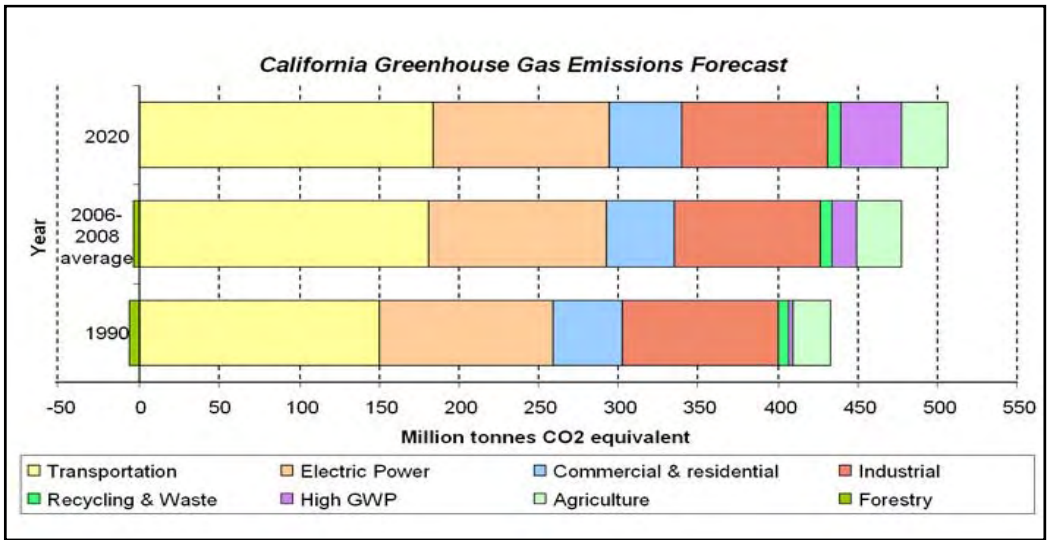
4.2.6.2 Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.[4] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines sections 15064(h)(1) and 15130). To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult, if not impossible, task.

[2] http://www.epa.gov/oms/climate/regulations.htm#1-1
[3] http://epa.gov/otaq/climate/regulations.htm
[4] This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

The AB 32 Scoping Plan mandated by AB 32 contains the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

Figure 4-1: California Greenhouse Gas Forecast



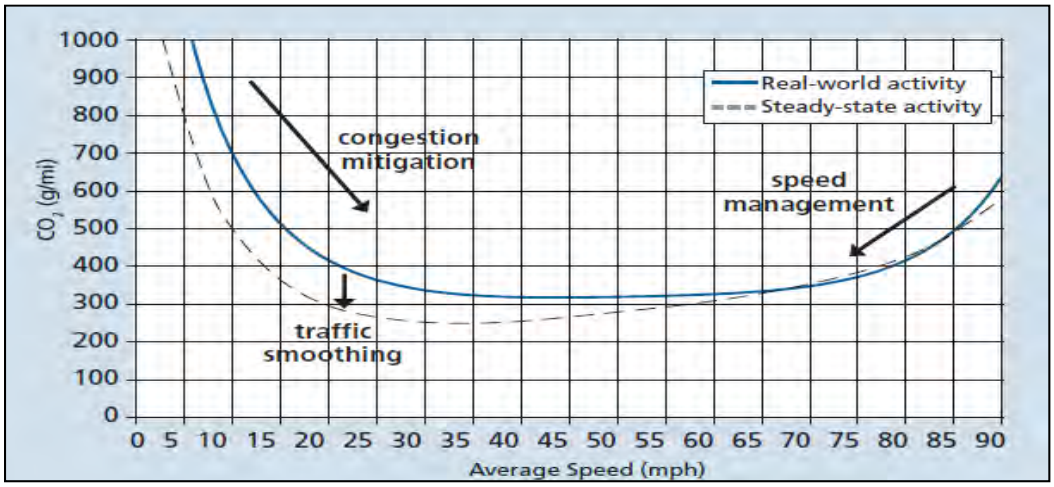
Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

Caltrans and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[5]

One of the main strategies in Caltrans' Climate Action Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of carbon dioxide from mobile sources, such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0-25 miles per hour (see Figure 4-2 below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors GHG emissions, particularly CO_2, may be reduced.

[5] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

Figure 4-2: Possible Effect of Traffic Operation Strategies in Reducing On-Road CO_2 Emission[6]



As detailed in the *SR-58 Realignment and Widening Project Traffic Study Report* (Metrics Group, Inc. 2010), the proposed Build Alternatives would improve traffic along the SR-58 project limits during peak travel periods. As shown below in Table 4-2, the proposed Build Alternatives are projected to increase peak-hour travel speed, thereby reducing corridor travel time (i.e., VHT), compared to the future no-build condition.

Table 4-2: Peak-period Travel Speed Vehicle and VHT Comparisons, Existing and Future

Evaluation Period	Travel Speed in miles per hour / LOS / VHT	
	No-Build Alternative	Build Alternatives
Baseline Year 2009	58 / C / 315	NA
Opening Year 2016	50 / C / 436	60 / A / 347
Horizon Year 2040	47 / D / 775	60 / A / 583
Source: Caltrans 2010.		

The purpose of the proposed project is to increase roadway capacity, improve roadway safety features, maintain route continuity, and improve pavement structural integrity. The proposed project would not generate new vehicular traffic trips since it would not construct new homes or businesses. An estimate of baseline year 2009, opening year 2016 and horizon year 2040 VMT data is provided below in Table 4-3. As shown therein, daily VMT is expected to remain unchanged under the Build Alternative when compared to No-build at the opening year 2016 and horizon year 2040.

[6] Traffic Congestion and Greenhouse Gases: Matthew Barth and Kanok Boriboonsomsin (TR News 268 May-June 2010)<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>

Table 4-3: Comparison of Baseline and Future Years VMT

Evaluation Period	Daily VMT		
	Without Project	With Project	Project Effect
Baseline Year 2009	107,880	NA	NA
Opening Year 2016	132,060	132,060	0
Horizon Year 2040	251,602	223,702	0

Note: Daily VMT calculated by multiplying AADT volumes from Table 1 (Current and Forecast Data) presented previously times project limits length of 9.3 miles.

Source: Caltrans 2010.

The traffic data shown above in Table 4-3, along with the EMFAC 2007 emission rates, were used to calculate the CO2 emissions based on 2016 and 2040 project alignment travel conditions. The forecast of CO_2 emissions is provided in Table 4-4.

As shown below in Table 4-4, the modeled CO_2 emissions in the future years (2016 and 2040) are higher than those for the baseline year 2009, which is attributed to the growth in VMT shown above in Table 4-3. At both opening year 2016 and horizon year 2040, modeled CO_2 emissions under the Build Alternatives would be less than one percent higher than under the No-build Alternative. This is due to the fact that project improvements would result in a marginal increase in peak-hour travel speeds. As shown above in Figure 4-2, GHG emissions factors increase as travel speed increases beyond approximately 40 miles per hour.

Table 4-4: CO_2 Emissions Comparisons, Existing and Future

Evaluation Period	Tons per Day CO_2 Emissions		
	No-Build Condition	Build Condition	Percent Change
Baseline Year 2009	82.7	NA	NA
Opening Year 2016	102.3	103.2	<1% increase
Horizon Year 2040	198.5	200.2	<1% increase

Source: Caltrans 2011a (CT-EMFAC output sheets are provided in Appendix A).

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Section 3.14.4 of this Draft EIR/EIS identifies specifications and measures included in the project to address construction emissions.

Limitations and Uncertainties with Modeling

EMFAC

Although EMFAC can calculate CO2 emissions from mobile sources, the model does have limitations when it comes to accurately reflecting CO2 emissions. According to the National Cooperative Highway Research Program report, *Development of a Comprehensive Modal Emission Model* (April 2008), studies have revealed that brief but rapid accelerations can contribute significantly to a vehicle's carbon monoxide and hydrocarbon emissions during a typical urban trip. Current emission-factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idle) in the operation of a vehicle and instead estimate emissions by average trip speed. This limitation creates an uncertainty in the model's results when compared to the estimated emissions of the various alternatives with baseline in an attempt to determine impacts. Although work by EPA and the CARB is underway on modal-emission models, neither agency has yet approved a modal emissions model that can be used to conduct this more accurate modeling. In addition, EMFAC does not include speed corrections for most vehicle classes for CO2 – for most vehicle classes emission factors are held constant which means that EMFAC is not sensitive to the decreased emissions associated with improved traffic flows for most vehicle classes. Therefore, unless a project involves a large number of heavy-duty vehicles, the difference in modeled CO2 emissions due to speed change will be slight.

CARB is currently not using EMFAC to create its inventory of greenhouse gas emissions. It is unclear why the CARB has made this decision. Their website only states:

> REVISION: Both the EMFAC and OFFROAD Models develop CO_2 and CH_4 [methane] emission estimates; however, they are not currently used as the basis for [CARB's] official [greenhouse gas] inventory which is based on fuel usage information. . . However, ARB is working towards reconciling the emission estimates from the fuel usage approach and the models.

Other Variables

With the current science, project-level analysis of greenhouse gas emissions is limited. Although a greenhouse gas analysis is included for this project, there are numerous key greenhouse gas variables that are likely to change dramatically during the design life of the proposed project and would thus dramatically change the projected CO_2 emissions.

First, vehicle fuel economy is increasing. The EPA's annual report, "Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2008 (http://www.epa.gov/oms/fetrends.htm)," which provides data on the fuel economy and technology characteristics of new light-duty vehicles including cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy has improved each year beginning in 2005, and is now the highest

since 1993. Most of the increase since 2004 is due to higher fuel economy for light trucks, following a long-term trend of slightly declining overall fuel economy that peaked in 1987. These vehicles also have a slightly lower market share, peaking at 52 percent in 2004 with projections at 48 percent in 2008. Table 4-5 shows the alternatives for vehicle fuel economy increases studied by the National Highway Traffic Safety Administration in its Final EIS for New Corporate Average Fuel Economy (CAFE) Standards (October 2008).

Table 4-5: Model Year 2015 Required Miles Per Gallon (mpg)

No Action		25% Below Optimized	Optimized (Preferred)	25% Above Optimized	50% Above Optimized	Total Costs Equal Total Benefits	Technology Exhaustion
Cars	27.5	33.9	35.7	37.5	39.5	43.3	52.6
Trucks	23.5	27.5	28.6	29.8	30.9	33.1	34.7

Second, near zero carbon vehicles will come into the market during the design life of this project. According to a March 2008 report released by University of California Davis (UC Davis), Institute of Transportation Studies:

> "Large advancements have occurred in fuel cell vehicle and hydrogen infrastructure technology over the past 15 years. Fuel cell technology has progressed substantially resulting in power density, efficiency, range, cost, and durability all improving each year. In another sign of progress, automotive developers are now demonstrating over 100 fuel cell vehicles (FCVs) in California – several in the hands of the general public – with configurations designed to be attractive to buyers. Cold-weather operation and vehicle range challenges are close to being solved, although vehicle cost and durability improvements are required before a commercial vehicle can be successful without incentives. The pace of development is on track to approach pre-commercialization within the next decade.
>
> "A number of the U.S. DOE 2010 milestones for FCV development and commercialization are expected to be met by 2010. Accounting for a five to six year production development cycle, the scenarios developed by the U.S. DOE suggest that 10,000s of vehicles per year from 2015 to 2017 would be possible in a federal demonstration program, assuming large cost share grants by the government and industry are available to reduce the cost of production vehicles."[7]

Third and as previously stated, California has adopted a low-carbon transportation fuel standard. CARB is scheduled to come out with draft regulations for low carbon fuels in late 2008 with implementation of the standard to begin in 2010.

Fourth, driver behavior has been changing as the U.S. economy and oil prices have changed. In its January 2008 report, "Effects of Gasoline Prices on Driving Behavior and Vehicle Market," (http://www.cbo.gov/ftpdocs/88xx/doc8893/01-14-GasolinePrices.pdf) the Congressional Budget Office found the following results based on data collected from California: 1) freeway motorists have adjusted to higher gas prices by making fewer trips and driving more slowly; 2) the market share of sports utility vehicles is declining; and 3) the average prices for larger, less-fuel-efficient

[7] Cunningham, Joshua, Sig Cronich, Michael A. Nicholas. March 2008. Why Hydrogen and Fuel Cells are Needed to Support California Climate Policy, UC Davis, Institute of Transportation Studies, pp. 9-10.

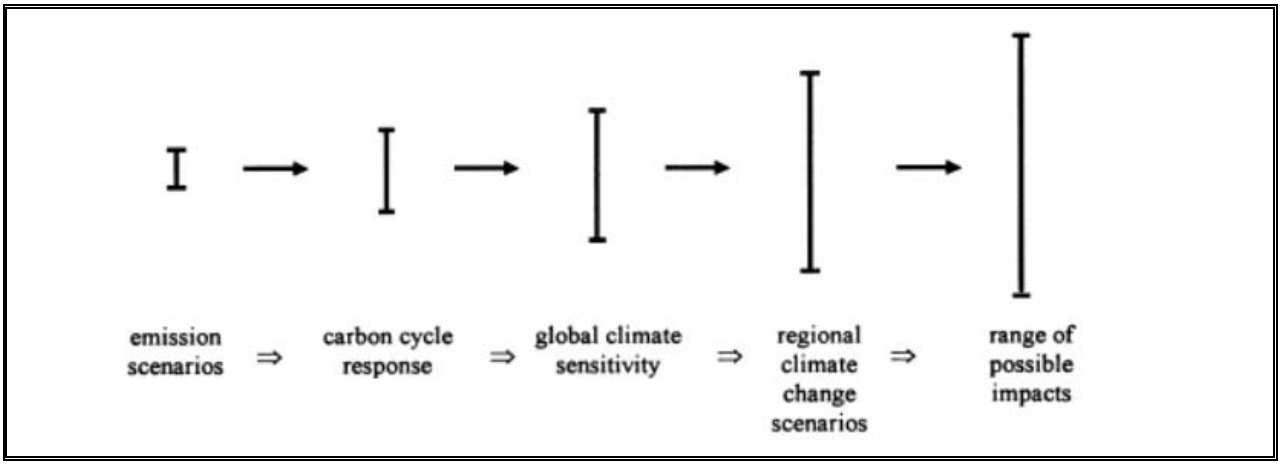
models have declined over the past five years as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more fuel efficient vehicles.

Limitations and Uncertainties with Impact Assessment

Taken from p. 3-70 of the National Highway Traffic Safety Administration Final EIS for New CAFE Standards (October 2008), Figure 4-3 illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis:

> "Cascade of uncertainties typical in impact assessments showing the "uncertainty explosion" as these ranges are multiplied to encompass a comprehensive range of future consequences, including physical, economic, social, and political impacts and policy responses."

Figure 4-3: Cascade of Uncertainties



Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in CO_2 emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of $C0_2$ equivalent. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global greenhouse gas emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce greenhouse gas emissions. Non-mitigation IPCC scenarios project an increase in global greenhouse gas emissions by 9.7 up to 36.7 billion metric tons CO2 from 2000 to 2030, which represents an increase of between 25 and 90%.[8]

[8] Intergovernmental Panel on Climate Change (IPCC). February 2007. Climate Change 2007: The Physical Science Basis: Summary for Policy Makers. http://www.ipcc.ch/SPM2feb07.pdf.

The assessment is further complicated by the fact that changes in greenhouse gas emissions can be difficult to attribute to a particular project because the projects often cause shifts in the locale for some type of greenhouse gas emissions, rather than causing "new" greenhouse gas emissions. It is difficult to assess the extent to which any project level increase in CO_2 emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.

The complexities and uncertainties associated with project level impact analysis are further borne out in the recently released Final EIS completed by the National Highway Traffic Safety Administration CAFE standards, October 2008. As the text quoted below shows, even when dealing with greenhouse gas emission scenarios on a national scale for the entire passenger car and light truck fleet, the numerical differences among alternatives is very small and well within the error sensitivity of the model.

> "In analyzing across the CAFE 30 alternatives, the mean change in the global mean surface temperature, as a ratio of the increase in warming between the B1 (low) to A1B (medium) scenarios, ranges from 0.5 percent to 1.1 percent. The resulting change in sea level rise (compared to the No Action Alternative) ranges, across the alternatives, from 0.04 centimeter to 0.07 centimeter. In summary, the impacts of the model year 2011-2015 CAFE alternatives on global mean surface temperature, sea level rise, and precipitation are relatively small in the context of the expected changes associated with the emission trajectories. This is due primarily to the global and multi-sectoral nature of the climate problem. Emissions of CO_2, the primary gas driving the climate effects, from the United States automobile and light truck fleet represented about 2.5 percent of total global emissions of all greenhouse gases in the year 2000 (EPA, 2008; CAIT, 2008). While a significant source, this is a still small percentage of global emissions, and the relative contribution of CO_2 emissions from the United States light vehicle fleet is expected to decline in the future, due primarily to rapid growth of emissions from developing economies (which are due in part to growth in global transportation sector emissions)." [NHTSA Draft EIS for New CAFE Standards, June 2008, pp.3-77 to 3-78]

CEQA Conclusion

Based on the above, it is Caltrans' determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a determination regarding the project's direct impact and its contribution on the cumulative scale to climate change. Caltrans is taking further measures to help reduce energy consumption and greenhouse gas emissions. These measures are outlined below, under *Assembly Bill 32 Compliance* subheading.

Greenhouse Gas Reduction Strategies

AB32 Compliance

Caltrans continues to be actively involved on the Governor's Climate Action Team as ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year. Former Governor Arnold

Schwarzenegger's Strategic Growth Plan calls for a $222 billion infrastructure improvement program to fortify the state's transportation system, education, housing, and waterways, including $100.7 billion in transportation funding during the next decade.

The Strategic Growth Plan targets a significant decrease in traffic congestion below today's level and a corresponding reduction in GHG emissions. The Strategic Growth Plan proposes to do this while accommodating growth in population and the economy. A suite of investment options has been created that combined together are expected to reduce congestion. The Strategic Growth Plan relies on a complete systems approach to attain CO_2 reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as depicted in Figure 4-4: The Mobility Pyramid.

Figure 4-4: Mobility Pyramid

Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high density housing along transit corridors. Caltrans works closely with local jurisdictions on planning activities but does not have local land use planning authority. Caltrans also assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting on-going research efforts at universities, by supporting legislative efforts to increase fuel economy, and by its participation on the Climate Action Team. It is important to note, however, that the control of the fuel economy standards is held by U.S. EPA and ARB.

Table 4-6 summarizes Caltrans and statewide efforts that it is implementing in order to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 4-6: Climate Change Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies and other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements and Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis and Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational and Information Program	Office of Policy Analysis and Research	Interdepartmental, Cal/EPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening and Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.045 0.0225
Non-Vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5% limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 0.36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal/EPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

Notes:
MMT = million metric tons; CEC = Commission for Environmental Cooperation; BT&H = Business, Transportation, and Housing.

To the extent that it is applicable or feasible for the project and through coordination with the project development team, the following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

1. Caltrans and the California Highway Patrol are working with regional agencies to implement intelligent transportation systems (ITS) to help manage the efficiency of the existing highway system. ITS is commonly referred to as electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.
2. Landscaping reduces surface warming, and through photosynthesis, decreases CO_2. The project proposes planting in the intersection slopes, drainage channels, and seeding in areas adjacent to frontage roads and planting a variety of different-sized plant material and scattered skyline trees where appropriate but not to obstruct the view of the mountains. Caltrans has committed to planting a minimum of 40 trees. These trees will help offset any potential CO_2 emissions increase. Based on a formula from the Canadian Tree Foundation,[9] it is anticipated that the planted trees will offset between 7-10 tons of $C0_2$ per year.
3. The project would incorporate the use of energy efficient lighting, such as LED traffic signals. LED bulbs — or balls, in the stoplight vernacular — cost $60 to $70 apiece but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED balls themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the projects CO_2 emissions.[10]
4. According to Caltrans Standard Specification Provisions, idling time for lane closure during construction is restricted to ten minutes in each direction; in addition, the contractor must comply with Mojave Desert Air Quality Management District (MDAQMD) rules, ordinances, and regulations in regards to air quality restrictions.

Adaption Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

[9] Canadian Tree Foundation at http://www.tcf-fca.ca/publications/pdf/english_reduceco2.pdf. For rural areas the formula is: # of trees/360 x survival rate = tones of carbon/year removed for each of 80 years.
[10] Knoxville Business Journal, "LED Lights Pay for Themselves," May 19, 2008 at http://www.knoxnews.com/news/2008/may/19/led-traffic-lights-pay-themselves/.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency report on October 14, 2010 outlining recommendations to President Obama for how federal agency policies and programs can better prepare the United States to respond to the effects of climate change. The Progress Report of the Interagency Climate Change Adaptation Task Force recommends that the federal government implement actions to expand and strengthen the nation's capacity to better understand, prepare for, and respond to climate change.

Climate change adaption must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, former Governor Arnold Schwarzenegger signed EO S-13-08 which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

The California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop. The California Climate Adaptation Strategy (Dec 2009)[11], which summarizes the best known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

The Resources Agency was also directed to request the National Academy of Science to prepare a Sea Level Rise Assessment Report by December 2010[12] to advise how California should plan for future sea level rise. The report is to include:

- Relative sea level rise projections for California, Oregon, and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.

[11] http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF
[12] Pre-publication copies of the report, *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*, were made available from the National Academies Press on June 22, 2012. For more information, please see http://www.nap.edu/catalog.php?record_id=13389.

- The range of uncertainty in selected sea level rise projections.
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- A discussion of future research needs regarding sea level rise.

Prior to the release of the final Sea Level Rise Assessment Report, all state agencies that are planning to construct projects in areas vulnerable to future sea level rise were directed to consider a range of sea level rise scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information regarding local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

Interim guidance has been released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise.

All projects that have filed a Notice of Preparation (NOP) as of the date of the EO S-13-08, and/or are programmed for construction funding through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The proposed project has been programmed for construction within the 2008 through 2013 time period. Therefore, no further analysis related to adaptive strategies is required for the proposed project.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system, and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available Caltrans will be able review its current design standards to determine what changes, if any, may be warranted in order to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

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Chapter 5. Comments and Coordination

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Chapter 5. Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation, the level of analysis required, and to identify potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including: project development team meetings, interagency coordination meetings, interagency consultation, scoping meetings, and public outreach meetings. This chapter summarizes the results of Caltrans' efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

5.1 Early Coordination

5.1.1 Coordination and Consultation Background

Coordination between Caltrans and representatives of applicable regulatory agencies has been ongoing since the mid-1980s. As the project has developed, input from the public and various agencies has been critical to the choice of alternatives that Caltrans has been able to create in order to construct the least environmentally damaging project and still accomplish the goals of the purpose and need outlined in this document. There have been many personnel at Caltrans and at various agencies who have commented on stages of the development of the proposed project.

The following timeline highlights key points in the development of the project:

- **1980** – City of Barstow officials and the Chamber of Commerce make continued efforts to secure funding for improving the route. Senator Walter Stiern, 16th Senatorial District, and Assemblyman Phil Wyman, 34th Assembly District, co-author a resolution requesting Caltrans to "expeditiously proceed" with the improvement and widening of SR-58.
- **1983** – The California Transportation Commission (CTC) programs $20 million in the 1985/86 Fiscal Year State Transportation Improvement Program (STIP) for a four-lane widening project from the San Bernardino/Kern county line to 10 miles east. While adopting the STIP the CTC decides that the entire segment of SR-58 from the San Bernardino/Kern county line to Barstow should be studied.
- **1985** – A public information meeting was held on January 16, 1985, in the City of Barstow as a part of the project initiation process.
- **1987** – On September 1987, a public hearing meeting was held and two maps were shown. The majority favored the overall project, but several concerns were raised including potential impacts to desert tortoise habitat, a potential for sound (traffic noise) levels to increase following construction, and at-grade street crossings. As a result of these concerns and subsequent environmental technical studies, modifications to the alternatives that were subsequently developed included the consideration for desert tortoise fences, traffic noise, and safety.

- **1990** – A Project Approval Report dated July 31, 1990, was submitted and programmed into the 1990 STIP and approved by the CTC under resolution HRA 91-2.
- **1991** – A subsequent Project Study Report (PSR) was approved on July 17, 1991.
- **2002** –A second public information meeting was held on September 25, 2002, at the Hinkley Elementary School (37600 Hinkley Road, Hinkley, CA 92347) to inform the public of the status of the project. Maps were displayed showing the proposed project and the properties that could be affected. Several residents raised questions regarding the potential for widening the existing SR-58 rather than the construction of the proposed route on new the alignment.
- **2002** – A Value Analysis study was conducted on October 2002. Nine features were presented to project team members. A majority of the features were either rejected or conditionally accepted. Only one feature was accepted by the project decision makers: to eliminate the frontage road from the west end of the project to Valley View Road. Widening the existing SR-58 alternative was investigated during the VA study. However it was not carried forward to environmental studies due to its poor traffic performance as compared to the proposed alternative.
- Since the Project Approval Report dated July 31, 1990, substantial developments have occurred. These include the re-design of the alignment between Hinkley Road and Dixie Road to avoid impacts to underground water contamination monitoring wells for Alternative 2. The long tangent of the alignment between Hinkley Road and Dixie Road was revised so that the mitigation wells owned by PG&E would be avoided and associated costs minimized. Also additional alternatives were proposed.

5.1.2 Interagency Coordination and Consultation

Cooperating Agencies

- Bureau of Land Management (BLM)
- U.S. Army Corps of Engineers (USACOE)

Participating Agencies

- Barstow School District
- California Department of Conservation
- California Department of Fish and Game (DFG)
- California Department of Parks and Recreation
- California Department of Toxic Substances Control
- California Department of Water Resources (DWR)
- California Highway Patrol
- California Office of Historic Preservation (SHPO)
- California Public Utilities Commission (CPUC)
- California Regional Water Quality Control Board, Region 6 (RWQCB)
- City of Barstow, Community Development Department – Planning Division
- Council on Environmental Quality (CEQ)

- Mojave Desert Air Quality Management District
- Native American Heritage Commission
- San Bernardino Associated Governments (SANBAG)
- San Bernardino County Fire Department
- San Bernardino County Land Use Services Department – Planning Division
- San Bernardino County Sheriff
- U.S. Department of Transportation, Federal Transit Administration
- U.S. Environmental Protection Agency (EPA)
- U.S. Fish and Wildlife Service (USFWS)

5.1.3 SAFETEA-LU Section 6002 Coordination

- As part of the requirements for the Safe, Accountable, Flexible, Efficient, Transportation Equity Act – A Legacy for Users (SAFETEA-LU) Section 6002, various agencies were invited to participate in the project as cooperating, participating, and/or responsible agencies, as applicable. Per responses to the invitation letters, interagency review roles have been established, and a summary of consultation and coordination is provided below. All agencies on this list have been requested to comment on key components of the environmental document prior to public circulation. Additionally, please refer to Section 5.2.3 for additional information regarding the January 2008 Cooperating/Participating Agency Scoping Meeting.
- Caltrans, District 8 (Role: NEPA and CEQA lead agency)
  - 10/4/2010: Caltrans sent a formal project update letter to the public.
  - 06/11/2009 - Letters were mailed to cooperating and participating agencies requesting review and comment on the Draft Purpose and Need, Alternatives under study, and the Coordination Plan.
- U.S. Army Corps of Engineers (USACOE) (Role: Cooperating Agency/Participating Agency)
  - 11/08/2007 – Invitation sent to the USACOE Los Angeles office requesting the agency's involvement as a cooperating and/or participating agency; a written response was received agreeing to be a Cooperating and Participating Agency.
  - 09/29/2009 – Field meeting with Veronica Chan (USACOE) and Karen Riesz (Caltrans) to present the project.
- U.S. Fish and Wildlife Service (USFWS) (Role: Participating Agency)
  - 02/20/1990: Biological Assessment submitted for endangered species consultation.
  - 06/22/1990: Biological Opinion obtained. (An environmental document for this project, previously approved in 1990, led to a Biological Opinion from USFWS.)
  - 11/08/2007: An invitation was sent to the Ventura office requesting the agency's involvement as a cooperating and/or participating agency; no response was received in return; Participating Agency status assigned.

  - 08/27/2009: Meeting with Ray Bransfield (USFWS) to discuss mitigation ratios and installation of desert tortoise fencing. It was determined that desert tortoise fencing would be located outside the detention fencing.
  - 09/22/2009: Meeting with Ray Brandsfield (USFWS), Tonia Moore (CDFG), Eric Weiss (CDFG), and Becky Jones (CDFG): follow up discussion from previous meetings pertaining to culvert design, raven monitoring as part of the desert tortoise monitoring, and mitigation ratios for the proposed project.

- U.S. Bureau of Land Management (BLM) (Role: Cooperating Agency/Participating Agency)
  - 11/14/2007: An invitation was sent to the Barstow office requesting the agency's involvement as a cooperating and/or participating agency; a written response requesting Cooperating Agency status was received in June 2007 based upon a quarterly meeting between Caltrans and BLM where the project was presented.
  - 09/03/2009: Meeting with Mickey Quillman (BLM Manager) to present project. BLM accepted role as Cooperating Agency. They agreed to review all documents including the Natural Environment Study (NES) prior to Caltrans approval. Lorenzo Encinas assigned to the project.

- California Department of Fish and Game (CDFG)
  - 03/12/1990: CDFG approval of project. An environmental document for this project, previously approved in 1990, led to CDFG approval.
  - 11/14/2007: An invitation was sent to the Ontario office requesting the agency's involvement as a participating agency; no response was received; consideration as a Participating Agency has expired.
  - 09/22/2009 - Meeting with Ray Brandsfield (USFWS), Tonia Moore (CDFG), Eric Weiss (CDFG), and Becky Jones (CDFG): Follow up discussion from previous meetings pertaining to culvert design, raven monitoring as part of the desert tortoise monitoring, and mitigation ratios for this project.

- California Regional Water Quality Control Board, Region 6 (RWQCB, Region 6) (Role: Participating Agency)
  - 1/2002 - Lahontan Regional Water Control Board met with Jones and Stokes, the Project's environmental consultant at the time.
  - 6/2007 - Second meeting of Lahontan Regional Water Control Board and Jones and Stokes
  - 11/2007 - Invitation letters for Cooperating/Participating agencies mailed (including Lahontan Regional Water Control Board)
  - 12/04/2007: An invitation was sent to Ms. Judith Deir requesting the agency's involvement as a participating agency; no response was received.
  - 1/08/2008 - First meeting for cooperating/participating agencies
  - 5/21/2009 - The water quality control board may have an issue with the size and number of basins planned due to the remediation efforts of PG&E.

- 08/06/2009 - Received comments from the CA Regional Water Quality Control Board – Lahontan Region (RWQCB regarding the SR-58 Hinkley project.
- 09/10/2009 - Meeting with Lisa Dernbach (RWQCB, Region 6) to present the project to the RWQCB. No relevant biological related issues were discussed. Requested Participating Agency status.
- 9/10/2009 – (On 07/27/2009, Received a letter from Chuck Curtis, Manager Cleanup and Enforcement Division, which stated that staff of the CA RWQCB had reviewed the packet of information and comments were attached. A meeting was held by explaining that the meeting's purpose was to discuss any issues/concerns that the CA Regional Water Quality Control Board may have with the Hinkley Expressway project.
  - Lisa Dernbach-CA Regional Water Quality Control Board
  - Mike Keever-Caltrans Design
  - Karen Riesz-Caltrans Biology
  - Rosanna Roa-Caltrans Hazardous Waste

  Teleconference with BLM, PG&E, and the RWQCB took place since from the map it appeared that the plume was close to BLM land and the Mojave River. A review of the file revealed that on 06/11/2009 a packet containing the Draft Purpose and Need, the Coordination Plan, and the Alternatives under study was mailed to:

  California Regional Water Quality Control Board – Lahontan, Region 6 (RWQCB-6)
  Mike Plaziak, Supervising Engineering Geologist 760-241-7404
  14440 Civic Dry, Suite 200
  Victorville, CA 92392

  Lisa stated her agency would like to be copied on the information exchange and kept in the loop regarding coordination. Lisa indicated that if the need in relocating the piping network and/or monitoring wells results that her agency will need to be notified as the wells and the piping network have been placed in strategically chose locations. General discussion occurred regarding the PG&E remediation piping network that was constructed. Lisa stated that Caltrans may contact PG&E for specifics regarding the depth of the pipeline network and its exact location and dimensions.
- 10/27/2009 - meeting with PG&E representative. Information will be requested regarding any Environmental studies that have been done for their remediation projects (id).

- U.S. Environmental Protection Agency (EPA) (Role: Participating Agency)
  - 11/13/2007- An invitation was sent to Jeff Scott in the San Francisco office requesting the agency's involvement as a cooperating and/or participating agency; a written response requesting Participating Agency status was received.
- Council on Environmental Quality (CEQ) (Role: Participating Agency)
  - 05/28/2010 – An invitation was sent requesting the agency's involvement as a cooperating and/or participating agency; no response was received. Participating Agency status assigned.

- California Department of Water Resources (DWR)
  - 12/04/2007- An invitation was sent to Nadell Gayou in the Sacramento office requesting the agency's involvement as a participating agency; no response was received. Consideration as a Participating Agency has expired.
- California Office of Historic Preservation
  - 11/14/2007: An invitation was sent requesting the agency's involvement as a participating agency; no response was received. Consideration as a Participating Agency has expired.
- California Public Utilities Commission (CPUC) (Role: Participating Agency)
  - 12/04/2007: An invitation was sent requesting the agency's involvement as a participating agency; a written response requesting Participating Agency status was received.
- San Bernardino County (County) Land Use Services Department, Planning Division (Role: Participating Agency)
  - 04/03/2010: Response to invitation received/requested Participating Agency status during meeting.
- San Bernardino Associated Governments (SANBAG)
  - 05/28/2010: An invitation was sent requesting the agency's involvement as a participating agency; no response was received. Consideration as a Participating Agency has expired.
- Mojave Desert Air Quality Management District (Role: Participating Agency)
  - 05/28/2010: An invitation was sent requesting the agency's involvement as a participating agency; a written response wishing to be designated a Participating Agency was received on 06/02/2010.
- California Highway Patrol
  - 12/04/2007: An invitation was sent requesting the agency's involvement as a participating agency; no response was received. Consideration as a Participating Agency has expired.
- San Bernardino County Fire Department (Role: Participating Agency)
  - 05/28/2010: An invitation was sent requesting the agency's involvement as a participating agency; a response via telephone wishing to be designated a Participating Agency was received on 06/28/2010.
- San Bernardino County Sheriff
  - 05/28/2010: An invitation was sent; requesting the agency's involvement as a participating agency; no response was received. Consideration as a Participating Agency has expired.

- Native American Heritage Commission
  - 12/04/2007: An invitation was sent requesting the agency's involvement as a participating agency; no response was received. Consideration as a Participating Agency has expired.
- U.S. Department of Transportation, Federal Transit Administration (Role: Participating Agency)
  - 11/14/2007: An invitation was sent requesting the agency's involvement as a cooperating and/or participating agency; a written response was received declining participation as a Cooperating Agency. Status as a Participating Agency assigned.
- California Department of Toxic Substances Control
  - 12/04/2007: An invitation was sent requesting the agency's involvement as a participating agency; no response was received. Consideration as a Participating Agency has expired.
- California Department of Parks and Recreation
  - 12/04/2007: An invitation was sent requesting the agency's involvement as a participating agency; no response was received. Consideration as a Participating Agency has expired.
- California Department of Conservation
  - 12/04/2007: An invitation was sent requesting the agency's involvement as a participating agency; no response was received. Consideration as a Participating Agency has expired.
- City of Barstow, Community Development Department, Planning Division
  - 05/28/2010: An invitation was sent requesting the agency's involvement as a cooperating and/or participating agency; no response was received. Consideration as a Participating Agency has expired.
- Barstow Unified School District
  - 05/28/2010: An invitation was sent requesting the agency's involvement as a participating agency; no response was received. Consideration as a Participating Agency has expired.

5.1.4 Permits, Reviews and Approvals

Coordination for the following permits, reviews, and approvals are anticipated prior to project construction.

- County of San Bernardino Freeway Agreement for (1) local roads that will be closed, (2) construction of the new interchanges, and, as applicable (3) relinquishment to the County of the existing SR-58 and small segments of local roads the project would construct;
- County of San Bernardino Temporary Construction permits for construction affecting local road systems;

- Burlington Northern Santa Fe (BNSF) Encroachment Permit for work performed within railroad right-of-way;
- U.S. Bureau of Land Management (BLM) Application for Proposed Action due to involvement of parcels owned by BLM;
- California Public Utilities Commission (CPUC) Service Contract and Construction/Maintenance Agreements for the construction of a grade separated structure over the BNSF rail line;
- California State Water Resources Control Board (SWRCB) Coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 99-08-DWQ);
- California Regional Water Quality Control Board (RWQCB) waste discharge permit;
- RWQCB, Region 6, Section 401 Clean Water Act (CWA) Water Quality Certification for activities within ephemeral dry washes;
- California Department of Fish and Game (CDFG) 1600/1602 Permit for activities within ephemeral dry washes;
- CDFG 2081Permit for Mohave Ground Squirrel;
- CDFG 2081 Incidental Take Permit for Desert Tortoise/Loss Desert Tortoise Habitat; and
- U.S. Fish and Wildlife Service (USFWS) Biological Assessment and Biological Opinion (BA/BO) for Desert Tortoise.

5.2 Scoping Process

5.2.1 Notification of Scoping

As part of the NEPA and CEQA process, a scoping meeting is required as part of the preparation of an EIR and EIS. A Notice of Intent (NOI) to prepare an EIS and a Notice of Preparation (NOP) of an EIR were advertised to the public and mailed to elected officials and local, state, and federal agencies having jurisdiction or discretionary approval within the project corridor in May 2007. The NOI was published in the Federal Register on May 10, 2007, and the NOP was received and accepted by the State Clearinghouse on May 11, 2007.

5.2.2 June 2007 Public Scoping Meeting

A public scoping meeting was held on June 26, 2007, at Hinkley Elementary School, to provide an additional forum to share project information, discuss the Range of Alternatives, answer questions, and accept input and comments on the draft purpose and need and the project as a whole. The public scoping meeting was held in an open house format without a formal presentation. Each meeting attendee received an information packet that included a meeting agenda, program, project fact sheet, handout denoting alternative alignments under consideration, fact sheet on NEPA/CEQA, the EIR/EIS preparation process, a list of frequently asked questions (FAQs), and a comment sheet. A large aerial photomap was placed at the center

of the meeting venue and the public was encouraged to identify their preferred route locations. A total of 118 comments were received from the public and resource agencies. All comments have been considered and incorporated, as appropriate, into the preliminary engineering and EIR/EIS.

All alignments suggested by the community from the Scoping Meeting on June 26, 2007, were evaluated for engineering and environmental implications. The existing easterly segment of the SR-58 evaluation indicated non-viability of some alternatives identified by the community. However, during the meeting, most of the community attendees indicated support of the alternatives carried forward and presented herein. Alternative 5 was created based on the suggestion from the Scoping Meeting that suggested a bypass around Hinkley Community with a connection to Interstate 15 (I-15) approximately one mile north of Outlet Center Drive. From the suggested alignment, Caltrans created a similar Alternative 5 based on design criteria and engineering adjustments. This alternative was not carried forward to environmental study because it would require a new connection point to I-15, which would not meet the minimum requirement for distance between two interchanges; would cross over the Mojave River; would require additional right-of-way and result in additional environmental impacts; and would bypass a freeway section that had recently been constructed from east of Lenwood Road to I-15.

Another alternative was also suggested at the scoping meeting. It proposed that the alignment be located north of the existing SR-58 and run parallel to the BNSF railroad. This alternative was not carried forward due to its similarity to Alternative 4 and greater engineering, operational and environmental issues.

5.2.3 January 2008 Cooperating/Participating Agency Scoping Meeting

On November 14, 2007, Caltrans sent letters to all cooperating and participating agencies inviting them to attend a meeting on January 8, 2008. The purpose of the meeting was to discuss the purpose and need and range of alternatives for the project and solicit agency comments. None of the agencies invited attended the meeting; however, Caltrans had presented the project at a quarterly meeting with BLM.

5.3 Additional Project Coordination and Public Outreach

5.3.1 Public Outreach

5.3.1.1 2008 Public Information Meetings

Public information meetings were held at Hinkley Elementary School (37600 Hinkley Road, Hinkley, CA 92347) on July 15, 2008, October 29, 2008, and September 22, 2010, to share updated features of the proposed project. Information display boards and maps depicting Alternatives 2, 3, and 4 were located around the room. Caltrans' representatives were on hand to answer questions, address concerns, and receive public input regarding the proposed project.

5.3.1.2 September 2010 Public Information Meeting

Meeting Summary

A public information meeting was held on Wednesday, September 22, 2010, from 6:00 p.m. to 8:00 p.m. at Hinkley Elementary School, located at 37600 Hinkley Road, Hinkley, CA 92347. The meeting was hosted by Caltrans.

The purpose of the public information meeting was to update the public regarding the project schedule, the elimination of the interchanges at Valley View Road and Summerset Road, discuss the addition of the detention basins for all alternatives, and to present the proposed slight modifications for the proposed project alignments. Of interest to the public was a proposed modification on the east end of Alternative 2. The updated alignment for Alternative 2 avoids impacts to an existing alfalfa field that is equipped with a center pivot irrigation system. Design staff worked with the property owner, who is a farmer, in order to avoid impacts to his alfalfa fields. Informational display boards were located around the room and Caltrans' representatives were on hand to answer questions, address concerns, and receive public input regarding the proposed project.

Community Outreach

Community outreach was completed via newspaper advertisements. On September 12, 2010, Caltrans placed advertisements in English and Spanish announcing the meeting in the *Daily Press* newspaper. The *Daily Press* is a daily newspaper of local/general circulation serving the community of Hinkley. Additionally, letters of invitation were mailed to residents who had requested a direct mailing list be developed from the July 2008 public information meeting. Residents advised environmental staff that in addition to reading the advertisements and receiving the letters, an announcement was made during Sunday services at Hinkley Bible Church located at 37313 Hinkley Road, Hinkley, CA 92347.

Public Scoping

Upon arriving, attendees were asked to sign an attendance sheet to ensure that all interested parties were added to the project mailing list.

Twenty-four people signed the attendance roster. Attendees were encouraged to view displays and maps of the proposed project alternatives and ask questions. Comment cards were available at the sign-in table. Attendees were encouraged to take additional comment cards to their families and friends, who were not able to attend the meeting. Attendees were encouraged to fill-out comment cards at the meeting. Three comment cards were received. All three comment cards reflected support for Alternative 2.

At one point residents asked if smaller copies of the maps on display were available. Environmental staff prepared a mailing list and Caltrans provided the requested maps along with a letter summarizing the status of the project. Community members were informed that the draft environmental document would be available and that a public hearing is planned for the project.

5.3.2 Native American and Section 106 Coordination

Native American coordination was also conducted through the following correspondence:

- Native American Heritage Commission (NAHC) was contacted by letter on July 6, 2007, requesting information regarding sacred lands and a list of Native American organizations/individuals to contact.
- NAHC response received July 12, 2007 stated that a records search of the Sacred Land Files failed to indicate the presence of Native American cultural resources and provided a list recommending that nine individuals with knowledge of the project area be contacted.
- In December 2007, Dr. Karen Swope, the District Native American coordinator at Caltrans, District 8, reviewed the NAHC list and recommended six individuals be contacted with a slight correction to contact information. In addition, Dr. Swope also recommended consulting with three additional individuals.
- On January 8, 2008, letters were sent to representatives of various Native American tribes in accordance with the list of organizations/individuals received from the NAHC and Dr. Swope's recommendations. Table 5-1 provides a list of individuals who were contacted from applicable Native American organizations.
- As of January 28, 2008, no written responses or telephone contacts from these Native American representatives had been received.
- On January 28, 2008, telephone contact was initiated with these ten individuals/organizations previously contacted by letter. Of those ten contacted, only one was reached. Ms. Walker of the Serrano Nation of Indians requested being notified in the event that any cultural resources were discovered during project-related ground-disturbing activities. She also requested copies of all project related archaeology reports and environmental documents.
- A second attempt to contact the remaining nine individuals was made on January 30, 2008. At that time, Dr. Tsosie of the Colorado River Reservation and Mr. Wood of the Chemehuevi Tribe stated that they had no immediate concerns related to the proposed project. To date, no other Native American responses have been received.
- On March 24, 2008 the Twenty-nine Palms Band of Mission Indians provided a written response indicating that they believe that the project site may contain cultural resources and that they have no specific comments on the project. The Band also requested that they be notified if any cultural resources are discovered.

Table 5-1: Native American Contact Information

Contact Person	Organization
Henry Duro	San Manuel Band of Mission Indians
Ann Brierty	San Manuel Band of Mission Indians
Charles Wood	Chemehuevi Reservation
John Valenzuela, Chairperson	San Fernando Band of Mission Indians
Linda Otero	AhaMaKav Cultural Society of the Fort Mojave Indian Tribe
Britt Wilson	Morongo Band of Mission Indians

Contact Person	Organization
Goldie Walker	Serrano Nation of Indians
Tim Wilson, Cultural Resources Coordinator	Fort Mojave Tribe
Dean Mike, Chairman	Twenty-nine Palms Band of Mission Indians
Michael Tsosie, Museum Director	Colorado River Reservation

The following coordination has also occurred to address cultural resources pursuant to Section 106 of the National Historic Preservation Act:

- December 15, 2010 - The Area of Potential Effect (APE) for cultural resources was signed by Caltrans (District 8) Environmental Branch Chief.
- July 6, 2007 – Letters were sent to the Museum Director at the Twenty Mule Team Museum in Boron, California, and Robert Hilburn at the Mojave River Valley Museum in Barstow, California to solicit additional historical information regarding the project study area.
- January 23, 2012 – Letter of concurrence regarding non-eligible properties per the National Register of Historic Places, received from the Office of Historic Preservation, Department of Parks and Recreation (SHPO) reference the project undertaking in accordance with the Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (PA).

5.3.3 Project Development Team

At the inception of project planning, the Project Development Team (PDT) was established to direct the course of engineering and environmental studies for the Project. The purpose of the PDT was to:

- develop a set of alternatives that met the purpose and need of the project;
- assess the engineering, environmental, social, and economic aspects of the proposed project alternatives and develop and evaluate measures to mitigate potential impacts of the project;
- ensure that local agency, state, and federal requirements are met; and
- establish and conduct a program of community and interagency coordination to communicate project issues.

The PDT included representatives from the following agencies and consultants at some point during project development:

- Caltrans, District 8
- SANBAG
- City of Barstow

- County of San Bernardino
- ICF International (consultant)

5.3.4 Notice of Intent (NOI) & Notice of Preparation (NOP)

- NOI – copy located after subsection 5.3.6.
- NOP – copy located after subsection 5.3.6.

5.3.5 Correspondence Related to the 6002 Process

Sample letters of the 6002 process are included at the end of this chapter.

5.3.6 Other Agency Correspondence

Other agency correspondence follows sample 6002 letters.

Federal Register / Vol. 72, No. 90 / Thursday, May 10, 2007 / Notices 26679

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Los Angeles County, CA

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an Environmental Impact Statement (EIS) will be prepared for the proposed Interstate 5 (I–5) High Occupancy Vehicle (HOV)/Truck Lanes project in the City of Santa Clarita and the County of Los Angeles, California, in accordance with the National Environmental Policy Act (NEPA) of 1969.

FOR FURTHER INFORMATION CONTACT: Steve Healow, FHWA California Division, 650 Capitol Mall, #4–100, Sacramento, CA 95814, *telephone:* 916–498–5849, or Carlos Montez, California Department of Transportation, 100 South Main Street, Los Angeles, CA 90012, *telephone:* 213–897–9116.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the California Department of Transportation (Caltrans), will prepare an EIS on a proposal to widen existing I–5 to include truck climbing lanes and HOV lanes. This I–5 project extends from State Route 14 (SR–14) on the south to Parker Road on the north, a distance of approximately 13.6 miles. The proposed improvements include extending the existing HOV lanes on I–5 from SR–14 to Parker Road (approximately 13 miles) and adding truck climbing lanes between SR–14 interchange and Calgrove Boulevard (northbound) and Pico Canyon Road/Lyons Avenue (southbound), a distance of three to four miles. Analysis supporting the EIS will determine the type of facility necessary to meet the existing and future transportation needs in the corridor. Due to traffic volumes, truck traffic, and substantial planned development, the capacity of the existing corridor will be exceeded. The proposed EIS will evaluate a constrained alternative, which would provide one HOV lane in each direction from SR–14 to Parker Road, and truck climbing lanes in each direction from SR–14 to Calgrove Boulevard (NB) and Pico Canyon Road/Lyons Road (SB). This constrained alternative would provide standard lane widths. The EIS would also evaluate a standard alternative, which includes the same HOV and truck lanes, as described above, and standard lane widths and full shoulders. A no build alternative will also be evaluated.

The public information program and project development team (PDT) meetings will continue throughout the environmental and design phases for the proposed project. The Draft EIS will be available for public and agency review and comment. A public hearing will be held to discuss the alternatives and the potential impacts of the proposed action. Public notice will be given for the time and place of the public hearing. To ensure that the full range of issues related to this proposed action is addressed and all significant concerns are identified, comments and suggestions are invited from all interested parties. Comments or questions about this proposed action and the EIS should be directed to FHWA and Caltrans at the addresses indicated above.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Research, Planning, and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

Issued on: May 3, 2007.

Maiser Khaled,

Director, Project Development & Environment, California Division, Federal Highway Administration.

[FR Doc. E7–8937 Filed 5–9–07; 8:45 am]

BILLING CODE 4910–22–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: San Bernardino County, CA

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Intent.

SUMMARY: The FHWA is issuing this notice to advise the public of its intent to prepare an Environmental Impact Statement (EIS) for the proposed realignment and widening of State Route 58 Freeway (SR–58) located west of the City of Barstow near the community of Hinkley in San Bernardino County, California.

FOR FURTHER INFORMATION CONTACT: Tay Dam, Senior Project Development Engineer, Federal Highway Administration, 888 South Figueroa, Suite 1850, Los Angeles, CA 90017. *Telephone:* (213) 202–3954. Boniface Udotor, California Department of Transportation District 8, 464 W. Fourth Street, San Bernardino, CA 92401. *Telephone:* (909) 383–1387.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the California Department of Transportation, District 8, will prepare an EIS to realign and widen SR–58 from a two-lane conventional highway to a four-lane expressway/freeway west of the City of Barstow near the community of Hinkley (between Post Mile 21.8 and Post Mile 31.1) in San Bernardino County, California. The project length is approximately 10 miles long. As proposed, the EIS document would address the following current and future transportation issues for this area:

- This section of SR–58 is currently a nonstandard two-lane conventional highway between a four-lane freeway to the west and a four-lane freeway to the east. The existing highway section has insufficient capacity to handle present and future travel demands, which is forecasted to be more than double the year 2030. Since SR–58 remains the main east-west corridor for interregional travelers, no other viable alternatives for travel exist. This proposed project will close one gap in lane continuity and remove the bottleneck condition.
- The existing two-lane highway has numerous driveways and intersecting cross-streets, which present numerous conflict points affecting the operation of the highway. Upgrading from a non-standard two-lane highway to a full-standard four-lane expressway/freeway would allow for better passing and increased sight distance. A separated median would reduce the risk of head-on collisions. A clearance zone (clear recovery zone) from the edge of the traveled way to obstructions would provide an unobstructed roadside for errant drivers to regain control.
- The pavement section of SR–58 for this area is inadequate to handle the high movement of truck volumes, which are contributing to rising maintenance costs. It is expected that SR–58 will continue to carry high truck volumes because the route is designated for extra-legal and oversized loads. Currently, SR–58 serves as the major connection point between I–15 in Bakersfield and the I–15/I–40 in Barstow. A new pavement design would meet standards for carrying truckloads and reduce future maintenance costs.

A preferred alternative has not been selected at this point. The following four alternatives will be addressed in the EIS document:

- *Alternative 1:* No Build. Under this alternative, the capacity of SR–58 would remain the same as current traffic conditions continue to worsen while local developments take place. This alternative would not address the transportation issues described above.

• *Alternative 2:* Realign and Widen (South). This alternative realigns and widens SR–58 from two lanes to a four-lane expressway/freeway about one-half mile south of the existing SR–58.

• *Alternative 3:* Widen the Existing. This alternative follows the existing SR–58 alignment or a slightly offset alignment throughout the project limits.

• *Alternative 4:* Realign and Widen (North). This alternative consists of a realignment of SR–58 to a four-lane expressway/freeway just north of the existing SR–58.

The alternatives described above will be further refined through efforts conducted under the National Environmental Policy Act (40 CFR parts 1500–1508, and 23 CFR part 771), the 1990 Clear Air Act Amendments, section 404 of the Clean Water Act, Executive Order 12898 regarding environmental justice, the National Historic Preservation Act, the Endangered Species Act, the section 4(f) of the U.S. Department of Transportation Act, and other federal environmental protection laws, regulations, policies, and executive orders. The EIS will incorporate comments from the public scoping process as well as analysis in technical studies. Other alternatives suggested during scoping process would be considered during the development of the EIS. The EIS will consider any additional reasonable alternatives identified during scoping process. Letters describing the proposed action and soliciting comments will be sent to appropriate Federal, State, regional and local agencies, and to private organizations and citizens who previously have expressed, or are known to have, an interest in this project. Location and details of the public scoping meeting for the proposed project will be advertised in local newspapers and other media and will be hosted by the California Department of Transportation, District 8.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Research, Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation Federal programs and activities apply to this program.)

Issued On: May 2, 2007.

Maiser Khaled,

Director, Project Development & Environment, California Division, Federal Highway Administration.

[FR Doc. E7–8939 Filed 5–9–07; 8:45 am]

BILLING CODE 4910–22–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: San Bernardino County, CA

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Intent.

SUMMARY: The FHWA is issuing this notice to advise the public of its intent to prepare an Environmental Impact Statement (EIS) for the proposed widening and realignment of State Route 58 (SR–58) Kramer Junction Expressway from two to four lanes located between the Kern/San Bernardino County line and a point 12.9 miles east on SR–58 in San Bernardino County, California. This will be a gap closure project.

FOR FURTHER INFORMATION CONTACT: Tay Dam, Senior Project Development Engineer, Federal Highway Administration, 888 South Figueroa, Suite 1850, Los Angeles, CA 90017. *Telephone:* (213) 202–3954. Marie Petry, California Department of Transportation District 8, 464 W. Fourth Street, San Bernardino, CA 92401. *Telephone:* (909) 383–6379.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the California Department of Transportation, will prepare an EIS for the proposed widening and realignment of SR–58 Kramer Junction Expressway in San Bernardino County, California. This 13-mile long project would take place entirely within San Bernardino County and is centered on the Kramer Junction where SR–58 intersects with US–395 west of the City of Barstow. This section of SR–58 is currently a nonstandard two-lane highway between a four-lane freeway to the west and a four-lane expressway to the east. The proposed project would close this gap. The existing two-lane segment includes an at-grade signalized intersection at SR–58/US–395 (Kramer Junction), an overhead crossing of Burlington Northern Santa Fe (BNSF) railroad west of that intersection, and numerous uncontrolled at-grade driveway and street access points. There is also an at-grade railroad crossing on US–395 north of the SR–58/US–395 intersection that slows traffic and contributes to accidents when traffic backs up during train crossings. SR–58 is a major east-west transportation corridor with a high percentage of truck traffic transporting goods in and out of the state. The purpose of this project is to provide for increased separation of slow moving vehicles, to separate local and regional traffic, to reduce accidents, and to eliminate the convergence of SR–58 and US–395 traffic. The project would also provide congestion relief and improve traffic operations and access to local services.

A preferred alternative has not been selected at this point. One No Build (Alternative A) and three Build Alternatives (Alternatives B, C, and D) will be addressed in the EIS document. All three proposed Build Alternatives would increase capacity and be reclassified from a conventional highway to an expressway. As proposed, Alternative B would be a realignment north of the existing highway. Alternative C would be generally along the existing highway alignment, and Alternative D would be a realignment south of the existing highway. Furthermore, construction of a new freeway-to-freeway interchange where SR–58 intersects with US–395 is proposed for Alternatives B, C, and D. This new interchange would have to span the existing at-grade railroad under Alternatives B and C, but this would not be necessary under Alternative D because the new interchange is far enough south of the railroad. In addition, Alternatives B and D would include a second grade separation (overhead) structure to span the railroad further east and west, respectively, of the proposed SR–58/US–395 interchange.

The alternatives described above will be further refined through efforts conducted under the National Environmental Policy Act (40 CFR parts 1500–1508, and 23 CFR part 771), the 1990 Clear Air Act Amendments, section 404 of the Clean Water Act, Executive Order 12898 regarding environmental justice, the National Historic Preservation Act, the Endangered Species Act, the section 4(f) of the U.S. Department of Transportation Act, and other federal environmental protection laws, regulations, policies, and executive orders. The EIS will incorporate comments from the public scoping process as well as analysis in technical studies. Other alternatives suggested during scoping process would be considered during the development of the EIS. The EIS will consider any additional reasonable alternatives identified during scoping process. Letters describing the proposed action and soliciting comments will be sent to appropriate Federal, State, regional and local agencies, and to private organizations and citizens who previously have expressed, or are known to have, an interest in this project. Location and details of the

SCH No. _____

NOTICE OF PREPARATION

To: AGENCIES, ORGANIZATIONS, AND INTERESTED PARTIES

From: California Department of Transportation, District 8
464 W. 4th Street, 6th Floor
San Bernardino, CA 92401-1400

Subject: **Notice of Preparation of a Draft Environmental Impact Report**
Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375

Project Title: State Route 58 via Hinkley Widening and Realignment Project

Project Location: State Route 58 (SR-58) near the community of Hinkley (between Post Mile 21.8 and Post Mile 31.1) in San Bernardino County, California (Attachment A).

Project Description: The proposed project would involve widening and realignment of an approximately 10-mile segment of SR-58 from a two-lane conventional highway to a four-lane expressway/freeway west of the City of Barstow near the community of Hinkley. SR-58 is a four-lane expressway on either side of the proposed project, so this will be a gap closure project (Attachment B).

This notice is to inform you that the California Department of Transportation District 8 will be the lead agency and will prepare a joint Environmental Impact Statement/Report (EIS/R) for the project identified above. Your participation as a responsible agency is requested in the preparation and review of this document.

We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR/EIS prepared by our agency when considering your permit or other approval for the project.

The project location, project description, and potential environmental effects of the proposed action are described in Attachments A, B, and C.

Due to the time limits mandated by state law, your response must be sent at the earliest possible date, but not later than 30 days after receipt of this notice.

Please direct your response to Boniface Udotor (Telephone 909/388-1387) at the address shown above. Please provide us with the name for a contact person in your agency.

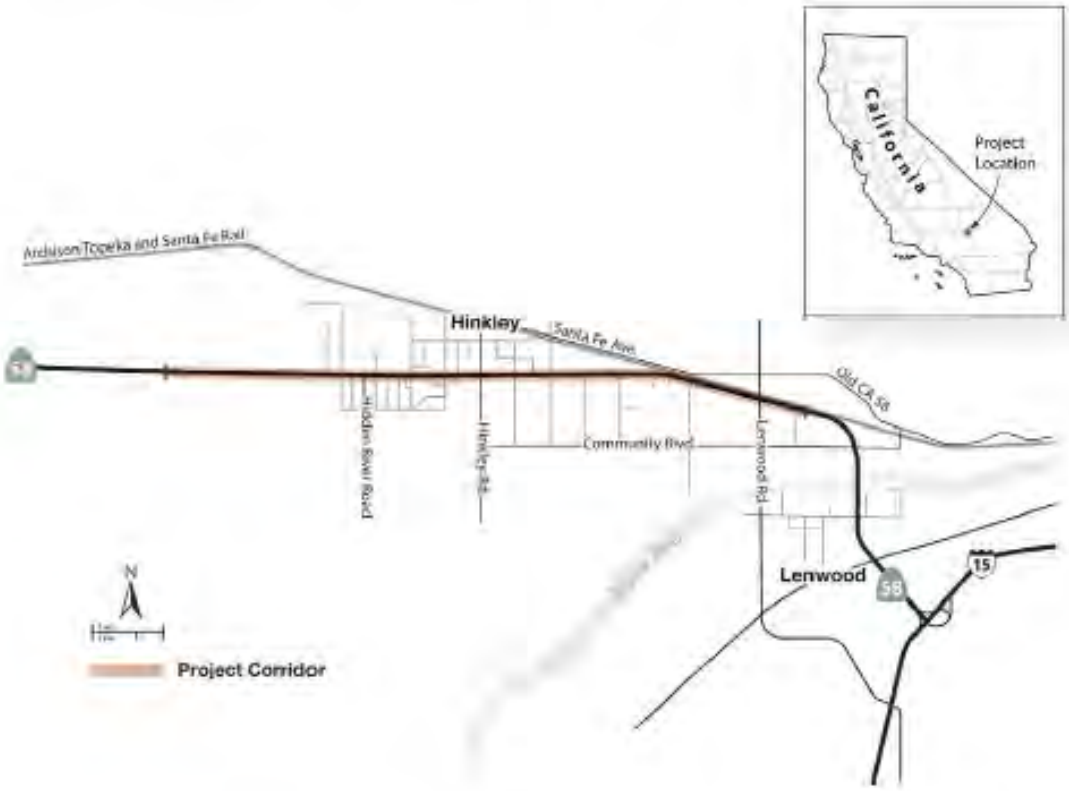
Date 5-10-07

Signature [illegible]

Title SENIOR ENVIRONMENTAL PLANNER

ATTACHMENT A: PROJECT LOCATION

State Route 58 via Hinkley Widening and Realignment Project



ATTACHMENT B: PROJECT DESCRIPTION

State Route 58 via Hinkley Widening and Realignment Project

The Federal Highway Administration (FHWA), in cooperation with the California Department of Transportation District 8, proposes to widen and realign State Route 58 (SR-58) from a two-lane conventional highway to a four-lane expressway/freeway. The approximately 10-mile long segment (between Post Mile 21.8 and Post Mile 31.1) extends through the community of Hinkley, west of the City of Barstow. This section of SR-58 is currently a nonstandard two-lane conventional highway between a four-lane freeway to the west and a four-lane freeway to the east, and the proposed project would close this gap.

The purpose of this project is to increase capacity, to improve safety, and to improve route continuity on this major east-west transportation corridor. SR-58 is the major connection between I-15 in Bakersfield on the west and I-15/I-40 in Barstow on the east. The project is needed for the following reasons.

- This 10-mile segment has insufficient capacity to handle present and future travel demands, which is forecasted to more than double by the year 2030. SR-58 remains the primary east-west corridor for interregional travel and transportation of goods. Widening this two-lane gap to four lanes will remove a bottleneck condition.
- The existing two-lane highway has numerous driveways and intersecting cross-streets, which present numerous conflict points affecting operation of the highway. Upgrading from a nonstandard two-lane highway to a full-standard four-lane expressway/freeway would allow for better passing and increased site distance. A separated median would reduce the risk of head-on collisions. A clearance zone (clear recovery zone) from the edge of the traveled roadway would provide an unobstructed roadside for errant drivers to regain control.
- The existing pavement is inadequate to handle the high truck volume, which is contributing to increasing maintenance costs. It is expected that SR-58 will continue to carry high truck volumes because, as the primary east-west corridor for interregional travel and transportation of goods, it is designated for extra-legal and oversized loads. A new pavement design would meet standards for carrying this volume and size of trucks and reduce future maintenance costs.

A preferred alternative has not been selected at this point. One No Build (Alternative 1) and three Build Alternatives (Alternatives 2, 3, and 4) will be evaluated in the environmental impact statement/report (EIS/R) being prepared for the proposed project. Under the No Build (Alternative 1), the capacity and condition of SR-58 would remain the same as current traffic conditions continue to worsen. This alternative would not address the transportation issues described above. All three Build Alternatives would increase capacity from two lanes to four lanes and would reclassify this segment of SR-58 from a conventional highway to an expressway. Alternative 2: Realign and Widen (South) would widen and realign SR-58 about one-half mile south of the existing SR-58. Alternative 3: Widen the Existing would widen the highway along the existing SR-58 alignment or a slightly offset alignment throughout the project limits. Alternative 4: Realign and Widen (North) would widen and realign SR-58 just north of the existing SR-58.

The EIS/R will consider other reasonable alternatives identified during the scoping process. Caltrans District 8 will hold a scoping meeting. The scoping meeting will be advertised in local newspapers and other media, and a scoping meeting notice will be sent to appropriate Federal, State, regional and local agencies and to private organizations and citizens who previously expressed or are known to have an interest in this project.

Sample Letters (Cooperating & Participating Agencies): 6002 Process

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 8
ENVIRONMENTAL PLANNING (MS 823)
464 W. FOURTH STREET, 6TH FLOOR
SAN BERNARDINO, CA 92401-1400
PHONE (909) 383-6387
FAX (909) 383-6494
TTY (909) 383-6300

Flex your power!
Be energy efficient!

Reference: 08-SBd-State Route-58
Post Mile 21.8/31.1
EA: 04351

November 14, 2007

U.S. Department of Transportation
Federal Transit Administration
201 Mission Street
Suite 1650
San Francisco, CA 94105-1839

Attention: Region 9 Representative

Dear Federal Transit Representative:

SUBJECT: Invitation to Become Participating Agency and Cooperating Agency on State Route 58 (SR-58) Widening and Realignment Project

The California Department of Transporation (Department), as delegated by the Federal Highway Administration (FHWA) is preparing an Environmental Impact Statement (EIS) for the widening and realignment of SR-58 near the community of Hinkley, west of the City of Barstow, in San Bernardino County, California – a distance of approximately 10 miles. The Notice of Intent for this project was published in the Federal Register Notice on May 10, 2007 (Vol. 72, No. 90, Pages 26679 & 26680).

Because your agency has been identified as an agency that may have an interest in this project, we are inviting you to become a participating agency with the Department in the development of the EIS. This designation does not necessarily imply that your agency supports the proposed project.

The Department also requests the participation of your agency as a cooperating agency in the preparation of the DEIS and FEIS, in accordance with 40 CFR 1501.6 of the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provision of the National Environmental Policy Act (NEPA).

Pursuant to Section 6002(f) of SAFETEA-LU [Public Law 109-59, 8/10/2005] the Department as the lead agency in the environmental review process for this project is responsible for:

a) Coordination among agencies and the public for efficient environmental reviews and project decision-making.

b) Providing an opportunity for involvement by participating agencies and the public in defining the purpose and need for this project.

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c) Making information available to the participating agencies as early as practicable in the environmental review process regarding the environmental and socioeconomic resources located within the project area and the general locations of the alternatives under consideration.

Participating agencies, pursuant to Section 6002 of SAFETEA-LU, are responsible for identifying as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project. We suggest that your agency's role in the development of the above project should include the folling as they relate to your area of expertise:

a) Provide meaningful and early input on defining the purpose and need, determining the range of alternatives to be considered, and the methodologies and level of detail required in alternatives analysis.

b) Paticipate in coordination meetings and join field reviews as appropriate.

c) Timely review and comment on the pre-draft or pre-final environmental documents to reflect the views and concerns of your agency on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

A reply is requested by December 13, 2007, even if you decline this invitation. Any Federal agency that is invited to participate in the environmental review process for a project shall be designated as a participating agency by the lead agency unless the invited agency informs the lead agency, in writing, that the invited agency:

a) Has no jurisdiction or authority with respect to the project;
b) Has no expertise or information relevant to the project; and
c) Does not intend to submit comments on the project.

A participating agency scoping meeting is scheduled for Tuesday, January 8, 2008 from 1:00 p.m. to 4:30 p.m. at the District 8 - Department Office, located at 464 West 4th Street, San Bernardino, CA 92401-1400, Room 805, on the 8th floor. Please allow time to check-in with security.

Please contact Boniface Udotor, Office Chief, San Bernardino County, Environmental Studies, at (909) 388-1387 or Anwar Ali, Associate Environmental Planner, at (909) 388-2072 should you have any questions. Thank you for your cooperation and interest in this project.

Sincerely,

Boniface Udotor
Office Chief, San Bernardino County
Environmental Studies/Support A

bc: File

Irene Dominguez/id

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Sample Response Letter: 6002 Process

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

December 13, 2007

Boniface Udotor
California Department of Transportation District 8
Environmental Planning (MS 823)
464 West 4th Street, 6th Floor
San Bernardino, CA 92401-1400

Dear Mr. Udotor:

We are writing in response to your letter dated November 13, 2007 inviting the U.S. Environmental Protection Agency (EPA) to become a Participating and Cooperating Agency for the State Route 58 (SR 58) Widening and Realignment Project, near the community of Hinkley, west of the City of Barstow, in San Bernardino County, California. The California Department of Transportation (Caltrans) will prepare an environmental impact statement (EIS) for the project under National Environmental Policy Act (NEPA).

The State of California has assumed Federal Highway Administration (FHWA) responsibilities under NEPA for this project pursuant to the *Memorandum of Understanding Between the Federal Highway Administration and the California Department of Transportation Concerning the State of California's Participation in the Surface Transportation Project Delivery Pilot Program.*

EPA accepts Caltrans' invitation to become a "Participating Agency" (as defined in 23 USC 139 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)). As a Participating Agency, EPA will provide comments on the Draft EIS and Final EIS. EPA has already provided scoping comments for this project on July 31, 2007. EPA's participation as a Participating Agency does not constitute formal or informal approval of any part of this project under any statute administered by EPA, nor does it limit in any way EPA's independent review of the Draft and Final EISs pursuant to Section 309 of the Clean Air Act.

EPA respectfully declines Caltrans' invitation to participate as a Cooperating Agency. We understand that 40 CFR Section 1501.6 requires the FHWA to invite EPA to participate as a Cooperating Agency. However, it is not unusual for EPA to decline invitations to participate as a Cooperating Agency in federal projects. EPA prefers to engage in projects through coordination under the April 2006 *National Environmental Policy Act and Clean Water Action Section 404 Integration Process for Federal Aid Surface Transportation Projects in California Memorandum of Understanding* (NEPA/404 MOU). EPA has committed to specific concurrence points to aide in development of the EIS through the NEPA/404 MOU, which

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involves active participation in meetings and document reviews. EPA is committed to upholding our formal responsibilities under the NEPA/404 MOU.

The NEPA/404 MOU applies to transportation projects that have five or more acres of permanent impacts to waters of the United States and require EIS preparation. We encourage Caltrans to contact the NEPA/404 signatory agencies once more information about the potential impact to waters of the United States is available so that the agreement points can be addressed in coordination with SAFETEA-LU requirements and as early as possible in the EIS process.

We appreciate Caltrans' interest in working with EPA and look forward to participating in the project's EIS development. Unfortunately, EPA is not available for the January 8, 2008 participating agency scoping meeting. If you have any questions, please contact me at 415-947-4188 or by e-mail at sturges.susan@epa.gov.

Sincerely,

Susan Sturges, Life Scientist
Environmental Review Office

CC: Anwar Ali, California Department of Transportation, District 8
Tay Dam, Federal Highway Administration
Horst Greczmiel, Council on Environmental Quality

2

Sample Response Correspondence: 6002 Process

Edythe_Seehafer@ca.blm.gov
06/20/2007 03:35 PM

To boniface_udotor@dot.ca.gov
cc Mary_Petry@dot.ca.gov
bcc
Subject Fw: SR 58 Widening - Response to Scoping Letter

Boniface, please add BLM, Barstow Field Office to your list of interested agencies. We had a recent Caltrans - BLM Coordination Meeting at which SR 58 widening project came up in conversation, but no specifics were given. Once the alignment alternatives and ROW width is identified, BLM will have to review its records to determine what, if any, impact this would have on public lands. It appears some of the alternative alignments cross public lands in the area of the Valley View exit. It is likely that we would be a cooperating agency given the location, if all work cannot be completed within the existing ROW.

BLM would prefer an alignment that uses the existing alignment to the extent feasible, given we manage public lands both north and south of the alignment for desert tortoise recovery. Also, we would want any existing desert tortoise fences reconstructed, and appropriate culverts for use of DT and other wildlife constructed as feasible beneath the roadway. The FHWA will need to consult with USFWS on this project also given its location, and should do so as soon as a preferred alignment is identified.

Also, for the purposes of the NEPA analysis and USFWS consultation for this project and the upgrade project on SR58 to the west (Marie Petry lead, scoping notice received a few weeks ago), it would appear time and consultation savings would occur if the analysis and consultation is combined. I will be the point of contact until we know the scope of public lands effects. Edy

Edythe Seehafer
Environmental Coordinator
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311
760-252-6021

Anwar Ali/D08/Caltrans/CAGov
12/26/2007 09:42 AM

To "Rahman, Junaid" <JNR@cpuc.ca.gov>
cc Bon face.Udotor@dot.ca.gov, Mark Lancaster/D08/Caltrans/CAGov@DOT
bcc
Subject RE: Invitation to Become Participating Agency and Cooperating Agency on State Route 58 Widening and Rea ignment Project

Hi Junaid,
Thank you for response to our invitation to become a participating agency. The California Department of Transportation project development process ensures all utilities in project area are identified early on . For this project, all utilities have been identified and plans are being developed. The information requested will provided as they become available. Thank you.

Anwar Ali
Associate Environmental Planner
Department of Transportation
464 W. 4th Street, MS 823
San Bernardino, CA 92401-1400
Phone: (909) 388-2072 Fax: (909) 383-6494

Phone: (909) 388-2072 Fax: (909) 383-6494
"Rahman, Junaid" <JNR@cpuc.ca.gov>

"Rahman, Junaid" <JNR@cpuc.ca.gov>
12/20/2007 05:55 PM

To <Boniface.Udotor@dot.ca.gov>
cc <Anwar.Ali@dot.ca.gov>, "Lukins, Chloe" <CLU@cpuc.ca.gov>
Subject RE: Invitation to Become Participating Agency and Cooperating Agency on State Route 58 Widening and Realignment Project

Boniface,
The California Public Utilities Commission wishes to act as a Participating Agency with CDOT in the development of the EIS for SR 58 Road Widening and Realignment Project. We request further details on the project, such as:

- are there transmission lines that will be affected by the road widening?
- will any utilities need to make upgrades to accommodate this project?

The CPUC appreciates the opportunity to act as a Participating Agency.

Junaid Rahman
Energy Division
Phone: (415) 355-5492
Fax: (415) 703-2200
E-mail: jnr@cpuc.ca.gov

<Raymond.Sukys@dot.gov>
01/03/2008 01:52 PM

To <anwar.ali@dot.ca.gov>
cc
bcc
Subject SR-58

As discussed today, FTA Region 9 declines to become a cooperating or participating agency for the NEPA evaluation of this project.

Thank you,

Ray Sukys
Director, Office of Planning & Program Development
FTA Region 9

participating agency

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 8
ENVIRONMENTAL PLANNING (MS 823)
464 W. FOURTH STREET, 6TH FLOOR
SAN BERNARDINO, CA 92401-1400
PHONE (909) 383-6387
FAX (909) 383-6494
TTY (909) 383-6300

Flex your power!
Be energy efficient!

Reference: 08-SBd-State Route-58
Post Mile 21.8/31.1
EA: 04351

June 11, 2009

U.S. Department of Transportation
Federal Transit Administration
201 Mission Street, Suite 1650
San Francisco, CA 94105-1839

Attention: Region 9 Representative

SUBJECT: Review request for the Draft Purpose and Need, Coordination Plan, and Proposed Alternatives on the State Route 58 (SR-58) Hinkley Expressway Project

Dear Federal Transit Representative:

The California Department of Transporation (Department), as delegated by the Federal Highway Administration (FHWA) is preparing an Environmental Impact Statement (EIS) for the widening and realignment of SR-58 near the community of Hinkley, west of the City of Barstow, in San Bernardino County, California – a distance of approximately 10 miles. The Notice of Intent for this project was published in the Federal Register Notice on May 10, 2007 (Vol. 72, No. 90, Pages 26679 & 26680).

Pursuant to Section 6002(f) of SAFETEA-LU [Public Law 109-59, 8/10/2005], and in accordance with 40 CFR 1501.6 of the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provision of the National Environmental Policy Act (NEPA), the Department, as the lead agency, is sending the enclosed information regarding this project in order to request comments on the Draft Purpose and Need, Coordination Plan, and Proposed Alternatives. **Please submit comments on, or before July 11, 2009.**

On June 26, 2007, July 26, 2008 and October 29, 2008 the Department hosted public information meetings with community stakeholders to request comments on the Draft Purpose and Need and discuss the Proposed Alternatives. As of December 1, 2008 all comments from community stakeholders regarding the Draft Purpose and Need and the Proposed Alternatives were received.

On January 8, 2008, an agency scoping meeting was scheduled at the District 8 - Department Office to discuss the Draft Purpose and Need, Coordination Plan, and the Proposed Alternatives. In order to update your agency on where we are in the environmental process the Department is mailing this packet of information. Additionally, we are requesting your agency's comments on the Draft Purpose and Need, Coordination Plan, and Proposed Alternatives on, or before July 11, 2009.

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It is the Department's goal to identify any issues of concern regarding the project's potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval that is needed for the project.

Please notify us as soon as possible if you are not the correct agency contact person for this project so that we may update our records. Should you have any questions regarding this review request and/or the proposed project please contact Boniface Udotor, Office Chief, San Bernardino County, Environmental Studies, at (909) 388-1387 or Irene Dominguez, Associate Environmental Planner at (909) 388-7068.

Thank you for your cooperation and interest in this project.

Sincerely,

Russell Williams

for Boniface Udotor
Office Chief, San Bernardino County
Environmental Studies/Support A

bc: File

Irene Dominguez/id

"Caltrans improves mobility across California"

Mojave Desert Air Quality Management District
14306 Park Avenue, Victorville, CA 92392-2310
760.245.1661 • fax 760.245.2699
Visit our web site: http://www.mdaqmd.ca.gov
Eldon Heaston, Executive Director

June 25, 2009

Boniface Udotor, Office Chief
Department of Transportation, District 8, Environmental Planning (MS 823)
464 W. Fourth Street
San Bernardino, CA 92401-1400

Project: State Route 58 Hinkley Expressway Project

Dear Mr. Udotor:

The Mojave Desert Air Quality Management District (MDAQMD) has received the review request for the Draft Purpose and Need, Coordination Plan, and Proposed Alternatives on the State Route 58 (SR-58) Hinkley Expressway Project. This project will widen and realign SR-58 near the community of Hinkley for a distance of approximately 10 miles. The purpose of the project is to: improve safety features; maintain route continuity; increase capacity and reduce congestion; and upgrade the pavement structural section to handle the high truck volumes and heavy loads.

Certain air quality issues may have a potentially significant impact on air quality in the District. The Environmental Impact Statement should include a discussion of those aspects of the proposed project which have the potential to generate air quality impacts. The cumulative air quality impacts discussion should assess total non-attainment air pollutant emissions from the proposed project to determine the cumulative air quality impact on the District's air quality relative to the District attainment designations. MDAQMD Designations and Classifications are available at http://www.mdaqmd.ca.gov/rules_plans/documents/CEQAGuidelines.pdf.

Thank you for the opportunity to review this planning document. If you have any questions regarding this letter, please contact me at (760) 245-1661, extension 6726, or Tracy Walters at extension 6122.

Sincerely,

Alan J. De Salvio
Supervising Air Quality Engineer

TW/AJD Hinkley Widening & Realignment Project

City of Adelanto | Town of Apple Valley | City of Barstow | City of Blythe | City of Hesperia | City of Needles | County of Riverside | County of San Bernardino | City of Twentynine Palms | City of Victorville | Town of Yucca Valley

Other Agency Correspondence

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

January 23, 2012 Reply To: FHWA111128B

Gabrielle Duff, Office Chief
Cultural Studies
Caltrans District 8
Environmental Planning (MS 825)
464 W Fourth Street, 6th Floor
San Bernardino, CA 92401-1400

Re: Determination of Eligibility for the Proposed State Route 58 Hinkley Expressway Project in San Bernardino County, CA

Dear Ms. Duff:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has determined that the following properties are not eligible for the National Register of Historic Places:

- CA-SBR-12747H, South of Frontier Road, in Section 32, T10N, R3W, SBBM
- CA-SBR-12478H, North and South of SR-58, in Sections 25 and 36, T10N, R4W, SBBM
- Leylerly Dairy, 21988 Hwy 58
- Van Vliet Dairy, 37109 Hinkley Road
- Shephard Farmstead, 21931 Hwy 58
- 36999 Flower Street
- Single Family Residence on Mountain View Road, APN-0494-201-22

Based on review of the submitted documentation, I concur.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at nlindquist@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

Table 5-2: Agency Coordination

Agency Name	Role	Responsibilities	Coordination
California Department of Transportation District 8 (Caltrans)	Lead Agency	Manage SAFETEA-LU Section 6002 process; prepare EIS/EIR; provide opportunity for public & participating/cooperating agency involvement.	PDT Meetings.
U.S. Army Corps of Engineers (USACOE)	Cooperating Agency/ Participating Agency	Probable Section 404.	9/29/09 – Field meeting with Veronica Chan (ACOE) and Karen Riesz (Caltrans) to present the project.
U.S. Environmental Protection Agency (EPA)	Cooperating Agency/ Participating Agency	Cooperating Agency/Participating Agency. Provide input during CEQA/NEPA process.	
Council on Environmental Quality (CEQ)	Cooperating Agency/Participating Agency	Cooperating Agency/Participating Agency. Provide input during CEQA/NEPA process.	
U.S. Fish and Wildlife Service (USFWS)	Cooperating Agency/ Participating Agency	Probable Formal Section 7 and 2081 take permit	2/20/90: BA submitted. 6/22/90: BO obtained. 8/27/09: Meeting with Ray Bransfield (USFWS Ventura) to discuss mitigation ratios and installation of desert tortoise fencing. Desert tortoise fencing will be located outside the detention fencing. 9/22/09 - Meeting with Ray Brandsfield (USFWS), Tonia Moore (CDFG), Eric Weiss (CDFG), and Becky Jones (CDFG): Follow up discussion from previous meetings pertaining to culvert design, raven monitoring as part of the desert tortoise monitoring, and mitigation ratios for this project.
U.S. Bureau of Land Management (BLM)	Cooperating Agency/Participating Agency	Property owner. Provide input regarding land uses and issues in project area.	06/20/07: E-mail received from Edythe Seehafer of BLM requesting Cooperating Agency Status on the project, which was presented during a quarterly meeting between Caltrans and BLM. 9/3/09: Meeting with Mickey Quillman (BLM Manager) to present project. BLM accepted role as cooperative agency under NEPA. They agreed to review all

Agency Name	Role	Responsibilities	Coordination
			documents including the NES prior to Caltrans approval. Lorenzo Encinas assigned to the project.
California Department of Fish and Game (DFG)	Participating Agency	Probable 1602	3/12/90: CDFG approval of project. 9/22/09 - Meeting with Ray Brandsfield (USFWS), Tonia Moore (CDFG), Eric Weiss (CDFG), and Becky Jones (CDFG): Follow up discussion from previous meetings pertaining to culvert design, raven monitoring as part of the desert tortoise monitoring, and mitigation ratios for this project.
California Department of Water Resources (DWR)	Participating Agency	Provide input regarding local hydrology and water supply.	
California Office of Historic Preservation (SHPO)	Participating Agency	Provide input regarding historic and archaeological resources.	
California Public Utilities Commission (CPUC)	Participating Agency	*Note: Aboveground electrical lines, underground utility lines used for distribution of natural gas and petroleum. Railroad alignment.*	
California Regional Water Quality Control Board, Region 6	Participating Agency	Section 401 *Note: Numerous monitoring and treatment wells in the area.* *If NPDES or 401 Water Quality Certification is needed, then Board has permitting authority and would be cooperating/participating under NEPA and responsible under CEQA.*	9/10/09 - Meeting with Lisa Dernbach (RWQCB, Region 6) to present the project to the RWQCB as part of NEPA coordination. No relevant biological related issues were discussed.
San Bernardino County Land Use Services Department, Planning Division	Participating Agency	*Note: Local planning authority. The alignment is entirely within the unincorporated area of San Bernardino County.*	
San Bernardino Associated Governments (SANBAG)	Participating Agency	Provide transportation and land use planning related input throughout CEQA/NEPA process.	
Mojave Desert Air Quality Management District	Participating Agency	Provide input related to air quality during CEQA/NEPA process.	
CA Highway Patrol	Participating Agency	Provide input during CEQA/NEPA process.	

Agency Name	Role	Responsibilities	Coordination
San Bernardino County Fire Department	Participating Agency	Provide input during CEQA/NEPA process.	
San Bernardino County Sheriff	Participating Agency	Provide input during CEQA/NEPA process.	
Native American Heritage Commission	Participating Agency	Provide input during CEQA/NEPA process.	See Section 5.3.1.1
U.S. Department of Transportation, Federal Transit Administration	Participating Agency	Provide input during CEQA/NEPA process.	
CA Department of Toxic Substances Control	Participating Agency	Provide input during CEQA/NEPA process.	
CA Department of Parks and Recreation	Participating Agency	Provide input during CEQA/NEPA process.	
CA Department of Conservation	Participating Agency	Provide input during CEQA/NEPA process.	
City of Barstow, Community Development Dept, Planning Division	Participating Agency	Provide input during CEQA/NEPA process.	
Barstow Unified School District	Participating Agency	Provide input during the CEQA/NEPA process.	

Chapter 6. **List of Preparers**

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Chapter 6 List of Preparers

6.1 California Department of Transportation (Caltrans) Staff

This DEIR/DEIS was prepared by Caltrans, District 8. The following Caltrans staff prepared this report:

Jim Robinson, P.E., BS Civil Engineering, Villanova University in Villanova, Pennsylvania; 31 years' experience in Design, Project Management, and Construction Management. Project Manager. Previous Project Managers were Paula Beauchamp and Mark Lancaster

Kurt Heidelberg, BS - Mathematics, Virginia Commonwealth University, M.S. - Computer Science, Virginia Commonwealth University, M.A. - Anthropology (Archaeology), University of California, Riverside, 20 years Environmental Planning experience, Branch Chief, Environmental Studies "D", DEIR/DEIR Senior Environmental Planner

Kerrie Hudson, BA Business Administration, California Baptist University; 17 years' experience in Transportation/Environmental Planning. Branch Chief, Environmental Studies "A," DEIS/DEIR Senior Environmental Planner

Boniface Udotor, MUP & BA Environmental Studies, San Jose State University, San Jose, California; 23 years of experience in Environmental Analysis. Senior Environmental Planner

Tisa Rodriguez, MA Public Administration, San Diego State University; BA Political Science, California Lutheran University; 5.5 years' experience in Environmental Analysis. Associate Environmental Planner, Visual Impact Assessment, DEIS/DEIR Writer, and Review Lead

Irene Dominguez, BA Sociology/Law and Society, University of California Riverside; 8 years' experience in Environmental Analysis. Associate Environmental Planner, DEIS/DEIR Writer

Antonia Toledo, MS City and Regional Planning, Cal Poly San Luis Obispo; BA Urban Studies and Planning, University of CA San Diego; 9 years' experience in Environmental Analysis, 3 years' experience in Land Development. Associate Environmental Planner, DEIS/DEIR Writer

Diboro Kanabolo, P.E., Senior Transportation Engineer; MS & BS Civil Engineering, Texas Tech University in Lubbock, Texas; 26 years' experience in Transportation/General Civil Engineering. Senior Design Engineer, Engineering Review

Dat H. Wong, P.E., Transportation Engineer, BS Civil Engineering, California State Polytechnic Pomona; 13 years' experience in Project Development/Design, 1 year experience in Caltrans Construction. Project Engineer, Design and Project Report Lead

Joe Damian, Caltrans Transportation Engineer, Caltrans Design O

Tim Lam, Senior Transportation Engineer, Caltrans Geotechnical Services

Roy King, R.C.E., MS Water Resources Engineering, California State University, Fullerton, BS Civil Engineering, University of Wyoming; 13 years' experience in Caltrans Hydraulics Division, 10 years' experience in Caltrans Construction Division; 25 years' experience in various private and overseas engineering firms and government agencies. Hydrology/Floodplains Lead

Tony Louka, Senior Transportation Engineer, Caltrans Environmental Engineering

Hoang B Pham, Transportation Engineer, Caltrans Environmental Engineering

Rodrigo Panganiban, Transportation Engineer, Caltrans Environmental Engineering

Rosanna Roa, 19 years' experience in Caltrans Environmental Engineering, Hazardous Waste. Hazardous Waste Coordinator, Hazmat Review Lead

Olufemi Odufalu, Senior Transportation Engineer, Caltrans Environmental Engineering Oversight

Gabrielle Duff, MA Archaeology, University of California, Riverside; BA Anthropology, University of California, Santa Barbara; 15 years' experience in Cultural Resources Management. Senior Environmental Planner, Cultural/Paleontology Review Lead

Craig Wentworth, Senior Environmental Planner, Environmental Bio. Studies/Permits – Replaced by Scott Quinnell, Senior Environmental Planner, Environmental Bio. Studies/Permits

Anwar Ali, Associate Environmental Planner, Caltrans Environmental Bio. Studies/Permits – Replaced by Kyle Myrick, Environmental Planner, Caltrans Environmental Bio. Studies/Permits

Ray Desselle, District Landscape Architect, Caltrans Engineering Services, Landscape Architecture

John Stanton, Landscape Associate, Caltrans Landscape Architecture Unit A

Byron Strout, Senior Landscape Architect, Caltrans Landscape Architecture Unit A

Edison Jaffrey, Associate Transportation Engineer, Caltrans Environmental Engineering

Michael S. Romo, Senior Right of Way Agent, No longer with Caltrans Right of Way

Catherine B. Jochai, California Licensed Landscape Architect # 4905, BS Landscape Architecture, California State Polytechnic University, Pomona; BA Biology, Immaculate Heart College; 6 years' experience in NPDES compliance, 12 years' experience in landscape architecture, revegetation and erosion control design for highway projects. District NPDES/Stormwater Coordinator, Water Quality Review

Chunghao "Will" Kuo, Masters in Landscape Architecture, California State Polytechnic University, Pomona; 8 years' experience in Landscape Architecture & Stormwater, Qualified Storm Water Pollution Prevention Plan Developer and Certified Professional Stormwater Quality (EnviroCert). Registered Landscape Architect, Water Quality Review Lead

6.2 Consultants

6.2.1 System Metrics Group, Inc.

Yu-Ying Chu	Traffic Engineer	*Traffic Study Report*

6.2.2 SECOR International, Inc.

Kevin K. Miskin, P.E.	Project Manager	*Initial Site Assessment*
Anne E. Perez	Task Order Manager	*Initial Site Assessment*
Jason Adelaars	Environmental Scientist	*Initial Site Assessment*
Dion Monge	Environmental Scientist (Soils)/ISA Lead	*Initial Site Assessment*

6.2.3 ECORP Consulting, Inc.

Brad Haley	Senior Biologist	*Field Surveys*
Mark Allaback	Senior Biologist	*Field Surveys*
Kristen Mobraaten	Field Assistant	*Field Surveys*
Caleb Murhy	Field Assistant	*Field Surveys*
Barbara Stein	Field Assistant	*Field Surveys*
Daria Snider	Botanist	*Field Surveys*
Tara Collins	Botanist	*Field Surveys*
Debra Sykes	Biologist	*Field Surveys*
Margaret Bornyasz	Biologist	*Field Surveys*
Alicia Pool	Biologist	*Field Surveys*
Manna Warburton	Biologist	*Field Surveys*
Brian Zitt	Biologist	*Field Surveys*
Scott Taylor	Biologist	*Field Surveys*
Tom Scofield	Biologist	*Field Surveys*
Natasha Bartley	Biologist	*Field Surveys*
Keith Kwan	Biologist	*Field Surveys*
Freddie Olmos	Biologist	*Field Surveys*
Alferdo Aguirre	Biologist	*Field Surveys*

6.2.4 ICF International (Draft EIR/EIS Preparation Lead)

David Freytag	Project Director	*DEIR/DEIS QA/QC*
Brian Calvert	Project Director	*DEIR/DEIS QA/QC*

Lee Lisecki	Project Director	*DEIR/DEIS QA/QC*
Jean Lafontaine	Project Manager	*DEIR/DEIS Preparation Lead*
Mari Piantka	Project Coordinator	*DEIR/DEIS Coordinator*
Kate Giberson	Project Manager, Pre-DEIR/DEIS	*Section 6002 Coordination*
Diana Roberts	Project Coordinator, Pre-DEIR/DEIS	*Section 6002 Coordination*
Keturah Anderson	Senior Environmental Planner	*Community Impact Assessment*
Carson Anderson	Senior Environmental Planner	*Visual Impact Assessment*
Peter Hardie	Environmental Planner	*Noise Study Report*
Keith Cooper	Senior Air Quality and Climate Change	*Air Quality Report*
Hina Gupta	Environmental Planner	*Relocation Impact Report*
Nate Martin	Environmental Planner	*Water Quality Report*
Matt McFalls	Environmental Planner	*Energy Study*
Shilpa Trisal	Senior Environmental Planner	*Community Impact Assessment and Relocation Impact Report*
Daniella Sanaryan	Senior Environmental Planner	*DEIR/DEIS Preparation*
Denise Souliotes	Environmental Research Assistant	*DEIR/DEIS Preparation*
Melissa Kennedy	Environmental Research Assistant	*DEIR/DEIS Preparation*
Gabriel Olson	Environmental Planner	*DEIR/DEIS Preparation*
Steve Bossi	Environmental Planner	*DEIR/DEIS Preparation*
Mayra Medel	Environmental Planner	*DEIR/DEIS Biological*
Aaron Brownwood	Environmental Planner	*DEIR/DEIS Preparation*
Lesa Erecius	Environmental Planner	*DEIR/DEIS Preparation*
Elizabeth Irvin	Technical Editor	*Technical Editing*
John Mathias	Technical Editor	*Technical Editing*
Jenelle Mountain-Castro	Publications Specialist	*Formatting*

6.2.5 Applied Earthworks, Inc.

Susan Goldberg	Principal Investigator	*Archeological Study*
David Earle	Historian	*Historic Resources Evaluation*

6.2.6 Cogstone

Sherri Gust	Principal Paleontologist	*Paleontological Evaluation*
Kim Scott	Paleontologist	*Paleontological Evaluation*

Chapter 7. **Distribution List**

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Chapter 7. Distribution List

FEDERAL	
Barbara Boxer US Senator	201 North “E” Street, Suite 210 San Bernardino, CA 92401
Dianne Feinstein US Senator	750 “B” Street, Suite 1030 San Diego, CA 92101
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Edythe Seehafer Environmental Coordinator	U.S. Bureau of Land Management Barstow Field Office 2601 Barstow Road Barstow, CA 92311
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Jeff Scott	Environmental Protection Agency Communities and Ecosystems Division 75 Hawthorne Street San Francisco, CA 94105
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	Federal Railroad Administration 1200 New Jersey Avenue, SE Washington, DC 20590
Office of the Secretary	U.S. Department of Agriculture 1400 Independence Ave., S.W. Washington, D.C. 20250
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Paul D. Thayer Executive Director	California State Lands Commission 100 Howe Avenue, #100 Sacramento, CA 95825
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Administrator	California Highway Patrol 300 E Mountain View St Barstow, CA 92311-2887
Administrator	California Department of Conservation 655 S. Hope Street, #700 Los Angeles, CA 90017
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Larry Myers	Native American Heritage Commission 915 Capitol Mall Rm 364 Sacramento, CA 95814-4801
Mike Chrisman	California Resources Agency 1416 9th St Ste 131 Sacramento, CA 95814-5511
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	Southern California Association of Governments San Bernardino County Regional Office Santa Fe Depot 1170 West Third Street, Suite 140 San Bernardino, CA 92418
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Fire Captain	Hinkley Station 56 37284 Flower Rd P.O. Box 218 Hinkley, CA 92347
Captain Cliff Raynolds	County of San Bernardino Sheriff's Department, Barstow Station 225 East Mountain View Barstow, CA 92311
Mike Massimini City Planner and Nick Nichols City Engineer	City of Barstow Community Development Department Planning and Engineering Division 220 East Mountain View Street, Suite A Barstow, CA 92311
Susan Levine Superintendent	Barstow Unified School District 551 S. Avenue H Barstow, CA 92311

Debbie Medina Branch Manager	Barstow Branch Library 304 E. Buena Vista St. Barstow, CA 92311-2806
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Alessia Morris Transportation Coordinator	1st Student (School Bussing) PO Box 2350 Barstow, CA 92311
Geri Justis	Barstow Area Chamber Of Commerce PO Box 698 Barstow, CA 92312-0698
Joe Gomez	Mayor, City Of Barstow 220 E Mountain View St Ste A City Hall Barstow, CA 92311
Julie Hackbarth-McIntyre Willie Hailey Sr. Tim Saenz Timothy Silva	City Council Members, City of Barstow 220 E Mountain View St Ste A City Hall Barstow, CA 92311
	Hinkley Senior Citizens 35997 Mountain View Rd Hinkley, CA 92347-9613
PROPERTY OWNERS	
House of Faith	36730 Hinkley Road Hinkley, CA 92347
Hinkley EMP Church	36833 Flower St Hinkley, CA 92347
Hinkley Bible Church	37313 Hinkley Road Hinkley, CA 92347-9701
Ms. Denise Flores & Mr. Joel Valenzuela	ARC Towing 821 W Main St Barstow, CA 92311-2649
James & Ruth Harmsen	Harmsen Family Dairy 23920 Community Blvd Hinkley, CA 92347-9721
Jim Harmsen Jr.	Harmsen Family Dairy 36507 Dixie Road Hinkley, CA 92347
Alex Abu Hantash	Hinkley Market & Gas 37466 Hinkley Road Hinkley, CA 92347
	M&M Tinting 21841 State Highway 58 Hinkley, CA 92347-9705
	Mt View LLC 831 W Main St Barstow, CA 92311-2649
Current Resident	15533 Lockhart Ranch Rd Hinkley, CA 92347-9529
Current Resident	15635 Lockhart Ranch Rd Hinkley, CA 92347-9754

Current Resident	15654 Roy St Hinkley, CA 92347-9662
Current Resident	16198 Lockhart Ranch Rd Apt A Hinkley, CA 92347-9772
Current Resident	19139 State Highway 58 Hinkley, CA 92347-9597
Current Resident	19798 State Highway 58 Hinkley, CA 92347-9525
Current Resident	19910 State Highway 58 Hinkley, CA 92347-9767
Current Resident	20034 State Highway 58 Hinkley, CA 92347-9527
Current Resident	20054 State Highway 58 Hinkley, CA 92347-9527
Current Resident	20338 Frontier Rd Hinkley, CA 92347-9634
Current Resident	20455 Halstead Rd Hinkley, CA 92347-9737
Current Resident	20620 Alcudia Hinkley, CA 92347
Current Resident	20800 Halstead Rd Hinkley, CA 92347-9737
Current Resident	20941 State Highway 58 Hinkley, CA 92347-9638
Current Resident	21102 Halstead Rd Hinkley, CA 92347-9737
Current Resident	21112 Rainbow Rd Hinkley, CA 92347-9759
Current Resident	21165 State Highway 58 Hinkley, CA 92347-9638
Current Resident	21184 Rainbow Rd Hinkley, CA 92347-9759
Current Resident	21261 Park Ave Hinkley, CA 92347-9756
Current Resident	21281 Park Ave Hinkley, CA 92347-9756
Current Resident	21286 Ash St Hinkley, CA 92347-9675
Current Resident	21504 Santa Fe Ave Hinkley, CA 92347-9750
Current Resident	21515 Halstead Rd Hinkley, CA 92347-9695
Current Resident	21536 Santa Fe Ave Hinkley, CA 92347-9750
Current Resident	21622 Sunset Rd Hinkley, CA 92347-9562
Current Resident	21676 Sunset Rd Hinkley, CA 92347-9562
Current Resident	21732 Community Blvd Hinkley, CA 92347-9714
Current Resident	21753 Irwin Ct Hinkley, CA 92347-9602

Current Resident	21767 Irwin Ct Hinkley, CA 92347-9602
Current Resident	21778 Catskill Rd Hinkley, CA 92347-9687
Current Resident	21785 Irwin Ct Hinkley, CA 92347-9602
Current Resident	21792 Alcudia Rd Hinkley, CA 92347-9543
Current Resident	21801 Burnt Tree Rd Hinkley, CA 92347-9723
Current Resident	21803 Burnt Tree Rd Hinkley, CA 92347-9723
Current Resident	21817 State Highway 58 Hinkley, CA 92347-9705
Current Resident	21818 Pioneer Rd Hinkley, CA 92347-9598
Current Resident	21825 Pera Rd Hinkley, CA 92347-9742
Current Resident	21830 Community Blvd Hinkley, CA 92347-9512
Current Resident	21832 Catskill Rd Hinkley, CA 92347-9686
Current Resident	21852 Plymouth Rd Hinkley, CA 92347-9624
Current Resident	21853 State Highway 58 Hinkley, CA 92347-9705
Current Resident	21873 Granada Rd Hinkley, CA 92347-9665
Current Resident	21878 Alcudia Rd Hinkley, CA 92347-9627
Current Resident	21928 Community Blvd Hinkley, CA 92347-9513
Current Resident	21966a Nicholason Ln Hinkley, CA 92347-9696
Current Resident	22009 Manacor Rd Hinkley, CA 92347-9644
Current Resident	22023 Pera Rd Hinkley, CA 92347-9652
Current Resident	22040 Community Blvd Hinkley, CA 92347-9514
Current Resident	22040 Salinas Rd Hinkley, CA 92347-9617
Current Resident	22046 Ashwood Rd Hinkley, CA 92347-9595
Current Resident	22062 Santa Fe Ave Apt A Hinkley, CA 92347-9734
Current Resident	22062 Santa Fe Ave Apt B Hinkley, CA 92347-9734
Current Resident	22067 Pera Rd Hinkley, CA 92347-9652
Current Resident	22079 Manacor Rd Hinkley, CA 92347-9645

Current Resident	22080 Manacor Rd Hinkley, CA 92347-9645
Current Resident	22086 State Highway 58 Hinkley, CA 92347-9510
Current Resident	22094 Santa Fe Ave Hinkley, CA 92347-9734
Current Resident	22096 Santa Fe Ave Hinkley, CA 92347-9734
Current Resident	22178 Highcrest Rd Hinkley, CA 92347-9548
Current Resident	22180 State Highway 58 Hinkley, CA 92347-9604
Current Resident	22214 Thompson Rd Apt B Hinkley, CA 92347-9571
Current Resident	22240a Salinas Rd Hinkley, CA 92347-9404
Current Resident	22240b Salinas Rd Hinkley, CA 92347-9404
Current Resident	22245 Highcrest Rd Hinkley, CA 92347-9603
Current Resident	22268 State Highway 58 Hinkley, CA 92347-9604
Current Resident	22270 Highcrest Rd Hinkley, CA 92347-9603
Current Resident	22274 Community Blvd Hinkley, CA 92347-9516
Current Resident	22275 Granada Rd Hinkley, CA 92347-9549
Current Resident	22275 Payer Ln Hinkley, CA 92347-9610
Current Resident	22324 Highcrest Rd Hinkley, CA 92347-9611
Current Resident	22342 Via Vaccaro Hinkley, CA 92347-9674
Current Resident	22392 Via Vaccaro Hinkley, CA 92347-9674
Current Resident	22425 Salinas Rd Hinkley, CA 92347-9614
Current Resident	22456 State Highway 58 Hinkley, CA 92347-9604
Current Resident	22639 Riverview Rd Hinkley, CA 92347-9591
Current Resident	22757 Riverview Rd Hinkley, CA 92347-9711
Current Resident	22777 Riverview Rd Hinkley, CA 92347-9711
Current Resident	22839 Thompson Rd Hinkley, CA 92347-9799
Current Resident	22880 Riverview Rd Hinkley, CA 92347-9697
Current Resident	22920b Santa Fe Ave Hinkley, CA 92347-9663

Current Resident	22999 Community Blvd Hinkley, CA 92347-9592
Current Resident	23023 Alcudia Rd Hinkley, CA 92347-9732
Current Resident	23490 Alcudia Rd Hinkley, CA 92347-9628
Current Resident	23502 Alcudia Rd Hinkley, CA 92347-9628
Current Resident	23508 Alcudia Rd Hinkley, CA 92347-9628
Current Resident	23535 Community Blvd Hinkley, CA 92347-9717
Current Resident	23624 Alcudia Rd Hinkley, CA 92347-9729
Current Resident	23669 Mark Twain Moreno Valley, CA 92557-4902
Current Resident	23835 State Highway 58 Apt A Hinkley, CA 92347-9605
Current Resident	24012 Community Blvd Hinkley, CA 92347-9721
Current Resident	24026 Community Blvd Hinkley, CA 92347-9721
Current Resident	24056 Community Blvd Hinkley, CA 92347-9721
Current Resident	24134 Dixie Rd Hinkley, CA 92347-9682
Current Resident	24182 Dixie Rd Hinkley, CA 92347-9682
Current Resident	24289 Community Blvd Hinkley, CA 92347-9789
Current Resident	24299 Community Blvd Hinkley, CA 92347-9789
Current Resident	24332 State Highway 58 Hinkley, CA 92347-9726
Current Resident	24333 1/2 Community Blvd Hinkley, CA 92347-9789
Current Resident	24333 Community Blvd Hinkley, CA 92347-9789
Current Resident	24399 State Highway 58 Hinkley, CA 92347-9726
Current Resident	24553 1/2 Community Blvd Hinkley, CA 92347-9777
Current Resident	24553 Community Blvd Hinkley, CA 92347-9777
Current Resident	24615 Community Blvd Hinkley, CA 92347-9777
Current Resident	24661 Community Blvd Hinkley, CA 92347-9777
Current Resident	24692 State Highway 58 Hinkley, CA 92347-9726
Current Resident	24811 Community Blvd Apt B Hinkley, CA 92347-9780

Current Resident	24811 Community Blvd Spc 10 Hinkley, CA 92347-9779
Current Resident	24811 Community Blvd Spc 11 Hinkley, CA 92347-9779
Current Resident	24811 Community Blvd Spc 12 Hinkley, CA 92347-9779
Current Resident	24811 Community Blvd Spc 13 Hinkley, CA 92347-9779
Current Resident	24811 Community Blvd Spc 15 Hinkley, CA 92347-9778
Current Resident	24811 Community Blvd Spc 16 Hinkley, CA 92347-9778
Current Resident	24811 Community Blvd Spc 17 Hinkley, CA 92347-9778
Current Resident	24811 Community Blvd Spc 18 Hinkley, CA 92347-9778
Current Resident	24811 Community Blvd Spc 19 Hinkley, CA 92347-9778
Current Resident	24811 Community Blvd Spc 2 Hinkley, CA 92347-9779
Current Resident	24811 Community Blvd Spc 21 Hinkley, CA 92347-9778
Current Resident	24811 Community Blvd Spc 22 Hinkley, CA 92347-9778
Current Resident	24811 Community Blvd Spc 23 Hinkley, CA 92347-9778
Current Resident	24811 Community Blvd Spc 24 Hinkley, CA 92347-9778
Current Resident	24811 Community Blvd Spc 25 Hinkley, CA 92347-9778
Current Resident	24811 Community Blvd Spc 26 Hinkley, CA 92347-9778
Current Resident	24811 Community Blvd Spc 4 Hinkley, CA 92347-9779
Current Resident	24811 Community Blvd Spc 6 Hinkley, CA 92347-9779
Current Resident	24811 Community Blvd Spc 7 Hinkley, CA 92347-9779
Current Resident	24811 Community Blvd Spc 8 Hinkley, CA 92347-9779
Current Resident	24811 Community Blvd Spc 9 Hinkley, CA 92347-9779
Current Resident	2493 W Hwy 58 Barstow, CA 92311
Current Resident	24944 Community Blvd Hinkley, CA 92347-9788
Current Resident	25684 Community Blvd Hinkley, CA 92347
Current Resident	2682 W Imperial Hwy # 370 Inglewood, CA 90303-3137
Current Resident	34825 Mountain View Rd Hinkley, CA 92347-9577

Current Resident	34930 Mountain View Rd Hinkley, CA 92347-9608
Current Resident	35093 Mountain View Rd Hinkley, CA 92347-9712
Current Resident	35289 Mountain View Rd Hinkley, CA 92347-9609
Current Resident	35372 Mountain View Rd Hinkley, CA 92347-9613
Current Resident	35375 Mountain View Rd Hinkley, CA 92347-9613
Current Resident	35426 Tamarack Rd Hinkley, CA 92347-9666
Current Resident	35435 Mountain View Rd Hinkley, CA 92347-9613
Current Resident	35490 Riverview Rd Hinkley, CA 92347-9722
Current Resident	35523 Mountain View Rd Hinkley, CA 92347-9613
Current Resident	35599 1/2 Riverview Rd Hinkley, CA 92347-9960
Current Resident	35599 Riverview Rd Hinkley, CA 92347-9660
Current Resident	35648 Mountain View Rd Hinkley, CA 92347-9613
Current Resident	35650 Hervey Rd Hinkley, CA 92347-9787
Current Resident	35667 Riverview Rd Hinkley, CA 92347-9661
Current Resident	35669 Riverview Rd Hinkley, CA 92347-9661
Current Resident	35681 Dixie Rd Hinkley, CA 92347-9631
Current Resident	35683 Dixie Rd Apt B Hinkley, CA 92347-9631
Current Resident	35694 Riverview Rd Apt B Hinkley, CA 92347-9661
Current Resident	35754 Hervey Rd Hinkley, CA 92347-9787
Current Resident	35784 Mountain View Rd Hinkley, CA 92347-9613
Current Resident	35863 Fairview Rd Hinkley, CA 92347-9710
Current Resident	35945 Aquarius Rd Hinkley, CA 92347-9590
Current Resident	35985 Mountain View Rd Hinkley, CA 92347-9613
Current Resident	35997 Mountain View Rd Hinkley, CA 92347-9613
Current Resident	36150 Saggitarius Rd Hinkley, CA 92347-9698
Current Resident	36227 Hinkley Rd Hinkley, CA 92347-9688

Current Resident	36246 Lenwood Rd Hinkley, CA 92347-9724
Current Resident	36275 Hinkley Rd Hinkley, CA 92347-9688
Current Resident	36316 Serra Rd Hinkley, CA 92347-9594
Current Resident	36326 Mountain View Rd Hinkley, CA 92347-9781
Current Resident	36345 Mountain View Rd Hinkley, CA 92347-9646
Current Resident	36360 Mountain View Rd Hinkley, CA 92347-9781
Current Resident	36363 Livingston Ln Hinkley, CA 92347-9677
Current Resident	36411 Hinkley Rd Hinkley, CA 92347-9704
Current Resident	36462 Mountain View Rd Hinkley, CA 92347-9781
Current Resident	36484 Mountain View Rd Hinkley, CA 92347-9781
Current Resident	36499 Hinkley Rd Hinkley, CA 92347-9704
Current Resident	36506 Mountain View Rd Hinkley, CA 92347-9301
Current Resident	36530 Red Rock Rd Apt A Hinkley, CA 92347-9565
Current Resident	36530 Red Rock Rd Apt B Hinkley, CA 92347-9565
Current Resident	36535 Lakeview Rd Hinkley, CA 92347-9766
Current Resident	36579 Red Rock Rd Apt A Hinkley, CA 92347-9763
Current Resident	36579 Red Rock Rd Apt B Hinkley, CA 92347-9763
Current Resident	36583 Indian Wells Rd Hinkley, CA 92347-9764
Current Resident	36586 Hinkley Rd Hinkley, CA 92347-9703
Current Resident	36587 Indian Wells Rd Hinkley, CA 92347-9764
Current Resident	36591 Hillview Rd Hinkley, CA 92347-9521
Current Resident	36610 Indian Wells Rd Hinkley, CA 92347-9532
Current Resident	36655 Indian Wells Rd Hinkley, CA 92347-9533
Current Resident	36680 Indian Wells Rd Hinkley, CA 92347-9532
Current Resident	36683 Hillview Rd Hinkley, CA 92347-9522
Current Resident	36693 Anson Ave Hinkley, CA 92347-9676

Current Resident	36696 Valley Wells Rd Hinkley, CA 92347-9760
Current Resident	36700 Lakeview Rd Hinkley, CA 92347-9766
Current Resident	36703 Lakeview Rd Hinkley, CA 92347-9766
Current Resident	36721 Hillview Rd Hinkley, CA 92347-9523
Current Resident	36727 Lakeview Rd Hinkley, CA 92347-9766
Current Resident	36735 Hinkley Rd Hinkley, CA 92347-9640
Current Resident	36763 Hillview Rd Hinkley, CA 92347-9523
Current Resident	36765 Lakeview Rd Hinkley, CA 92347-9766
Current Resident	36837 Hillview Rd Hinkley, CA 92347-9762
Current Resident	36881 Hinkley Rd Hinkley, CA 92347-9670
Current Resident	36999 Flower Rd Hinkley, CA 92347-9753
Current Resident	37000 Locust Rd Hinkley, CA 92347-9782
Current Resident	37008 Hinkley Rd Hinkley, CA 92347-9673
Current Resident	37067 Indian Wells Rd Hinkley, CA 92347-9691
Current Resident	37109 Hinkley Rd Hinkley, CA 92347-9702
Current Resident	37113 Locust Rd Hinkley, CA 92347-9782
Current Resident	37116 Dixie Rd Hinkley, CA 92347-9791
Current Resident	37118 Pera Rd Hinkley, CA 92347-9569
Current Resident	37136 1/2 Lenwood Rd Hinkley, CA 92347-9550
Current Resident	37136 Lenwood Rd Hinkley, CA 92347-9550
Current Resident	37185 Flower Rd Hinkley, CA 92347-9632
Current Resident	37193 Hinkley Rd Hinkley, CA 92347-9702
Current Resident	37194 Locust Rd Hinkley, CA 92347-9782
Current Resident	37229 Flower Rd Hinkley, CA 92347-9583
Current Resident	37342 Flower Rd Hinkley, CA 92347-9796
Current Resident	37344 Flower Rd Hinkley, CA 92347-9796

Current Resident	37364 Flower Rd Hinkley, CA 92347-9796
Current Resident	37396 Mulberry Rd Hinkley, CA 92347-9622
Current Resident	37414 Mulberry Rd Hinkley, CA 92347-9622
Current Resident	37424 Mulberry Rd Hinkley, CA 92347-9622
Current Resident	37430 Summerset Rd Hinkley, CA 92347-9731
Current Resident	37440 Mulberry Rd Hinkley, CA 92347-9622
Current Resident	37444 Flower Rd Hinkley, CA 92347-9528
Current Resident	37456 Mulberry Rd Hinkley, CA 92347-9622
Current Resident	37472 Mulberry Rd Hinkley, CA 92347-9622
Current Resident	37475 Mulberry Rd Hinkley, CA 92347-9622
Current Resident	37488 Mulberry Rd Hinkley, CA 92347-9622
Current Resident	37496 Flower Rd Hinkley, CA 92347-9528
Current Resident	37516 Mulberry Rd Hinkley, CA 92347-9755
Current Resident	37531 Mulberry Rd Hinkley, CA 92347-9755
Current Resident	37532 Flower Rd Hinkley, CA 92347-9794
Current Resident	37532 Mulberry Rd Hinkley, CA 92347-9755
Current Resident	37542 Flower Rd Hinkley, CA 92347-9794
Current Resident	37543 Mulberry Rd Hinkley, CA 92347-9755
Current Resident	37679 Dixie Rd Hinkley, CA 92347-9791
Current Resident	37709 Hinkley Rd Hinkley, CA 92347-9749
Current Resident	37721 Hinkley Rd Hinkley, CA 92347-9749
Current Resident	37728 Hinkley Rd Hinkley, CA 92347-9749
Current Resident	37733 Hinkley Rd Hinkley, CA 92347-9749
Current Resident	37767 Mountain View Rd Hinkley, CA 92347-9575
Current Resident	37769 Blanca Rd Hinkley, CA 92347-9568
Current Resident	37769 Petra Rd Hinkley, CA 92347-9747

Current Resident	37775 Hinkley Rd Hinkley, CA 92347-9749
Current Resident	37775 Pueblo Rd Hinkley, CA 92347-9745
Current Resident	37781 Hinkley Rd Hinkley, CA 92347-9749
Current Resident	37782 Summerset Rd Apt A Hinkley, CA 92347-9784
Current Resident	37782 Summerset Rd Apt B Hinkley, CA 92347-9784
Current Resident	37807 Petra Rd Hinkley, CA 92347-9654
Current Resident	37813 Hinkley Rd Hinkley, CA 92347-9748
Current Resident	37814 Blanca Rd Hinkley, CA 92347-9746
Current Resident	37826 Pueblo Rd Hinkley, CA 92347-9570
Current Resident	37829 Blanca Rd Hinkley, CA 92347-9746
Current Resident	37834 Petra Rd Hinkley, CA 92347-9654
Current Resident	37862 Petra Rd Hinkley, CA 92347-9655
Current Resident	37878 Pera Rd Hinkley, CA 92347-9653
Current Resident	37961 Blanca Rd Hinkley, CA 92347-9629
Current Resident	37967 Petra Rd Hinkley, CA 92347-9567
Current Resident	37967 Pueblo Rd Hinkley, CA 92347-9502
Current Resident	38001 Summerset Rd Hinkley, CA 92347-9784
Current Resident	38005 Blanca Rd Hinkley, CA 92347-9629
Current Resident	38005 Pueblo Rd Hinkley, CA 92347-9657
Current Resident	38006 Pueblo Rd Hinkley, CA 92347-9657
Current Resident	38020 Blanca Rd Hinkley, CA 92347-9629
Current Resident	38028 Summerset Rd Hinkley, CA 92347-9784
Current Resident	38031 Hinkley Rd Hinkley, CA 92347-9748
Current Resident	38033 Petra Rd Hinkley, CA 92347-9699
Current Resident	38053 Hinkley Rd Hinkley, CA 92347-9748
Current Resident	38054 Petra Rd Hinkley, CA 92347-9699

Current Resident	38062 Pueblo Rd Hinkley, CA 92347-9657
Current Resident	38075 Summerset Rd Hinkley, CA 92347-9784
Current Resident	38132 Mountain View Rd Hinkley, CA 92347-9736
Current Resident	38170 Serra Rd Hinkley, CA 92347-9740
Current Resident	38320 Mountain View Rd Hinkley, CA 92347-9647
Current Resident	38374 Mountain View Rd Hinkley, CA 92347-9647
Current Resident	38380 Serra Rd Hinkley, CA 92347-9572
Current Resident	38420 Mountain View Rd Hinkley, CA 92347-9505
Current Resident	38423 Mountain View Rd Hinkley, CA 92347-9505
Current Resident	38425 Petra Rd Hinkley, CA 92347-9739
Current Resident	38651 Pueblo Rd Hinkley, CA 92347-9408
Current Resident	38683 Mountain View Rd Hinkley, CA 92347-9507
Current Resident	38790a Mountain View Rd Hinkley, CA 92347-9648
Current Resident	38790b Mountain View Rd Hinkley, CA 92347-9648
Current Resident	38864 Mountain View Rd Hinkley, CA 92347-9534
Current Resident	39073 Hinkley Rd Hinkley, CA 92347-9418
Current Resident	39185 Mountain View Rd Hinkley, CA 92347-9534
Current Resident	39239 Mountain View Rd Hinkley, CA 92347-9536
Current Resident	40222 Hinkley Rd Hinkley, CA 92347-9738
Current Resident	40400 Hinkley Rd Hinkley, CA 92347-9738
Current Resident	40441 Hinkley Rd Hinkley, CA 92347-9738
Current Resident	40668 Harper Lake Rd Hinkley, CA 92347-9774
Current Resident	41234 Harper Lake Rd Hinkley, CA 92347-9636
Current Resident	41246 Harper Lake Rd Hinkley, CA 92347-9636
Current Resident	41311 Edie Rd Hinkley, CA 92347-9773
Current Resident	41361 Edie Rd Hinkley, CA 92347-9773

Current Resident	41374 Harper Lake Rd Hinkley, CA 92347-9684
Current Resident	41446 Harper Lake Rd Hinkley, CA 92347-9684
Current Resident	41717 American Way Hinkley, CA 92347-9557
Current Resident	41850 Hinkley Rd Hinkley, CA 92347-9419
Current Resident	42125 Friends Rd Hinkley, CA 92347-9531
Current Resident	42127 Friends Rd Hinkley, CA 92347-9531
Current Resident	42201 Friends Rd Hinkley, CA 92347-9596
Current Resident	42474 Hinkley Rd Hinkley, CA 92347-9558
Current Resident	42584 Hinkley Rd Hinkley, CA 92347-9656
Current Resident	7932 Meandering Light Ave Las Vegas, NV 89131-5013
Current Resident	PO Box 21 Hinkley, CA 92347-0021
Current Resident	PO Box 23 Hinkley, CA 92347-0023
Current Resident	PO Box 246894 Sacramento, CA 95824-6894
Current Resident	PO Box 34 Hinkley, CA 92347-0034
Current Resident	PO Box 406 Hinkley, CA 92347-0406
Current Resident	PO Box 450 Hinkley, CA 92347-0450
Current Resident	PO Box 522 Joshua Tree, CA 92252-0522
Current Resident	PO Box 54 Hinkley, CA 92347-0054
Current Resident	PO Box 93 Hinkley, CA 92347-0093
A D Gardner (or Current Resident)	PO Box 1314 Desert Hot Springs, CA 92240-0942
Current Resident	13591 Mahogany Pl Tustin, CA 92782-8368
Abraham Zuno (or Current Resident)	PO Box 266 Hinkley, CA 92347-0266
Alan J Fletcher (or Current Resident)	36566 Flower Rd Hinkley, CA 92347-9633
Alcario & Lillian M Melendez (or Current Resident)	36579 Hillview Rd Hinkley, CA 92347-9521
Alfred V. & Janet Norman (or Current Resident)	37822 Serra Rd Hinkley, CA 92347-9743
Alvaro & Maria Cruz (or Current Resident)	36796 Hidden River Rd Hinkley, CA 92347-9765

Alvaro V & Maria V Cruz (or Current Resident)	36796 Hidden River Rd Hinkley, CA 92347-9765
Alvin V & Nancy L Kurth (or Current Resident)	23124 Santa Fe Ave Hinkley, CA 92347-9663
Andrea Perry (or Current Resident)	36796 Hillview Rd Hinkley, CA 92347-9523
Aniko Kegyulics (or Current Resident)	PO Box 308 Hinkley, CA 92347-0308
Anna A Traylor (or Current Resident)	36550 Hinkley Rd Hinkley, CA 92347-9703
Anthony & Grace Ortiz (or Current Resident)	36955 Flower Rd Hinkley, CA 92347-9753
Antonio & Rosemary Munoz (or Current Resident)	23358 Santa Fe Ave Hinkley, CA 92347-9730
Archie M & Ida L Bryan (or Current Resident)	21564 Hinkley Rd Hinkley, CA 92347-9601
Arlene Zampiello And Anastasio Tsakonas (or Current Resident)	36401 Summerset Rd Hinkley, CA 92347-9718
Armando V Gonzalez (or Current Resident)	21234 Rainbow Rd Hinkley, CA 92347-9520
Arnulfo & Virginia Suarez (or Current Resident)	37334 Flower Rd Hinkley, CA 92347-9796
Barbara A. Stewart (or Current Resident)	34115 Mountain View Rd Hinkley, CA 92347-9561
Barbara Trentecoste (or Current Resident)	22232 Community Blvd Hinkley, CA 92347-9516
Barbara Whitson (or Current Resident)	35633 Fairview Rd Hinkley, CA 92347-9710
Belina L. Nelson (or Current Resident)	22858 Alcudia Rd Hinkley, CA 92347-9735
Bernie Renee Klingenberg (or Current Resident)	23980 Community Blvd Hinkley, CA 92347-9721
Bessie L Taylor (or Current Resident)	PO Box 237 Hinkley, CA 92347-0237
Beth M Case (or Current Resident)	37114 Flower Rd Hinkley, CA 92347-9758
Blair C Merbs (or Current Resident)	36639 Hillview Rd Hinkley, CA 92347-9522
Bobby Proctor (or Current Resident)	35473 Tamarack Rd Hinkley, CA 92347-9666
Brian D Miller (or Current Resident)	37022 Lenwood Rd Hinkley, CA 92347-9551
Bruce C & Eileen S J Leake (or Current Resident)	21284 Rainbow Rd Hinkley, CA 92347-9793
Burnest Cottrell (or Current Resident)	PO Box 325 Hinkley, CA 92347-0325
Carlyn & Gladys Steelman (or Current Resident)	36859 Sunset View Rd Hinkley, CA 92347-9761
Carmela J. Spasojevich	10900 Misty Creek Court Nokesville, VA 20181
Carolyn & William Bolin (or Current Resident)	36310 Lenwood Rd Hinkley, CA 92347-9724

Charlene Gurule (or Current Resident)	35922 Hervey Rd Hinkley, CA 92347-9589
Charles C Mattiesen (or Current Resident)	36771 Hidden River Rd Hinkley, CA 92347-9765
Charles R H & Shawna M Lee (or Current Resident)	36636 Mountain View Rd Hinkley, CA 92347-9792
Charles Wu (or Current Resident)	36436 Mountain View Rd Hinkley, CA 92347
Claude S Brackeen (or Current Resident)	36825 Hidden River Rd Hinkley, CA 92347-9765
Connie Wilkie (or Current Resident)	PO Box 176 Hinkley, CA 92347-0176
Cuong Greene (or Current Resident)	22623 Community Blvd Hinkley, CA 92347-9715
Cynthia Lara (or Current Resident)	23992 Santa Fe Ave Hinkley, CA 92347-9730
Dan Kelley (or Current Resident)	35624 Tamarack Rd Hinkley, CA 92347-9563
Daniel M & Jennifer L Virog (or Current Resident)	36877 Hillview Rd Hinkley, CA 92347-9762
David J Alley (or Current Resident)	PO Box 207 Hinkley, CA 92347-0207
David Velasquez (or Current Resident)	37825 Dixie Rd Hinkley, CA 92347-9542
Denise Flores & Joel Valenzule (or Current Resident)	22191 Hwy 58 Hinkley, CA 92347
Dolly I Feely (or Current Resident)	21392 State Highway 58 Hinkley, CA 92347-9752
Don Brown (or Current Resident)	36686 Dixie Rd Hinkley, CA 92347-9720
Donald R Mitchell (or Current Resident)	21212 Rainbow Rd Hinkley, CA 92347-9520
Douglas A Christie (or Current Resident)	36679 Lakeview Rd Hinkley, CA 92347-9766
Ed D & Martha K Duitsman (or Current Resident)	35691 Dixie Rd Hinkley, CA 92347-9631
Eddie R. Varela (or Current Resident)	37445 Summerset Rd Hinkley, CA 92347-9731
Edward Smith (or Current Resident)	25258 Jade Rd Hinkley, CA 92347
Efrain Ortiz (or Current Resident)	36570 Hidden River Rd Hinkley, CA 92347-9407
Elizabeth Modica (or Current Resident)	24410 Alcudia Rd Hinkley, CA 92347-9790
Elwood L & Luellen Lightle (or Current Resident)	23835 State Highway 58 Hinkley, CA 92347-9605
Enedelia Mahoney (or Current Resident)	37346 Mulberry Rd Hinkley, CA 92347-9622
Erika Schneider (or Current Resident)	20220 Halstead Rd Hinkley, CA 92347-9737
Erin & Henry Rice (or Current Resident)	37562 Mulberry Rd Hinkley, CA 92347-9755

Ernest S & Rosie G Rivera (or Current Resident)	21284 W Acacia Rd Hinkley, CA 92347-9625
Erroll & Tammy Niedert (or Current Resident)	36506 Mountain View Rd Hinkley, CA 92347
Everado Deleon (or Current Resident)	37895 Mountain View Rd Hinkley, CA 92347-9574
Everette & Letha Odegaard (or Current Resident)	36730 Hinkley Rd Hinkley, CA 92347-9640
Felipe & Ignacio Zavala (or Current Resident)	36325 Mountain View Rd Hinkley, CA 92347-9646
Floyd D & Norma J Burns (or Current Resident)	37362 Mulberry Rd Hinkley, CA 92347-9622
Francisco F Solorzano (or Current Resident)	21160 Rainbow Rd Hinkley, CA 92347-9759
Francisco J & Lydia Lara (or Current Resident)	36610 Dixie Rd Hinkley, CA 92347-9720
Fred P & Bette J Poe (or Current Resident)	37304 Hinkley Rd Hinkley, CA 92347-9701
Fred Williamson (or Current Resident)	36858 Sunset View Rd Hinkley, CA 92347-9664
Gabino & Lucy Felix (or Current Resident)	36591 Indian Wells Rd Hinkley, CA 92347-9764
George A & Carrol J Greenwood (or Current Resident)	PO Box 56 Hinkley, CA 92347-0056
George C & Betty J Golden (or Current Resident)	22232 State Highway 58 Hinkley, CA 92347-9604
George E. Shearer (or Current Resident)	37760 Summerset Rd Hinkley, CA 92347-9784
Gerardo N Montes (or Current Resident)	36744 Hillview Rd Hinkley, CA 92347-9523
Harley L & Cindy L Davis (or Current Resident)	36628 Hillview Rd Hinkley, CA 92347-9522
Helen Garrett (or Current Resident)	39675 Mountain View Rd Hinkley, CA 92347-9537
Henry & Dale Dominguez (or Current Resident)	22611 Community Blvd Hinkley, CA 92347-9715
Herbert V. Nethery (or Current Resident)	23394 Alcudia Rd Hinkley, CA 92347-9628
Hermilio & Evelyn Talamante (or Current Resident)	23588 State Highway 58 Hinkley, CA 92347-9564
Huisen Sally Van (or Current Resident)	19922 State Highway 58 Hinkley, CA 92347-9767
Irmgard Roberts (or Current Resident)	PO Box 43 Hinkley, CA 92347-0043
Jack Mills (or Current Resident)	23920 Alcudia Rd Hinkley, CA 92347-9519
James Blackwood (or Current Resident)	23146 State Highway 58 Hinkley, CA 92347-9708
James J & Dolores Miller (or Current Resident)	22062 Community Blvd Hinkley, CA 92347-9514
James J Munoz (or Current Resident)	20913 Hwy 58 Hinkley, CA 92347-9638

James R & Kathy L Burkhouse (or Current Resident)	21373 Poppy Ln Hinkley, CA 92347-9579
James R & Tina M Dawson (or Current Resident)	22123 State Highway 58 Hinkley, CA 92347-9511
Janet L Schultz (or Current Resident)	36827 Hillview Rd Hinkley, CA 92347-9762
Janice L Watkins (or Current Resident)	36702 Red Rock Rd Hinkley, CA 92347-9679
Jaroslav & Kveta Loucky (or Current Resident)	36650 Livingston Ln Hinkley, CA 92347-9706
Jay & Beverly A Potter (or Current Resident)	PO Box 417 Hinkley, CA 92347-0417
Jeanette Aguayo (or Current Resident)	22619 Thompson Rd Hinkley, CA 92347-9600
Jeanette L. Yagla (or Current Resident)	PO Box 41 Hinkley, CA 92347-0041
Jerry Linebugh (or Current Resident)	35889 Dixie Rd Hinkley, CA 92347-9401
Jesse E & Kenneth Fox (or Current Resident)	21134 Rainbow Rd Hinkley, CA 92347-9759
Jesus & Jo Ellen Aguilar (or Current Resident)	PO Box 232 Hinkley, CA 92347-0232
Jim Perkins (or Current Resident)	PO Box 342 Hinkley, CA 92347
Jim Wandell (or Current Resident)	37364 Flower Rd Hinkley, CA 92347
Joann Greengrass (or Current Resident)	20913 Hwy 58 Hinkley, CA 92347-9638
Joe & Julia Turner (or Current Resident)	36570 Indian Wells Rd Hinkley, CA 92347-9764
Joe P & Jayme Turner (or Current Resident)	36530 Indian Wells Rd Hinkley, CA 92347-9764
John A Bird (or Current Resident)	24664 Hwy 58 Hinkley, CA 92347-9726
John D & Charisma G Turner (or Current Resident)	37330 Mulberry Rd Hinkley, CA 92347-9622
John R Fiscus (or Current Resident)	36616 Valley Wells Rd Hinkley, CA 92347-9760
John T & Alta L Findley (or Current Resident)	36816 Hillview Rd Hinkley, CA 92347-9762
John W Eller (or Current Resident)	PO Box 348 Hinkley, CA 92347-0348
John Wooten (or Current Resident)	PO Box 235 Hinkley, CA 92347-0235
Jonathan G & Lena R Quass (or Current Resident)	36433 Hinkley Rd Hinkley, CA 92347-9704
Jose & Zoila Arias (or Current Resident)	20807 Hwy 58 Hinkley, CA 92347-9637
Jose A Rodriguez (or Current Resident)	36709 Hidden River Rd Hinkley, CA 92347-9765
Jose Arredorido (or Current Resident)	23690 Alcudia Rd Hinkley, CA 92347-9729

Jose M & Gloria S Gutierrez (or Current Resident)	24116 Santa Fe Ave Hinkley, CA 92347-9727
Joseph & Sylvia Evans (or Current Resident)	24616 State Highway 58 Hinkley, CA 92347-9726
Joseph Gisler (or Current Resident)	36634 Mountain View Rd Hinkley, CA 92347-9792
Juan A & Mildred Diaz (or Current Resident)	36975 Mountain View Rd Hinkley, CA 92347-9593
Juan M Gomez (or Current Resident)	35605 Fairview Rd Hinkley, CA 92347-9710
Julianne Russell (or Current Resident)	PO Box 37 Hinkley, CA 92347
Ken Jacobsen (or Current Resident)	22145 State Highway 58 Hinkley, CA 92347-9511
Kenneth & Lana Housos (or Current Resident)	21167 W. Hwy 58 Hinkley, CA 92347-9638
Kenneth G. Tapie (or Current Resident)	37824 Summerset Rd Hinkley, CA 92347-9784
Kenneth J & Gerri L Bortner (or Current Resident)	22067 Acacia St Hinkley, CA 92347-9671
Kenneth M & Lana Housos (or Current Resident)	21163 State Highway 58 Hinkley, CA 92347-9638
Kevin Banks (or Current Resident)	36565 Valley View Rd Hinkley, CA 92347-9689
Larry And Michelle Banks (or Current Resident)	22355 Salinas Rd Hinkley, CA 92347-9614
Lavon M Johnston (or Current Resident)	PO Box 71 Hinkley, CA 92347-0071
Le Roy R & Sandra Baca (or Current Resident)	21825 Granada Rd Hinkley, CA 92347-9665
Lee Roy & Patricia A Adair (or Current Resident)	PO Box 414 Hinkley, CA 92347-0414
Leonard Harris Dva (or Current Resident)	37524 Summerset Rd Hinkley, CA 92347-9731
Leonard J Hilton (or Current Resident)	PO Box 331 Hinkley, CA 92347-0331
Leron Haan (or Current Resident)	22064 Ashwood Rd Hinkley, CA 92347-9595
Lester Smith (or Current Resident)	35215 Mountain View Rd Hinkley, CA 92347-9713
Lester White (or Current Resident)	19816 Hwy 58 Hinkley, CA 92347-9571
Linda Clark (or Current Resident)	38277 Serra Rd Hinkley, CA 92347-9740
Linda Vencil (or Current Resident)	36611 Lakeview Rd Hinkley, CA 92347-9766
Lloyd E & Barbara A Hill (or Current Resident)	21250 Frontier Rd Hinkley, CA 92347-9552
Lloyd K & Babbara A Vinson (or Current Resident)	36327 Hinkley Rd Hinkley, CA 92347-9704
Lorenzo C & Jessica R Eylicio (or Current Resident)	21881 State Highway 58 Hinkley, CA 92347-9705

Louie And Ann Aviles (or Current Resident)	38092 Serra Rd Hinkley, CA 92347-9607
Loveta Powers (or Current Resident)	37410 Summerset Rd Hinkley, CA 92347-9731
Magdolna & Aniko Kegyulics (or Current Resident)	PO Box 308 Hinkley, CA 92347
Manuel R Baca (or Current Resident)	36488 Dixie Rd Hinkley, CA 92347-9720
Mardell & Leora Stovall (or Current Resident)	20688 West Hwy 58 Hinkley, CA 92347-0036
Mardell & Leora Stovall (or Current Resident)	PO Box 36 Hinkley, CA 92347-0036
Marie And Kim Massey (or Current Resident)	21245 Park Ave Hinkley, CA 92347-9615
Marie Brahn (or Current Resident)	35694 Riverview Rd Apt A Hinkley, CA 92347-9661
Mario & Martin Aguilera (or Current Resident)	36530 Red Rock Rd Hinkley, CA 92347-9565
Mark & Jessie N Orr (or Current Resident)	PO Box 87 Hinkley, CA 92347-0087
Mark Gonzales (or Current Resident)	37475 Yellowstone Rd Hinkley, CA 92347-9425
Martin Garcia (or Current Resident)	36717 Hinkley Rd Hinkley, CA 92347-9639
Mary L Juberg (or Current Resident)	36559 Hillview Rd Hinkley, CA 92347-9521
Matthew And Joleen Howell (or Current Resident)	36388 Lenwood Rd Hinkley, CA 92347-9725
Mchenry Cook (or Current Resident)	38790 Mountain View Rd Hinkley, CA 92347-9648
Michael E & Priscilla Mc Cauley (or Current Resident)	20430 Frontier Rd Hinkley, CA 92347-9530
Michael E & Roberta L Rafferty (or Current Resident)	36743 Hillview Rd Hinkley, CA 92347-9523
Michael Nolan (or Current Resident)	22700 Alducia Hinkley, CA 92347
Michael W Royce (or Current Resident)	36535 Hillview Rd Hinkley, CA 92347-9521
Mike Brown (or Current Resident)	37731 Pueblo Rd Hinkley, CA 92347-9745
Mike Merritt (or Current Resident)	PO Box 23 Hinkley, CA 92347
Moises & Jovita G Vargas (or Current Resident)	21151 Rainbow Rd Hinkley, CA 92347-9759
Mr. & Mrs. Robert Smith (or Current Resident)	24543 Community Blvd Hinkley, CA 92347-9777
Mr. Zepeda (or Current Resident)	23171 Thompson Rd Hinkley, CA 92347-9427
Muriel Marcum (or Current Resident)	22771 Community Blvd Hinkley, CA 92347-9715
Nancy Toten (or Current Resident)	24811 Community Blvd Spc 1 Hinkley, CA 92347-9779

Nathan B Rigby (or Current Resident)	36827 Hidden River Rd Hinkley, CA 92347-9765
Newmeyer & Linebauch (or Current Resident)	22695 Community Blvd Hinkley, CA 92347-9715
Current Resident	19654 State Highway 58 Hinkley, CA 92347-9524
Pat Mitchell (or Current Resident)	35838 Mountain View Rd Hinkley, CA 92347-9613
Patricia L Stoller (or Current Resident)	21079 State Highway 58 Hinkley, CA 92347-9638
Patti Dickmann (or Current Resident)	22772 Sonoma St Hinkley, CA 92347-9667
Paul And Sandra Wildrick (or Current Resident)	22698 Alcudia Rd Hinkley, CA 92347-9735
Paul D & Rosalie Waters (or Current Resident)	36626 Mountain View Rd Hinkley, CA 92347-9792
Paul H & Judith Johnson (or Current Resident)	37223 Hinkley Rd Hinkley, CA 92347-9702
Paul M Warner (or Current Resident)	36695 Indian Wells Rd Hinkley, CA 92347-9533
Paul Ryken (or Current Resident)	37501 Mountain View Rd Hinkley, CA 92347-9612
Ramon Preciado (or Current Resident)	22078 Acacia St Hinkley, CA 92347-9559
Randall & Venessa Smith (or Current Resident)	20121 State Highway 58 Hinkley, CA 92347-9685
Raul & Josefina Coronado (or Current Resident)	36747 Flower Rd Hinkley, CA 92347-9757
Raymond H & Cynthia A Pearce (or Current Resident)	36524 Hinkley Rd Hinkley, CA 92347-9703
Raymond Steele (or Current Resident)	22085 State Highway 58 Hinkley, CA 92347-9510
Reynolds Ohai (or Current Resident)	43108 Hinkley Rd Hinkley, CA 92347-9544
Richard & Theresa Green (or Current Resident)	36528 Hillview Rd Hinkley, CA 92347-9521
Richard J & Rosita G Newman (or Current Resident)	36558 Lakeview Rd Hinkley, CA 92347-9766
Richard W & Sherril J Powell (or Current Resident)	36570 Hillview Rd Hinkley, CA 92347-9521
Rick And Karon Zieglar (or Current Resident)	37898 Coon Canyon Rd Hinkley, CA 92347-9728
Rick Hanna (or Current Resident)	36800 Lenwood Rd Hinkley, CA 92347
Robert & Jacie Conaway (or Current Resident)	22562 Aquarius Rd Hinkley, CA 92347-9424
Robert & Olga Richards (or Current Resident)	20262 W. Hwy 58 Hinkley, CA 92347
Robert A. Markowitz (or Current Resident)	37373 Summerset Rd Hinkley, CA 92347-9731
Robert D & Linda M Sheldon (or Current Resident)	PO Box 126 Hinkley, CA 92347-0126

Robert D Millar (or Current Resident)	36791 Hidden River Rd Hinkley, CA 92347-9765
Robert E & Clara B Miller (or Current Resident)	37241 Sycamore St Hinkley, CA 92347-9582
Robert H Payne (or Current Resident)	PO Box 242 Hinkley, CA 92347-0242
Roberta Walker (or Current Resident)	37885 Dixie Rd Hinkley, CA 92347-9542
Rodney T. & Joanna Lucas (or Current Resident)	37359 Flower Rd PO Box 57 Hinkley, CA 92347-0057
Rodrigo & Patricia A Castillo (or Current Resident)	22230 State Highway 58 Hinkley, CA 92347-9604
Roger Sandoz (or Current Resident)	22214 Thompson Rd Hinkley, CA 92347
Roman Gomez (or Current Resident)	37455 Summerset Rd Hinkley, CA 92347-9731
Ron Oliveras (or Current Resident)	PO Box 115 Hinkley, CA 92347
Rosetta Vanhoy (or Current Resident)	PO Box 186 Hinkley, CA 92347-0186
Scott And Sharon Haislip (or Current Resident)	37968 Serra Rd Hinkley, CA 92347-9607
Sergio Rodriguez (or Current Resident)	21260 Rainbow Rd Hinkley, CA 92347-9520
Serie Y House (or Current Resident)	37398 Flower Rd Hinkley, CA 92347-9796
Shane M Depew (or Current Resident)	36611 Anson Ave Hinkley, CA 92347-9676
Sherman E Dorr (or Current Resident)	36710 Hidden River Rd Hinkley, CA 92347-9765
Shirley A. Archer (or Current Resident)	37317 Summerset Rd Hinkley, CA 92347-9731
Shirley Mendenhall (or Current Resident)	21490 Hwy 58 Hinkley, CA 92347-9538
Stephen E Riddle (or Current Resident)	PO Box 111 Hinkley, CA 92347-0111
Steve Smith (or Current Resident)	408 Pioneer St Hinkley, CA 92347
Susan Eustice (or Current Resident)	24041 Riverview Rd Hinkley, CA 92347-9619
Sylvia Morales (or Current Resident)	37364 Flower Rd Hinkley, CA 92347
Tawfig A & Mufida P Musitef (or Current Resident)	PO Box 146 Hinkley, CA 92347-0146
Tillman Family (or Current Resident)	34120 Mountain View Rd Hinkley, CA 92347-9561
Tom And Helen Hare (or Current Resident)	35729 Dixie Rd Hinkley, CA 92347-9631
Travis Duffy (or Current Resident)	21455 Poppy Ln Hinkley, CA 92347-9776
Van Duitsman (or Current Resident)	35683 Dixie Rd Apt A Hinkley, CA 92347-9631

Vanessa Smith (or Current Resident)	20121 Lakeview Road Hinkley, CA 92347
Victor Pena Diaz (or Current Resident)	35494 Dixie Rd Hinkley, CA 92347-9620
Virgil Gorman (or Current Resident)	PO Box 215 Hinkley, CA 92347-0215
Virginia Davis (or Current Resident)	36631 Red Rock Rd Hinkley, CA 92347-9659
Virginia M Persons (or Current Resident)	PO Box 303 Hinkley, CA 92347-0303
Wesley J & Deanna R Hensley (or Current Resident)	PO Box 163 Hinkley, CA 92347-0163
William K & Gertie M Mc Connell (or Current Resident)	35322 Hidden River Rd Hinkley, CA 92347-9416
William Wright (or Current Resident)	24390 State Highway 58 Hinkley, CA 92347-9726
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Alice C Y Liu	21251 Longleaf Mission Viejo, CA 92692-4039
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Yong Ho Kim Kwon Whan & Chi Yon Hw-Kwon Co	2601 Camino Del Sol Fullerton, CA 92833-4807
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Joan Lucy Walker Gen Norma J Beck	430 E Line St Apt 8 Bishop, CA 93514-3567
Craig & Sally Wood	616 20th St Huntington Beach, CA 92648
John B Trowbidge Casey J Randall	1599 Superior Ave Ste B5 Costa Mesa, CA 92627-3625
Lynard C Hinojosa John & Norma K Hall	11111 Santa Monica Blvd Ste 1000 Los Angeles, CA 90025-3344
Sheila Mcknight-John Eileen Mc Knight	17432 66th Ave W Lynnwood, WA 98037-2933
Alma Yerton Trustee Alma J Yerton (or Current Resident)	36558 Valley Wells Rd Hinkley, CA 92347-9760
Cheryl Cagliero Leonard Luning (or Current Resident)	3689 Chelan Blvd Manson, WA 98831-9214
Ed & Cheryl Delahousie (or Current Resident)	Pioneer Road Hinkley, CA 92347
Evelyn N Klass Evelyn M Minor Klass (or Current Resident)	15456 Victory Blvd Van Nuys, CA 91406-6240
Marshall & Lorraine Marshall & Lorraine Briggs (or Current Resident)	36614 Red Rock Rd Hinkley, CA 92347-9658
Yoko M Swafford John/Linda Mnser (or Current Resident)	36828 Hillview Rd Hinkley, CA 92347-9762
Howard E & Mary L Hallinan	12750 Amber Creek Cir Victorville, CA 92395-9070
Ardean & Loretta Heimark Living Tru (or Current Resident)	37776 Serra Rd Hinkley, CA 92347-9680
Bell K N & L G 2005 Trust	517 S Archer St Anaheim, CA 92804-2421
Bruce W Hall Executor John & Norma K Hall	PO Box 1116 Fort Collins, CO 80522-1116
Bryon & Judith Fox T Fox Family Trust 1-5-01	PO Box 751 Temple City, CA 91780-0751
Canbo & Amy Hong Tru Hong Family Trust 4/23/04	1365 Bellwood Rd San Marino, CA 91108-2712
Dexter & Shirley Brown Family Trust	37712 Summerset Rd Hinkley, CA 92347-9784
Diane D Harkison Baller Israel - Est Of	PO Box 2097 San Bernardino, CA 92406-2097

DMG Trust And Investor Company	PO Box 128 Hinkley, CA 92347-0128
Donna L Carr Trustee Donna L Carr	36434 Mountain View Rd Hinkley, CA 92347-9781
Dorothy M Shively Tr Dorothy M Shively	923 Magnolia Ave Modesto, CA 95350-5220
Duval Family Limited Partnersh	430 N Maple Dr Apt 201 Beverly Hills, CA 90210-3813
E D Patterson Jr Tru E D Patterson	2200 E Citrus Ave Redlands, CA 92374-8206
Ermine Plaster Trust Patti Sue Plaster	1795 W Persimmon St Rialto, CA 92377-4189
Frank Holland Family Trust	37457 Summerset Rd Hinkley, CA 92347-9731
Harold & Alice Tolli Tolliver Family Revocable Tr 5-28-02	4408 Heron Lakes Dr Stockton, CA 95219-1764
Harriet Ruth & Alici Ykema Family Partnership	10795 6th Ave Hanford, CA 93230-9324
Jack N Sohrbeck Trus A Sohrbeck	377 Poppinga Way Santa Maria, CA 93455-4260
Jacobsen Kenneth C & C Trust	22415 State Highway 58 Hinkley, CA 92347-9604
Jensen Robert G & B J Trust	15455 Glenoaks Blvd Spc 169 Sylmar, CA 91342-7951
Larsen Trust	3200 Park Center Dr Ste 720 Costa Mesa, CA 92626-1971
Lenard Luning Living Trust & Luning Associtess, L.P	3300 S Lakeshore Rd Chelan, WA 98816-9341
Leslie E & Brittie M L E & B M Dhabolt	36702 Indian Wells Rd Hinkley, CA 92347-9623
Mandeville Family Trust 12-16-97	2549b Eastbluff Dr # 461 Newport Beach, CA 92660-3504
Marylee H Blake Tr Norwil Family Trust 730424	34554 K St Barstow, CA 92311-4351
Michael D & Donald F Hanify White Bear Ranch	36511 Lenwood Rd Hinkley, CA 92347-9725
Michael Nosanov Trus Michael Jay	409 Arcade Pl Glendale, CA 91206-3002
Miller Kenneth J 2004 Trust	1515 W Arrow Hwy Spc 51 Upland, CA 91786-5032
Montano Family Trust	19195 Majela Rd Apple Valley, CA 92307-1568
Nerissa Avery Norberto Z & Erana C Misa	827 Southgrove Dr San Jose, CA 95133-1258
Richard & Kathy Heiser Delbert A Gregg	36805 Hillview Rd Hinkley, CA 92347-9762
Richard E. Leyerly Richard Leyerly Trust	21988 Hwy 58 Hinkley, CA 92347-9509
Robert & Dolores Peabody Peabody Trust 7-2-90	36868 Locust Rd Hinkley, CA 92347-9618
Scott C Lee Rugh Lee Sherrie G - Est Of	9914 Manet Rd Burke, Va 22015-3806

Steven C Breitengros BCS California Trust 3/19/01	PO Box 1741 Benson, AZ 85602-1741
Suminori & Himi Naka Nakamura Family Trust 2001	2200 E Romneya Dr Anaheim, CA 92806-2223
Thayer Jovita M Trust	12847 Red River Rd Victorville, CA 92392-6162
Vernola Pat & Mary A Trust	1604 N Laurel Ave Upland, CA 91784-1920
Wilson Elizabeth V Trust	4880 Zanzibar Ln Las Vegas, NV 89147-5275
Workman Family Trust (8-21-00)	9157 Stoakes Ave Downey, CA 90240-2847
Yjkema Family Trust Harmsen Family Dairy	25252 Community Road Hinkley, CA 92347
Utilities & Railroad	
Region Manager	Southern California Edison PO Box 800 Rosemead, CA 91770
Representative	Pacific Gas and Electric Environmental Health & Safety Services 77 Beale St San Francisco, CA 94105
Jose Moreno-Jimenez	Pacific Gas and Electric 22999 Community Blvd. Hinkley, CA 92347
Representative	Time Warner Cable 1881 West Main Street Barstow, CA 92311
Representative	Verizon General Correspondence PO Box 6600 Hayden, ID 83835
Representative	Sprint KSOPHT0101-Z4300 6391 Sprint Parkway Overland Park, KS 66251-4300
Representative	Southwest Gas Corporation, Corporate Office 5241 Spring Mountain Road Las Vegas, NV 89150-0002
Representative	Southwest Gas Corporation Southern California Division 13471 Mariposa Road Victorville, CA 92395-5315
Representative	Mojave Pipeline Company Western Pipelines P.O. Box 1087 Colorado Springs, CO 80944
Representative	El Paso Natural Gas Company Western Pipelines P.O. Box 1087 Colorado Springs, CO 80944
Representative	Burlington Northern Santa Fe Railway 740 E. Carnegie San Bernardino, CA 92408

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APPENDICES

Appendix A **CEQA Environmental Checklist**

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APPENDIX A
CEQA Environmental Checklist

08 - SBd - 58	22.2 / 31.1	04351 (Project ID 08-0000-0010)
Dist.-Co.-Rte.	P.M/P.M.	E.A.

Supporting documentation of all CEQA checklist determinations is provided in Chapter 3 and 4 of this Environmental Impact Report/Environmental Impact Statement. Documentation of "No Impact" determinations is provided at the beginning of Chapter 3 and 4. Discussion of all impacts, avoidance, minimization, and/or compensation measures is under the appropriate topic headings in Chapter 3 and 4.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☒	☐	☐
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	☐	☐	☒	☐
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

V. CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

VI. GEOLOGY AND SOILS: Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans's determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☒	☐	☐
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☒	☐	☐
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☒	☐
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

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Appendix B **Title VI Policy Statement**

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STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
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Flex your power!
Be energy efficient!

March 16, 2012

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

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

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Mario Solis, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353, TTY 711, fax (916) 324-1869, or via email: *mario_solis@dot.ca.gov*.

MALCOLM DOUGHERTY
Acting Director

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Appendix C **Summary of Relocation Benefits**

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APPENDIX C SUMMARY OF RELOCATION BENEFITS

California Department of Transportation (Caltrans) Relocation Assistance Program

RELOCATION ASSISTANCE ADVISORY SERVICES

DECLARATION OF POLICY

The purpose of this title is to establish a uniform policy for fair and equitable treatment of persons displaced as a result of federal and federally assisted programs in order that such persons shall not suffer disproportionate injuries as a result of programs designed for the benefit of the public as a whole."

The Fifth Amendment to the U.S. Constitution states, "No Person shall…be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation." The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 Code of Federal Regulations, Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments, as discussed below.

FAIR HOUSING

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This Act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, and sanitary and are within their financial means. This policy, however, does not require Caltrans to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized, and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations, and also are given a detailed explanation of the Caltrans Relocation Assistance Program. To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Department relocation advisor.

RELOCATION ASSISTANCE ADVISORY SERVICES

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, the Department will provide relocation advisory assistance to any person, business, farm or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. The Department will assist eligible displacees in obtaining comparable replacement housing by providing current and continuing information on the availability and prices of both houses for

sale and rental units that are “decent, safe and sanitary.” Nonresidential displacees will receive information on comparable properties for lease or purchase (For business, farm and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning Federal and State assisted housing programs, and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable “decent, safe and sanitary” replacement dwelling, available on the market, is offered to them by the Department.

RESIDENTIAL RELOCATION PAYMENTS

The Relocation Assistance Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

Moving Costs

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule. Lawful occupants who move into the displacement property after the initiation of negotiations must wait until the Department obtains control of the property in order to be eligible for relocation payments..

Purchase Differential

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 180 days or more prior to the date of the initiation of negotiations (usually the first written offer to purchase the property), may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate. The maximum combination of these three supplemental payments that the owner-occupant can receive is $22,500.

If the total entitlement (without the moving payments) is in excess of $22,500, the Last Resort Housing Program will be used (See the explanation of the Last Resort Housing Program below).

Rent Differential

Tenants and certain owner-occupants (based on length of ownership) who have occupied the property to be acquired by the Department prior to the date of the initiation of negotiations may qualify to receive a rent differential payment. This payment is made when the Department determines that the cost to rent a comparable "decent, safe and sanitary" replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the *Down Payment* section below. The maximum amount payable to any eligible tenant and any owner-occupant of less than 180 days, in addition to moving expenses, is $5,250. If the total entitlement for rent supplement exceeds $5,250, the Last Resort Housing Program will be used.

In order to receive any relocation benefits, the displaced person must buy or rent and occupy a "decent, safe and sanitary" replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment

The down payment option has been designed to aid owner-occupants of less than 180 days and tenants in legal occupancy prior to the Department's initiation of negotiations. The down payment and incidental expenses cannot exceed the maximum payment of $5,250. The one-year eligibility period in which to purchase and occupy a "decent, safe and sanitary" replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 CFR 24) contain the policy and procedure for implementing the Last Resort Housing Program on federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been designed primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing payments exceed the $22,500 and $5,250 limits of the standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.

After the initiation of negotiations, the Department will within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Number of people to be displaced;
- Specific arrangements needed to accommodate any family member(s) with special needs;
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family;
- Preferences in area of relocation;
- Location of employment or school.

NONRESIDENTIAL RELOCATION ASSISTANCE

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs. The types of payments available to eligible businesses, farms and nonprofit organizations are: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payment types can be summarized as follows:

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property, including: dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items acquired in the Right of Way contract may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move that item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move.
- Expenses related to searching for a new business site, up to $2,500, for reasonable expenses actually incurred..

Reestablishment Expenses

Reestablishment expenses related to the operation of the business at the new location, up to $10,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment

A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses which meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than $1,000 nor more than $20,000.

ADDITIONAL INFORMATION

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance
under the Social Security Act, or any other law, *except* for any Federal law providing local "Section 8" Housing Programs.

Any person, business, farm or nonprofit organization which has been refused a relocation payment by the Department relocation advisor or believes that the payment(s) offered by the agency are inadequate, may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a pubic project. A list of ineligible expenses can be obtained from Caltrans Right of Way. California's law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

Appendix D Glossary of Technical Terms

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Appendix D Glossary

Active Fault: A fault that has moved recently and which is likely to move again. For planning purposes, an "active fault" is usually defined as one the shows movement within the last 11,000 years and can be expected to move within the next 100 years.

Alluvium: A general term for all detrital deposits resulting from the operations of modern rivers, thus including the sediments laid down in riverbeds, flood plains, lakes, fans at foot of mountain slopes, and estuaries.

Ambient Air Quality: The atmospheric concentration (amount in specified volume of air) of a specific compound as actually experienced at a particular geographic location that may be some distance from the source of the relevant pollutant emissions.

Ambient Noise Level: The composite of noise from all sources near and far.

Americans with Disabilities Act: The ADA was signed into law by President George Bush in 1990. Divided into four titles, it guarantees people with disabilities equal access to employment, transportation and public services, public accommodations, and telecommunications.

Archaeological: Pertaining to the material remains of past human life, culture, or activities.

Bedrock: The solid rock underlying unconsolidated surface materials.

Best Available Control Technology: The most stringent emission limit or control technique that has been achieved in practice that is applicable to a particular emission source.

Best Management Practices : The most current methods, treatments, or actions in regards to environmental mitigation responses.

California Department of Parks and Recreation: Established in 1961, it originally consisted of the statutory Divisions of Beaches and Parks, Small Craft Harbors, Recreation and Administration; it is organizationally within the Resources Agency. It is the legal name for California State Parks.

California Environmental Quality Act: A state law (PRC §21000 et al.) requiring state and local agencies to take actions on projects with consideration for environmental protection. If a proposed activity may result in a significant adverse effect on the environment, an EIR must be prepared. General Plans require a "program EIR," and park development projects require a project environmental document.

California Native Plant Society: A statewide non-profit organization of amateurs and professionals with a common interest in increasing the understanding and appreciation of California's native plans and conserving them and their habitats through education, science, advocacy, horticulture, and land stewardship.

California Natural Diversity Database: Maintained by the California Department of Fish and Game, CNNDB is a statewide inventory of the locations and condition of the state's rarest species and natural communities. It is a "heritage program" and is part of the National Heritage Network, a nationwide network of similar programs. The goal of CNNDB is to provide the most current information on the state's most imperiled elements of natural diversity and to provide tools to analyze these data.

Clean Water Act: Enacted in 1972 to create a basic framework for current programs to control water pollution; it provides statutory authority for the National Pollutant Discharge Elimination System (NPDES).

Cultural Resource: A resource that exists because of human activities. Cultural resources can be prehistoric (dating from before European settlement) or historic (post- European contact).

Cumulative Impact: As defined by the state CEQA Guidelines (§15355), two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts.

Demographic: Having to do with a particular characteristic of a segment of the public at large; may be connected to the group's age, the region where the group resides, a particular recreational interest, economic status, etc.

Ecology: The study of the interrelationship of living things to one another and their environment.

Ecosystem: A community consisting of all biological organisms (plant, animals, insects, etc.) in a given area interacting with the physical environment (soil, water, air) to function together as a unit of nature.

Effect/Impact: An environmental change, as defined by State CEQA Guidelines §15358: (1) Direct or primary effects are caused by the project and occur at the same time and place; (2) Indirect or secondary effects that are caused by the project and are late in time or farther removed in distance, but still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water quality and other natural systems including ecosystems.

Endangered Species: A species of animal or plant is considered to be endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. The U.S. Fish and Wildlife Service and/or the California Department of Fish and Game make this designation.

Endemic: Indigenous to, and restricted to, a particular area.

Environment: As defined in State CEQA Guidelines §15360, "the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, mineral, flora, fauna, noise, and objects of historical and aesthetic significance."

Environmental Impact Report: A report required by CEQA that assesses all the environmental characteristics of an area and determines what effects of impacts will result if the area is altered or disturbed by a proposed action. If a proposed activity may result in a significant adverse effect on the environment, an EIR must be prepared. General plans require the preparation of a "program" EIR appropriate to its level of specificity.

Environmentally Sensitive: An area in which plant or animal life or their habitats are either rare or especially valuable because of their role in an ecosystem. Such areas can be easily disturbed or degraded by human activities and developments.

Floodplain: A lowland or relatively flat area adjoining inland or coastal waters that is subject to a one or greater chance of flooding in any given year (i.e., 100-year flood).

Floodway: The channel of a natural stream or river and portions of the floodplain adjoining the channel that are required to carry and discharge the floodwater or flood flow of any natural stream or river.

General Plan: A general plan is a legal planning document required for all cities by the State of California. A general plan lays out the future of a City's development in general terms through a series of policy statements depicted in text and maps. A general plan provides a comprehensive framework for addressing the current and future needs of a city. All city decisions related to development, growth, infrastructure and environmental management must be consistent with the policies contained in the General Plan.

Geology: The scientific study of the origin, history, and structure of the earth.

Grade: The degree of rise or descent of a sloping surface.

Habitat: The physical location or type of environment, in which an organism or biological population lives or occurs. It involves an environment of a particular kind, defined by characteristics such as climate, terrain, elevation, soil type, and vegetation. Habitat typically includes shelter and/or sustenance.

Hydrology: Pertaining to the study of water on the surface of the land, in the soil and underlying geology, and in the air.

Impervious surface: Any material that reduces or prevents absorption of water into land.

Infrastructure: Public services and facilities such as sewage-disposal systems, water supply systems, other utility systems, and road and site access systems.

Kilowatt Hour: A measure of quality of electrical consumption equal to the power of 1 kilowatt acting for 1 hour.

Kilowatt: A measure of the rate of electrical flow equal to 1,000 watts.

Landform: Configuration of land surface (topography).

Mitigation Measure: A measure proposed that would eliminate, avoid, rectify, compensate for, or reduce significant environmental effects (see State CEQA Guidelines §15370).

Morphology: Form and structure of a plant that is typical.

National Register of Historic Places: The official federal list of buildings, structures, objects, sites, and districts worthy of historic preservation. The register recognizes resources of local, state, and national significance. The register lists only those properties that have retained enough physical integrity to accurately convey their appearance during their period of significance.

Native species: A plant or animal that is historically indigenous to a specific site area.

Notice of Preparation: A document stating that an EIR will be prepared for a particular project. It is the first step in the EIR process.

Office of Historic Preservation: The governmental agency primarily responsible for the statewide administration of the historic preservation program in California. Its responsibilities include identifying, evaluating, and registering historic properties and ensuring compliance with federal and state regulatory obligations.

Project: As defined by the State CEQA Guidelines §15378, a project can be one of the following: a) activities undertaken by any public agency; b) activities undertaken by a person that are supported in whole or in part through contracts, grants, subsidies, loans or other forms of assistance from one or more public agencies; c) activities involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.

Public Resources Code: In addition to the State Constitution and Statues, California Law consists of 29 codes covering various subject areas. The PRC addresses natural, cultural, aesthetic, and recreation resources of the state.

Runoff: That portion of rainfall or surplus water that does not percolate into the ground and flows overland and is discharged into surface drainages or bodies of water.

Significant Effect on the Environment: As defined by State CEQA Guidelines §15382, substantial or potentially substantial adverse change on any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to physical change may be considered in determining whether the physical change is significant.

Special-Status Species: Plant or animal species that are typically listed (state and federal) as endangered, rare, and threatened, plus those species considered by the scientific community to be deserving of such listing.

State Historic Preservation Officer: The chief administrative officer for the OHP and is also the executive secretary of the State Historic Resources Commission.

Threatened Species: An animal or plant species that is considered likely to become endangered throughout a significant portion of its range within the foreseeable future because its prospects for survival and reproduction are in jeopardy from one or more causes. The U.S. Fish and Wildlife

Topography: Graphic representation of the surface features of a place or region on a map, indicating their relative positions and elevations.

Watershed: The total area above a given point on a watercourse that contributes water to the flow of the watercourse; entire region drained by a watercourse.

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Appendix E **Avoidance, Minimization, and/or Mitigation Summary**

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No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
Section 3.3. Human Environment—Farmlands/Timberlands					
FA-1	The implementation of a TMP (refer to Section 3.6, *Traffic and Transportation/Pedestrian and Bicycle Facilities*) and dust control measures (refer to Section 3.14, *Air Quality*) would minimize construction impacts. The following elements will be major components of the project TMP: public awareness campaign particularly related to the scheduling of work; construction zone enforcement enhancement program; use of portable changeable message signs; advance information signing that will communicate date, time, and duration of ramp closures; and preparation of temporary detour plans, if needed, during the plans, specifications, and estimates phase of the project (note: no detours are anticipated at this time).	District Design /Resident Engineer / Contractor	Final Design / Construction		
FA-2	Caltrans shall consult with San Bernardino County and/or NRCS to determine if an alternative compensation ratio or measure is deemed appropriate for the impacted farmland once the preferred alternative is selected. The proposed project's impact would be minimized with the purchase of an agricultural conservation easement of comparative quantity and quality to the farmland converted within the project limits.	District Environmental / District Design / District Right of Way	Final Design		
FA-3	Caltrans will minimize disruption to farm operations to properties impacted by closure of current direct access to SR-58. Alternative access would be provided to all properties affected by the project.	District Design / District Right of Way / Resident Engineer / Contractor	Final Design / Construction		
FA-4	If it is determined during the Final Design phase of the project that a parcel zoned for agricultural activity is anticipated to only involve potential partial acquisition, in addition to all applicable real property acquisition requirements being satisfied, the commitment(s) of Measure FA-2 above will be implemented to the fullest extent possible.	District Environmental / District Design / District Right of Way	Final Design		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
Section 3.4. Human Environment—Community Impacts					
CI-1	A Construction Management Plan and a Transportation Management Plan would be prepared for the project and include coordination efforts that would inform the community about project activities, maintain access to and from the project area during construction, minimize construction-period traffic, control glare, dust, and noise (see Section 3.6, Traffic and Transportation/Pedestrian and Bicycle Facilities, Section 3.7 Visual/Aesthetics, Section 3.3 Farmland, Section 3.14 Air Quality, and Section 3.15 Noise and Vibration). Measures to minimize construction impacts in these sections, also apply to minimizing permanent community cohesion/character impacts.	District Environmental / District Design / Resident Engineer / Contractor	Final Design / Construction		
CI-2	Pedestrian design features shall be incorporated wherever feasible on the existing SR-58 and/or the proposed frontage roads, including providing sidewalks along the proposed Lenwood and Hinkley overcrossings, striping all crosswalks, and constructing curb ramps at all new intersections.	District Environmental / District Design	Final Design		
CI-3	To address bypass impacts, during Final Design, Caltrans will coordinate with the community and County regarding the possibility of placing a *Welcome* sign at both ends of the proposed expressway with brief information encouraging visitors to visit services offered in Hinkley.	District Environmental / District Traffic Operations / District Transportation Planning / District Design / Resident Engineer / Contractor	Final Design / Construction		
CI-4	During Final Design and Construction, every effort will be made to further minimize the amount of right-of-way needed for the facility, and to further minimize community and environmental impacts in accordance with Directors Policy Number DP-22: Context Sensitive Solutions.	District Environmental / District Design / District Right of Way / Resident Engineer / Contractor	Final Design / Construction		
CI-5	For permanent impacts to community character, Visual Measures AES-1 through AES-8; and Farmland Measures FA-1 through FA-4 are also designed to minimize impacts.	District Environmental / Landscape Architecture / District Design / District Right of Way / Resident Engineer / Contractor	Final Design / Construction		
CI-6	All relocation activities would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. A business survey will be conducted to assist with the relocation of any businesses that are displaced. Relocation resources will be available to all displaces without discrimination.	District Environmental / District Design / District Right of Way	Final Design		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
CI-7	For impacts to agricultural business and dairies, every effort will be made during Final Design and Construction to minimize impacts to these, in an effort to allow them to continue operation with as little disruption as possible.	District Design / District Right of Way / Resident Engineer / Contractor	Final Design / Construction		
Section 3.5. Human Environment—Utilities/Emergency Services					
UT-1	Caltrans will coordinate all utility relocation work with the affected utility companies to ensure minimum disruption to customers in the service areas during construction.	District Design / District Right of Way / Resident Engineer / Contractor	Final Design / Construction		
Section 3.6. Human Environment—Traffic and Transportation/Pedestrian and Bicycle Facilities					
TR-1	Caltrans will prepare a TMP to ensure efficient movement of local and regional traffic during construction. The TMP and the construction plans will be provided to community agencies, such as the fire department, prior to project commencement. The information provided will include access and traffic management plans detailing any projected temporary street closures or expected traffic delays due to construction vehicles using the roadways. The following elements will be major components of the project TMP: a. public awareness campaign particularly related to the scheduling of work; b. construction zone enforcement enhancement program (COZEEP); c. use of portable changeable message signs (PCMS); d. advance information signing that will communicate date, time, and duration of ramp closures; e. Closures will be planned to minimize impacts to local circulation to the maximum extent feasible; and f. preparation of temporary detour plans, if needed, during the plans, specifications, and estimates (PS&E) phase of the project (note: no detours are anticipated at this time)	District Environmental / District Design / Resident Engineer / Contractor	Final Design / Construction		
TR-2	Frontage road intersections will be constructed a minimum of 500 feet from the proposed Hinkley Interchange.	District Design / Resident Engineer / Contractor	Final Design / Construction		
TR-3	If Alternative 3 alignment is selected, widening on each side of the roadway would be done in stages so that only a maximum of one lane is closed at one time.	District Design / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
TR-4	If Alternative 4 alignment is selected, construction activities would be planned so that at the end of each work shift, both eastbound and westbound lanes are open to traffic.	District Design / Resident Engineer / Contractor	Final Design / Construction		
TR-5	Additional motorist information strategies such as portable changeable message signs would be deployed along both approaches of the highway to inform local as well as non-local drivers during construction.	District Design / Resident Engineer / Contractor	Final Design / Construction		
TR-6	If Alternative 3 alignment is selected, one-way traffic control would be required and directed by a flagger on each approach to provide for one-way traffic movement.	District Design / Resident Engineer / Contractor	Final Design / Construction		
Section 3.7. Human Environment—Visual/Aesthetics					
AES-1	All lighting used for the project will be directional, directing light to the highway facility and away from homes and habitats to minimize glare (directional lighting) impacts to the night sky, and to avoid affecting background sky views. Glare (directional lighting) shields would be used.	District Design / District Landscape Architecture / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
AES-2	Detention basins and bioswales will be designed and addressed as visually integrated elements of the landscape planting. Contour grading of basins will minimize the visual impact by blending with the surrounding natural landscape features.	District Design / District Landscape Architecture / Resident Engineer / Contractor	Final Design / Construction		
AES-3	Bridge structures shall be pigmented an earth tone that is compatible with the native soil color within the project limits.	District Design / District Landscape Architecture / Resident Engineer / Contractor	Final Design / Construction		
AES-4	Native plantings shall be used to minimize the visual impact of the highway and associated detention basins. Drought tolerant native trees and shrubs will be planted at appropriate locations, especially near the drainage basins, and at the two proposed Interchanges to soften the structures. These interchanges would become the gateways into the community, and will be landscaped. Inert materials will also be considered where appropriate to beautify these areas and reduce erosion.	District Design / District Landscape Architecture / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
AES-5	The berm located on the west side of the project area shall be graded and vegetated to reflect the natural terrain.	District Design / District Landscape Architecture / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
AES-6	Where possible, concrete drainage ditches would be avoided in favor of soft-bottom ditches to reduce urbanizing elements, and to encourage infiltration and vegetation growth. Where required, concrete ditches will be pigmented to blend with adjacent soil.	District Design / District Landscape Architecture / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
AES-7	Erosion Control: all disturbed soil areas will be treated with erosion control measures, including seeding with native plant/native grass seeds. For further detail see measure GEO-2 (#6, Erosion).	District Design / District Landscape Architecture / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
AES-8	To address impacts relating to cohesion/rural character, and the bisecting of the community by the facility, design efforts will be made to provide linkage across the facility, such as sidewalks on the interchanges, to encourage pedestrians, and bicyclists in the community, to cross the facility.	District Design / District Landscape Architecture / District Environmental / Resident Engineer / Contractor	Final Design / Construction		
Section 3.8. Human Environment—Cultural Resources					
CR-1	If cultural materials are discovered during construction, all earthmoving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.	District Design / District Cultural Studies / Resident Engineer / Contractor	Final Design / Construction		
CR-2	If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the county coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, which will then notify the MLD. At this time, the person who discovered the remains will contact Gary Jones, District 8 Native American Coordinator at (909) 383-7505 so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC Section 5097.98 are to be followed as applicable.	District Design / District Cultural Studies / Resident Engineer / Contractor	Final Design / Construction		
Section 3.9. Physical Environment—Hydrology and Floodplains					
HF-1	The project shall be designed so that storm water flows shall not overtop the roadway section.	District Design / Resident Engineer / Contractor	Final Design / Construction		
HF-2	In several locations identified under Alternatives 2 & 4, detention basins shall be constructed to reduce peak discharge to the point where it will not overtop the road and be adequate at conveying the 100-year design flood.	District Design / Resident Engineer / Contractor	Final Design / Construction		
HF-3	Channels and ditches shall be used to collect and convey flows into one main flow, or into a detention basin, which may have a single outlet or multiple outlets, before it crosses the road.	District Design / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
HF-4	For maintenance considerations, culverts shall never be less than 36 inches in diameter. Circular culverts shall be used whenever possible, as box culverts are more susceptible to sediment deposition in the flow line.	District Design / Resident Engineer / Contractor	Final Design / Construction		
HF-5	Culverts in the part of the project area, where it is very flat and there are no flow lines that approach the new alignment, may require training dikes to concentrate flow into the inlet. Exact size and location will be determined during the project's final design phase in the final drainage report.	District Design / Resident Engineer / Contractor	Final Design / Construction		
HF-6	All culverts shall be constructed with their inverts on natural ground approximating the gradient flow line they are to serve. Placement in such a manner helps prevent bed load deposition in the culvert.	District Design / Resident Engineer / Contractor	Final Design / Construction		
HF-7	All culverts shall be designed for the 100-year Antecedent Moisture Condition (AMC) II storm. The project area is entirely within a desert area.	District Design / Resident Engineer / Contractor	Final Design / Construction		
HF-8	With the inclusion of 22 culverts that will disperse the water pressure and concentration of flows, water velocities at the culvert outlets are expected to be limited to ten feet per second in order to prevent excessive scour. Exact size and location will be determined during the project's final design phase in the final drainage report.	District Design / Resident Engineer / Contractor	Final Design / Construction		
Section 3.10. Physical Environment—Water Quality and Storm Water Runoff					
WQ-1	As described previously, the project would comply with the provisions of Statewide NPDES permit. The BMPs, as described in Section 3 of the Caltrans' Statewide SWMP (Caltrans 2003b) and the Project Planning and Design Guide (Caltrans 2010), Caltrans' Statewide Stormwater Management Plan (Caltrans 2003b) and the Project Planning and Design Guide (Caltrans 2010), would be evaluated prior to completion of the Project Approval and Environmental Document phase and incorporated into the project's engineering plans and specifications. Design pollution prevention BMPs are selected to reduce post-construction discharges. Treatment BMPs are designated to remove certain pollutants. Construction site BMPs would be incorporated in the SWPPP and implemented during the construction period.	District Design / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
WQ-2	The contractor would be responsible for preparing a SWPPP according to Caltrans standards, incorporating all BMPs in the contract plans, and amending these plans during the course of construction as necessary. The Resident Engineer would review and approve the SWPPP. The general contractor would also implement, inspect, and maintain all measures with oversight by the Resident Engineer.	District Design / Resident Engineer / Contractor	Final Design / Construction		
WQ-3	To minimize potential impacts on water quality, BMPs would be implemented as outlined in the project's engineering plans and specifications. All necessary BMPs would be implemented so that the construction practices avoid excessive erosion and sedimentation, prevent off-site contamination by construction materials, reduce stormwater discharges from the construction site, and reduce impacts on waterways once the proposed project is completed.	District Design / Resident Engineer / Contractor	Final Design / Construction		
WQ-4	Table 1-1 of the Caltrans' Construction Site Best Management Practices Manual (Caltrans 2003b) and/or the Caltrans Storm Water Quality Handbooks, Project Planning and Design Guide (Caltrans 2010h) include the following BMPs: • temporary soil stabilization, • temporary sediment control, • tracking control, • non-stormwater management, • waste management, and • materials pollution control. At a minimum, the contractor would implement all of the appropriate BMPs under the minimum requirement column of Table 1-1 of the Caltrans' Construction Site Best Management Practices Manual (Caltrans 2003b) and/or the Caltrans' Storm Water Quality Handbooks, Project Planning and Design Guide (Caltrans 2010h). Upon completion of the final engineering and design plans, specific BMPs would be identified and implemented to protect water quality. Such BMPs would be implemented by the contractor through the SWPPP. The plan would also include post-construction erosion	District Design / Resident Engineer / Contractor	Final Design / Construction		
WQ-5	Coordination with the Lahontan Regional Water Quality Control Board (RWQCB) and PG&E is ongoing and would continue in order to minimize impacts to the groundwater remediation efforts.	District Design / District Environmental / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
Section 3.11. Physical Environment—Geology/Soils/Seismic/Topography					
GEO-1	Earthwork in the project area shall be performed in accordance with the latest edition of the California Department of Transportation Standard Specifications.	District Design / Resident Engineer / Contractor	Final Design / Construction		
GEO-2	During grading and site preparation, all onsite earthwork would be performed in accordance with the recommendations contained in Section 12.0, Geotechnical Considerations and Section 15.0 Preliminary Recommendations of the Preliminary Geotechnical Design Report, the Caltrans Standard Specifications. that which include the following: 1. Cut slope. Cut slope for this project shall be 1:1.5 (V:H) or flatter. For planning purposes, the earthwork factor is 1.3 for rock cuts, and 1.05 for cut in alluvium. 2. Grading Factor. A value of 1.3 for earthwork factor in the rock cuts and a value of 1.05 for cuts in alluvium are recommended. These values may be adjusted based on further field exploration and laboratory testing. 3. Embankment. Embankment slope shall be 1:2 (V:H) or flatter. Where the future embankment will be constructed across natural drainage courses, 0.5 feet of alluvium shall be sub-excavated (over-excavated) from the embankment culvert foundation area and replaced as compacted fill. Embankment foundations shall be prepared in accordance with Section 19 of the Standard Specifications. Where embankment foundations cross existing cultivated land, the embankment foundation shall be subexcavated 2.6 feet and restored to grade with compacted fill. The recommendation may be modified or deleted based on supplement exploration and testing for the Geotechnical Design Report. Embankment foundations areas disturbed by building demolition or basement backfilling operations should be overexcavated and restored with compacted fill. 4. Excavation Technique. Excavation can be accomplished by conventional technique for this project, except for the cut sections from the rock area on western part the proposed project. This crystalline rock mass contains a weathered horizon that appears rippable to a depth of 7 feet below the top of the rock. At depth between 7 feet to 46 feet, the rock will require difficult ripping and/or light blasting. Rock excavated below 46 feet will likely require blasting.	District Design / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
GEO-2 **(continued)**	5. Structure Foundations a) Retaining wall. The wall foundation soils should be sub-excavated and restored as compacted fill; either a Type 1 or Type 2 Standard Plan retaining wall can be used. Alternatively a Mechanically Stabilized Embankment (MSE) wall could be used. The MSE walls are more tolerable to settlement, subexcavation and recompaction of the foundation soils would be more significantly reduced or eliminated. For planning purposes assume that no subexcavation for an MSE wall. b) During preparation of the Geotechnical Design Report, bulk samples will be taken from the proposed sub-excavated area for laboratory compaction, remolded, direct shear, sieve analysis, and sand equivalent testing. This date will be used to analyze the bearing capacity, external stability, and suitability of on-site soils as structure backfill. 6. Erosion. The following are only recommendations; erosion mitigation, actual mitigation measures should be selected through interaction between Design, the District Landscape Architecture Section and the Office of Landscape Architecture Section and the office of Geotechnical Design-South. a) Vegetate and mulch the slope surface and include the use of erosion protection coverings. Specifications would require the embankment construction to be done in phases, with completed slopes covered following each phase of grading. The Preliminary Geotechnical Design Report defers to the District Landscaping Section for techniques, specifications and materials in vegetating slopes. b) Time the embankment construction to minimize soil exposure. Precipitation is a key factor in slope erosion. If possible, it would be best not to perform embankment construction during the relatively wet season. Embankment could be constructed during late spring to early summer months and vegetated/mulched prior to the rainy season.	District Design / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
GEO-2 **(continued)**	c) Divert runoff away from slope surface. Use a combination of pavement cross-slope and asphalt concrete (AC) dikes to prevent flow over the toe of the slope. d) Roughen the slope surface by applying salvaged topsoil (with vegetation) from the clearing and grubbing operation. This would reduce the runoff velocity and enhance the growth of native vegetation. e) Armor the slope using rock fragments derived from blasting/cutting the cut slopes section on the west side of the proposed alignment. f) Build "zoned" embankments such that the sides of the embankments are equipment width "shells" of rock fill derived from cutting the hard rock segments of the projects. 7. Hazardous Wastes. Water required for construction purposes would not be taken from existing or constructed groundwater wells within the project limits due to the presence of Hexavalent Chromium (Chrom VI) in the groundwater and soils. 8. Excavation Techniques. Excavations can be accomplished by conventional techniques for this project, except for the section of Alternative 2 between PM 23.0 and PM 24.1 where rock excavated below a depth of 46 feet will likely require blasting. If blasting is not viable, then realignment may be considered. 9. Settlement. Consolidation tests to further review the primary consolidation estimates for the higher embankment as well as the potential for collapsible soils will be needed. The recommendations, which are considered preliminary, may be revised based on actual conditions encountered during earthwork and grading. In addition, they will be revised if the project design is modified.	District Design / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
Section 3.12. Physical Environment—Paleontology					
PA-1	Grading, excavation and other surface and subsurface excavation in the RSA have potential to impact significant nonrenewable fossil resources of Pleistocene age. A Paleontological Mitigation Plan (PMP) shall be prepared, during final project design, by a qualified paleontologist. The PMP will detail the measures to be implemented in the event of paleontological discoveries. The PMP shall include, at a minimum, the following elements:	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design / Construction		
PA-1.1	Required 1-hour preconstruction paleontological awareness training for earthmoving personnel, including documentation of training such as sign in sheets, and hardhat stickers, to establish communications protocols between construction personnel and the Principal Paleontologist.	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design / Construction		
PA-1.2	A signed repository agreement with the San Bernardino County Museum to establish a curation process in the event of sample collection.	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design / Construction		
PA-1.3	Monitoring, by a Principal Paleontologist, of Quaternary Older Alluvium of the Pleistocene Epoch during excavation.	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design / Construction		
PA-1.4	Field and laboratory methods that meet the curation requirements of the San Bernardino County Museum will be implemented for monitoring, reporting, collection, and curation of collected specimens. Curation requirements are available for the public review at the San Bernardino County Museum.	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design / Construction		
PA-1.5	All elements of the PMP will follow the PMP Format published in the Caltrans Standard Environmental Reference (Caltrans 2003).	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design / Construction		
PA-1.6	A Paleontological Mitigation Report discussing findings and analysis will be prepared by a Principal Paleontologist upon completion of project earthmoving. The report will be included in the Environmental project file and also submitted to the curation facility.	District Design / District Paleontological Studies / Resident Engineer / Contractor	Final Design / Construction		
Section 3.13. Physical Environment—Hazardous Waste/Materials					
HAZ-1	Proper removal and disposal of all stained pole-mounted transformers and evaluation of all soil beneath the cracked/stained units prior to project construction will be conducted.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		
HAZ-2	All soil excavations conducted on-site will be monitored by the construction contractor for visible soil staining, odor, and the possible presence of unknown hazardous-material sources, such as buried 55-gallon drums and underground tanks.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
HAZ-3	For structures within the proposed right-of-way that require demolition, an Asbestos Pre-Demolition Survey will be completed prior to the disturbance of building materials to determine the asbestos content. A certified asbestos contractor will be retained to abate any identified ACM in accordance with all applicable laws, including OSHA guidelines.	District Design / District Environmental Engineering / District Right of Way / Resident Engineer / Contractor	Final Design / Construction		
HAZ-4	In the event that ACM not identified in the asbestos study are uncovered during demolition/renovation activities, the contractor must stop work and have these materials tested for asbestos content. Any demolition or renovation of a structure will require notification and submittal of fees to the Mojave Desert Air Quality Management District (MDAQMD)) at least 10 days prior to proceeding with demolition work; failure to do so may result in being fined for regulatory non-compliance.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		
HAZ-5	Prior to demolition, a geophysical survey of affected properties will be conducted in order to investigate the potential for underground features and hazardous materials storage.	District Design / District Environmental Engineering / District Right of Way / Resident	Final Design / Construction		
HAZ-6	Shallow soil sampling for petroleum, volatile organic compounds, metals, and PCBs will be conducted near identified drum storage and debris covered areas within the environmental footprint to determine if the need for special handling and disposal of soil is needed.	District Design / District Environmental Engineering / District Right of Way / Resident Engineer / Contractor	Preliminary Engineering / Final Design / Construction		
HAZ-7	Soil sampling for chromium will be conducted within the identified preferred alternative right-of-way, prior to completion of the Project Approval and Environmental Document phase, to determine if the need for special handling and disposal of soil is needed.	District Design / District Environmental Engineering / District Right of Way / Resident Engineer / Contractor	Preliminary Engineering / Final Design / Construction		
HAZ-8	Due to the possible presence of elevated lead concentrations within the yellow thermoplastic and yellow-painted traffic stripes along the existing highway, it is recommended to include special provisions to require the Contractor to properly manage removed stripe and pavement markings as a hazardous waste and to have and implement a lead compliance plan prepared by a Certified Industrial Hygienist (CIH).	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		
HAZ-9	Caltrans Waste Management and Materials Pollution Control BMPs—Material Delivery and Storage and Material Use. Thermoplastic waste will be disposed of in accordance with Standard Specification 7-1.13. Environmental Rules and Requirements as outlined in the Caltrans Construction Manual—7-103D (1) Caltrans & Contractor Designated Disposal, Staging, and Borrow Sites—will be followed and/or implemented.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
HAZ-10	A Site Safety Plan, which addresses the management of potential health and safety hazards to workers and the public, will be prepared and implemented prior to initiation of the proposed construction activities. Instructions, guidelines, and requirements for handling hazardous materials to ensure employee safety as provided in Chapter 16, "Hazardous Materials Communication Program," of the Caltrans' Safety Manual will be included in the Site Safety Plan.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		
HAZ-11	Wastes and petroleum products used during construction will be collected, transported, and removed from the project site in accordance with RCRA regulations, federal/OSHA standards, including: Waste Management and Materials Pollution Control BMPs- Spill Prevention and Control, Materials and Waste Management BMP, Hazardous Waste Management. All hazardous waste will be stored, transported, and disposed as required in Title 22, CCR, Division 4.5 and 49 CFR 261-263, and Caltrans requirements as stated in Section 7-109 Solid Waste Disposal and Recycling Reporting Caltrans Construction Manual.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		
HAZ-12	As shown in Table 3.13-1, the number and type of wells associated with the PG&E hexavalent chromium cleanup effort that could be impacted varies with each alternative. Caltrans will coordinate with PG&E and the Lahontan Regional Water Quality Control Board (RWQCB) to determine all aspects associated with the abandonment and reinstallation of affected wells prior to completion of the Project Approval and Environmental Document phase.	District Design / District Environmental Engineering / District Environmental / District Right of Way / Resident Engineer / Contractor	Preliminary Engineering / Final Design / Construction		
HAZ-13	A Lead Compliance Plan shall be prepared under Section 7-1.07 of the Caltrans' Standard Specifications. The Lead Compliance Plan shall include provisions regarding use of earth material. If earth material will be relinquished to the Contractor, concentration levels of lead and depth of earth material in which lead has been detected will be disclosed. If earth material will not be relinquished to the contractor, all excavated earth material with lead, typically found within the top two feet of material in unpaved areas of the highway, will be reused within the project limits.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		
HAZ-14	Earth material containing lead will be handled according to all applicable laws, rules, and regulations, including those of the following agencies: (1) Cal/OSHA**,** (2) CA Regional Water Quality Control Board, Region 6 – Lahontan and (3) CA Department of Toxic Substances Control.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
HAZ-15	If earth material is disposed of: (1) It shall be disposed of under Section 7-1.13 of the Caltrans' Standard Specifications, "Disposal of Material Outside the Highway Right of Way." (2) Lead concentration of the earth material will be disclosed to the receiving property owner when obtaining authorization for disposal on the property. (3) The receiving property owner's acknowledgment of lead concentration disclosure in the written authorization for disposal shall be obtained. (4) Contractor is responsible for any additional sampling and analysis required by the receiving property owner.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		
HAZ-16	If a commercial landfill will be used to dispose earth material: (1) Earth material will be transported to a Class III or Class II landfill appropriately permitted to receive the material and (2) Contractor is responsible for identifying the appropriately permitted landfill to receive the earth material and for all associated trucking and disposal costs including any additional sampling and analysis required by the receiving landfill. If hazardous waste material is discovered during construction, such material must be transported under manifest to a permitted Class 1 disposal facility.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		
Section 3.14. Physical Environment—Air Quality					
AQ-1	Caltrans will require implementation of effective and comprehensive avoidance and minimization measures, as detailed in the Caltrans' Standard Specifications, Section 7-1.01F (Air Pollution Control), and MDAQMD Rule 403.2 (Fugitive Dust Control). Measures to reduce exhaust emissions specified in Section 7-1.01F (Air Pollution Control) may include but are not limited to the following. a) General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would have their engines turned off when not in use, to reduce vehicle emissions. Construction emissions should be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts. b) All equipment shall be properly tuned and maintained in accordance with manufacturer's specifications. c) Use electricity from power poles, rather than temporary diesel or gasoline powered generators if or where feasible.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
AQ-1 **(continued)**	d) Use on-site mobile equipment powered by alternative fuel sources (i.e., methanol, natural gas, propane or butane) as feasible. e) Develop a construction traffic management plan that includes, but is not limited to: (1) consolidating truck deliveries; (2) providing a rideshare or shuttle service for construction workers; and (3) providing dedicated turn lanes for movement of construction trucks and equipment on-and off-site. Measures to reduce exhaust emissions specified in MDAQMD Rule 403.2 (Fugitive Dust Control) include the following. The owner or operator of any construction/demolition source shall: a) Use periodic watering for short-term stabilization of disturbed surface area to minimize visible fugitive dust emissions. For purposes of this rule, use of a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes shall be considered sufficient to maintain compliance; b) Take actions sufficient to prevent project-related trackout onto paved surfaces; c) Cover loaded haul vehicles while operating on publicly maintained paved surfaces; d) Stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than 30 days, except when such a delay is due to precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions; d) Clean-up project-related trackout or spills on publicly maintained paved surfaces within 24 hours; and f) Reduce nonessential earth-moving activity under high wind conditions. For purposes of this rule, a reduction in earth-moving activity when visible dusting occurs from moist and dry surfaces due to wind erosion shall be considered sufficient to maintain compliance.	District Design / District Environmental Engineering / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
Section 3.15. Physical Environment—Noise and Vibration					
NOI-1	To reduce noise levels from construction to the extent that is technically feasible and avoid unnecessary annoyance from construction noise, the construction noise control measures listed below will be implemented. a. To the extent practicable, avoid using construction equipment or any other activity that could generate high noise levels near homes. If nighttime construction is required, the community will be advised. b. Place maintenance yards, batch plants, haul roads, and other construction-oriented operations in locations that would be the least disruptive to the community. c. Hold community meetings to explain to area residents the construction work, time involved, and control measures to be taken to reduce the impact of construction work, as appropriate. d. Schedule the timing and duration of construction activities to minimize noise impacts at noise-sensitive locations. e. As practicable, use noise-attenuating "jackets" or portable noise screens to provide shielding for pavement breaking, jack hammering, or other similar activities when work is close to noise-sensitive areas. f. Comply with the Caltrans' Standard Specification 14-8.02A (2010): Do not exceed 86 dBA LMax at 50 feet from the job site activities from 9 p.m. to 6 a.m. Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.	District Design / District Environmental Engineering / District Environmental / Resident Engineer / Contractor	Final Design / Construction		
NOI-2	If, after circulation of the DEIR/DEIS, Alternative 4 is selected as the Preferred Alternative, Noise Barrier M-13 Segment 3 would be installed. Details related to this noise barrier would be determined during Final Design of the project.	District Design / District Environmental Engineering / District Environmental / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
Section 3.18. Natural Environment—Wetlands and Other Waters					
W-1	Avoidance and minimization efforts to be utilized in order to protect aquatic resources during the course of the project will include the implementation of BMPs (Caltrans 2003b) and the SWPPP (Caltrans 2003b) during all phases of construction, which will include the following: a. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into washes or culverts that cross the project area. The SWPPP and NPDES will contain specific methods for meeting this requirement. b. Raw cement/concrete or washing thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic-life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering washes or culverts that cross the project area as defined through compliance with the contractor's SWPPP. c. No equipment maintenance/parking or fueling shall be done within or near any drainages or washes depicted in the JD, where petroleum products or other pollutants from equipment shall enter these areas under any flow condition.	District Design / District Biological Studies / District Environmental / Resident Engineer / Contractor	Final Design / Construction		
W-2	An Environmentally Sensitive Area (ESA) fence will be installed along washes within the right-of-way that will not be directly affected by the project.	District Design / District Biological Studies / District Environmental / Resident Engineer / Contractor	Final Design / Construction		
W-3	A biological construction monitor will coordinate with the RE to ensure that construction activities will not have an impact on washes limited by the ESA fencing. No grading or fill activity of any type will be will be permitted within the ESA's. The monitor, in coordination with the RE, will be operated in a manner so as to present accidental damage to nearby preserved areas.	District Design / District Biological Studies / District Environmental / Resident Engineer / Contractor	Final Design / Construction		
W-4	Project impacts to the California Department of Fish and Game (CDFG) jurisdictional waters will be mitigated at a minimum 2:1 ratio, either through onsite restoration and/or offsite acquisition, through coordination with CDFG and RWQCB during the permitting process for the 1602 and 401 permits, respectively.	District Design / District Biological Studies / District Environmental / District Right of Way / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
Section 3.19. Natural Environment—Plant Species					
BIO-1	Pre-construction surveys for rare plants will be conducted to determine where rare plants are for ESA purposes, during the appropriate blooming period.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-2	The project design will avoid impacts to rare plants to the maximum extent possible.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-3	ESA fencing will be established around the rare plants and sensitive species that are to be protected in place as determined by the biologist.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-4	A qualified biological construction monitor will monitor construction activities to avoid and/or minimize impacts to species.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-5	All temporary staging areas, storage areas, and access roads involved with this project will occur within the permanent impact area (future pavement, median, on- and off-ramps, interchanges etc.). Access to the project site will be gained from the existing SR-58. No new access roads will be built as part of this project.	District Design / District Biological Studies / District Environmental / Resident Engineer / Contractor	Final Design / Construction		
Section 3.20. Natural Environment—Animal Species					
BIO-6	A biological monitor will monitor all construction activities to ensure that no harm to American badger will take place. All monitoring activities will be consistent with the monitoring measures listed in the avoidance and minimization measures for desert tortoise and Mohave ground squirrel.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-7	All temporary staging areas, storage areas, and access roads involved with this project will be located in the area of permanent direct impact. Access to the project site will be gained from the existing SR-58. No new access roads will be built as part of this project. Staging areas and equipment storage will take place on existing roads or within the proposed right-of-way of the realigned SR-58.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-8	All measures will be taken to minimize impacts on nesting birds. A pre-construction sweep for nesting birds would be conducted prior to construction activities outside of the nesting season as well. The sweep will include areas used for construction, staging, storage, sign placement, and parking areas. If a migratory bird is detected during surveys construction will stop within a minimum radius of 100 feet or as determined by the biological monitor.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
BIO-9	A preconstruction survey of the project site for burrowing owl and other bird species protected by the MBTA will occur 30 days prior to commencing construction activities. See BIO-8 for measures required if nesting birds are identified during the preconstruction survey. Pursuant to the MBTA, and to avoid any impacts on migratory birds, vegetation removal must take place outside of the breeding season, which occurs between March 15 and September 15. If, due to construction schedules, it is necessary to remove vegetation, including trees, during this season, a biological construction monitor must perform a pre-construction survey of each individual tree and/or of the entire area where vegetation will be removed. All measures will be taken to minimize impacts on nesting birds. A pre-construction sweep for nesting birds would be conducted prior to construction activities outside of the nesting season as well. The sweep will include areas used for construction, staging, storage, sign placement, and parking areas. If a migratory bird is detected during surveys construction will stop within a minimum radius of 100 feet or as determined by the biological monitor.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-10	If burrowing owls are found on site during the pre-construction sweep: • Occupied burrows will not be disturbed during the nesting season of February 1 to August 31, unless a biologist can verify through non-invasive methods that either the owls have not begun egg laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent flight. • A Burrowing Owl Mitigation and Monitoring Plan will be submitted to CDFG for review and approval prior to relocation of owls. All relocation will be approved by CDFG, and will be based on the mitigation and monitoring plan. The permitted biologist will monitor the relocated owls a minimum of three days per week for a minimum of three weeks. A report summarizing the results of the relocation and monitoring will be submitted to the Caltrans within 30 days following completion of the relocation and monitoring of the owls.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
BIO-10 (continued)	• Owls will be relocated by a qualified biologist from any occupied burrows that will be affected by project activities. Suitable habitat must be available adjacent to or near the disturbance site or artificial burrows will be provided nearby. Once the biologist has confirmed that the owls have left the burrow, burrows will be excavated using hand tools and backfilled to prevent reoccupation.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-11	Replacement habitat for burrowing owl will be provided according to the ratios listed below and can be combined with the mitigation ratios required for other species, unless the land purchase under that mitigation does not comply with the conditions listed: • replacement of occupied habitat with occupied habitat at 1.5 times per 6.5 acres (9.95) per pair or single bird, or • replacement of occupied habitat with habitat contiguous with occupied habitat 2 times per 6.5 acres per pair or single bird (13), or • replacement of occupied habitat with suitable unoccupied habitat, as required by the mitigation plan, at 3 times per 6.5 acres (19.5) per pair or single bird.	District Design / District Biological Studies / District Environmental / District Right of Way / Resident Engineer / Contractor	Final Design / Construction		
Section 3.21. Natural Environment—Threatened and Endangered Species					
BIO-12	All personnel involved in the construction project will receive desert tortoise protection training. Training will include discussion of the fragility of desert habitats, the importance of the desert tortoise to the environment, the protections afforded to the desert tortoise by FESA and CESA, and the protocols set by the CDFG and USFWS to follow should a desert tortoise be encountered.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-13	Copies of the biological opinion for this project and Caltrans' brochure *Protection of the Desert Tortoise* will be maintained at the worksite by the project Resident Engineer.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-14	Project personnel will carefully check for desert tortoises under parked vehicles or equipment before moving them. Desert tortoises found within the parking, traffic, or construction areas will be moved by an authorized handler to a location away from danger and only as specified in the Biological Opinion.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
BIO-15	Permanent desert tortoise exclusion fencing will be placed along the proposed project length prior to surface disturbance to prevent encounters with desert tortoise during construction activities. Pre-construction sweeps within the proposed project site will be conducted before construction, to ensure that desert tortoises are absent from the project area. Additionally, biological monitors will be on site during construction of the desert tortoise exclusion fencing. Upon completion of construction of the desert tortoise exclusion fencing, an on-call biologist will be available should desert tortoise be encountered during construction activities.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-16	All desert tortoises sighted within the proposed project area must be immediately reported to the project Resident Engineer, and construction activity jeopardizing the tortoise must be halted until the approved USFWS biologist is able to relocate the animal to a location away from danger and only as specified in the Biological Opinion. If a desert tortoise is injured or killed, the Resident Engineer and authorized biologist must be notified, the injury or death documented, and the animal taken to a qualified veterinarian or the carcass removed by the authorized biologist.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-17	All construction activities will be confined within the project footprint. All material area, equipment storage areas, construction shacks, or other facilities related to the construction project must be within the desert tortoise–fenced project footprint. At no time will equipment or personnel be allowed within the ESA discussed in Bio-15.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-18	An authorized biologist must approve the borrow sites and haul roads prior to use. The contractor will demonstrate that they have obtained the required permits for borrow sites outside of the Caltrans right-of-way.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-19	No overnight hazards to desert tortoise will be left unfenced or uncovered; such hazards will be eliminated each day prior to the work crew leaving the site.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-20	Litter will be contained in containers to prevent attracting common ravens or potential predators of the desert tortoise.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-21	Vegetation removal will be minimized to the fullest extent possible. Any grubbing and clearing of vegetation will be monitored or inspected prior to clearing by a Caltrans biologist or qualified consultant biologist under Caltrans' direction.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
BIO-22	Dust will be controlled, as stipulated in CT Standards and Specifications, and discussed in section 3.14 Air Quality.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-23	All drainages will be designed with a flat bottom to allow desert tortoise to use them as a crossing.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-24	No firearms or pets will be allowed at the work area. Firearms carried by authorized security and law enforcement personnel are exempt from this term and condition.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-25	Pre-construction surveys will be conducted to ensure that no unexpected threatened or endangered species of animals exist within the project area. If during pre-construction surveys any listed animal species is discovered, consultation with CDFG and USFWS will be reinitiated to implement the appropriate avoidance, minimization, and/or mitigation measures.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-26	A biological monitor will ensure that all construction activities will not harm MGS.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-27	MGS awareness training will be provided prior to construction. All construction related vehicles, including private automobiles parked in staging areas, must be inspected prior to ignition to ensure that MGS have not moved underneath the parked vehicle. Inspection flags will be placed on heavy equipment at the end of the day to remind drivers to look under them prior to startup.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-28	If any MGS are excavated during construction, work must stop in the immediate area and the project biologist and the RE will be immediately notified.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-29	If any MGS are injured during the course of construction, work must stop in the immediate area and the project biologist and the RE will be immediately notified. Only the authorized biologist will handle, and transport the animal to a qualified veterinarian.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-30	If any MGS are killed during the course of construction, work must stop in the immediate area, the animal must be left in place as is, and the project biologist and the RE will be immediately notified.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		
BIO-31	Mitigation for loss of marginal desert tortoise habitat will be accomplished based on the quality of habitat affected. As determined through consultation with CDFG and USFWS, habitat will be compensated according to the following ratios: - a 5:1 ratio for impacts west of Hinkley Road; and - a 3:1 ratio for impacts east of Hinkley Road.	District Design / District Biological Studies / District Environmental / District Right of Way / Resident Engineer / Contractor	Final Design / Construction		

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
BIO-32	Mitigation for loss of Mohave ground squirrel habitat will be accomplished based on the quality of habitat affected according to the following ratios: - a 5:1 ratio for impacts west of Hinkley Road; and - a 3:1 ratio for impacts east of Hinkley Road.	District Design / District Biological Studies / District Environmental / District Right of Way / Resident Engineer / Contractor	Final Design / Construction		
Section 3.22. Natural Environment—Invasive Species					
BIO-33	Measures to minimize the introduction or spread of non-native species will include cleaning all equipment and vehicles with water to remove dirt, seeds, vegetative material, or other debris before entering and upon leaving the project site and the removal and disposal offsite of existing non-native species within the project area. Landscaping and erosion control measures proposed during this Caltrans project would not contain invasive species in the plant selections or seed mixtures.	District Design / District Biological Studies / Resident Engineer / Contractor	Final Design / Construction		

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Appendix F List of Acronyms

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Appendix F. List of Acronyms

AADT	annual average daily traffic
AB	Assembly Bill
AC	asphalt concrete
ACEC	Area of Critical Environmental Concern
ACMs	asbestos containing materials
ADL	Aerially Deposited Lead
ADT	Average Daily Traffic
af	acre-feet
AGS	antelope ground squirrel
AIC	Archaeological Information Center
AMC	Antecedent Moisture Condition
amsl	above mean sea level
AMSP	Abengoa Mojave Solar Project
APE	Area of Potential Effect
APN	Assessor Parcel Number
AQR	Air Quality Report
ARB	Air Resources Board
ARPA	Archaeological Resources Protection Act
ASR	Archaeological Survey Report
ASTM	American Standard Testing Methods
ASTs	aboveground storage tanks
AUs	agricultural treatment units
BA	Biological Assessment
BO	Biological Opinion
Basin	Mojave Desert Air Basin
BFE	base floodplain elevation
bgs	below ground surface
BLM	U.S. Bureau of Land Management
BMPs	Best Management Practices
BNSF	Burlington Northern Santa Fe
BSA	Biological Study Area
BT&H	Business, Transportation, and Housing
CAFE	Corporate Average Fuel Economy
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEC	Commission for Environmental Cooperation

CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERFA	Community Environmental Response Facilitation Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geologic Survey
CH4	methane
CHP	California Highway Patrol
CIA	Community Impact Assessment
CIH	Certified Industrial Hygienist
CIMIS	California Irrigation Management Information System
CNDDB	Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO2	carbon dioxide
County	San Bernardino County
COZEEP	construction zone enforcement enhancement program
CPUC	California Public Utilities Commission
CTC	California Transportation Commission
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibels
DEIR	Draft Environmental Impact Report
DFG	California Department of Fish and Game
DNAC	District 8 Native American Coordinator
DOC	Department of Conservation
DPLA	Division of Planning and Local Assistance
DRIR	Draft Relocation Impact Report
DSA	Disturbed Soil Area
DWMA	Desert Wildlife Management Area
DWR	California Department of Water Resources
EDR	Environmental Data Resources, Inc.
EIS	environmental impact statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Environmentally Sensitive Area
FAQs	frequently asked questions
FCAA	Federal Clean Air Act

FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRMs	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
FY	fiscal year
GHG	greenhouse gas
GWh	Gigawatt-hour
H_2S	hydrogen sulfide
HFCs	hydrofluorocarbons
HHS	Health and Human Services
HOV	High Occupancy Vehicle
HPSR	Historic Property Survey Report
HRER	Historical Resources Evaluation Report
HUC	hydrologic unit code
I/C	interchange
I-15	Interstate 15
ICES	Intermodal Corridor of Economic Significance Act establishes the
IPCC	Intergovernmental Panel on Climate Change
ISA	Initial Site Assessment
ITIP	Interregional Transportation Improvement Program
ITS	intelligent transportation systems
JD	jurisdictional delineation
Jqd	Jurassic Quartz Diorite
KOP	Key observations point
KP	kilopost
LBP	lead-based paint
L_{dn}	Day-Night Level
LDVs	light-duty vehicles
LEDPA	least environmentally damaging practicable alternative
L_{eq}	Equivalent Sound Level
LESA	land evaluation and site assessment
L_{max}	Maximum Sound Level
LOS	levels of service
LUST	Leaking Underground Storage Tank
L_{xx}	Percentile-Exceeded Sound Level
MBTA	Migratory Bird Treaty Act
MDAQMD	Mojave Desert Air Quality Management District
MGD	million gallons per day

MGS	Mojave Ground Squirrel
MLD	Most Likely Descendent
MMT	million metric tons
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mpg	miles per gallon
MPG	miles per gallon
MPO	Metropolitan Planning Organization
MS	marble
MSAT	mobile-source air toxics
MSE	Mechanically Stabilized Embankment
N/A	not applicable
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAC	noise abatement criteria
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NHPA	National Historic Preservation Act of 1966, as amended
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NOA	Naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries Service	National Oceanic and Atmospheric Administration's National Marine Fisheries Service
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	Noise Study Report
NWI	National Wetland Inventory
O_3	ozone
OHV	off-highway vehicle
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Act
OSTP	Office of Science and Technology Policy
PA	Programmatic Agreement
Pb	lead
PCBs	polychlorinated biphenyls
PCI	per capita income
PCMS	portable changeable message signs

PDT	Project Development Team
PFCs	perfluorocarbons
PG&E	Pacific Gas and Electric Company
PID	Project Initiation Document
PIR/PER	paleontological identification report and paleontological evaluation report
PM2.5	PM10 and particles of 2.5 micrometers and smaller
PMP	Paleontological Mitigation Plan
ppm	parts per million
PRC	Public Resources Code
PS&E	plans, specifications, and estimates
PSR	Project Study Report
Qa	Quaternary alluvium
Qo	Quaternary Alluvium
Qoa	Quaternary Older Alluvium
RAP	Relocation Assistance Program
RCRA	Conservation and Recovery Act of 1976
RECs	Recognized Environmental Conditions
RSA	resource study area
RTGS	round-tailed ground squirrel
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Boards
SAFETEA-LU	Safe, Accountable, Flexible, Efficient, Transportation Equity Act – A Legacy for Users
SANBAG	San Bernardino Associated Governments
SB 97	Senate Bill 97
SBAIC	San Bernardino Archaeological Information Center
SBCFD	San Bernardino County Fire Department
SBCSD	San Bernardino County Sheriff's Department
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SDC	Seismic Design Criteria
septic	sewage treatment systems
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLF	Sacred Lands File
SLIC	Spills, Leaks, Investigations, and Cleanups
SO_2	sulfur dioxide
Southwest	Southwest Gas Corporation
SPT	Standard Penetration Tests
SR-58	State Route 58

STAA	Surface Transportation Assistance Act
STIP	State Transportation Program
SWDR	Storm Water Data Report
SWMD	Solid Waste Management Division
SWMP	Statewide Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TCS	Total Corrected Sign
TCS/Acre	TCS per acre
TCWG	Transportation Conformity Working Group
TMDLs	Total Maximum Daily Loads
TSCA	Toxic Substances Control Act
U.S	United States
U.S. EPA	U.S. Environmental Protection Agency
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USACOE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tanks
VHT	vehicle hours traveled
VIA	Visual Impact Assessment
VMT	vehicle miles traveled
WDRs	Waste Discharge Requirements
WEMO	West Mojave Plan
WPCP	Water Pollution Control Plan
ZEV	zero emission vehicle
ZOI	Zone of Influence
µg/m3	per cubic meter

Appendix G List of Technical Studies

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Appendix G List of Technical Studies

Aerially Deposited Lead (ADL) Investigation Report State Route 58 Hinkley Expressway Project, November 10, 2010.

Air Quality Report State Route 58 Hinkley Expressway Project, January 2011.

Archaeological Survey Report, June 29, 2011.

Community Impact Assessment (CIA) for the State Route 58 Hinkley Expressway Project, April 2011. CIA Update Memo, October 17, 2012.

Final Drainage Report, Location Hydraulic Study and the Floodplain Evaluation Report Summary, March 2012.

Farmland Conversion Impact Rating, State Route 58 Widening and Realignment. March 2009.

Historic Property Survey Report (HPSR), November 16, 2011.

Historical Resources Evaluation Report (HRER), November 16, 2011.

Hydrology and Water Quality Technical Report State Route 58 Hinkley Expressway Project, March 2011.

Initial Site Assessment (ISA) Report Realign and Widen SR 58. July 2008.

Jurisdictional Delineation, December 16, 2010.

Natural Environment Study SR-58 Realignment and Widening Project, Hinkley, California, January 2010.

Final Noise Abatement Decision Report State Route 58 via Hinkley, Widening and Realignment, December 2010.

Noise Study Report State Route 58 Hinkley Expressway Project, December 2010.

Paleontological Identification Report and Paleontological Evaluation Report, August 2010. Caltrans Errata Sheet, October 3, 2012.

Preliminary Geotechnical Report State Route 58 for Widening and Realignment. Division of Engineering Services, Geotechnical Services, Office of Geotechnical Design – South. July 2002.

Protocol Rare Plant, Desert Tortoise, and Burrowing Owl Habitat Assessment Survey Report for State Route 58 Hinkley Expressway Project, September. 2009.

Draft Relocation Impact Report State Route 58 Hinkley Expressway Project, October 25, 2010.

State Route 58 via Hinkley Widening and Realignment Project Scoping Report, April 2008.

Traffic Study Report for State Route 58 from Post Mile R21.8 to Post Mile R31.1, February 2010. Supplemental Traffic Data Memo dated October 24, 2011.

Visual Impact Assessment State Route 58 Hinkley Expressway Project, September 2010. Update Analysis/Findings Memo, April 20, 2012.

Appendix H USFWS JUNE 15, 2012 Species List and USACE JD Approval Letter

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APPENDIX H: USFWS JUNE 15, 2012 SPECIES LIST AND USACE JD APPROVAL LETTER

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

IN REPLY REFER TO:
08EVEN00-2012-SLI-0358

June 15, 2012

Scott Quinnell
California Department of Transportation
464 West Fourth Street, MS 822
San Bernardino, California 92401

Subject: Species List Request for SR-58 Realignment Project, Hinkley, California

Dear Mr. Quinnell:

We are responding to your request received through the U.S. Fish and Wildlife Service's (Service) internet-based Information, Planning, and Conservation (IPaC) decision support system on May 30, 2012. You requested information on federally listed threatened and endangered species, candidate species, and designated critical habitat that may be affected by your proposed project. The proposed project is located near Hinkley, San Bernardino County, California.

The Service's responsibilities include administering the Endangered Species Act of 1973, as amended (Act), including sections 7, 9, and 10. Section 9 of the Act and its implementing regulations prohibit the taking of any federally listed endangered or threatened species. Section 3(19) of the Act defines take to mean to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Service regulations (50 CFR 17.3) define harm to include significant habitat modification or degradation which actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Harassment is defined by the Service as an intentional or negligent action that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. The Act provides for civil and criminal penalties for the unlawful taking of listed species.

Exemptions to the prohibitions against take may be obtained through coordination with the Service through interagency consultation for projects with Federal involvement pursuant to section 7 or through the issuance of an incidental take permit under section 10(a)(1)(B) of the Act. If the subject project is to be funded, authorized, or carried out by a Federal agency and may affect a listed species, the Federal agency must consult with the Service, pursuant to section 7(a)(2) of the Act. If a proposed project does not involve a Federal agency but may result in the take of a listed animal species, the project proponent should apply for an incidental take permit, pursuant to section 10(a)(1)(B) of the Act. Once you have determined if the proposed project

will have a lead Federal agency, we can provide you with more detailed information regarding the section 7 or 10(a)(1)(B) permitting process.

Based on the best available information, including information you provided through the IPaC system, scientific and technical literature, and information in our files, we have identified the federally threatened desert tortoise (*Gopherus agassizii*) as the only listed species likely to occur in your project area. Please note that pursuant to Federal regulation (50 CFR 402.12(e) a species list is valid for 90 days.

Only federally listed species receive protection under the Act; however, species listed by the State of California or otherwise considered to be sensitive should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Game's Natural Diversity Data Base. You can contact the California Department of Fish and Game at (916) 324-3812 for information on other sensitive species that may occur in this area.

If you have any questions regarding this matter, please contact Amy Torres of my staff at (909) 382-2654.

Sincerely,

Carl T. Benz
Assistant Field Supervisor

APPENDIX H: USFWS JUNE 15, 2012 SPECIES LIST AND USACE JD APPROVAL LETTER

DEPARTMENT OF THE ARMY
Los Angeles District Corps of Engineers
P.O. Box 532711
Los Angeles, CA 90017-3401

August 3, 2012

REPLY TO
ATTENTION OF
Regulatory Division

Scott Quinnell
California Department of Transportation, District 8
Senior Environmental Planner
464 West 4th Street Fl 6
San Bernardino, California 92401-1400

SUBJECT: Approved Jurisdictional Determination regarding presence/absence of geographic jurisdiction

Dear Mr. Quinnell:

Reference is made to your request (File No. SPL-2007-01449-VCC), dated June 16, 2011, for an approved Department of the Army jurisdictional determination (JD) for the Caltrans State Route 58 (SR-58) Realignment and Widening Project site 34.92218° N, -117.260294°W), located near the city of Hinkley, San Bernardino County, California.

As you may know, the Corps' evaluation process for determining whether or not a Department of the Army permit is needed involves two tests. If both tests are met, then a permit is required. The first test determines whether or not the proposed project is located in a water of the United States (i.e., it is within the Corps' geographic jurisdiction). The second test determines whether or not the proposed project is a regulated activity under section 10 of the River and Harbor Act or section 404 of the Clean Water Act. As part of the evaluation process, pertaining to the first test only, we have made the jurisdictional determination below.

Based on available information, we have determined there are no waters of the United States on the project site, in the locations depicted on the enclosed drawing. The basis for our determination can be found in the enclosed JD form(s).

The aquatic resources identified as HarperDryLake 1 through 40 on the attached approved jurisdictional determination and map are intrastate isolated waters with no apparent interstate or foreign commerce connection. As such, these waters are not currently regulated by the Corps of Engineers. This disclaimer of jurisdiction is only for section 404 of the Clean Water Act. Other Federal, State, and local laws may apply to your activities. In particular, you may need authorization from the California State Water Resources Control Board and/or the U.S. Fish and Wildlife Service.

This letter contains an approved jurisdictional determination for the Caltrans State Route 58 (SR-58) Realignment and Widening Project site. If you object to this decision, you may request an administrative appeal under Corps regulations at 33 CFR part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet (Appendix A) and Request for Appeal (RFA) form. If you request to appeal this decision you must submit a completed RFA form to the Corps South Pacific Division Office at the following address:

Tom Cavanaugh
Administrative Appeal Review Officer,
U.S. Army Corps of Engineers
South Pacific Division, CESPD-PDS-O, 2042B
1455 Market Street, San Francisco, California 94103-1399

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 C.F.R. section 331.5, and that it has been received by the Division Office within 60 days of the date on the NAP. Should you decide to submit an RFA form, it must be received at the above address by **October 2, 2012**. It is not necessary to submit an RFA form to the Division office if you do not object to the decision in this letter.

This verification is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. If you wish to submit new information regarding the approved jurisdictional determination for this site, please submit this information to Veronica Chan at the letterhead address by **August 3, 2017**. The Corps will consider any new information so submitted and respond within 60 days by either revising the prior determination, if appropriate, or reissuing the prior determination. A revised or reissued jurisdictional determination can be appealed as described above.

This determination has been conducted to identify the extent of the Corps' Clean Water Act jurisdiction on the particular project site identified in your request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

If you have any questions, please contact Veronica Chan at 213-452-3292 or via e-mail at Veronica.C.Chan@usace.army.mil.

Please be advised that you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Mark D. Cohen
Deputy Chief, Regulatory Division

Enclosures

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Appendix I 2012 RTP Project Listing and 2011 FTIP Project Listing

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2012 RTP PROJECT LISTING

FTIP Projects					
County	System	FTIP ID	Route	Description	Project Cost ($1,000's)
SAN BERNARDINO	STATE HIGHWAY	SBD031279	15	IN HESPERIA AT I-15 AND RANCHERO ROAD – CONSTRUCT 6 LANE INTERCHANGE WITH LEFT AND RIGHT TURN LANES, INCLUDING 1300 FT. AUX LANE PRIOR TO N/B OFF RAMP AND 3200 FT. AUX LANE FROM TO S/B LOOP ON RAMP	$80,625
SAN BERNARDINO	STATE HIGHWAY	35558	15	IN SAN BERNARDINO CO. – GATEWAY ENHANCEMENTS ON I-15 FROM MOJAVE DR. IN VICTORVILLE TO STODDARD WELLS RD. IN BARSTOW-RETENTION WALL ENHANCMENTS AND LANDSCAPING(PPN00175N)	$2,446
SAN BERNARDINO	STATE HIGHWAY	35556	15	IN THE CITY OF VICTORVILLE FROM 0.6 MILES NORTH OF MOJAVE DRIVE TO 1.0 NORTH OF EXISTING STODDARD WELLS ROAD WELLS OVERCROSSING. RECONSTRUCT D/E/STODDARD WELLS RD IC'S. WIDEN BRIDGES (NO NEW LANES). CONSTRUCT NEW COLLECTOR DISTRIBUTOR RD OVER D/E/AND BNSF RR TO PARRALLEL I-15 NB INCLUDES ITS OWN BRIDGE. RECONST/REALIGN EAST/WEST FRONTAGE RDS. CONST NEW AUX LN. (REFER TO MODELING DETAILS)(CA061)	$146,676
SAN BERNARDINO	STATE HIGHWAY	34170	15	IN VICTORVILLE AT LA MESA ROAD/NISQUALLI ROAD CONSTRUCT I/C NEW 6 LANE INTERCHANGE	$90,009
SAN BERNARDINO	STATE HIGHWAY	200152	15	ON I-15 FROM 3,500 FT. S OF ARROW RTE. TO 3,500 ' N/O FOOTHILL BLVD AND AND ON ARROW RT. FROM 1000 FT.W/TO 100 FT. E/ OF I- 15-CONSTRUCT NEW I/C AR ARROW RTE, CONSTRUCT S/B DOUBLE DECEL LANES TO FOOTHILL BLVD OFFRAMP AND MODIFY RAMPS AT FOOTHILL.	$91,370
SAN BERNARDINO	STATE HIGHWAY	200078	15	PARK-N-RIDE LOT EXPANSION AND FACILITIES AT BEAR VALLEY RD & I-15 (70 EXISTING SPACES TO 300 SPACES)	$755
SAN BERNARDINO	STATE HIGHWAY	20061702	18	E-220 HIGH DESERT CORRIDOR-WEST TO EAST SR-14 TO US 395 CONNECTING AT SB COUNTY, . CONSTRUCT NEW 4-6 LANE FACILITY (PART OF 20020144) JPA PROJECT. SR. 138 PM 43.4 TO SR18T 17.0 S.B. COUNTY LINE 0.0.	$4,000,000
SAN BERNARDINO	STATE HIGHWAY	20020144	18	HI- DESERT CORR. PHASE 1, SR-18 REALIGNMENT FROM US 395 IN ADELANTO TO SR-18 E/O APPLE VALLEY. COONSTRUCT 4-6 LANE FREEWAY/EXPRESSWAY. CONSTRUCT NEW IC @I-15 W/AUX LANES NORTH AND SOUTH OF NEW IC. CONSTRUCT INTERSECTION @US 395 W/TURN POCKETS TO NORTH AND SOUTH	$1,156,000
SAN BERNARDINO	STATE HIGHWAY	0A7910	18	IN RUNNING SPRINGS FROM RTE. 18 FROM N/O NOB HILL DR. TO S/O R.S. SCHOOL RD. AND RTE 330 FROM S/O RTE. 18 TO RTE. 18-RURAL GATEWAY BEAUTIFICATION-AESTHETIC IMPROVEMTNS	$2,265
SAN BERNARDINO	STATE HIGHWAY	200612	18	SR 18 FROM APPLE VALLEY RD. TO CORWIN RD. – WIDEN FROM 4-6 LANES (APPROX. 3 MI)	$14,400
SAN BERNARDINO	STATE HIGHWAY	20110602	18	SR18 AT APPLEY VALLEY ROAD INTERSECTION REALIGNMENT WITH TURN AND APPROACH LANES	$4,650
SAN BERNARDINO	STATE HIGHWAY	34770	58	0.4 MILES WEST OF KERN CO LINE TO 7.5 MI EAST OF JCT RTE 395 – CONSTRUCT 4 LANE EXPRESS WAY ON NEW ALIGNMENT, NEW INTERCHANGE AT US 395 AND SR 58	$148,067
SAN BERNARDINO	STATE HIGHWAY	4351	58	SR58 EXPRESSWAY-REALIGN AND WIDEN FROM 2-4 LANE EXPRESSWAY. NEW INTERCHANGES AT LENWOOD RD AND HINKLEY RD. 2.4 MILES WEST OF HIDDEN RIVER RD. TO 0.7 MILES EAST OF LENWOOD ROAD – REALIGN AND WIDEN TO 4 LANE EXPRESSWAY (2-4 LANES) (PHASE 2)	$298,326
SAN BERNARDINO	STATE HIGHWAY	200602	60	SR 60 AND VINEYARD AVE. INTERCHANGE RECONSTRUCTION-LENGTHEN BRIDGE TO ACOMMODATE VINEYARD AVE WIDENING AND RAMP WIDENING 4-6 LANES	$50,810
SAN BERNARDINO	STATE HIGHWAY	201133	60	SR 60 AT EUCLID WIDEN W/B EXIT RAMP FROM 2-3 LANES	$1,620
SAN BERNARDINO	STATE HIGHWAY	201132	60	SR-60 AT ARCHIBALD AVENUE WIDEN ON AND OFF RAMPS (2-3 LANES EACH WAY)	$7,900

APPENDIX I: 2012 RTP PROJECT LISTING AND 2011 FTIP PROJECT LISTING

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

2011 Federal Transportation Improvement Program

San Bernardino County
State Highway
Including Amendments 1-15 and 17-26
(In $000's)

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Ame
4351	San Bernardino	MDAB		4351	CAX63	58	22.2	31.1	S	NON-EXEMPT	
Description:							PTC	298,326	Agency	CALTRANS	

SR58 EXPRESSWAY-REALIGN AND WIDEN FROM 2-4 LANE EXPRESSWAY. NEW INTERCHANGES AT LENWOOD RD AND HINKLEY RD. 2.4 MILES WEST OF HIDDEN RIVER RD. EAST OF LENWOOD ROAD -- REALIGN AND WIDEN TO 4 LANE EXPRESSWAY (2-4 LANES) (PHASE 2)

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016
NATIONAL HWY SYSTEM - IIP	13,993			13,993	13,993						
STATE CASH - IIP		2,624		2,624					2,624		
STIP ADVANCE CON-IIP		20,251		20,251					20,251		
4351 Total	13,993	22,875		36,868	13,993				22,875		

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Ame
34770	San Bernardino	MDAB		34770	CAX67	58	143.5	12.9	S	NON-EXEMPT	
Description:							PTC	148,067	Agency	CALTRANS	

0.4 MILES WEST OF KERN CO LINE TO 7.5 MI EAST OF JCT RTE 395 - CONSTRUCT 4 LANE EXPRESS WAY ON NEW ALIGNMENT, NEW INTERCHANGE AT US 395 AND SR 58

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016
NATIONAL HWY SYSTEM - IIP	15,044			15,044	15,044						
STATE CASH - IIP		14,523	13,592	28,115	14,523				13,592		
STIP ADVANCE CON-IIP			104,908	104,908					104,908		
34770 Total	15,044	14,523	118,500	148,067	29,567				118,500		

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Ame
201132	San Bernardino	SCAB		4M07017	NCR88	60		.01	S	NON-EXEMPT	
Description:							PTC	7,900	Agency	ONTARIO	

SR-60 AT ARCHIBALD AVENUE WIDEN ON AND OFF RAMPS (2-3 LANES EACH WAY)

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016
DEVELOPER FEES	783		4,439	5,222		261	522			4,439	
SBD CO MEASURE I	402		2,276	2,678		134	268			2,276	
201132 Total	1,185		6,715	7,900		395	790			6,715	

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Ame
201114	San Bernardino	SCAB		4M04050	CAR75	60	1.1	3.55	S	NON-EXEMPT	
Description:							PTC	27,779	Agency	CHINO	

WIDENING OF CENTRAL AVENUE BRIDGE CROSSING SR-60 TO ACCOMODATE WIDENING OF RAMPS AND THE DESIGNATED FREEWAY LANES.

Fund	ENG	R/W	CON	Total	Prior	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016
CITY FUNDS	1,556			1,556		1,556					
201114 Total	1,556			1,556		1,556					

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Appendix J **Farmland Conversion Impact Rating Form AD 1006**

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U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 12/17/08
Name Of Project State Route 58 Hinkley Widening & Realignment	Federal Agency Involved Federal Highway Administration
Proposed Land Use Transportation/Highway Easement	County And State San Bernardino County/California
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 01/17/09

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form).*	Yes ☒ No ☐	Acres Irrigated 40961	Average Farm Size 635
Major Crop(s) Alfalfa Bok Choi Orange	Farmable Land In Govt. Jurisdiction Acres: 58,141 % 0.4	Amount Of Farmland As Defined in FPPA Acres: DATA NOT AVAILABLE %	
Name Of Land Evaluation System Used CALIFORNIA STORIE SYSTEM	Name Of Local Site Assessment System NONE	Date Land Evaluation Returned By NRCS 03/03/09	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating: Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	61 ~~38~~	69	61	
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	0.0 ~~38~~ 61	0.0 69	0.0 61	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	55	63	54	
B. Total Acres Statewide And Local Important Farmland	6	6	7	
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.10	0.12	0.10	
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	DATA	NOT	AVAILABLE	
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	~~0~~ 64	~~0~~ 63	~~0~~ 64	0

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Nonurban Use	15	15	15	15	
2. Perimeter In Nonurban Use	10	5	6	8	
3. Percent Of Site Being Farmed	20	15	15	15	
4. Protection Provided By State And Local Government	20	20	20	20	
5. Distance From Urban Builtup Area	0				
6. Distance To Urban Support Services	0				
7. Size Of Present Farm Unit Compared To Average	10	0	0	0	
8. Creation Of Nonfarmable Farmland	25	7	10	8	
9. Availability Of Farm Support Services	5	1	1	1	
10. On-Farm Investments	20	10	10	10	
11. Effects Of Conversion On Farm Support Services	25	5	7	5	
12. Compatibility With Existing Agricultural Use	10	6	3	6	
TOTAL SITE ASSESSMENT POINTS	160	0 84	0 87	0 88	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	0 64	0 63	0 64	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0 84	0 87	0 88	0
TOTAL POINTS *(Total of above 2 lines)*	260	0 148	0 150	0 152	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☒

Reason For Selection:

(See Instructions on reverse side) Form AD-1006 (10-83)

This form was electronically produced by National Production Services Staff

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