



TOTAL TRANSPORTATION APPROACH

Prepared

by



**CALIFORNIA
HIGH-SPEED RAIL
AUTHORITY**

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I. OVERVIEW

The Authority's enabling legislation directs it to develop a high-speed train network that is coordinated with the State's existing transportation network, particularly intercity rail and bus lines, commuter rail lines and urban rail transit lines.

This total approach to how a high-speed train network integrates with the State's existing transportation infrastructure underscores the tremendous potential high-speed trains have to not only meet the coming demand in high-speed travel but to enhance the overall efficiency of highways, freeways, airports and conventional rail as well.

Such an approach is consistent with the way in which European and Asian countries have approached the development of their high-speed train systems.

The Authority's work has focused on selecting multi-modal high-speed train station locations that provide seamless, direct connections between the high-speed train network and the existing network of conventional rail lines (both intercity and commuter) and transit. Moreover, the Authority has adopted policies and will use its resources to encourage transit-oriented development around high-speed train stations to promote walking, biking, conventional rail and transit.¹ The synergies to be developed between high-speed trains, conventional rail and buses will ensure that all of California's major population centers are served and will build on the investments already made and help justify future improvements for these complementary services. The Authority supports increased funding and accelerated planning for conventional intercity, commuter rail and transit that provide enhanced higher speed service, and in partnership with Bay Area and Central Valley local and regional agencies, is pursuing high-speed train compatible commuter rail service in the Altamont Pass Corridor.

II. SELECTION OF MULTI-MODAL HIGH-SPEED TRAIN STATION LOCATIONS

Connections with other rail and urban transit lines as well as good freeway and highway access will be critical to realizing the promise of a coordinated high-speed transportation system.

High-speed train stations in California will be multi-modal transportation hubs. To meet the Authority's adopted objectives², the locations that were selected as potential high-speed train stations would provide linkage with local and regional transit, airports and highways. In particular, convenient links to other rail services (heavy rail, commuter rail, light rail and conventional intercity) would promote transit-oriented development at stations by increasing ridership and pedestrian activity at these *hub* stations. A high level of accessibility and activity at the stations can make the nearby area more attractive for additional economic activity.

Most of the 26 potential stations identified for further evaluation are located in the heart of the downtown/ central city area of California's major cities. By eliminating potential *greenfield* sites,³ the Authority has described a proposed high-speed train system that meets the objectives of minimizing potential impacts on the environment and maximizing connectivity with other modes of transportation. These locations also would have the most potential to support infill development and transit-oriented development.

¹ "High-Speed Train Station Development Policies" adopted at the May 2008 Authority Meeting in Anaheim.

² See the final statewide program EIR/EIS (California High-Speed Rail Authority{ XE "California High-Speed Rail Authority" } and Federal Railroad Administration 2005), Section 1.2.1 ,Purpose of High-Speed Train System.

³ Sites in rural areas with very limited or no existing infrastructure.

Examples of the type of intermodal development opportunities the Authority has selected include the following preferred high-speed train station locations:

■ **Downtown Sacramento**

The multimodal station in downtown Sacramento is located within walking distance of the State Capitol. This station serves existing Amtrak services to Sacramento, including the Capitol Corridor and the Sacramento LRT (which was recently extended to directly link with this station site). The City of Sacramento is planning a massive 240-acre mixed used “Sacramento Railyards” project at this site—which is the largest urban infill project in the region. The site is also adjacent to Interstate 5, which provides good highway access throughout the Sacramento region.



Figure 5.1 Simulation of the Sacramento Station and possible surrounding development

■ **Diridon Station in San Jose**

Already the rail hub of the Silicon Valley, Diridon Station is the preferred site for the San Jose high-speed train station, offering connections to Caltrain, Altamont Commuter Express (ACE), Capitol Corridor, VTA buses and light rail, Amtrak long-distance services, and a possible future link to BART (via Fremont). Moreover, Diridon Station is just over three miles from San Jose International Airport, and the City of San Jose expects there will be a direct local rail line connecting these two major transportation hubs.



Figure 5.2 Simulation of the San Jose Station and possible surrounding development

■ **The Transbay Transit Center in San Francisco**

The Transbay Transit Center will be located in the heart of the financial center of downtown San Francisco where many potential high-speed train passengers could walk to the station. This station would emerge as the transit hub for all major services to downtown San Francisco, with the advantage of direct connections to Caltrain, BART (one block from the terminus), Muni and regional bus transit (SamTrans, AC Transit, and Golden Gate Transit). The Transbay Transit Center is the focal point of the Transbay redevelopment plan that includes extensive high-density residential, office, commercial/retail development and parks.



Figure 5.3 A simulation of passengers and the high-speed train inside the Transbay terminal

■ **Santa Fe Depot in San Diego**

This existing station is currently served by Amtrak’s Pacific Surfliner, NCTD’s Coaster Commuter Rail, the San Diego Trolley, San Diego Transit buses and Mexicocoach buses. This site in the heart of San Diego’s city center is about two miles from San Diego International Airport. A high-density condominium project adjacent to the station has been completed and several other developments with commercial and residential units are being constructed within walking distance of the rail depot.

■ **Los Angeles Union Station**

Los Angeles Union Station is the hub for passenger rail services and public transportation in Southern California. This is the hub station for Metrolink and Amtrak trains, the Red Line subway, the Pasadena Gold Line, and an extensive network of local and regional bus services. The high-speed train station would be an elevated structure constructed over the current Metrolink and Amtrak tracks (which the existing station was designed to accommodate).



Figure 5.4 A simulation of the interior an open air/covered high-speed train station

■ **Anaheim Regional Transportation Intermodal Center (ARTIC)**

A world-class, joint-development opportunity is emerging in Southern California adjacent to several major freeways, near rail service and a short walk from Angel Stadium of Anaheim and Honda Center, home of the Stanley Cup Champion Anaheim Ducks. ARTIC will combine a transportation gateway and a mixed-use activity center on a 16-acre site owned by the Orange County Transportation Authority (OCTA) and the City of Anaheim. ARTIC will provide easy connections between the Platinum Triangle, Anaheim Resort, the Southern California region and beyond. ARTIC will offer convenient travel via Amtrak, Metrolink commuter rail, car, intercity bus, taxi or local transit, and is being designed to accommodate the proposed high-speed train service.



Figure 5.5 A simulation of the Anaheim ARTIC high-speed train station and facility

■ **San Francisco International Airport (SFO)**

SFO is the major “hub” airport servicing international travel in Northern California. The current plan is to link to SFO at the Millbrae Caltrain/BART station location (which is adjacent to the airport). This multi-modal station would link to the airport by the existing BART connection and could possibly be reached in the future by the airport people-mover system.

■ **Ontario and Palmdale Airports**

The Authority’s high-speed train service proposes stations at both Ontario and Palmdale airports in Southern California. These proposed stations offer not only high-speed train-air connections; they offer high-speed train-conventional rail connections as well. And the highway and freeway access to both airports extends the reach of high-speed train passengers far beyond the local boundaries of the airports. Direct connection to the high-speed train system at these airports will increase connectivity at these airports and help encourage future growth at these airports—which is a critical component of regional plans to reduce congestion at Los Angeles International Airport (LAX).



Figure 5.6 A simulation of the Ontario High-Speed Train Station and Airport

This partial listing of the intermodal connection opportunities between the high-speed train service and conventional rail, transit and bus services as well as highways and freeways typifies the potential for generating a total approach to transportation for Californians.

III.

ENCOURAGE TRANSIT-ORIENTED DEVELOPMENT

There would be great benefits to enhancing development patterns and increasing development densities near proposed high-speed train stations. In addition to potential benefits from minimizing land consumption needs for new growth, dense development near high-speed train stations would concentrate activity conveniently located to stations. This would increase the use of the high-speed train system, generating additional high-speed train ridership and revenue to benefit the entire state. It also would accommodate new growth on a smaller footprint. Reducing the land needed for new growth should reduce pressure for new development on nearby habitat areas, in environmentally fragile or hazardous areas, and on agricultural lands. Denser development allowances would also enhance joint development opportunities at and near the station which, in turn, could increase the likelihood of private financial participation in construction and operations related to the high-speed train system. A dense development pattern can better support a comprehensive and extensive local transit and shuttle system, bike and pedestrian paths, and related amenities that can serve the local communities as well as provide access and egress to high-speed train stations. Benefits from transit-oriented development around high-speed train stations could also include reduced traffic congestion, improved air quality, more affordable housing, a reduction in energy consumption, promotion of job opportunities, and a better use of public infrastructure. The Authority's adopted policies would ensure that implementation of the high-speed train in California would maximize station area development that serves the local community and economy while increasing high-speed train ridership.

Local government would be expected to promote transit-oriented development and to use value-capture techniques to finance and maintain station amenities and the public spaces needed to create an attractive pedestrian environment. Because the high-speed train stations would be public gathering places, value-capture techniques should be used to enhance station designs with additional transportation or public facilities. It is the Authority's policy that parking for high-speed train services at high-speed train stations

should, as appropriate, be provided at market rates (no free parking). The Authority would maximize application of transit-oriented development principles during the site-specific review of proposed station locations.

The Authority has prescribed the following criteria for high-speed train station locations:

- To be considered for a station, the proposed site must have the potential to promote higher density, mixed-use, pedestrian accessible development around the station.
- As the high-speed train project proceeds to more detailed study and before a final station location decision is made, the responsible local government(s) are expected to provide (through planning and zoning) for transit-oriented development around high-speed train station locations.
- Give priority to stations for which the city and/or county has adopted station area transit-oriented development plans and general plans that focus and prioritize development on the transit-oriented development areas rather than on auto-oriented outlying areas.
- As the project proceeds to more detailed study, local governments are expected to finance (e.g., through value-capture or other financing techniques) the public spaces needed to support the pedestrian/bicycle traffic generated by hub stations as well as identifying long-term maintenance of the spaces.

The Authority recognizes that the actual land use decisions will be made by local communities and the real estate market. Local governments can use a number of mechanisms to encourage higher density high-speed train-oriented development in and around potential high-speed train station locations and to minimize undesirable growth effects. These include developing plans (such as specific plans, transit village plans, regional plans and greenbelts), development agreements, zoning overlays and, in some cases, use of redevelopment authority. The Authority and local government working together would determine which mechanisms best suit each community and could be implemented to enhance the benefits possible from potential high-speed train station development.

Over the last five years, four of the major regions of California—Los Angeles, San Diego, Sacramento and the Bay Area—have developed regional blueprints. Eight counties in the Central Valley are now conducting their own blueprint process. All of these blueprints focus on supporting the existing downtowns and increasing transit ridership as critical ways for future growth to be environmentally and economically sustainable. The high-speed train could provide a major boost to these blueprints by greatly increasing access to the downtowns, directly supporting local and regional rail systems, and indirectly supporting bus and light rail systems with an infusion of additional riders.

Significant growth is expected in large areas of California with or without a high-speed train system. The proposed high-speed train system, however, would be consistent with and promote the State’s adopted smart growth principles⁴ and could be a catalyst for wider adoption of smart growth principles in communities near high-speed train stations. With strong companion policies and good planning, high-speed train stations should encourage infill development, help protect environmental and agricultural resources by encouraging more efficient land use, and minimize ongoing cost to taxpayers by making better use of our existing infrastructure.

In pursuing its objective of providing a profitable and successful high-speed train system, the Authority will use its resources, both financial and otherwise, to encourage the local government authority with development jurisdiction at and around potential high-speed train stations to take the following steps:

⁴ As expressed in the Wiggins Bill (AB 857, 2003), and in government code 65041.1.

- In partnership with the Authority, develop a station area plan⁵ for all land within a half-mile of the high-speed train pedestrian entrance that adheres to the station area development principles (described above).
- Use a community planning process to plan the street, pedestrian, bicycle environment, parks and open spaces, and other amenities.
- Incorporate the station area plan through amendment of the city or county general plan and zoning.
- Use community planning processes to develop regional plans and conform amendments to general plans, which would focus development in existing communities and would provide for long-term protection of farmland, habitat, and open space.

IV. HIGH-SPEED TRAIN COMPLEMENTS CONVENTIONAL RAIL, COMMUTER RAIL AND TRANSIT

The high-speed train system complements and will actually promote the use of the State’s existing conventional intercity rail, commuter rail, and transit networks. The primary purpose of the high-speed train system is to serve the travel markets between California’s major metropolitan regions (trips generally 100 to 500 miles in length). To offer competitive service, the high-speed train system must have limited station stops. There is a great synergy between high-speed train and multi-stop transit systems and commuter rail services. These commuter-oriented services will be important feeder and distribution systems for the high-speed train system within urban areas. For example, while the 800-mile high-speed train system has an average distance between stations of over 30 miles, the 104-mile BART service in the San Francisco Bay Area averages a station every 2.4 miles, and light rail services such as San Diego Trolley and Los Angeles Blue & Gold lines average a station about every one mile. High-speed train service and ridership that is more evenly spread throughout the day and night than commuter-oriented services and are heavily used on weekends, also helps increase the use of commuter rail and transit during weekends and off-peak hours.

The three state-supported Amtrak services are: the 351-mile Surfliner service (San Luis Obispo-Santa Barbara-Los Angeles-Anaheim-San Diego), the 169-mile Capitol Rail Service (Auburn-Sacramento-Oakland-San Jose), and the 365-mile San Joaquin service⁶ (Oakland-Martinez-Bakersfield). These three services have the second, third and fifth highest ridership respectively of any Amtrak services throughout the U.S., carrying a total of about 4.7 million riders in 2006—and are rapidly growing as a result of service improvements, automobile congestion and the escalating cost of gas. Through 2005, California has invested over \$2.8 billion for conventional intercity passenger rail service. Amtrak’s Coast Starlight, Southwest Chief, Sunset Limited and California Zephyr services also link California’s major metropolitan areas to the rest of the nationwide Amtrak system.

Figure 5.7 shows the relationship between the proposed high-speed train system, California’s state-supported Amtrak services and Amtrak’s National services (within California). This simple map helps clarify the complementary nature between high-speed train and the existing Amtrak services. With the exception of the San Joaquin service, high-speed train connects with the other services at hub stations (Sacramento, San Jose, Los Angeles and Anaheim), but almost exclusively serve different travel markets.

⁵ Such a plan could take the form of a specific plan pursuant to California Government Code sections 65450–65457 or a Transit Village Development Plan pursuant to California Government Code sections 65460–65460.10, which specify the content for such a plan, or another form as determined appropriate by local government.

⁶ The San Joaquin service has feeder bus service to provide connections to San Francisco (via the Emeryville Station) and Los Angeles (via the Bakersfield Station).

Even the San Joaquins (which largely parallel the high-speed train through the Central Valley) would serve a complementary role by providing direct intercity “feeder” service with additional stations in Central Valley and San Francisco Bay Area communities that would not have high-speed train stations.



Figure 5.7 Statewide High-Speed Train System and Amtrak Services in California

The Authority supports increased funding and accelerated planning and programming for conventional intercity service, commuter rail and transit. Consistent with the Authority’s policies, the high-speed train bond measure for November 2008 (Proposition 1A) includes \$950 million for “capital improvements to intercity and commuter rail lines and urban rail systems to provide connectivity to the high-speed train system...” Of this amount, \$190 million would be allocated to the state-supported intercity rail lines, with at least \$47.5 million to the Surfliners, Capitols and San Joaquins. The remaining \$760 million would be eligible to existing commuter rail, light rail, heavy rail and cable car passenger rail services. These funds would be used for “connectivity with the high-speed train system, or for the rehabilitation or modernization of, or safety improvements to, tracks utilized for public passenger rail service, signals, structures, facilities and rolling stock.”

V. ALTAMONT PASS PROJECT

The Authority is pursuing a partnership with “local and regional agencies and transit providers” to propose and develop a joint-use (“Regional Rail” and high-speed train) infrastructure project in the Altamont Pass corridor—as advocated in the Metropolitan Transportation Commission’s (MTC) recently approved “Regional Rail Plan for the San Francisco Bay Area.” The Altamont Pass enables quick travel times between Sacramento/northern San Joaquin Valley and the San Francisco Bay Area with great potential for serving long-distance commuters between these regions. Regionally provided commuter overlay services would require regional investment and would potentially need operational subsidies. The Authority cannot unilaterally plan for regionally operated commuter services.

“Regional Rail” in the Altamont Pass corridor is being pursued as an independent project to satisfy a different *purpose and need*⁷ from the proposed high-speed train system, but that would also accommodate high-speed train service. The Authority’s pursuit of improved regional rail service in the Altamont Pass corridor is dependent on forming a partnership with the region for the joint-use infrastructure. The Authority is spearheading future environmental studies and working in partnership with other agencies to secure local, state, federal and private funding to develop a joint-use infrastructure project in the Altamont Corridor, and has recommended that this corridor be added as part of the high-speed train funding package.

The Authority’s analysis suggests that Altamont high-speed train overlay service might terminate in Oakland and/or San Jose via the East Bay (see Figure 5.8), whereas the Regional Rail Plan recommends it cross the Bay at Dumbarton. MTC also recommends future study of terminating this service in Livermore (connecting to an extended and enhanced BART system). As a part of future studies, the Authority will need to work with agencies, organizations and the public to define the appropriate alternatives to be investigated for “Regional Rail”/High-Speed Train in the Altamont Pass to serve long-distance interregional commuters. The Authority’s objective is that the infrastructure would be electrified, fully grade-separated, and compatible with and shared by high-speed train services. Providing connectivity and accessibility to Oakland and Oakland International Airport is a crucial objective for the Authority.

⁷ As defined in CEQA and NEPA implementing regulations, procedures and guidelines.

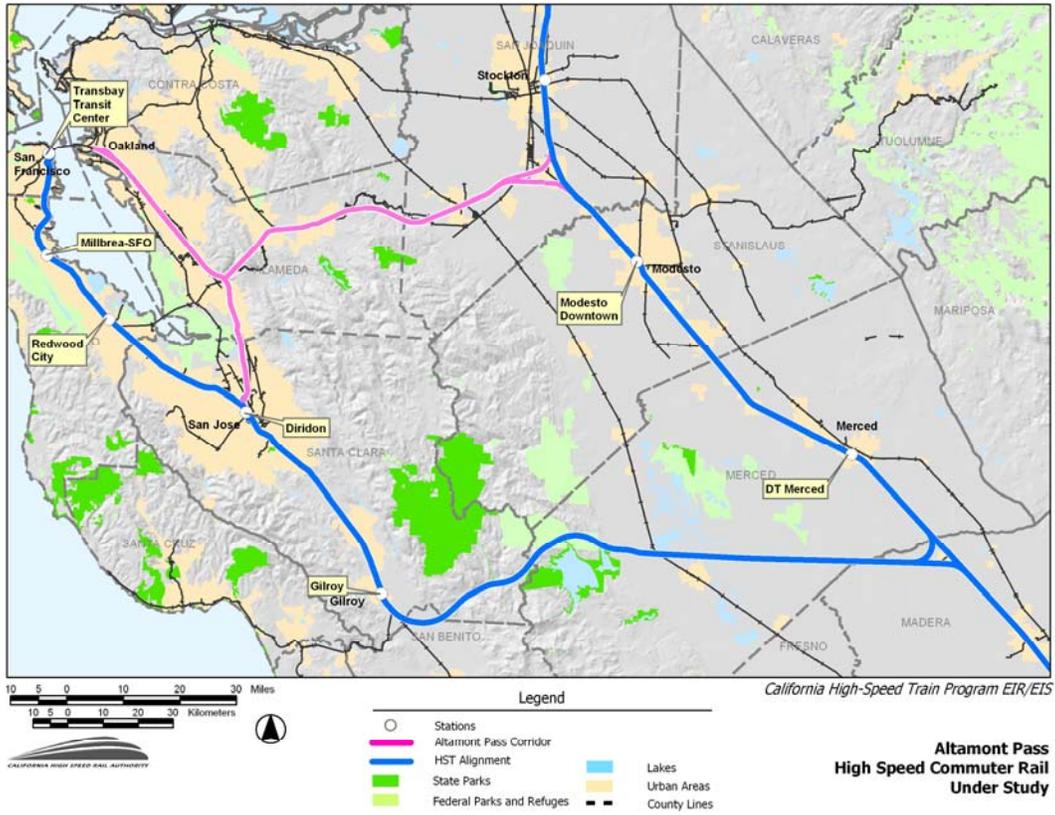


Figure 5.8 The Altamont Pass Corridor under study

To lay the groundwork for a future “Regional Rail”/High-Speed Train Altamont Pass project, the Authority is working with ACE, SJRRC, San Joaquin County Council of Governments, the Tri-Valley Pac, Alameda County, Santa Clara County and others to get the Altamont “Regional Rail”/High-Speed Train project identified in the update to the 2035 Regional Transportation Plan (RTP) and funds programmed in the 2035 RTP and RTIP. The Authority is leading an Altamont “Regional Rail”/High-Speed Train Steering Committee that will include MTC, and agencies and transit providers along the Altamont Corridor project study that will address the Altamont Pass, the East Bay connections and stations in partnership, and provide the information necessary for the Authority to complete the environmental study for this project.



Figure 5.9 A simulation of the Altamont Pass with tunnels and elevated guideway