

SUMMER 2019



# SAN JOSE TO MERCED PROJECT SECTION STATE'S PREFERRED ALTERNATIVE

## OVERVIEW

High-speed rail offers an unprecedented opportunity to modernize California's transportation system and tie together the state's economies. The San Jose to Merced Project Section will be the crucial connection between the Bay Area and the Central Valley. This fact sheet discusses the staff recommendation for the State's Preferred Alternative to be considered by the California High-Speed Rail Authority (Authority) Board of Directors.

## WHAT IS A PREFERRED ALTERNATIVE?

Since 2008, numerous alternatives have been considered for the high-speed rail alignment traveling within and outside of the Bay Area. Ultimately, four alternatives are being analyzed for the Draft Environmental Impact Report/Statement (EIR/EIS). The alternative determined to best balance tradeoffs between environmental; community; and performance, operations, and cost factors will be identified as the State's Preferred Alternative.

Planning, design, and analysis of the four alternatives, collaboration with landowners and agencies, and input from the public and stakeholders has led Authority staff to recommend Alternative 4 as the State's Preferred

Alternative. Authority staff is seeking feedback on this recommendation before it is presented to the Authority Board of Directors in September 2019.

Alternative 4 will be referred to as the staff-recommended State's Preferred Alternative until the Authority Board of Directors concurs with the staff recommendation or requests that a different alternative be identified as the State's Preferred Alternative. The identification of the State's Preferred Alternative for the Draft EIR/EIS does not express or imply approval or adoption of a preferred alternative for final design or construction.

## WHAT IS THE PUBLIC'S ROLE IN DEVELOPING AND RECOMMENDING ALTERNATIVES?

The Authority coordinates closely with individuals, local governments, tribes, public agencies, and organizations to gather local knowledge and input on project alternatives. Over the last three years, the Authority participated in nearly 500 meetings with stakeholders and members of the public.

Now the Authority is seeking public feedback on the staff-recommended State's Preferred Alternative. A summary of feedback provided at community meetings and open houses – as well as via telephone or written correspondence – will be presented to the Authority Board of Directors in September 2019.



## HOW TO PROVIDE FEEDBACK

**By email:** [san.jose\\_merced@hsr.ca.gov](mailto:san.jose_merced@hsr.ca.gov)

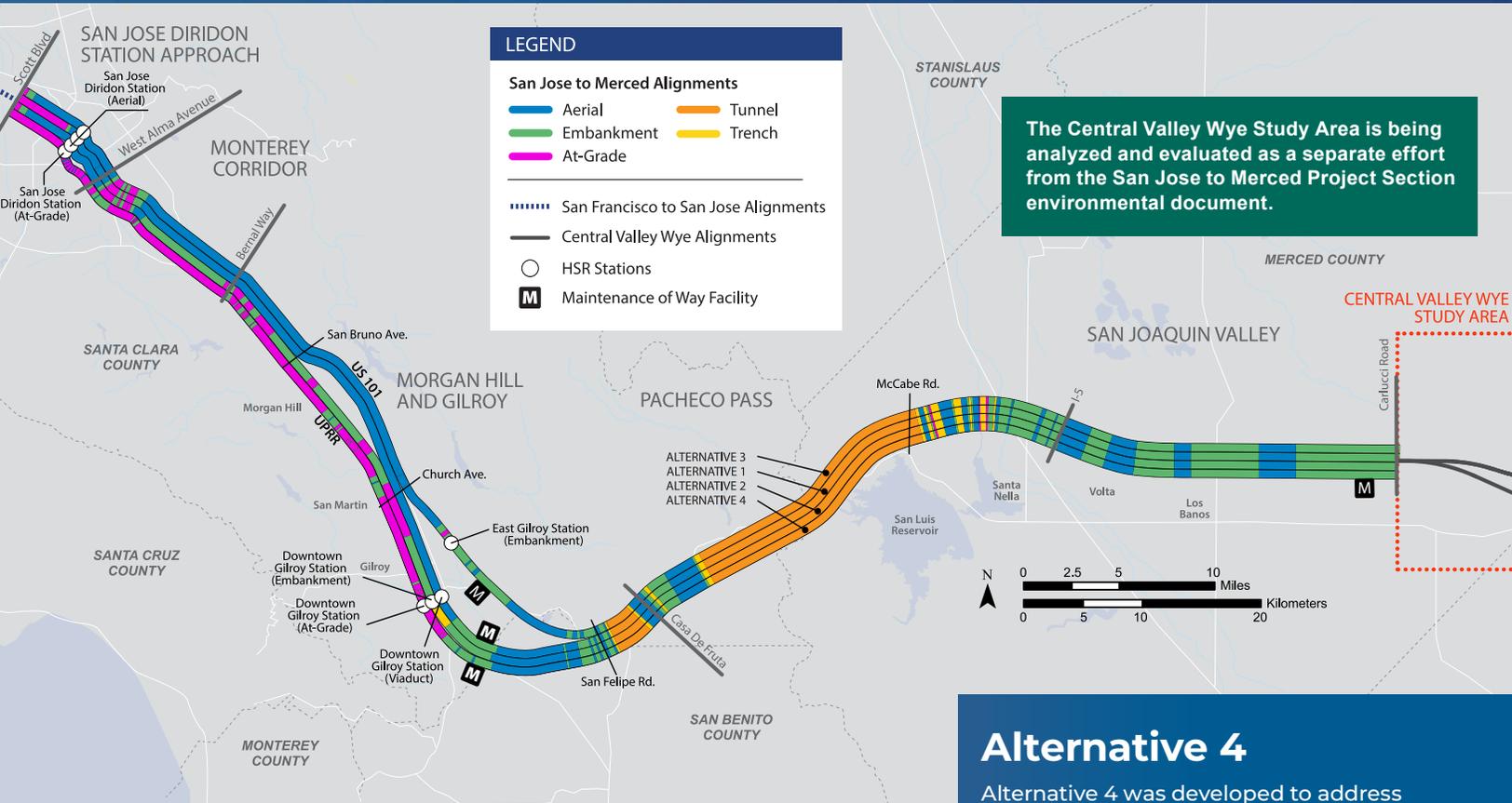
**By phone:** 800-455-8166

**By mail:** Northern California Regional Office  
California High-Speed Rail Authority  
100 Paseo De San Antonio, Suite 300  
San Jose, CA 95113

**In person:** Attend a Community  
Open House:  
August 8 in Gilroy  
August 15 in San Jose  
August 21 in Los Banos

Attend the Board  
Meeting:  
September 17 in San Jose

# WHAT ARE THE FOUR ALTERNATIVES CONSIDERED?



## Alternative 1

The objective of Alternative 1 is to minimize land required for the project, minimize impacts on the ground, and reduce the need to purchase right-of-way to build and operate dedicated, fully grade-separated high-speed rail. This would be accomplished by extensive use of viaduct (raised "aerial") structures and bypassing downtown Morgan Hill. By traveling where existing transportation infrastructure – like rail or highways – exist, Alternative 1 makes use of existing rights-of-way whenever feasible.

## Alternative 2

Alternative 2 features a dedicated high-speed rail alignment located between the existing Union Pacific Railroad (UPRR) corridor and Monterey Road. This alternative would have the highest number of property displacements (taking private or public land for rail), but would provide grade separations between the rail corridor and city streets in San Jose, Morgan Hill, San Martin, and Gilroy.

## Alternative 3

Alternative 3 was also designed to minimize the project footprint by operating on viaducts and going around downtown Morgan Hill. The objective of Alternative 3 is to minimize the needed right-of-way in downtown Gilroy by bypassing downtown and instead serving an east Gilroy Station. Like Alternative 2, Alternative 3 features a long viaduct between Scott Boulevard and Diridon Station, but is the same as Alternative 1 from the Monterey Corridor Subsection to Church Avenue in San Martin.

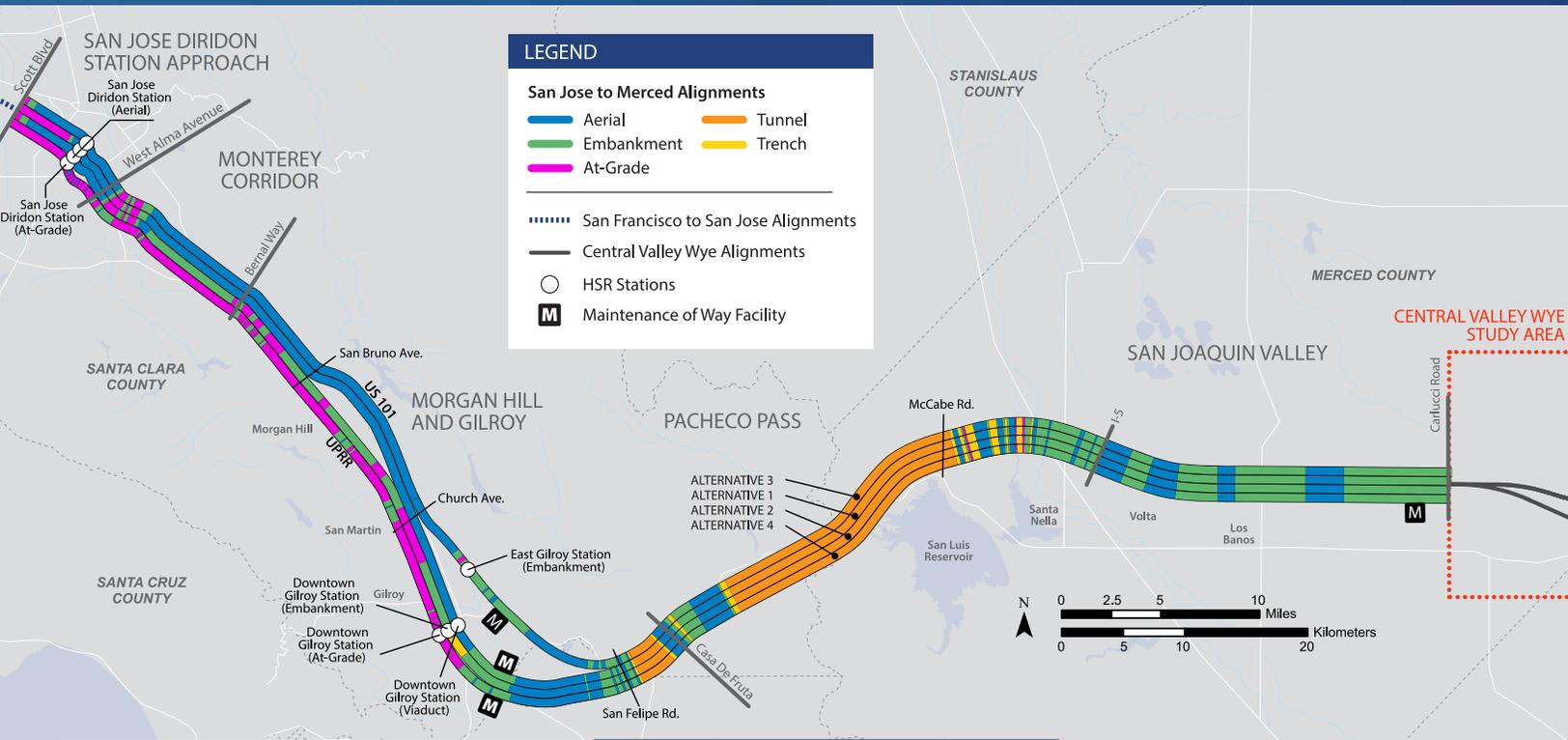
## Alternative 4

Alternative 4 was developed to address feedback from stakeholders on Alternatives 1, 2, and 3: minimize property displacements, limit natural resource impacts, retain local community development patterns, improve the efficiency and safety of the existing railroad corridor, and set the stage for extending regional electrified passenger rail service to Southern Santa Clara County.

Alternative 4 is different from the others because it would enable both Caltrain and High-Speed Rail to operate on the same alignment (this is called a blended system). The service would operate on two electrified passenger tracks alongside one conventional freight track predominantly within the existing Caltrain and UPRR rights-of-way.

The maximum train speed would be 110 mph where operations would be blended between San Jose and Gilroy. South and east of Gilroy, speeds would increase up to 220 mph in the dedicated High-Speed Rail portion of the alignment. Alternative 4 will require the successful completion of negotiations with UPRR for the use of their rail corridor between San Jose and Gilroy.

# THE ALTERNATIVES AT A GLANCE



SUBSECTION/ DESIGN OPTIONS	ALT 1	ALT 2	ALT 3	ALT 4
<b>San Jose Diridon Station Approach</b>				
Viaduct to Scott Blvd (Long Viaduct)		●	●	
Viaduct to I-880 (Short Viaduct)	●			
Blended, at-grade				●
<b>Monterey Corridor</b>				
Viaduct	●		●	
Dedicated, at-grade		●		
Blended, at-grade				●
<b>Morgan Hill and Gilroy</b>				
Embankment to downtown Gilroy		●		
Viaduct to downtown Gilroy	●			
Viaduct & embankment to east Gilroy			●	
Blended, at-grade to downtown Gilroy				●
<b>Pacheco Pass</b>				
Tunnel, viaduct, and other structures	●	●	●	●
<b>San Joaquin Valley</b>				
Embankment and viaduct along Henry Miller Rd	●	●	●	●

## Pacheco Pass and San Joaquin Valley Subsections

All alternatives have the same alignment after Gilroy (starting near Casa De Fruta). Through the Pacheco Pass Subsection, there would be a long tunnel around the northern arm of the San Luis Reservoir and viaducts over the California Aqueduct, Delta-Mendota Canal, and I-5.

East of the I-5 overcrossing, the alignment through the San Joaquin Valley Subsection would be predominantly on embankment along the south side of Henry Miller Road to Carlucci Road, traveling on viaduct over major watercourses and through the Grasslands Ecological Area.

## WHY IS STAFF RECOMMENDING ALTERNATIVE 4 AS THE STATE'S PREFERRED ALTERNATIVE?

Teams of rail and environmental planners, engineers, and other specialists in the design and operation of high-speed rail services have undertaken a complex analysis of the four alternatives. The results indicate that all of the alternatives have tradeoffs – advantages and disadvantages. Nevertheless, Alternative 4 was identified as the staff-recommended State's Preferred Alternative because it provides the best overall balance between system performance, community, and environmental factors. The factors that differentiate the four alternatives are presented in the tables below.

## HOW WERE THE ALTERNATIVES EVALUATED?

Alternatives 1, 2, 3, and 4 were evaluated by comparing the four alternatives across three sets of criteria:<sup>1</sup>



**System Performance, Operations, and Costs.** The best-performing alternative is marked with an **asterisk**.

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Alignment length (miles)	89	89	<b>87*</b>	89
Operational Speed (mph) — San Jose to Gilroy	Up to 175	<b>Up to 195*</b>	Up to 175	Up to 110
Operational Speed (mph) — Gilroy to Central Valley Wye	Up to 220			
Proximity to existing transit corridors (miles) <sup>2</sup>	43	<b>50*</b>	35	<b>50*</b>
Travel time — San Jose and Gilroy <sup>3</sup> (minutes)	17-18	17-18	<b>16-17*</b>	23
Proposition 1A service travel time compliance	✓	✓	✓	✓
Estimated capital costs <sup>4</sup> (2017\$ billions)	\$20.5	\$17.7	\$20.8	<b>\$13.6*</b>
Estimated annual operations and maintenance costs <sup>5</sup> (2017\$ millions)	\$162			

<sup>1</sup> Resources or topics for which potential impacts do not substantially differentiate the alternatives are not included on this fact sheet, but they still remain an important part of the evaluation and may be of importance to the public, stakeholders, and agencies. These include: archaeological resources; air quality and climate change; electromagnetic fields and interference; geology, soils, and seismicity; hazardous materials and waste; hydrology and water quality; paleontological resources; socioeconomic and communities (apart from displacements); regional growth; station planning; and vibration. All of these analyses will be included in the Draft environmental documents.

<sup>2</sup> This represents the length of the proposed alignment that is in close proximity to existing transit (bus, car, train, etc.) corridors.

<sup>3</sup> Times include Gilroy stop. East Gilroy station for Alt. 3 is approximately one mile further north than the Downtown Gilroy station for Alts. 1, 2, and 4.

<sup>4</sup> Conceptual cost estimates prepared for the project alternatives were developed by utilizing recent bid data from large transportation projects in the western United States and by developing specific, bottom-up unit pricing to reflect common HSR elements and construction methods with an adjustment for Bay Area and Central Valley labor and material costs.

<sup>5</sup> Based on level of design sufficient to analyze potential environmental impacts.

**Community Factors.** The best-performing alternative(s) (fewest/least community impacts) are marked with an **asterisk**.

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Residential displacements (# of units)	147	603	157	<b>68*</b>
Commercial displacements (# of businesses)	217	348	157	<b>66*</b>
Agricultural displacements (# of structural improvements)	49	53	49	<b>40*</b>
Community or public facilities displacements (# of units)	7	8	5	<b>1*</b>
Commercial displacements (square footage)	<b>411,000*</b>	1,800,000	994,000	448,000
Agricultural structure displacements (square footage)	<b>407,000*</b>	1,206,000	1,489,000	542,000
Permanent conversion of important farmland <sup>6</sup> (acres)	1,036	1,181	1,193	<b>1,033*</b>
Visual quality effects	<ul style="list-style-type: none"> <li>• Viaduct</li> <li>• Elevated Stations</li> </ul>	<ul style="list-style-type: none"> <li>• Embankment and Viaduct</li> <li>• Elevated Stations</li> <li>• Roadway Grade Separations</li> </ul>	<ul style="list-style-type: none"> <li>• Viaduct</li> <li>• Elevated Stations</li> <li>• Alignment in Rural Area (East Gilroy)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>At-Grade Alignment*</b></li> <li>• <b>Existing Railroad Right-of-Way*</b></li> </ul>
Consistency with Gilroy City General Plan	<b>Yes*</b>	<b>Yes*</b>	No	<b>Yes*</b>
Noise impacts with noise barrier mitigation/with noise barrier mitigation and quiet zones (# of sensitive receptors)	231/223	194/194	<b>173/173*</b>	275/179
Increase in 2040 peak travel time on Monterey Road (northbound – AM/PM, southbound – AM/PM, minutes)	Northbound–8/20 Southbound–6/12	Northbound–27/5 Southbound–16/17	Northbound–8/20 Southbound–6/12	<b>Northbound–0/5*</b> <b>Southbound–1/8*</b>
Permanent road closures	17	26	<b>15*</b>	<b>15*</b>
Type of mitigation needed to minimize emergency vehicle delays	<b>Vehicle detection equipment*</b>			Vehicle detection equipment, and additional mitigations <sup>7</sup>
EJ proportion of total significant and unavoidable impacts on local views <sup>8</sup>	50%	<b>N/A<sup>9*</sup></b>	67%	<b>N/A<sup>9*</sup></b>
EJ proportion of total residential displacements	60%	66%	<b>50%*</b>	<b>50%*</b>
EJ proportion of total business displacements	87%	92%	<b>82%*</b>	83%
Amount of mitigation required to address effects on emergency vehicle response times for EJ populations (lower number is less mitigation needed)	<b>1*</b>	3	<b>1*</b>	4
EJ proportion of total moderate and severe noise impacts <sup>10</sup>	49%	65%	<b>45%*</b>	76%

**Environmental Factors.** The best-performing alternative(s) (fewest/least environmental impacts) are marked with an **asterisk**.

CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4
Permanent impacts on jurisdictional waters and wetlands (acres)	104	111	116	<b>101*</b>
Permanent impacts on habitat for listed plant species (non-overlapping acres)	1,171	1,178	1,183	<b>1,146*</b>
Permanent impacts on habitat for listed wildlife species (California tiger salamander, acres)	2,273	2,329	2,470	<b>2,146*</b>
Wildlife corridor impacts	<b>Avoids east Gilroy; fewer Soap Lake floodplain impact*</b>	<b>Avoids east Gilroy; fewer Soap Lake floodplain impacts*</b>	Impacts east Gilroy; more Soap Lake floodplain impacts	<b>Avoids east Gilroy; fewer Soap Lake floodplain impacts*</b>
Conservation areas (acres)	<b>427*</b>	432	481	<b>427*</b>
Permanent use of 4(f)/6(f) park resources (#/acres)	4/4.8	6/7.4	5/5.0	<b>3/1.4*</b>
Permanent adverse effects on NRHP-listed/eligible resources (# of resources)	8	9	7	<b>5*</b>
Permanent significant impacts on CEQA-only historic resources (# of resources)	2	4	<b>1*</b>	<b>1*</b>

6 Important Farmland includes Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance.

7 Additional mitigations include emergency equipment for existing fire stations, new fire stations, and potentially additional ambulance services.

8 As indicated by impacts on visual landscape units.

9 These alternatives have no significant and unavoidable impacts on visual landscape units.

10 Noise impacts after noise barrier mitigation.

## ACRONYMS, ABBREVIATIONS, AND KEY TERMS

Term	Definition	Term	Definition
<b>At-grade</b>	An alignment at ground level	<b>MOWF</b>	Maintenance of way facility: A facility where equipment for nightly maintenance of right-of-way and tracks is stored
<b>Aerial</b>	An alignment with tracks raised in the air (e.g. on a bridge or viaduct)	<b>mph</b>	Miles per hour
<b>Authority</b>	California High-Speed Rail Authority: State agency responsible for planning, designing, building, and operating the first high-speed rail system in the US	<b>NEPA</b>	National Environmental Policy Act: A Federal law that requires Federal agencies to assess the environmental effects of their proposed actions prior to making decisions
<b>Blended</b>	A rail system shared between two or more operators (e.g. high-speed rail and Caltrain)	<b>NOI</b>	Notice of intent: A formal announcement of intent to prepare an EIS; the first step of the NEPA process
<b>CEQA</b>	California Environmental Quality Act: A California law that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible	<b>NOP</b>	Notice of preparation: A document stating that an EIR will be prepared for a particular project; the first step in the CEQA process
<b>Dedicated</b>	An alignment with only high-speed trains	<b>PAA</b>	Preliminary Alternatives Analysis report: For the San Jose to Merced Project Section, this document, released in 2010, provided initial details of design options in each subsection and helps inform the environmental document
<b>EIR</b>	Environmental impact report: A document required by CEQA for certain actions; it describes the environmental effects of a proposed action	<b>PTE</b>	Permission to enter: Process through which the Authority obtains consent to access property in order to conduct environmental studies
<b>EIS</b>	Environmental impact statement: A document required by NEPA for certain actions that significantly affect the quality of the human environment; it describes the environmental effects of a proposed action	<b>ROW</b>	Right-of-way: Land reserved for use by railroads
<b>EJ</b>	Environmental justice: Fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies	<b>SAA</b>	Supplemental Alternatives Analysis report: For the San Jose to Merced Project Section, this document, released in 2011, considered feedback received on the PAA and presented a refined suite of alternatives
<b>Embankment</b>	An earth-filled structure that raises tracks above the ground	<b>Sensitive receptor</b>	Places where the occupants are more susceptible to the adverse effects of exposure to noise, such as residences, hospitals, hotels, schools, libraries, or concert halls
<b>Environmental document</b>	A combined EIR/EIS document	<b>SR</b>	State Route
<b>ETO</b>	Early train operator: DB Engineering and Consulting was engaged by the Authority to assist with planning, designing, and implementing the initial operations of California's high-speed rail program	<b>Statewide Program EIR/EIS</b>	Final Program EIR/EIS for the Proposed California High-Speed Train System: This document, released in 2005, identified a high-speed train system as the preferred alternative for meeting future intercity travel needs and cleared the way for further analysis of alignment and station locations
<b>FRA</b>	Federal Railroad Administration: Federal agency that regulates passenger and freight rail travel in the US	<b>Trench</b>	An excavation that lowers the tracks below ground level
<b>GEA</b>	Grasslands Ecological Area: 160,000 acres of wetlands in the San Joaquin Valley that serve as an important habitat for many bird species, including migratory waterfowl	<b>UPRR</b>	Union Pacific Railroad
<b>Grade-separated</b>	Physical separation at the intersection between railroad tracks and a roadway (e.g. with a bridge)	<b>US</b>	U.S. Highway
<b>I-</b>	Interstate	<b>Viaduct</b>	An elevated structure that raises tracks above the ground; an example of an aerial alignment
		<b>VTA</b>	(Santa Clara) Valley Transportation Authority