Chapter 1

INTRODUCTION AND BACKGROUND

The following sections provide applicable background on the Regional Aviation Strategic Plan (RASP) prepared for the 12 public-use airports located within San Diego County (the Airport System).

1.1 POLICY CONTEXT

California Senate Bill 10 of 2007 (SB-10) and the California Public Utilities Code (Sections 132357, 132358, and 132359) requires airport multimodal planning to be conducted and coordinated in San Diego County by the San Diego County Regional Airport Authority (the Authority) and San Diego Association of Governments (SANDAG). The main planning provisions of SB-10 are the development of RASP and an Airport Multimodal Accessibility Plan (AMAP). The Authority is leading preparation of the RASP, which will identify workable strategies to improve the performance of the Airport System. SANDAG is leading the AMAP, which will develop a multimodal strategy to improve surface transportation access to airports.

The development of the RASP and AMAP is a coordinated process between SANDAG and the Authority, which was given responsibility for preparation of the RASP in SB-10. The overall planning schedule was designed to allow RASP findings to be incorporated into the AMAP, which will subsequently be incorporated into the next update of the Regional Transportation Plan (RTP). SANDAG is required under federal law to update the RTP every four years, with the next update required in 2011.

1.2 STUDY OBJECTIVES

In enacting SB-10, the California Legislature intended to: (a) promote long-range planning for airports in local general plans; (b) advance regional transportation strategies; (c) explore mechanisms for regional cooperation; and (d) ensure consistency between the planning documents prepared or approved by the Authority and SANDAG. The RASP contributes to the accomplishment of these goals by identifying workable strategies to improve the performance of the Airport System.

Accordingly, the primary objectives of the RASP are to:

1. Define the region’s long-range air transportation needs and the roles of regional airports in meeting those needs

2. Determine opportunities and constraints with respect to accommodating future aviation demand at regional airports
3. Establish a plan to meet future regional aviation needs while preserving flexibility

4. Develop strategies to maximize the efficiency and effectiveness of existing and planned facilities

5. Comply with SB-10, which requires consideration of: existing airport capacities, forecast demand, ground access, transit facilities and services, compatibility with adjacent communities, and applicable financial issues

The overarching goal of the RASP is to maximize the efficiency and effectiveness of existing and planned aviation facilities. In other words, the goal is not to “force traffic,” but rather “optimize assets” across the County’s growing areas. Hence, the RASP is unique in that it brings together what have typically been considered separate modal infrastructures to help ensure the region’s decisions can be made in an integrated fashion.

1.3 PROJECT OVERVIEW

The RASP was divided into a 3-phase work plan culminating in early 2011.

- **Phase 1** – Conducted between spring and winter 2009, included data gathering and development of the econometric demand model that would be used to assess the various alternative scenarios.

- **Phase 2** – Conducted between spring and summer 2010, included the development of a Baseline or “do-nothing” Scenario, and identification of concepts and strategies intended to optimize the Airport System.

- **Phase 3** – Conducted between fall 2010 and winter 2011, included technical and qualitative evaluations of various alternative scenarios.

Each phase included stakeholder and public outreach (see Section 1.7), as well as individual task-specific documentation and deliverables.

1.4 SAN DIEGO COUNTY AIRPORT SYSTEM

As presented on Figure 1-1, the San Diego County “Airport System” is defined by the 12 public-use airports in San Diego County and Tijuana Rodriguez International Airport, which is located just south of the California – Mexico border. The four military airfields in San Diego County – Camp Pendleton Marine Corps Air Station (NFG); Miramar Marine Corps Air Station (NKX); Imperial Beach Naval Outlying Field (NRS); and North Island Naval Air Station (NZY) – are excluded from the RASP except for consideration of the effects/impacts on regional airspace.
1.4.1 Characteristics

San Diego County is the second most populous county in California, with over 3 million residents accounting for 8% of the state’s population. However, only two airports in the County – San Diego International and McClellan-Palomar – are certificated by the Federal Aviation Administration (FAA) for commercial airline service, with San Diego International having one of the smallest footprints of any metropolitan airport in the U.S. The other public-use airports in San Diego County are general aviation facilities with various expansion constraints.

Geographically, the County is bounded on the west by the Pacific Ocean and on the east by rising terrain which generally complicates airport development and requires greater use of navigational aids.
Because there are multiple airports in close proximity (12 public-use and 4 military bases with aviation activity), San Diego County is considered one of the busiest and most complex airspace regions in the U.S. There are numerous competing and conflicting interests (commercial, military, corporate, recreational, etc.) operating in the airspace at any given moment. In addition, San Diego County includes various areas designated as special-use and international airspace (e.g., Mexico).

### 1.4.2 Airport Sponsors and Roles

The operator (i.e., sponsor), classification, and 2007 activity data for each airport in the Study Area is presented in Table 1-1. The following airports are owned and operated by the County of San Diego: Aqua Caliente, Borrego Valley, Fallbrook Airpark, Gillespie Field, Jacumba, Ocotillo, McClellan-Palomar, and Ramona. Brown Field Municipal and Montgomery are owned and operated by the City of San Diego. The City of Oceanside owns and operates Oceanside Municipal; and the Authority owns and operates San Diego International. Tijuana Rodriguez International is owned and operated by Grupo Aeroportuario del Pacifico (GAP).

<table>
<thead>
<tr>
<th>Airport</th>
<th>Sponsor</th>
<th>Classification</th>
<th>Operations 2007</th>
</tr>
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<tr>
<td>San Diego International (SAN)</td>
<td>SDCRAA</td>
<td>Large-hub Commercial Service</td>
<td>229,486</td>
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<tr>
<td>McClellan-Palomar (CRQ)</td>
<td>County of San Diego</td>
<td>Non-hub Commercial Service</td>
<td>212,023</td>
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<tr>
<td>Montgomery Field (MYF)</td>
<td>City of San Diego</td>
<td>Reliever</td>
<td>222,492</td>
</tr>
<tr>
<td>Gillespie Field (SEE)</td>
<td>County of San Diego</td>
<td>Reliever</td>
<td>295,652</td>
</tr>
<tr>
<td>Brown Field Municipal (SDM)</td>
<td>City of San Diego</td>
<td>Reliever</td>
<td>145,661</td>
</tr>
<tr>
<td>Ramona (RNM)</td>
<td>County of San Diego</td>
<td>Reliever</td>
<td>164,699</td>
</tr>
<tr>
<td>Oceanside Municipal (OKB)</td>
<td>City of Oceanside</td>
<td>General Aviation</td>
<td>14,128</td>
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<tr>
<td>Fallbrook Community (L18)</td>
<td>County of San Diego</td>
<td>General Aviation</td>
<td>33,286</td>
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<td>Borrego Valley (L08)</td>
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<td>General Aviation</td>
<td>26,251</td>
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<td>Agua Caliente (L54)</td>
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<td>Jacumba (L78)</td>
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<tr>
<td>Tijuana Rodriguez Int (TIJ)</td>
<td>GAP</td>
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</tr>
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</table>

SDCRAA = San Diego County Regional Airport Authority  
GAP = Grupo Aeroportuario del Pacifico
Collectively, the 13 airports accommodate the following types of users:

- Commercial Service – Scheduled passenger service, including scheduled air taxi
- General Aviation – Non-scheduled corporate flight activity, training, and recreational activities
- Cargo Service – Scheduled cargo and freight service; only San Diego International currently provides scheduled cargo service

San Diego International, McClellan-Palomar, and Tijuana Rodriguez International accommodate commercial, general aviation, and corporate services. Airports accommodating only general aviation and corporate services include: Brown Field Municipal, Gillespie Field, Montgomery Field, and Ramona. The remaining airports – Agua Caliente, Borrego Valley, Fallbrook Airpark, Jacumba, Oceanside Municipal, and Ocotillo – accommodate general aviation only.

A summary of facilities and operational data for the Airport System is presented on Figure 1-2.

The National Plan of Integrated Airport Systems (NPIAS) designated San Diego International Airport and McClellan-Palomar Airport as primary airports in the San Diego County. According to the FAA Future Airport Capacity Task (FACT) 2, published in 2007, the San Diego County region would need aviation capacity after 2025. FACT 2 also added that the San Diego International Airport should be closely monitored to gauge the effects of swiftly changing industry outlook as changes could expedite the need for additional capacity.
### Regional Forecast Facility Improvement and Operational Assumptions

Baseline Scenario assumes construction of new gates, airfield improvements, auto-parking, and roadway improvements beginning in 2009. Continued deployment of narrow-body jets; replacement of small regional jets in larger regional jets; increased use of wide-body jets; and an increased flight activity gives projected increase of fixed factors. High scenario overall forecast reflects lower fixed prices more than baseline Scenario.

- **San Diego International**
  - Baseline Scenario assumes SkyWest will continue to serve LAX and replace EMB-120 aircraft with CRJ200 or similar aircraft in 2011. Planned 38,000 square feet of new hangar space developed in 2009. High Scenario assumes runway extension to accommodate CRJ200s, EMB170, EMB190 and 72-seat Q400 (or similar aircraft without restrictions) (no indication of length required). Markets potentially served in addition to LAX include LAX, PHX, DFW, and SFO.
  - None identified

- **McClellan-Palomar**
  - None identified

- **Montgomery Field**
  - High Scenario assumes planned 356 acre development in association with Distinctive Projects Company is implemented. Development includes additional hangar capacity to accommodate 205 additional based aircraft; full occupancy realized.

- **Brown Field Municipal**
  - High Scenario assumes planned 70 acre Cajon Air Center development is implemented with 53 acres of new aircraft storage hangars; full occupancy realized. Majority of additional based aircraft would originate from outside San Diego County (as opposed to other County airports). Forecasts represent unconstrained conditions, and activity levels may exceed current capacity.

- **Gillespie Field**
  - High Scenario assumes planned development of the Rancho Murieta Airport in 2017-2018, including 56 private hangars and 40 public hangars; full occupancy realized.

- **Ramona**
  - Not included in the regional forecast

#### Airports Facilities

**FAA NPIAS Designation**
- Large Hub Primary Commercial
- Non-Hub Primary Commercial
- Reliever

**California Aviation System Plan Designation**
- Primary Commercial Hub
- Metropolitan GA
- Regional GA

**FAA Airport Reference Code**
- D-V
- B-II
- D-V
- B-II
- B-II

**Runway Data**
- 9/27 - 5,000 (Paved)

**Instrument Approach**
- Runway 9 L/S CAT I
- Runway 27 Non-pmission
- Runway 28R L/S CAT I
- Non-pmission
- Non-pmission
- Non-pmission

### Airports Activity Statistics

**Annual Enplanements**
- Historical (2007)
- Forecast (2020)

**Annual Operations**
- Historical (2007)
- Forecast (2020)

### Notes:
- N/A = Not Applicable
- Not in NPIAS = Not in the National Plan of Integrated Airport Systems
- FAA = Federal Aviation Administration
- Sources: FAA Airport Data
- Regional Aviation Strategic Plan

### Regional Aviation Strategic Plan

**Source:** Federal Aviation Administration, National Plan of Integrated Airport Systems, 2009.
1.5 SUMMARY OF AVIATION ACTIVITY

Forecasts of aviation activity developed for the RASP were prepared in 2008 as part of the Destination Lindbergh study. As of January 2011, a complete copy of the San Diego County Regional Aviation Strategic Plan, Aviation Demand Forecasts (December 2008) can be obtained at the following link:


Appendix A includes a technical memorandum presenting aviation demand forecasts for 2035 for the 12 public-use airports in San Diego County in support of planning efforts being conducted by SANDAG. The 2035 forecast is an extrapolation of the baseline forecasts which includes enplaned passengers, air cargo, and aircraft operations (passenger and all-cargo airlines and general aviation) for each of the 12 public-use airports in San Diego County.

Understanding that current and projected aviation activity in the San Diego region is an essential and critical component of the RASP, the forecasts were used as a starting point for determining latent demand and facility improvements necessary to meet the region’s long-term air service needs. This approach recognizes that potential development scenarios can constrain or further stimulate demand, thereby altering the baseline demand forecast.

Overarching forecast assumptions are summarized below:

- The RASP forecast base year is 2007; consistent with the AMAP, annual operations and fleet mix forecasts are presented for each airport through 2030
- System airports are assumed to maintain their existing roles
- Forecast data was provided from the County of San Diego, City of San Diego, Airport Authority, and FAA sources
- Forecasts account for and consider the following:
  - Continued congestion at San Diego International
  - Planned improvements at San Diego International
  - Potential runway extension at McClellan-Palomar
  - Loss of a flight school at Gillespie Field
  - New high-end fixed based operator (FBO) at Brown Field Municipal
  - Development of the Ramona Air Center
  - Lease of Oceanside Municipal to a private operator
- Forecasts are based on unconstrained demand, which assumes that there are no physical, regulatory, environmental, political, or other impediments to aviation activity growth
The following sections summarize base year (2007) and forecast data for commercial passenger, air taxi, general aviation, and military activity. A summary of actual and forecast operations at each airport is provided on Table 1-2. Total aircraft operations for the Airport System are forecast to increase from 1.35 to 1.77 million operations between 2007 and 2030, representing an average annual growth rate of 1.2%.

1.5.1 Commercial Activity

San Diego International and McClellan-Palomar are the only two airports in San Diego County with scheduled commercial passenger service. San Diego International also has commercial cargo activity. Commercial passenger forecasts were based on regression of domestic origination and destination passengers against personal income and airline yield.

The majority of commercial operations will continue to be accommodated at San Diego International, where the passenger forecast is driven principally by passengers starting and ending their travel in San Diego (over 90% of passengers in 2007). Enplanements are projected to increase from 9.2 million in 2007 to 14.1 million in 2030, an average annual growth rate of 1.9% per year. However, by 2030 McClellan-Palomar is projected to accommodate 0.4% of total commercial passengers and about 25% of commuter passengers. Enplanements at McClellan-Palomar are forecast to return by 2010 to the 50,000 level experienced historically and remain at that level through 2030.

Passenger aircraft operations were derived from enplaned passenger forecasts. The aggregate number of commercial operations at an airport depends on the following three factors: total enplaned passengers, average aircraft size, and average load factor. The domestic passenger operations forecasts were developed based on the following assumptions:

- The historical deployment of 135- to 145-seat narrow-body jets at San Diego International would continue into the future, with the evolution of the fleet being towards similarly sized, next generation replacement aircraft

- Small regional jets are expected to be replaced with larger regional jets

- In general, domestic load factors are expected to increase in the short-term due to increases in fuel prices and corresponding capacity cuts

- International activity is expected to expand somewhat with non-stop service to Europe in 2011 and Pacific destinations by 2015, which will lead to more wide-body aircraft in the fleet. International load factors are expected to increase from almost 70% in 2007 to 75% in 2030
## Table 1-2
### ACTUAL AND FORECAST AIRCRAFT OPERATIONS — SAN DIEGO COUNTY AIRPORT SYSTEM

Regional Aviation Strategic Plan

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<thead>
<tr>
<th>Year</th>
<th>SAN</th>
<th>CRQ</th>
<th>MYF</th>
<th>SEE</th>
<th>SDM</th>
<th>RNM</th>
<th>OKB</th>
<th>L18</th>
<th>L08</th>
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<table>
<thead>
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<th>Average annual growth rate:</th>
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<td>2020-2030</td>
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<td>2007-2030</td>
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</table>

Note: Tijuana Rodriquez International Airport not included.


Legend:
- SAN - San Diego International Airport
- CRQ - McClellan-Palomar Airport
- MYF - Montgomery Field
- SEE - Gillespie Field
- SDM - Brown Field Municipal Airport
- RNM - Ramona Airport
- OKB - Oceanside Municipal Airport
- L18 - Fallbrook Community Airpark
- L08 - Borrego Valley Airport
- L54 - Agua Caliente Airport
- L90 - Ocotillo Airport
- L78 - Jacumba Airport
As a result, commercial passenger operations are expected to grow at 1.3% per year from 199,900 in 2007 to 269,200 operations by 2030.

Based on the domestic nature of cargo at San Diego International, it was assumed that the long-term forecast growth rate for air cargo would likely be less than the growth projected by national cargo forecasts prepared by the FAA, Boeing, and Airbus. Based on this assumption, cargo tonnage is expected to grow at a rate of 1.7% annually from 155,000 tons in 2007 to 225,600 tons in 2030.

1.5.2 General Aviation and Military Activity

General aviation forecasts were prepared based on an econometric model using a regression analysis of the total San Diego County air taxi and general aviation activity against historical personal income for San Diego County. San Diego International forecast air taxi/general aviation activity was calculated based on a market share analysis. San Diego International’s historical contribution of air taxi/general aviation traffic has averaged 2.3 percent of the total air taxi/general aviation activity in San Diego County between 1995 and 2007. However, based on the 2008 air taxi/general aviation activity estimates at the airport, this is expected to fall to 1.9%. Furthermore, as commercial passenger operations increase and airside congestion worsens, it is expected that this amount will decrease even further over time, reaching 1.6% by 2030.

Unconstrained general aviation operations are forecast to grow from 1.0 million to nearly 1.5 million by 2030, with Gillespie Field accounting for the majority of growth. The following assumptions were included in the forecasts:

- **McClellan-Palomar** – Assumes implementation of a 1,000-foot runway extension (under consideration since 2003); construction of a new terminal building; and 38,000 sq ft of new hangar space in 2009. Air taxi operations are forecast to reach 2007 levels by 2010 and increase at an average annual rate of 2.8% from 2010 to 2030, based on FAA growth rates. Itinerant general aviation operations grow based on FAA national forecasts; and local operations remain at 2008 levels through 2030.

- **Montgomery Field** – Assumes construction of a planned 423-foot runway extension, pavement rehabilitations, and 12 aircraft parking positions. Air taxi operations expected to continue to decline. Itinerant general aviation forecast to hold constant at 2008 levels through 2030; local operations projected based on national FAA forecasts.

- **Brown Field Municipal** – Assumes implementation of planned development of FBO and firefighting base and commercial, industrial, hotel, and educational facilities. Air taxi and itinerant general aviation projected based on trend analyses; local operations projected based on national FAA forecasts.
• **Ramona** – Assumes implementation of planned public-private development of hangars for approximately 100 aircraft. By 2012, itinerant general aviation reaches 2007 levels and local general aviation reaches 2006 levels; forecast operations increase based on FAA growth rates.

• **Oceanside Municipal** – General aviation operations expected to recover and reach 2007 levels in 2012; forecast operations increase at FAA growth rates.

• **Fallbrook Community Airpark** – Fallbrook Master Plan 2006 is not adopted for the RASP. General aviation activity projected based on FAA growth rates.

• **Borrego Valley, Agua Caliente, Ocotillo, and Jacumba Airports** – General aviation activity projected to remain constant at 2007 levels.

The future general aviation fleet mix was based on national trends, local demand, and planned development at each airport.

Military forecasts anticipate no growth in annual county-wide operations (approximately 12,500 operations) and no change in share by airport.

1.6 **PLANNING CHALLENGES**

There are numerous challenges to meeting RASP goals and objectives, as summarized below:

• Of the total system airports, only two are certificated by the FAA for commercial airline service – San Diego International and McClellan-Palomar. The other public-use airports are general aviation facilities with various expansion constraints. Airports with available land are not located near the population/economic base, complicating traffic redistribution strategies.

• San Diego International has one of the smallest footprints of any metropolitan airport in the U.S. The Airport’s growth is constrained by the single-runway airfield which will “cap” activity at around 28 million annual passengers. Since San Diego International is currently the only facility equipped to accommodate the full range of commercial service, the airfield constraint will likely ultimately limit regional growth.

• The best use of all aviation infrastructure is possible with an integration of air and ground (i.e., intermodal strategies). The potential for high speed rail to connect San Diego to other airports in Southern California may alleviate some short-haul demand at San Diego County airports, freeing up precious airfield capacity at San Diego International.

• Only San Diego International and Brown Field have runways capable of accommodating the full range of commercial activity (see Figure 1-3). In
addition to runway length, factors related to accommodating commercial service include: runway strength, airfield design standards, ability to lengthen runway, political and/or community opposition. Unrestricted accommodation of commercial aviation demand is not possible at McClellan-Palomar due to its runway length and also existing airfield layout constraints.

Figure 1-3

<table>
<thead>
<tr>
<th>Existing Runway Lengths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal runway length for air carrier/cargo operations = 8,000 feet</td>
</tr>
<tr>
<td>Nominal runway length for commuter operations = 6,000 feet</td>
</tr>
</tbody>
</table>

Note: Nominal runway length includes aircraft payload and range considerations.

- The conversion of an existing general aviation airport to a FAR Part 139 certificated airport to accommodate commercial service (passenger or cargo) is unlikely due to community and political opposition and significant costs associated with such an action.

- The collective capacity of the five general aviation airports is well above forecast demand (see Figure 1-4). In addition, capacity significantly exceeds demand at all facilities, except at Gillespie Field, where demand is projected to exceed capacity by 10,000 operations in 2030.
• The Airport System has achieved a natural “balance” with regard to accommodating activity (passenger, cargo, general aviation, etc.); this “balance” will be difficult to change given political, physical, and community factors associated with each airport.

• Although San Diego International has good domestic air service at competitive airfares, there are large numbers of passengers choosing to use other airports in the region, including Mexico. These choices are predominantly based on air service options rather than cost. In addition, there have been recent increases in interregional and international travel, with more people working in San Diego but living in Riverside and Imperial counties, and Mexico.

• No single entity has sole authority to implement recommendations, although many interests are part of the process and participated in the RASP.
1.7 COORDINATION AND OUTREACH

Many stakeholders have a vested interest in the outcome of the RASP, including:

- Airport sponsors, including the Airport Authority, the County of San Diego, City of San Diego, City of Oceanside, and GAP
- Federal, state, and regional agencies – FAA, Caltrans, California High Speed Rail Authority, SANDAG
- Regional transportation agencies – San Diego Metropolitan Transit System (MTS) and North County Transit District (NCTD)
- Local communities and the public, including all 18 cities in San Diego County represented by SANDAG
- Public and airport-specific stakeholders

While the Airport Authority led the RASP, significant coordination was required with the other airport sponsors and regional agencies. To meet this need, a technical Subcommittee of the Airport Advisory Committee was formed with representatives from the City of San Diego and County of San Diego, and other entities that have a responsibility in the development and operations of airports in the county.

In addition, and in compliance with SB-10 requirements, the Airport Authority implemented an extensive public outreach program to accompany preparation of the RASP. A summary of the public and stakeholder outreach program is documented separately.

1.8 AMAP INTEGRATION

Throughout the conduct of the RASP, the Authority worked closely with SANDAG, the agency leading the AMAP, to ensure that (1) ground access estimates used in the RASP econometric model were based on actual estimates from SANDAG’s latest RTP; (2) RASP analyses were consistent with the planning protocols of the AMAP; and (3) RASP findings could be incorporated into the AMAP and ultimately into the next update of the RTP. Based on RASP findings, the AMAP will identify and prioritize relevant ground access improvements in order to develop workable strategies to improve the overall performance of the ground access to various San Diego County airports. Coordination with SANDAG was accomplished via monthly meetings and regular updates regarding project strategies, technical assumptions, and preliminary findings. The Authority also collaborated with SANDAG and other regional planning agencies to ensure that the assumptions and the findings for scenarios pertaining to California High Speed Rail were consistent with the California High Speed Rail Authority’s plans, as well as other regional rail efforts.