

A plan to

# Fly California

*...without ever  
leaving the ground.*



**Highlights of the**

**Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the *proposed* California High-Speed Train System**

A STUDY BY THE CALIFORNIA HIGH-SPEED RAIL AUTHORITY AND THE FEDERAL RAILROAD ADMINISTRATION



# How will you travel from Southern California to the Bay Area in 2020?

*High-speed trains could be in your future*

San Francisco  
SFO  
Oakland  
Oakland Airport  
Redwood City/

## Californians will face a massive challenge by the year 2020:

Up to 98 million more intercity\* trips – and 11 million more people will mean a greater demand on the state’s infrastructure, resulting in more traffic congestion, reduced safety, more air pollution, longer travel times, less reliability and less predictability in intercity travel.

The California High-Speed Rail Authority (Authority) and the Federal Railroad Administration (FRA) have undertaken an environmental study to assess a proposed high-speed train system and other options for meeting future intercity travel demands. Alternatives for intercity travel were evaluated, generally from Sacramento and the San Francisco Bay Area, through the Central Valley, to Los Angeles and San Diego.

### The alternatives for serving existing and future intercity trips...

- **No Project** – reliance on the state’s existing transportation systems
- **Modal Development** – improvements to existing highway and air travel networks
- **High-Speed Trains** – a new statewide train system, over 700 miles in length, capable of travel at speeds up to 220 mph

### Based on the Final Program EIR/EIS, high-speed trains

- Would be two-to-three times less costly than expanding highways and airports to serve similar travel demands
- Would improve intercity transportation reliability
- Are projected to carry as many as 68 million passengers annually by 2020 – with the capacity to carry about twice that many passengers
- Would be the most energy efficient of the alternatives
- Would have quick travel times
- Would provide low passenger costs per mile
- Would be safer and more reliable than highway and air travel

### High-speed trains could

- Offer a new choice in intercity travel
- Connect to existing airports and transit terminals along high-speed train corridors
- Ease the growing demand on existing highways and airports through 2020 and beyond

\* “Intercity” means region-to-region trips, not including daily commute trips

Palo Alto  
San Jose  
Union City  
Fremont  
Stockton  
Modesto  
Sacramento  
Merced  
Fresno  
Bakersfield  
Palmdale  
Sylmar  
Burbank  
Los Angeles  
Norwalk  
Anaheim  
Irvine  
East San Gabriel Valley  
Ontario Airport  
Riverside  
Temecula  
Escondido  
University City  
San Diego

# No Project Alternative

*The state's existing transportation systems with planned improvements*

**This alternative** consists of the state's intercity transportation system (highway, air and conventional rail) as it existed in 1999-2000, and as it would be in 2020 with the addition of transportation projects currently programmed for implementation (already in funded programs/financially constrained plans), including:

- State Transportation Improvement Program
- Regional Transportation Plans for highways and public transit
- Airport improvement plans
- Intercity passenger rail plans

## Study Results

### Would not meet intercity travel needs projected for 2020 as population continues to grow

- Highway capacity would be insufficient to accommodate projected intercity travel growth in the regions that would be served by the proposed high-speed train system
- Many of the state's airports already are at or near capacity and could become severely congested under this alternative
- Highway congestion and airport delays would continue to increase, hindering the economy and eroding California's quality of life

### Would contribute to environmental degradation

- There would be negative impacts on traffic: increased congestion, decreased mobility and reduced reliability and safety
- Degradation of air quality and increased energy demand

### Total "door-to-door" travel time from Los Angeles to San Francisco

- Highway travel time would increase by one hour in 2020
- Air travel time would increase by 30 minutes in 2020
- Existing conventional rail travel time 10:05 (requires two bus transfers)

## ESTIMATED TOTAL TRAVEL TIMES "DOOR-TO-DOOR" BETWEEN CITIES BY AUTO, AIR AND HIGH-SPEED TRAIN IN 2020



CITY PAIRS DOWNTOWN TO DOWNTOWN	AUTO NO PROJECT ALTERNATIVE	AIR NO PROJECT ALTERNATIVE		HIGH-SPEED TRAIN ALTERNATIVE OPTIMAL EXPRESS TIMES	
	TOTAL	LINE HAUL*	TOTAL	LINE HAUL*	TOTAL
LOS ANGELES TO SAN FRANCISCO	7:57	1:20	3:32	2:35	3:30
LOS ANGELES TO FRESNO	4:30	1:05	3:02	1:22	2:33
LOS ANGELES TO SAN DIEGO	2:49	0:48	3:00	1:13	2:16
LOS ANGELES TO SAN JOSE	6:50	1:00	3:14	2:06	3:02
SACRAMENTO TO SAN JOSE	2:40	NO SERVICE	NO SERVICE	0:50	1:53

\*ACTUAL TIME IN PLANE OR TRAIN



# Modal Alternative

## Additional improvements to existing highway and air travel systems

**This alternative** consists of potentially feasible improvements to existing highways and airports sufficient to serve at least 68 million person trips annually. While these improvements are not proposed or recommended, they represent theoretically feasible options and include:

- 2,970 additional lane-miles on intercity highways statewide, which would include at least two and sometimes four additional highway lanes along selected intercity highways
- Over 90 new gates and five new runways statewide – equivalent to two new Ontario International Airports
- No increased transportation choices or improved connectivity
- Little or no sustainable capacity beyond the 68 million trips

### Study Results

#### Would help to meet the need for intercity travel into the future, but with significant disadvantages

- Would be less safe and less reliable than the proposed high-speed train alternative
- Congestion would still increase on highways and at airports compared to existing conditions as well as congestion and travel delays on streets and highways leading to and from airports
- Highway and air transportation improvements would result in reduced travel times and congestion as compared to the No Project Alternative
- As compared to the No Project Alternative, employment would be expected to increase by 250,000 and urbanized area by 65,000 acres between 2002 and 2035
- Would cost over \$82 billion (2003 dollars) – more than two times more expensive than the high-speed train alternative

#### Would have the potential for significant negative environmental impacts

- Increased energy use and dependence on petroleum
- Increased emissions of air pollutants
- Impacts on property and land uses
- Increased suburban sprawl
- Impacts to wetlands and biological resources
- Effects on cultural resources, such as historic sites
- Impacts on water quality
- Impacts on park lands



#### Total “door-to-door” travel time from Los Angeles to San Francisco

- Highway travel time would increase from the existing 6:57 in 2000 to 7:16 in 2020
- Air travel time would increase from the existing 3:02 in 2000 to 3:27 in 2020



# High-Speed Train Alternative

*A new statewide transportation network capable of traveling at 220 mph connecting California's major metropolitan areas*

**This alternative** consists of a new high-speed train system over 700 miles long that would deliver predictable, consistent and competitive intercity travel.

- State-of-the-art electrically powered high-speed steel-wheel-on-steel-rail technology with automatic train control
- Up to 68 million passengers a year by 2020
- Exclusive tracks for most of the system, fully grade-separated, either in an open trench or tunnel, at-grade, or on an elevated guideway, depending on terrain and physical constraints
- Most alignments within or adjacent to existing rail or highway right-of-way
- New and upgraded stations, with connections to major airports

## Study Results



### Would help to meet the need for intercity travel into the future

- Safer, more reliable than highway or air travel
- A new mode of transportation that would increase connectivity and accessibility to existing transit systems and airports
- Quick, predictable, consistent travel times that would be sustainable over time
- Improved travel options in parts of the state with limited bus, rail and air transportation service
- Employment opportunities expected to increase by 450,000 over the No Project Alternative; however, urbanization decreases by 2,600 acres compared to the No Project Alternative between 2002 and 2035
- Congestion would still increase on highways and at airports as compared to existing conditions
- Reduction of total travel times for all transportation modes as a result of traffic diversion to high-speed trains
- Cost to construct the entire system – over \$33 billion (2003 dollars)
- Passenger cost lower than auto or air travel for the same intercity markets
- Diverting trips to high-speed trains would reduce congestion on highways and for air travel

### Would have the potential for significant negative environmental impacts

- Impacts on property and land uses
- Impacts to wetlands and biological resources
- Impacts to cultural resources, such as historic sites
- Noise and vibration impacts
- Impacts to farmlands
- Impacts to park land and water quality

### Would provide environmental benefits compared with the No Project and Modal Alternatives

- Decreased energy consumption
- Reduced air pollutant emissions and improved air quality
- Would use less land than would be needed to expand existing highways and airports
- Would provide opportunities to plan for transit-oriented growth to meet future demands
- Fewer environmental impacts overall on sensitive habitats and water resources (floodplains, streams and wetlands) than the Modal Alternative
- For longer distance intercity travel, high-speed trains would provide “door-to-door” travel times comparable to air transportation and less than one-half as long as highway travel times
- For intermediate intercity markets such as Fresno to Los Angeles, high-speed trains would provide considerably quicker “door-to-door” travel times than either air or highway transportation options
- Would provide additional capacity for future generations

### Total “door-to-door” travel time from Los Angeles to San Francisco

- Highway travel time would increase from the existing 6:57 in 2000 to 7:36 in 2020
- Air travel time would increase from the existing 3:02 in 2000 to 3:26 in 2020
- High-speed train travel time would be 3:30 in 2020

# EIR/EIS Prepares Way For Meeting California's Transportation Needs

*220-mph train system would link major California cities*

**The California High-Speed Rail Authority** (the Authority) has proposed high-speed train service for intercity travel in California between the major metropolitan centers of the San Francisco Bay Area and Sacramento in the north, through the Central Valley, to Los Angeles and San Diego in the south. The proposed high-speed train system is projected to carry as many as 68 million passengers annually by the year 2020.

The Authority adopted a Final Business Plan in June 2000, for an economically viable high-speed train system capable of speeds in excess of 200 miles per hour on a mostly dedicated, fully grade-separated track with state-of-the-art safety, signaling and automated train control systems.

To comply with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), a Final Program EIR/EIS has been prepared. The Authority is both the project sponsor and the lead agency for purposes of the state CEQA requirements. The Federal Railroad Administration (FRA) is the federal lead agency for compliance under NEPA.

Preparation of the Final Program EIR/EIS by the Authority and the FRA has involved more than six months of public review of the Draft Program EIR/EIS, plus seven public hearings. The Authority and the FRA responded to thousands of comments, made appropriate changes and incorporated additional analysis in preparation of this Final Program EIR/EIS.

The Final Program EIR/EIS document includes:

- A full description of the alternatives
- Evaluation of potential environmental impacts for each alternative
- Identification of general mitigation strategies for the proposed high-speed train alternative
- Discussion of preferred high-speed train alignments and station locations

## **The Final Program EIR/EIS identifies high-speed trains as the preferred alternative that could shape California's intercity transportation future:**

- **A completely new and separate intercity transportation alternative to augment existing air, highway and conventional rail travel**
- **Quick travel times**
- **Better for the environment than only expanding highways and airports**
- **Proven, 22-year safety record in Europe and Japan**
- **Capable of carrying 68 million passengers a year by 2020**
- **Low passenger travel cost per mile**





# California's New High-Speed Train

*Bringing California closer together*

The Final Program EIR/EIS identifies preferred alignments and station locations

## Preferred Alignments and Station locations include:

### Northern Mountain Crossing

A broad corridor containing a number of feasible route options has been identified for further study. This broad corridor is generally bounded by (and includes) the Pacheco Pass (SR-152) corridor to the south, the Altamont Pass (I-580) corridor to the north, the BNSF corridor to the east, and the Caltrain to the west. Alignment options through Henry Coe State Park and station options at Los Banos would not be pursued. Further study will be conducted to identify a preferred route within the identified corridor.

### Southern Mountain Crossing

Through the Tehachapi Mountain Range between Los Angeles and Bakersfield via a crossing through Palmdale and the Antelope Valley.

### Bay Area

Service to the Bay Area along the Peninsula to San Francisco and the East Bay to Oakland.

### Central Valley

Service along or near the Highway 99 corridor (primarily BNSF alignment) from Bakersfield to Sacramento and the Bay Area.

### Service to San Diego (Inland)

Through the Inland Empire via the I-215/I-15 corridor to downtown San Diego.

### Service to Orange County

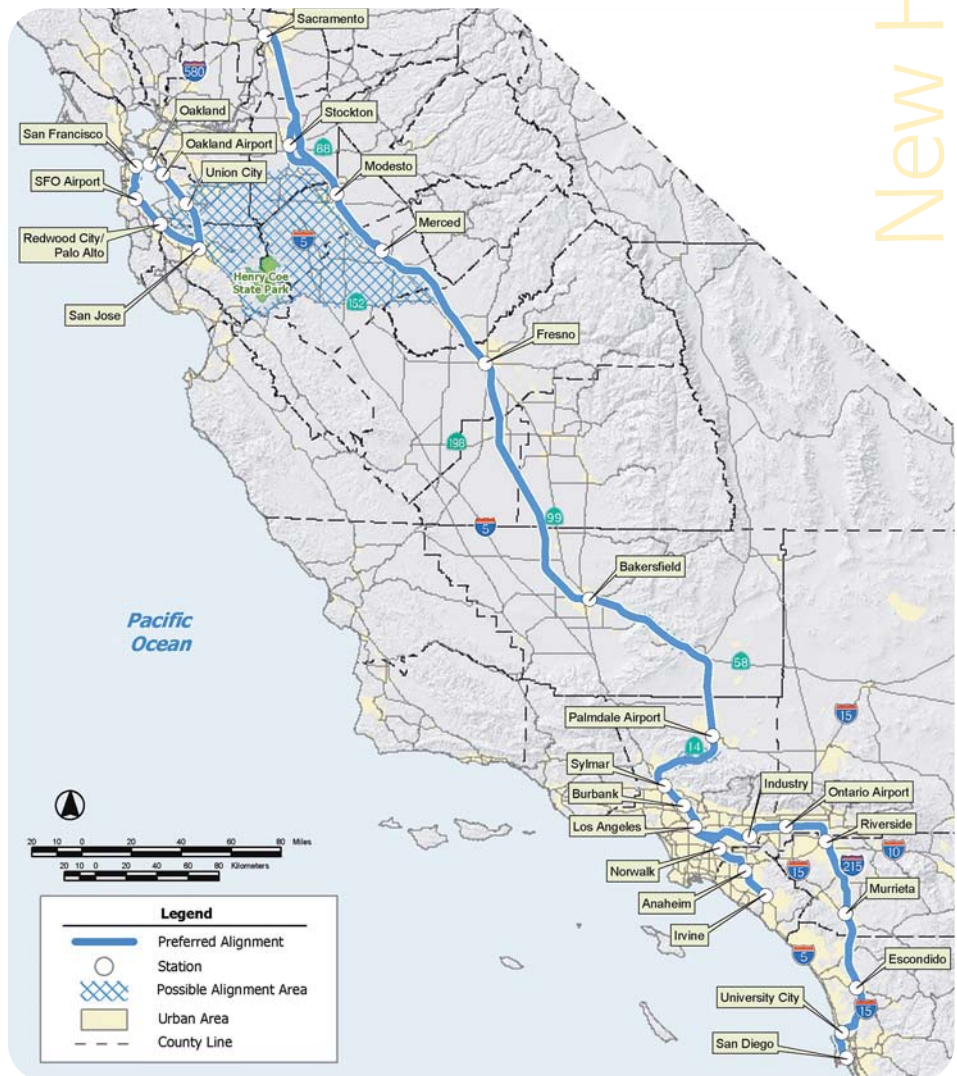
Direct service from Los Angeles to Orange County via the LOSSAN rail corridor.

### Shared Use and Intermodal Connections

Service to the urban centers on shared tracks with other passenger rail services at moderate speeds in heavily urbanized areas (i.e., San Jose to San Francisco and Los Angeles to Orange County).

Stations in close proximity to San Francisco Intl Airport, Oakland Metropolitan Intl Airport, Burbank-Glendale-Pasadena Airport, Ontario Intl Airport, Palmdale Airport, Los Angeles Intl Airport, San Jose Intl Airport and San Diego Intl Airport.

Station connections at major transit hubs in California's metropolitan areas. Each station site would have higher-density, mixed-used, pedestrian-oriented development around station.



# Next Steps in the Environmental Process for the Proposed High-Speed Train System

- The Authority certifies that the Final Program EIR/EIS complies with the California Environmental Quality Act, and the Federal Railroad Administration (FRA) issues a Record of Decision for compliance with National Environmental Protection Act.
- The Authority and FRA prepare a program level environmental review for the “Bay Area–Central Valley” segment to select a preferred alignment and station locations.
- The Authority determines whether to advance individual segments of the high-speed train system to project-specific environmental review.
- The Bay Area Metropolitan Transportation Commission’s statewide ridership/revenue study is completed and used to update the high-speed train system’s business plan.
- The Authority begins working with local governments, transportation agencies and private parties on right-of-way preservation and protective advance acquisition consistent with state and federal requirements.

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**Check out the California High-Speed Rail Authority’s Web site**  
for the Draft and Final Program EIR/EIS and related technical reports.  
**[www.cahighspeedrail.ca.gov](http://www.cahighspeedrail.ca.gov)**

**List of cities where libraries will have document available:**

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Fresno	Mountain View	Palo Alto	San Gabriel	Tulare

**The Final Program EIR/EIS is available** for viewing in libraries  
and can be obtained on CD by contacting the  
**California High-Speed Rail Authority**  
**at (916) 324-1541**



CALIFORNIA HIGH-SPEED RAIL AUTHORITY



U.S. Department  
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Federal Railroad  
Administration