

Fresno to Bakersfield Section of the California High-Speed Train System

Highlights of Draft Environmental Impact Report/Statement

Introduction and Background

The “Merced to Fresno” and “Fresno to Bakersfield” documents are the first project-level environmental impact documents for the California High-Speed Train (HST) System, the first over 200 mph high-speed rail project to be implemented in the nation. They kick off a formal period for public comment that will help shape the ultimate path of California’s HST in the Central Valley.

When California voters passed Proposition 1A in 2008 to provide state funding for the California HST, they acknowledged that the state’s roads and airports can no longer keep up with its growing population and that, with its speed, capacity, and connectivity, the HST system would provide travelers with a viable alternative for moving throughout California.

California’s HST system would provide intercity, high-speed service on more than 800 miles of track, connecting the major population centers of Sacramento, the San Francisco Bay Area, the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. It would use state-of-the-art, electrically powered, steel-wheel-on-steel-rail technology to operate trains at up to 220 miles per hour over a fully grade-separated, dedicated track, using advanced safety, signaling, and automated train-control systems. It would provide predictable and consistent travel times, work well – and relieve capacity struggles – with existing transportation systems, and remain sensitive to California’s unique natural resources.

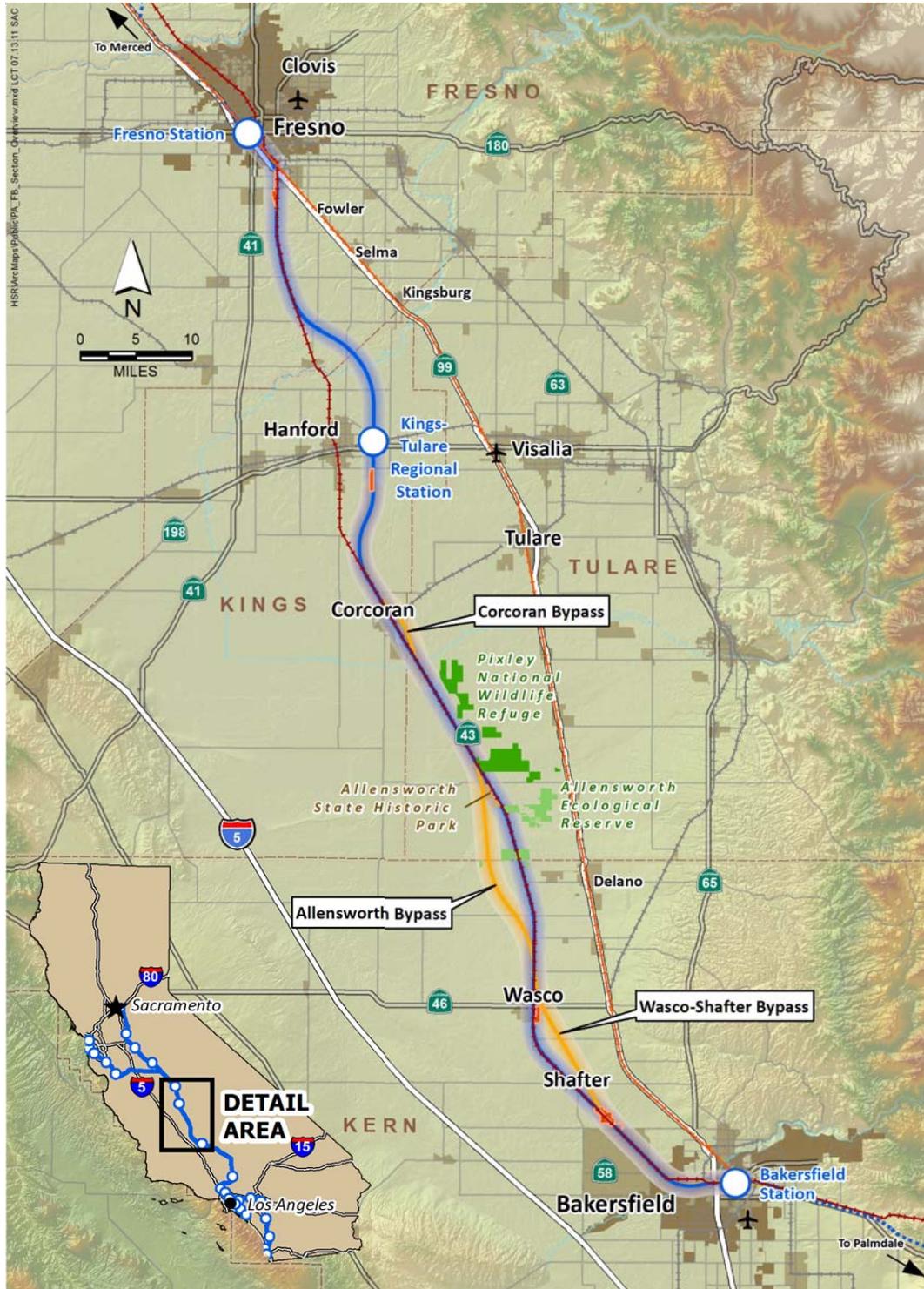
California’s current intercity transportation system, including in the Central Valley, cannot meet existing and future travel demands. Without the proposed project, transportation system congestion will lead to deteriorating air quality, reduced reliability, and increased travel times. The interstate highway system, commercial airports, and conventional passenger rail serving the intercity travel market are operating at or near capacity and will require large public investments for maintenance and expansion to meet existing demand and future growth. The feasibility of expanding many major highways and key airports is uncertain; some needed expansions might be constrained by physical, political, or other factors.

Statewide, over the next two decades, California’s HST system would alleviate the need to spend more than \$100 billion¹ to build 3,000 miles of new freeway, 5 airport runways, and 90 departure gates to meet the transportation needs of a growing population. In fact, the San Joaquin Valley is projected to grow at a rate higher than any other region in California. Four counties – Fresno, Kings, Tulare, and Kern – are projected to grow by 72% by year 2035.

The Fresno to Bakersfield Section, which includes three HST stations, plays a critical role in forming the “backbone” of a statewide system. Since work began on this section, the California High-Speed Rail Authority (Authority), which bears responsibility for this project, has held nearly 330 local meetings and 70 additional public and technical working group meetings. These meetings included public informational meetings; elected official, community organizations and stakeholder briefings; special meetings with agricultural groups, tribal leaders and other groups; and transportation/planning agency working groups.

The Fresno to Bakersfield Section Draft Project EIR/EIS builds upon work completed earlier in a broader, statewide environmental impact analysis. That first analysis provided the Federal Railroad Administration (FRA) and the Authority with the means to evaluate the overall HST system and make broad decisions about general alignments and station locations for further study. This Draft EIR/EIS is a more detailed look at the section between Fresno and Bakersfield, one of nine sections of the total HST system.

¹ *California High Speed Train Program Environmental Impact Report/Environmental Impact Statement Capital and Operation and Maintenance Costs*, prepared for the California High Speed Rail Authority and the US Department of Transportation Federal Railroad Administration. January 2004. pp 4-5, and Appendices A through D. The *Engineering News Record* cost indices of August 2004, 2010 and 2011 were used to update the 2003 estimates to 2011.



-  F-B Proposed Station
-  BNSF Alternative
-  Other Alternative
-  BNSF Railway
-  Union Pacific Railroad
-  Potential Heavy Maintenance Facility Location

Figure 1
Fresno to Bakersfield Section
Alternatives and Design Options

Alternatives

The Fresno to Bakersfield Section Draft EIR/EIS evaluates six basic HST alignment alternatives: the BNSF Alternative, the Corcoran Elevated Alternative, the Corcoran Bypass Alternative, the Allensworth Bypass Alternative, the Wasco-Shafter Bypass Alternative, and the Bakersfield South Alternative. The BNSF Alternative is a single continuous alignment from Fresno to Bakersfield. As shown in Figure 1, the additional five alternative alignments considered in this EIR/EIS deviate from the BNSF Alternative for portions of the route. There are 24 possible combinations of these alternatives to make a continuous alignment that would extend between and include the proposed Downtown Fresno and Downtown Bakersfield stations, and a potential Kings/Tulare Regional Station located east of Hanford.

The environmental studies also contemplate a “No Project Alternative” as the basis for comparison. The No Project Alternative represents the state’s transportation system (highway, air, bus, conventional rail) as it is currently and would be after implementation of programs or projects that are projected in regional transportation plans (RTPs), have identified funds for implementation, and are expected to be in place by 2035, as well as major planned land use changes. It does not include high-speed rail.

This Draft EIR/EIS also evaluates five heavy maintenance facility (HMF) site alternatives. Shown in Figure 1, these are: Fresno Works, city of Fresno; Hanford, King County; Kern Council of Governments – Wasco, city of Wasco; Kern Council of Governments – Shafter East, city of Shafter; and Kern Council of Governments – Shafter West, city of Shafter.

Projected growth and conversion of land to urbanized uses between 2010 and 2035 are anticipated to have a much greater environmental effect than the HST project in the study area. Under the No Project Alternative, the total population of the four-county area is expected to grow to approximately 4.1 million, which is an increase of about 72%, or 1.7 million new residents and 173,000 acres of land development. This is more than twice the geographic size of the city of Fresno which is about 72,000 acres and about 5% the size of Tulare County. Additionally, this development is anticipated to follow current patterns dispersed along the edges of city growth boundaries and into unincorporated areas along highways.

The annual vehicle-miles traveled for the four-county region is projected to increase from 62 million to about 80 million by 2035. This is over a 29% increase in travel. This increase would require the use of an estimated 20 million gallons of petroleum in the Fresno to Bakersfield region alone.² Demand for energy would also increase at a level commensurate with population growth under the No Project Alternative, which would require additional generation and transmission capacity.

HST Alternatives Evaluation

The HST project would reduce daily automobile travel, and would therefore reduce fuel consumption, congestion, and air pollution, and lead to better travel times. The HST also would provide an alternative to commercial air travel within California, reducing air travel miles and related fuel consumption and pollution. The HST project would increase electricity consumption compared to the No Project Alternative. However, since the HST system would provide a more energy-efficient mode as compared to the automobile and air transportation, the HST project would result in a relative decrease in energy consumption. Furthermore, the Authority has adopted a policy goal of using 100% renewable energy to power the HST vehicles. The HST stations would have the benefit of encouraging high-density transit-oriented development in Fresno and Bakersfield, revitalizing the downtown areas of these cities and discouraging the urban sprawl that, among other things, consumes large amounts of agricultural land.

² Bureau of Transportation Statistics 2010. *The Nation’s Freight*. Available at http://www.bts.gov/publications/freight_in_america/html/nations_freight.html. Research and Innovative Technology Administration, Bureau of Transportation Statistics. Accessed October 22, 2010. Washington, DC, 2010. Based on the 2007 national average fuel economy for passenger and other two-axle, four-tire vehicles.

Comparison of HST Alternatives

Each of the HST alternatives could have significant and unavoidable impacts on the following resources: transportation; air quality; noise and vibration; biological resources; socioeconomic considerations; farmland; aesthetics and visual resources; and cultural resources. Some mitigation measures, such as those for noise and visual resources, will be decided upon in coordination with local communities, whose input can influence the mitigation. For example, if a community decides against a sound barrier, the noise effect would remain significant.

Specifically, the following impacts would remain significant to varying degrees after mitigation is applied. Traffic congestion at the H Street intersections at Tulare and Divisadero in the city of Fresno would increase. Air quality would be affected during construction. Noise could affect properties in some locations. Various segments of the HST alternatives would affect biological communities, special-status species, habitats of concern, wildlife movement corridors, and wetlands and water courses protected under federal and state law. All HST alternatives would result in community impacts that would result in the division of existing communities east of Hanford and in northeast Bakersfield. Farmland would be converted to nonagricultural use. Views would be blocked in some urban areas by sound barriers and visual quality would be reduced in Bakersfield by HST elevated structures. Historically significant structures would be affected, including resources eligible for listing on the National Register of Historic Places.

Capital costs and some key areas with potentially significant project impacts, prior to mitigation, that differentiate among the HST alternatives are summarized below and shown on Table 1. For more information and details, please refer to the Fresno to Bakersfield Section Draft Project EIR/EIS at the Authority website (www.cahighspeedrail.ca.gov).

Capital Costs: Generally, alternatives that have the most elevated structures and urban area construction would be more expensive to build than alternatives that have a larger proportion of at-grade track and rural area construction. Therefore, the BNSF, Corcoran Elevated, and Bakersfield South alternatives would be the most expensive. The Corcoran Bypass, Allensworth Bypass, and Wasco-Shafter Bypass alternatives would be the least expensive.

Agriculture Lands: The BNSF, Corcoran Elevated, and Bakersfield South alternatives would affect the fewest acres of Important Farmland, Williamson Act land, and Farmland Security Zone land (See Table 1, footnote #3 for definitions). An alignment from Fresno to Bakersfield that uses the Corcoran Bypass, Allensworth Bypass, and Wasco-Shafter Bypass alternatives would affect the largest area of Important Farmland, Williamson Act land, and Farmland Security Zone land, and would cause the greatest severance of farmlands.

Noise: The Corcoran Elevated, BNSF, and Bakersfield South alternatives would have the greatest potential noise impacts, with over 60% more residences and sensitive receivers³ as the alternatives affecting the fewest. The Corcoran Bypass, Allensworth Bypass, and Wasco-Shafter Bypass alternatives would have the least potential noise impacts affecting the lowest number of residences and other sensitive receivers.

Cultural and Paleontological: The BNSF Alternative and alignments with the Allensworth Bypass would have the greatest impacts to prehistoric and historic resources.

Biological Resources and Wetlands: The BNSF Alternative would occupy approximately 8 acres of the Allensworth Ecological Reserve. This reserve land would be avoided with the Allensworth Bypass. The BNSF Alternative would have the greatest effect on waters of the U.S. under the jurisdiction of the U.S. Army Corps of Engineers (USACE). The alignment including the Corcoran Bypass, Wasco-Shafter Bypass, and Bakersfield South alternatives would have the least impact to jurisdictional waters. Alignments including the Corcoran Bypass and Allensworth Bypass alternatives would affect the largest acreage of land supporting special-status plant communities and riparian habitat. Alignments including the Corcoran Elevated and Bakersfield South alternatives would affect the fewest acres of land supporting special-status plant species and riparian habitat. Alignments containing the Allensworth Bypass Alternative would affect the largest acreage of land that has potential to support special-status plant and wildlife species. Overall, the Corcoran Bypass, Wasco-Shafter Bypass, and Bakersfield South have the greatest impact on biological resources and wetlands – over 80% more acreage than the Corcoran Elevated, BNSF and Allensworth Bypass.

³ Sensitive Receiver – Location considered more sensitive to adverse effects from air pollution (e.g., residences; preschools and kindergarten through grade 12 schools; daycare centers; health-care facilities such as hospitals, retirement homes, and nursing homes; and parks and/or playgrounds).



Heavy Maintenance Facility Alternatives

An HMF at all of the alternative sites would result in the conversion of Important Farmland to nonagricultural use. The largest conversion would take place if the HMF were located on the Kern Council of Governments-Shafter East site. An HMF at the Kern Council of Governments-Wasco site could expose sensitive receptors to substantial pollutant concentrations. Examples of sensitive receptors are schools, homes without air conditioning, and hospitals, among others. An HMF at the Wasco site could also involve handling extremely hazardous⁴ materials within 0.25 mile of a school. All the HMF sites would contain the same facilities to provide maintenance services for the HST system. There is not a noticeable cost differences among the alternative sites, and the HMF is estimated to cost approximately \$606 million.

Next Steps in the Environmental Process

The Authority and FRA are circulating the Fresno to Bakersfield Section Draft Project EIR/EIS to affected local jurisdictions, state and federal agencies, tribes, community organizations, other interest groups, interested individuals, and the public. The document also is available at the Authority offices, public libraries in the study area, and on the Authority’s website (www.cahighspeedrail.ca.gov). The Draft EIR/EIS will be circulated formally for a 45-day comment period, which closes on September 28, 2011 and will include public hearings. Schedule information for public hearings and opportunities to comment are available on the Authority’s website.

After considering public and agency comments, the Authority and FRA will identify a preferred alignment alternative, a preferred site for each station, and a preferred HMF alternative. The Authority and FRA will prepare a Fresno to Bakersfield Section Final Project EIR/EIS that will include responses to comments and a description of the preferred alternative and proposed mitigation. After the Final EIR/EIS has been developed and circulated, the FRA and Authority will make final approval decisions regarding the alignment location and stations to be constructed. The FRA will then issue a Record of Decision (ROD) and the Authority will issue a Notice of Determination (NOD).

The Authority and FRA anticipate identifying a preferred HMF from among the HMF alternatives examined in the Draft EIR/EIS. The Authority and FRA are also considering HMF facility alternatives as part of the Merced to Fresno Section EIR/EIS, and anticipates identifying a preferred HMF facility from among the alternatives in that EIR/EIS as well. A final decision on the HMF facility is anticipated to occur at a date later than the decisions on the alignments and stations, based on the Authority’s consideration of the preferred HMF alternatives from both the Merced to Fresno and Fresno to Bakersfield sections.

Project Implementation

After the issuance of the FRA’s ROD and the Authority’s NOD, the Authority would complete final design, obtain construction permits, and acquire property prior to construction, as shown in Figure 2.



Figure 2
Next Steps Schedule

⁴ Extremely Hazardous Substance – A list of hazardous substances defined pursuant to paragraph (2) of subdivision (g) of Section 25532 of the California Health and Safety Code.

Table 1

Key Project Impacts That Differentiate Among HST Alignment Alternatives																								
Impact	HST Alternatives (See footnote at end of table for numbered alternative descriptions)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Project Costs																								
Project costs (not including HMF) in 2010 Dollars (billions)	7.01	7.19	6.86	6.8	6.64	6.95	6.98	6.82	7.13	6.58	6.92	6.52	6.76	6.65	6.49	6.8	6.25	6.59	6.19	6.43	6.41	6.73	6.34	6.58
Noise⁵																								
Number of severe operational noise impacts to sensitive receivers.	5,513	5,714	5,206	5,482	3,858	5,513	5,683	4,059	5,714	4,028	5,683	4,028	4,059	5,175	3,551	5,206	3,520	5,175	3,520	3,551	3,827	5,482	3,827	3,858
Biological Resources and Wetlands																								
Number of acres impacted that has potential to support special-status plant species.	114	112	134	187	114	114	185	113	113	186	186	187	114	207	135	135	208	208	209	136	188	187	188	115
Number of acres impacted that has potential to support special-status wildlife species.	2,851	2,796	2,780	2,886	2,860	2,781	2,830	2,804	2,726	2,839	2,760	2,769	2,734	2,815	2,789	2,710	2,823	2,745	2,753	2,719	2,894	2,815	2,824	2,790
Number of acres disturbed that supports special-status plant communities and riparian areas.	129	127	150	199	130	127	198	128	126	199	196	197	126	220	150	148	221	218	219	149	200	197	198	128
Number of acres directly and indirectly affected that contain jurisdictional waters	60.9	59.3	52.2	57.6	60.3	60.5	56	58.7	58.9	55.4	55.6	54.9	58.2	48.9	51.5	51.7	48.2	48.4	47.8	51.1	57	57.2	56.5	59.8
Number of acres that would disturb portions of the Allensworth Ecological Reserve.	8	8	8	0	8	8	0	8	8	0	0	0	8	0	8	8	0	0	0	8	0	0	0	8

⁵ Severe Noise Impact – Under FRA criteria, this is defined on a sliding scale based on the existing noise levels. Lower existing noise levels allow the project to increase the noise levels more, while existing higher noise levels reduces the amount the project can raise the noise level. If existing noise levels are between 80 and 75 dBA, an increase of at least 2 to 3 dBA is a severe impact. If the existing level is 75 to 60 dBA, an increase of at least 3 to 5 dBA is a severe impact. If the existing level is between 60 and 55 dBA, an increase of 5 to 10 dBA is a severe impact. If existing levels are between 50 and 44 dBA, an increase between 10 and 15 dBA is considered a severe impact. For noise levels below 44 dBA, an increase of at least 15 dBA is considered a severe noise impact.

Agricultural Lands ⁶																								
Number of acres of agricultural land converted to nonagricultural use.	2,192	2,192	2,201	2,263	2,317	2,192	2,263	2,317	2,192	2,388	2,263	2,388	2,317	2,272	2,326	2,201	2,397	2,272	2,397	2,326	2,388	2,263	2,388	2,317
Number of acres of agricultural parcels split creating parcels too small to economically farm.	108	108	112	132	182	108	132	182	108	206	132	206	182	136	186	112	210	136	210	186	206	132	206	182
Aesthetics and Visual Quality																								
Lower visual quality in Corcoran, Wasco, Shafter, and Allensworth State Historic Park Landscape Units.	Yes	Yes	Yes	No	No	Yes	No	No	Yes	No	No	No	No	No	No	Yes	No							
Cultural and Paleontological Resources																								
Effect on significant prehistoric and historic-era archaeological resources.	3	3	3	4	3	3	4	3	3	4	4	4	3	4	3	3	4	4	4	3	4	4	4	3
Effect on historically significant built-environment resources.	27	27	27	28	25	24	28	25	24	26	25	23	22	28	25	24	26	25	23	22	26	25	23	22

Footnote: Each alternative combination was given a different number. Listed below is every single possible combination that may occur from the proposed alignment and alternatives. If an alternative alignment is not mentioned than the BNSF alternative is being used.

- | | | |
|---|---|---|
| 1. BNSF only | 9. Corcoran Elevated and Bakersfield South | 17. Corcoran Bypass and Allensworth Bypass and Wasco Shafter Bypass |
| 2. Corcoran Elevated | 10. Corcoran Elevated and Allensworth Bypass and Wasco Shafter Bypass | 18. Corcoran Bypass and Allensworth Bypass and Bakersfield South |
| 3. Corcoran Bypass | 11. Corcoran Elevated and Allensworth Bypass and Bakersfield South | 19. Corcoran Bypass and Allensworth Bypass and Wasco Shafter Bypass and Bakersfield South |
| 4. Allensworth Bypass | 12. Corcoran Elevated and Allensworth Bypass and Wasco Shafter Bypass and Bakersfield South | 20. Corcoran Bypass and Wasco Shafter Bypass and Bakersfield South |
| 5. Wasco Shafter Bypass | 13. Corcoran Elevated and Wasco Shafter Bypass and Bakersfield South | 21. Allensworth Bypass and Wasco Shafter Bypass |
| 6. Bakersfield South | 14. Corcoran Bypass and Allensworth Bypass | 22. Allensworth Bypass and Bakersfield South |
| 7. Corcoran Elevated and Allensworth Bypass | 15. Corcoran Bypass and Wasco Shafter Bypass | 23. Allensworth Bypass and Wasco Shafter Bypass and Bakersfield South |
| 8. Corcoran Elevated and Wasco Shafter Bypass | 16. Corcoran Bypass and Bakersfield South | 24. Wasco Shafter Bypass and Bakersfield South |

⁶ Affected Farmlands – The EIR/EIS has analyzed temporary and permanent project-related impacts for the potential conversion of agricultural land to nonagricultural land uses. This includes impacts to existing agricultural operations, including, for example, farmland cultivation, irrigation systems, access roads, aerial spraying, and noise and vibration effects on adjacent farm animals. It also includes the severance of agricultural parcels, and indirect impacts on operations like dairies. The types of farmland analyzed in the EIR/EIS include the following:

- Important Farmland: Important Farmlands include Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance.
- Affected Williamson Act Properties: The EIR/EIS also analyzed project-related impacts to Williamson Act properties and the loss of protected farmland. Under the California Land Conservation Act of 1965—commonly referred to as the Williamson Act—local governments may enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value.
- Affected Farmland Security Properties: Under the Williamson Act, participating land owners can also protect their farmland for a period of up to 20 years through the creation of a Farmland Security Zone.