

## EXECUTIVE SUMMARY

The Regional Aviation Strategic Plan (RASP) for the San Diego County was prepared by the San Diego County Regional Airport Authority (the Authority) to assess the long-range capabilities of all public-use airports in the county with the goal of improving the performance of the regional Airport System. The Federal Aviation Administration (FAA) provided funding for the preparation of the RASP.

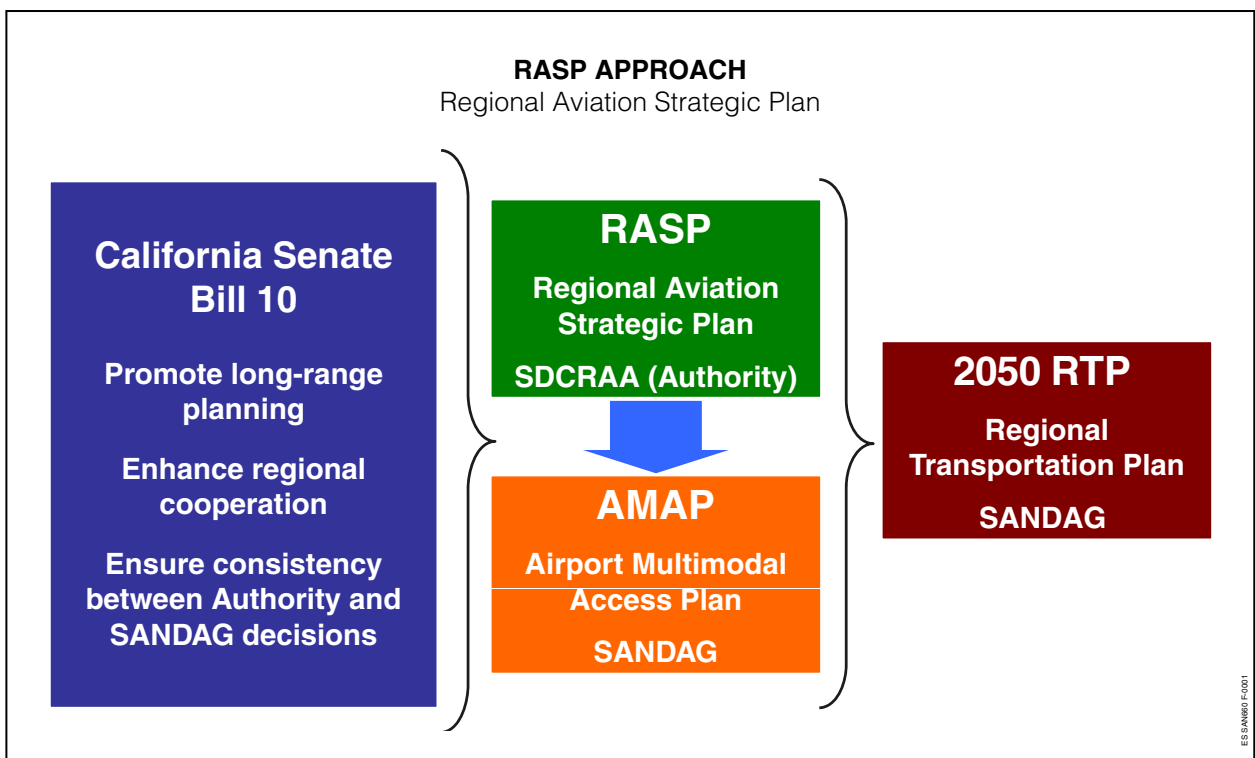
### KEY TAKEAWAYS

The following summarizes key aspects of RASP analyses and findings:

- **Significant Stakeholder Contributions.** A technical RASP Subcommittee, a formal subset of the Authority's Airport Advisory Committee, was formed at the outset of the RASP to provide input and feedback on the technical aspects of the study. In addition to playing an essential role in identifying the full range of reasonable and feasible options that were ultimately considered, the Subcommittee provided constant feedback to key stakeholders regarding the progress of the RASP.
- **All Reasonable Ideas and Concepts Were Evaluated.** The alternatives considered and evaluated in the RASP covered a comprehensive spectrum of possibilities, including: (a) funding, policy, and political factors; (b) surface, rail, and cross border initiatives; (c) physical change in airport capability and/or capacity; (d) expansion of an airport's user base/market; (e) change to an airport's fleet mix; (f) federal, state and/or local aviation initiatives; and (g) changes to surface transportation infrastructure.
- **Regional Airport Improvements Can Be Made.** There is a wide range of improvements and changes to airports in the region that could be made; some potential improvements are positive to airports individually, while some provide benefits to the entire system. However, some positive benefits can only be provided by actions that are legally challenging, impractical, and inadvisable to implement in full.
- **The Passenger Capacity of San Diego International Airport Can Only Marginally Be Improved.** In general, even the most beneficial actions have a nominal effect on improving overall commercial service (passenger airline) capacity in the region, namely at San Diego International Airport.

**PROJECT OVERVIEW**

California Senate Bill 10 of 2007 (SB-10) and the California Public Utilities Code (sections 132357, 132358 and 132359) requires that airport multimodal planning in San Diego County be conducted and coordinated by the Authority and the San Diego Association of Governments (SANDAG). The main provisions of SB-10 are the development of the RASP (led by the Authority), and an Airport Multimodal Accessibility Plan (AMAP), which is being prepared by SANDAG in order to develop a multimodal strategy to improve transportation access to airports. Findings of the RASP and AMAP will subsequently be incorporated into SANDAG’s 2050 Regional Transportation Plan (RTP).



In addition to complying with SB-10, the primary objectives of the RASP are to:

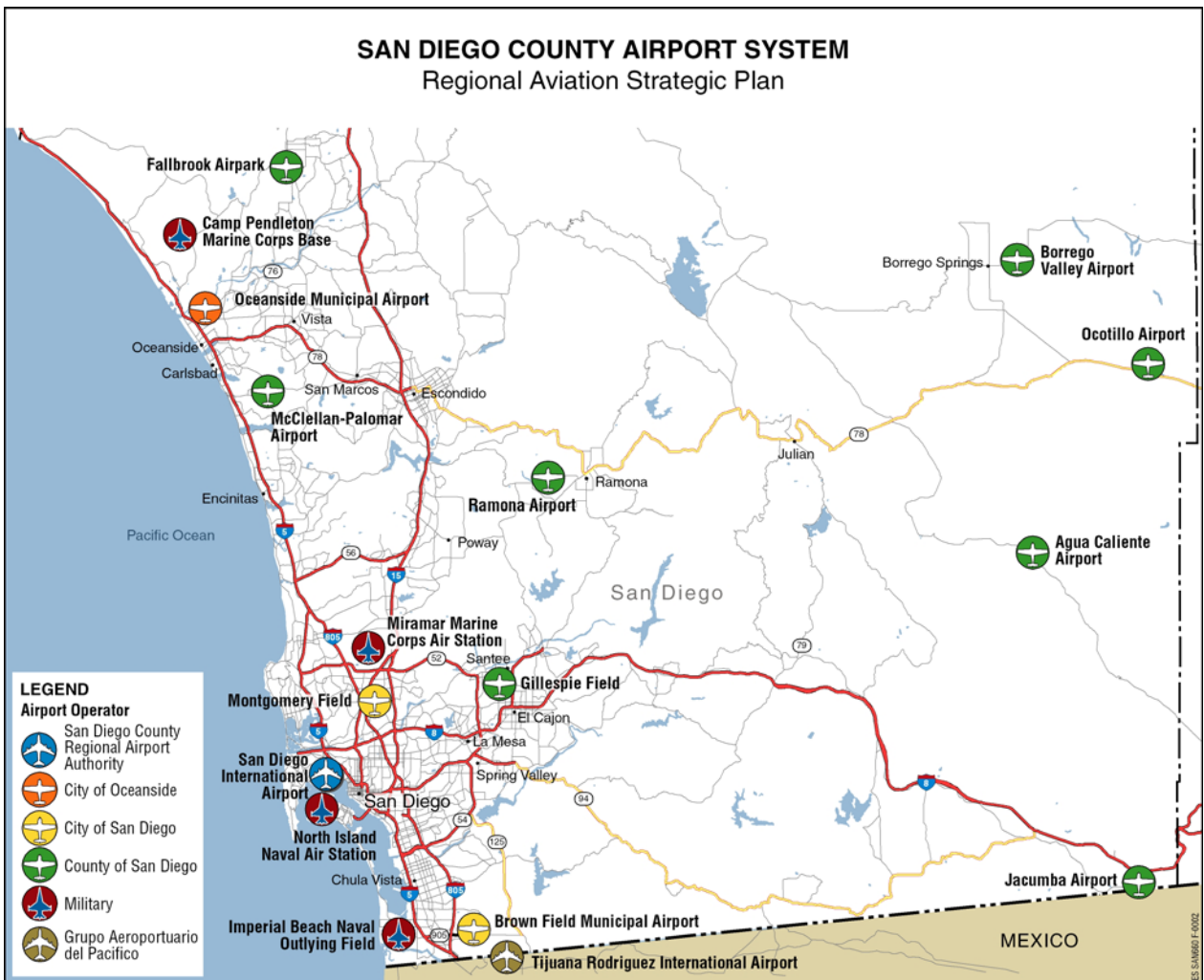
1. Define the region’s long-range air transportation needs and the roles of each airport in meeting those needs;
2. Determine opportunities and constraints with respect to accommodating future demand; and
3. Develop strategies to maximize the efficiency and effectiveness of existing and planned facilities.

**AIRPORT SYSTEM**

The following provides applicable background on the San Diego county “Airport System.”

**Airport System**

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. Because they do not accommodate civilian air travel, the four military airfields in San Diego County were excluded from the RASP (although airspace impacts were considered).



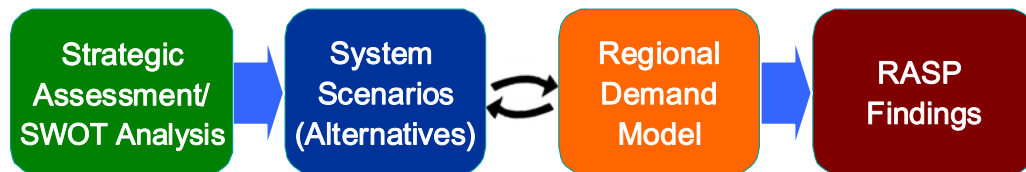
## Planning Challenges

There are a number of important challenges to meeting RASP goals and objectives:

- **Multiple Airport Sponsors.** The San Diego County Airport System includes multiple airport sponsors – the Authority, the County of San Diego, the City of San Diego, the City of Oceanside, and Grupo Aeroportuario del Pacifico (GAP) – and no single sponsor has unilateral authority to implement facility or policy changes for other airports in the region.
- **Accommodation of Commercial Service.** Of the total airports in San Diego County, only two airports are FAA-certificated for commercial service – McClellan-Palomar and San Diego International. The other public-use airports are general aviation facilities with significant expansion constraints, and San Diego International’s growth is constrained by its single-runway airfield.
- **Natural “Balance.”** The Airport System has achieved a natural balance with regard to accommodating passenger, cargo, and general aviation activity. This momentum is difficult to change given political, physical, and community factors. Furthermore, the conversion of an existing airport to accommodate new or additional service is complicated by community and political opposition, as well as costs and numerous technical factors.
- **Air Service Options.** Although San Diego International has good domestic air service at competitive airfares, there are large numbers of San Diego County residents and visitors choosing to use other airports, including Tijuana and airports in the greater Los Angeles metropolitan region. These choices are predominantly made based on air service options, rather than cost and accessibility.

## STUDY METHODOLOGY AND APPROACH

Four major work elements defined preparation of the RASP.



### Strategic Assessment and System Scenarios

A strategic assessment of each system airport was prepared to validate and document existing activity levels and facilities as well as the potential for future changes. Alternative scenarios were established that could have an effect on optimizing the Airport System. The scenarios included a wide range of infrastructure and operational

changes intended to accommodate certain aviation activity or distribute activity across multiple airports.

### **Regional Demand Model**

A regional econometric demand model was developed for the RASP and used as a decision support tool to evaluate various “what-if” scenarios and quantify potential outcomes. The model was based on information regarding the propensity for people to travel and the factors that lead to a choice of airport, which primarily include time and costs associated with accessing aviation services. SANDAG’s Regional Travel Demand Model was also incorporated into the RASP model to estimate ground transportation changes and access times.

Based on analyses using the demand model, findings were prepared that summarized the impacts and effects of implementing various scenarios. Model findings indicated the number of air trips (or passenger enplanements) that would occur under each scenario and the potential impact various changes would have on the Airport System.

### **“Expansion” of the RASP Study Area**

Although San Diego International provides good domestic air service at competitive airfares, it was determined early in the study that some San Diego County residents and visitors choose to use airports in the greater Los Angeles metropolitan region and Tijuana in order to capitalize on alternative air service options. Therefore, RASP strategies, alternatives, and findings were considered in the context of San Diego County and the larger region, including the following airports in the greater Los Angeles metropolitan region: Los Angeles International, John Wayne/Orange County, Long Beach, Ontario International, and Burbank.

### **AVIATION ACTIVITY AND AIRPORT CAPACITY**

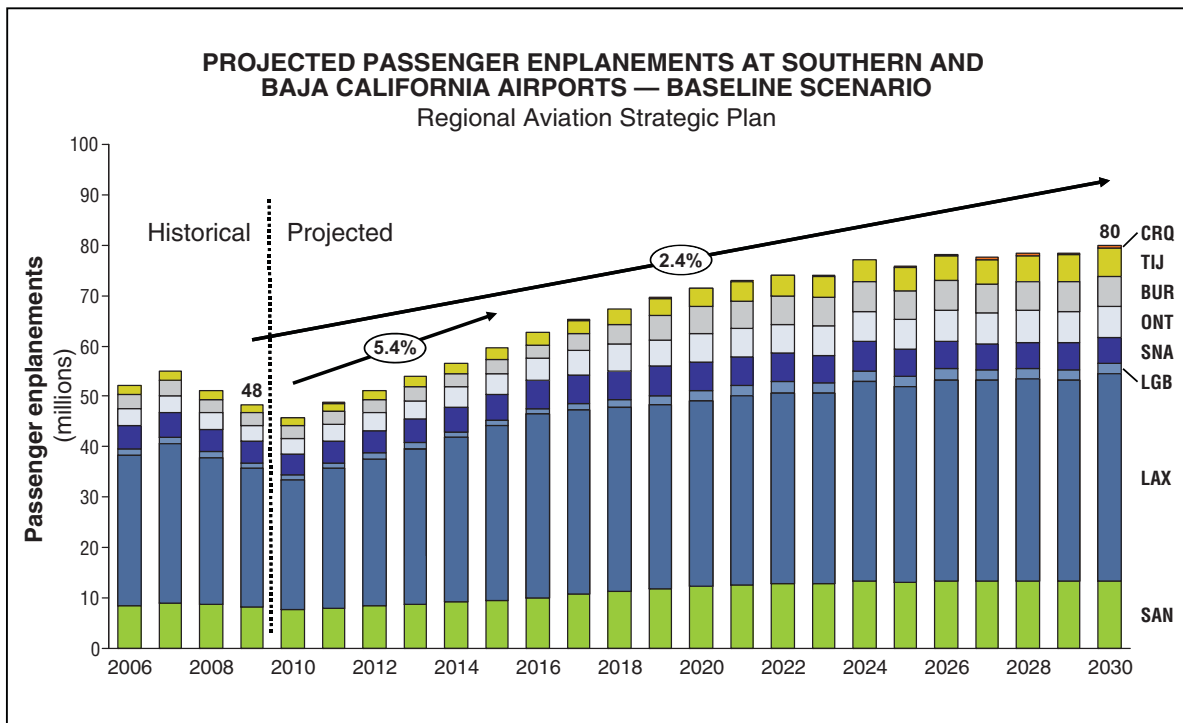
The following summarizes forecast aviation demand in the expanded RASP Study Area; the estimated capacity of the Airport System; and the Baseline Scenario, which is the “do-nothing” scenario against which all alternatives are compared.

Demand for air travel in the U.S. correlates strongly with fluctuations in the U.S. economy. In the post-financial crisis environment, carriers have reduced capacity in an effort to maintain high fares and revenues. Notwithstanding these cuts, the industry was projected to lose billions of dollars in 2009. While 2009 third quarter financials improved, passenger growth and yields remain weak, and a recovery in demand was projected to be modest relative to prior recoveries.

### **Forecast Aviation Demand**

Projected aviation demand (quantified by annual enplaned passengers) in the RASP Study Area – including San Diego, Tijuana, and five airports in the greater Los Angeles

metropolitan region – is projected to increase 50% between 2009 and 2030 from 48 to 80 million passenger enplanements. San Diego International’s 20-year compound annual growth rate is projected to be 2.5%. Tijuana Rodriguez International is expected to experience the largest demand increase between 2010 and 2030, with passenger enplanements increasing from 1.6 to 5.6 million at a compound annual growth rate of 6.4%.



### Airport System Capacity

Numerous studies prepared in the past five years have documented that San Diego County will reach commercial service (passenger airline) capacity during the RASP planning horizon. It has been calculated that San Diego International will reach its airfield capacity sometime between 2020 and 2030, at approximately 28 million annual passengers. Once this occurs, the airport’s level of service is expected to decrease and result in (1) increased operating delays on the airfield and in the ground transportation network leading to the airport; and (2) increases in the price of air service.

In addition, the RASP demand model predicted that many Southern California airports will reach capacity during the RASP forecast period. Los Angeles International is projected to reach capacity sometime around 2015. This is expected to result in significant increases in passenger enplanements at the other greater Los Angeles metropolitan region airports, thereby moving forward the time in which these airports will reach their respective capacities.

**Baseline Scenario**

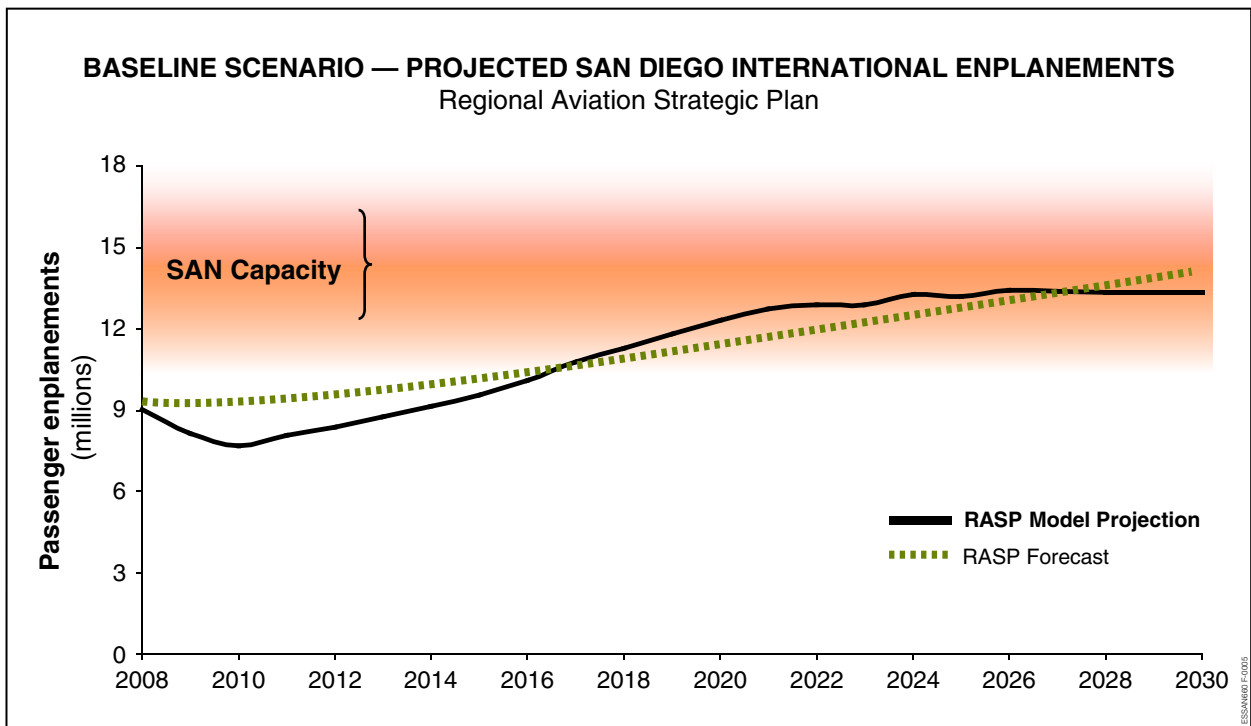
The RASP Baseline Scenario, shown below, is defined by the expected outcomes of the capacity constraint at San Diego International and incorporates the following:

- Reasonably foreseeable “market-driven” reactions to address demand once San Diego International reaches capacity
- Approved improvements in the near-term horizon, such as the Terminal 2 West 10 gate addition in 2013 and *Destination Lindbergh* “Opening Day” recommendation, including an Intermodal Transit Center (ITC) on the north side of the airfield



- Region-wide surface improvements per SANDAG’s 2007 RTP – “Revenue Constrained Scenario”
- Capacity constraints at greater Los Angeles metropolitan region airports

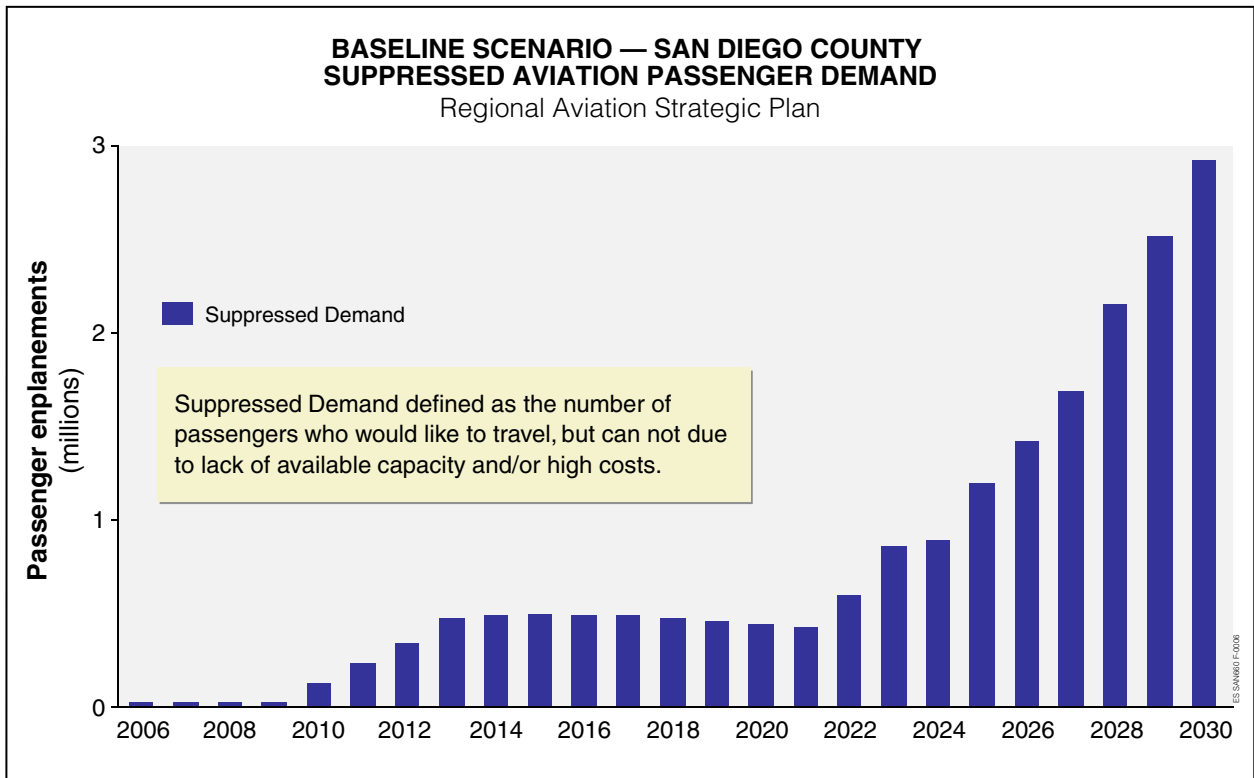
The Baseline Scenario assumes the capacity of San Diego International is approximately 14.2 million annual enplanements (28 million passengers), with an implementation cost of approximately \$535 million. It should be noted that multiple agencies would be responsible for funding and implementing the various projects in the Baseline Scenario, and not all are the responsibility of the Authority.



### Suppressed Demand

The RASP demand model, which incorporates numerous econometric variables as well as capacity constraints at RASP Study Area airports, indicates capacity constraints will occur at San Diego International earlier than previously predicted – beginning between 2020 and 2025. The effects of this capacity constraint will be diminished levels of service, increased operating delays, and higher airline fares. As a result, there will be “lost” or “suppressed” demand, which is defined as potential passengers who desire to utilize air service but do not because of the lack of available capacity and/or prohibitively high costs. As demand eventually nears regional aviation capacity, the number of “suppressed demand” in San Diego County is projected to increase to about 3.0 million annual passengers by 2030.





## ALTERNATIVE SCENARIOS

After an extensive process of considering all reasonable measures that could be taken to optimize the Airport System, five families of improvements were identified for analysis. Each family is oriented toward optimizing a certain market or user type associated with the Airport System, and each family includes individual alternatives resulting in the complete set of 15 scenarios developed for detailed evaluation:

**Commercial Passenger Optimization:** Addresses capacity limitations at San Diego International by developing future facilities, enhancing/introducing airline service at other regional airports, reserving capacity for airline passenger operations, and adjusting the size of aircraft serving the airport.

- A. Full build-out of the ITC and north side terminal at San Diego International
- B. Preserve San Diego International airfield capacity for commercial service
- C. Enhance commercial passenger service at McClellan-Palomar Airport
- D. Introduce commercial passenger service at Brown Field Municipal Airport
- E. Up-gauge San Diego International’s Fleet Mix – Narrow-body Fleet
- F. Up-gauge San Diego International’s Fleet Mix – Increased Wide-body Fleet

**Enhanced Utilization of Tijuana:** Focus on improving access to Tijuana Rodriguez International Airport to facilitate the accommodation of future regional passenger demand.

- A. Facilitate border crossings
- B. Aviation passenger cross border facility
- C. Cross border airport terminal

**California High Speed Rail (HSR):** Offers passengers an alternative ground transportation solution to cities and airports within California; two potential alternative alignments and station locations in San Diego were evaluated.

- A. Station at downtown San Diego (line terminates at Santa Fe depot / train station)
- B. Station at San Diego International (line terminates at San Diego International)

**General Aviation Optimization:** Enhancing other airports to accommodate high-end general aviation aircraft (typically corporate users) would provide an attractive alternative to using San Diego International.

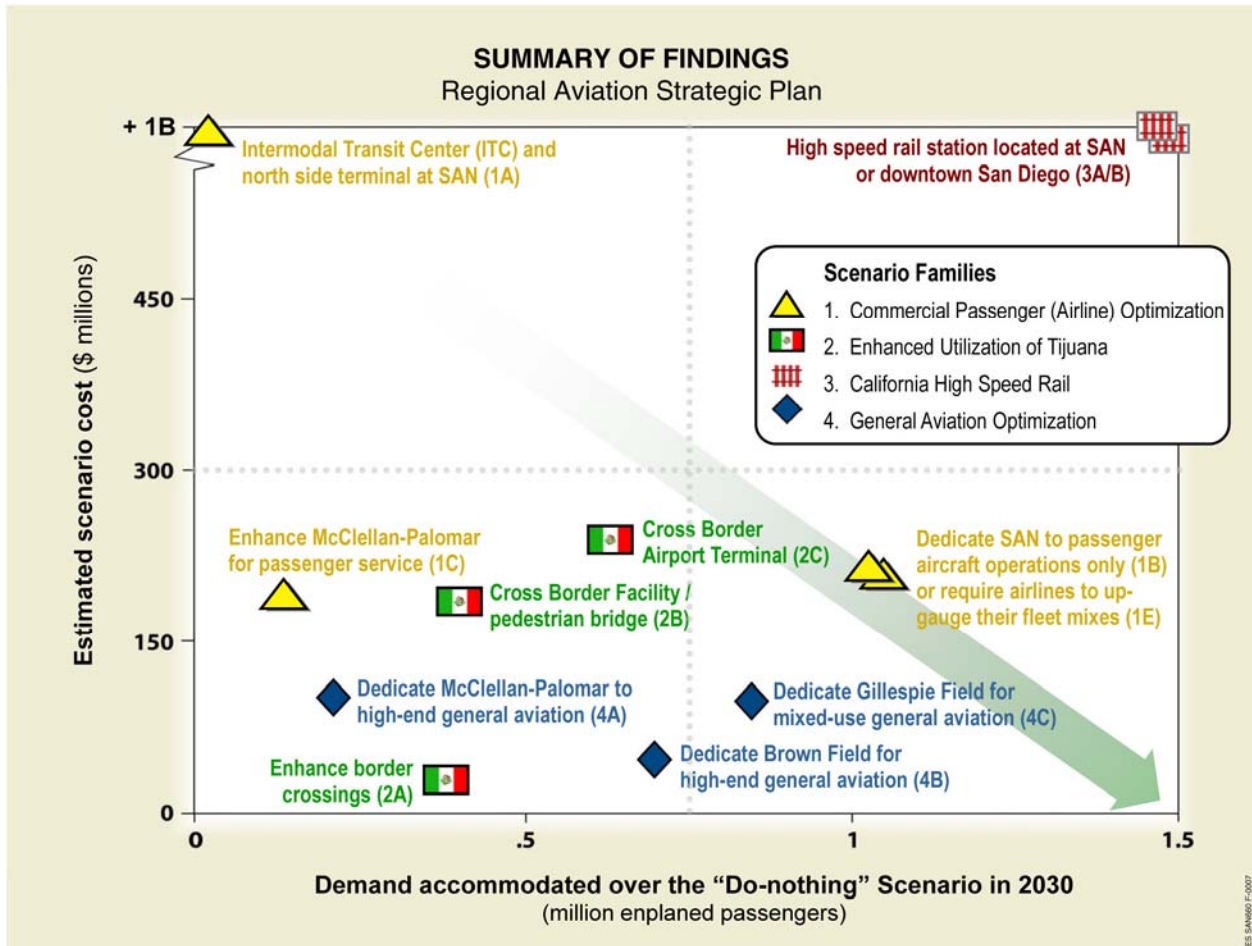
- A. Enhance McClellan-Palomar Airport for high-end/corporate general aviation
- B. Enhance Brown Field Municipal Airport for high-end/corporate general aviation
- C. Enhance Gillespie Field for mixed-use general aviation

**Air Cargo Optimization:** Alternative locations for air cargo could remove air cargo flights from San Diego International, preserving airfield capacity for commercial passenger airlines.

- A. Introduce air cargo service at Brown Field Municipal Airport

The above scenarios include planned and hypothetical measures that could be taken to optimize markets and user types which, if implemented, could serve to optimize the Airport System. Several of the 15 scenarios are designed to measure the maximum possible effect of a particular theoretical action and are legally challenging, impractical, and inadvisable to implement in full. Nevertheless, estimating the impact of these measures was determined valuable by the RASP Subcommittee so as to better understand the full range of available options, benefits, and costs of attempting to address projected demand.

**KEY FINDINGS**



An evaluation matrix measuring the additional projected demand that could be accommodated over the Baseline Scenario in 2030 for each scenario evaluated in the RASP is presented above. Additional findings are as follows:

1. **Full Build-out of the ITC.** The full build-out of the ITC and north side terminal at San Diego International (Scenario 1A) has no effect on suppressed demand relative to the Baseline Scenario; however, this scenario is expected to yield regional access and other tangible service benefits not captured by RASP analyses.
2. **McClellan-Palomar.** Enhancing commercial passenger service at McClellan-Palomar (Scenario 1C) has little effect on suppressed demand because the maximum capacity of this airport only represents 8% of the total projected suppressed demand in 2030.
3. **Up-gauging the San Diego International Fleet Mix.** Up-gauging the fleet mix at San Diego International (Scenarios 1E and F) provides the same relative

benefits to the region as Scenario 1B (reserving San Diego International capacity for commercial passenger service). San Diego International's fleet mix is already favorable (nearly optimized) as the Airport is projected to have a relatively low proportion of regional jets and turboprops in the future.

4. **Brown Field Municipal Airport.** Brown Field scenarios (Scenarios 1D and 5A) cannot feasibly be implemented for the following reasons: (a) The FAA has determined precision instrument approaches are infeasible at Brown Field due to terrain and airspace complications, thereby precluding commercial operators from conducting all-weather operations; (b) established passenger airlines are reluctant to "split operations" with San Diego International, and there are two other competitive commercial service airports (San Diego International and Tijuana Rodriguez International) in close proximity; (3) air cargo carriers are unwilling to operate from a facility south of San Diego International due to distance from to their demand base in San Diego County and lack of cargo sorting infrastructure.
5. **Tijuana Enhancements.** Tijuana scenarios (Scenarios 2A, B, and C) have a relatively small effect on suppressed demand, which is attributed to the following: (1) significant portions of demand accommodated at Tijuana Rodriguez International prior to 2030 is generated in the greater Los Angeles metropolitan region; and (2) by 2030, more San Diego residents and visitors are already projected to use Tijuana Rodriguez International for international trips with or without airport or access improvements.
6. **California High Speed Rail.** Both California HSR scenarios (Scenarios 3A and B) perform similarly with regard to accommodating intrastate, intercity demand; while a downtown San Diego HSR station shows higher air-rail diversion than a station at San Diego International, their overall regional benefits are similar. Nevertheless, either scenario could play a role to alleviate the region's aviation capacity problems by freeing up scarce San Diego International capacity and accommodating suppressed demand. These benefits may increase beyond the 2030 RASP planning horizon.
7. **General Aviation Optimization.** General aviation scenarios (4A, B, and C) have relatively similar costs and provide nearly the same, but nominal, impact on demand relative to the Baseline Scenario.

## **OBSERVATIONS AND NEXT STEPS**

The following summarizes the key observations of the RASP and identifies next steps for regional airport planning.

- **Even Beneficial Alternatives Yield Marginal Results.** The RASP makes clear that while several scenarios, if implemented, can reduce suppressed demand and allow more passengers to be accommodated they have a marginal effect on increasing overall aviation capacity in San Diego County, especially at San Diego International. Scenarios providing the most benefit outside of HSR (Scenarios 1B, E and F), would provide an additional five years of activity growth at San Diego International (at most). Beyond the end of the forecast period, the region's aviation system will face an imbalance between demand for air service and the supply of infrastructure available to serve it.
- **No Single Entity in the Region Can Implement RASP Findings.** Given the multiple airport sponsors in the region, there is no single entity that can unilaterally implement RASP findings. Implementing any airport improvement or policy change is an individual decision for the sponsor of each airport. The most challenging to implement are RASP scenarios that consider inducing aviation traffic to shift from one airport to another – and therefore, in order for these scenarios to be feasible, two or more airport operators must agree on the implementation costs and policy actions.
- **Regional Airport Sponsors Should Coordinate Future Improvements.** It is recommended that Airport sponsors in San Diego County coordinate future changes and improvements to help optimize overall system performance.
- **A Regional Airport Coordinating Committee Should Be Considered.** Given the multiple Airport sponsors in the region combined with the need to coordinate future changes and improvements, the formation of a regional airport coordinating committee should be considered. This committee should be formed by the airport owners/operators in the region and should include regional planning representatives. The coordinating committee should expand RASP analyses and evaluate economic, environmental, and other qualitative aspects of RASP alternatives that are deemed most appropriate.