Presentation #2

Preliminary Findings – Remaining Scenarios

- Enhanced Utilization of Tijuana Airport
- California High Speed Rail

Regional Aviation Strategic Plan

San Diego County Regional Airport Authority
RASP Subcommittee

December 9, 2010
**Presentation Content**

**Objectives**

1. Review project progress
2. Review scenario details (cost estimates, implementation schedules, timelines, and decision points, etc.)
3. Review preliminary findings on select scenarios
   1. Commercial Optimization (September 2010)
   2. Enhanced Utilization of Tijuana Airport
   3. California High Speed Rail
   4. General Aviation Optimization (Sept 2010)
   5. Air Cargo Optimization (September 2010)
4. Discuss next steps and project completion

**Contents**

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3. Remaining alternative scenario findings 13
   - Enhanced Utilization of Tijuana Airport
   - California High Speed Rail
   - New Commercial Scenarios
   - Summary findings
4. Next steps / outreach 55
Regional Aviation Strategic Plan (RASP)

Senate Bill 10 – Multimodal Planning to be Coordinated by SDCRAA and SANDAG

- California Senate Bill 10
  - Promote long-range planning
  - Enhance regional cooperation
  - Ensure consistency between Authority and SANDAG decisions

- RASP
  - Regional Aviation Strategic Plan
  - SDCRAA (Authority)

- AMAP
  - Airport Multimodal Access Plan
  - SANDAG

- RTP
  - Regional Transportation Plan
  - 2011 Update
Project Overview

3-Phase Work Plan

Phase I
Data Gathering and Model Development
Spring - Winter 2009

Phase 2
Evaluation of Concepts and Strategies
Spring - Summer 2010

Phase 3
Regional Aviation Strategic Plan
Fall 2010 - Early 2011

Stakeholder and public outreach
Task-specific documentation and deliverables
RASP Study Area

12 Public Use Airports Located in a Densely Populated and Developed Region

Notes: Tijuana Int. Airport not located in San Diego County. Military facilities are excluded from the RASP.
Complicated Factors Constrain Implementation of Alternatives

Forces Requiring Preparation of the RASP

- Aviation Activity Growth
- SDIA Capacity Limitations
- Need to Sustain Economic Growth

Factors Working Against Regional Airport System Solutions

- Regulatory Factors
  - No single controlling entity to implement solutions
  - No regulatory mechanisms to relocate activity segments

- Political Factors
  - NIMBY
  - Pre-conceived notions regarding effectiveness (or lack) of solutions
  - Consensus among stakeholders is difficult

- Technical Factors
  - Lack of appropriate existing facilities
  - Regional demand characteristics
  - Benefit-cost considerations of major capital improvements

RASP Alternative Scenarios
Review of Previous Findings
Baseline Scenario

The “Do–Nothing” Scenario Against Which Other Scenarios Will Be Evaluated

A. Airfield facility constraints “cap” activity at SDIA at around 28M annual passengers (14M enplanements)

B. Airfield capacity constraint results in higher fares and lower levels of service

C. Accommodation of some San Diego demand at LA region airports

D. Accommodation of some regional demand at Tijuana International Airport; assumption that GAP (the airport operator) will increase airport capacity

E. Increased commercial service at McClellan-Palomar
Project Enplaned Passengers in the Region are Projected to Increase 50% Between 2009 and 2030

Historical and Projected Passenger Enplanements
Southern and Baja California Airports

Notes:
- Passenger enplanements based on forecast demographic data from International Monetary Fund (IMF), LA Economic Development Corporation (LAEDC), and SANDAG Model calibrated to actual enplanements from 2006 to 2009; projections may be different from actual.
- Results generally correspond to FAA TAF data for 2025.
- SAN Compound Annual Growth Rate (CAGR) = 4.7% in the “recovery”; 2.5% for the forecast period.
Demand Model Indicates Capacity Constraint at SDIA Begins in Early 2020s

Historical and Projected Passenger Enplanements
San Diego International Airport

SDIA Capacity

Sources: RASP Forecasts and Financial Forecast Update, Landrum & Brown, Inc. December 2008 and June 2009, respectively.

Note: Model calibrated to actual enplanements from 2006 to 2009; projections may be different from actual.
Suppressed Passenger Demand – Baseline Scenario

As Capacity is Reached, the Number of Suppressed Passengers in the County Increases

Suppressed Aviation Passenger Demand
San Diego Residents and Visitors

Suppressed Demand defined as the number of passengers who would like to travel, but can not due to lack of available capacity and/or high costs.

Note: Suppressed demand presented above relative to 2006; some suppressed demand already exists.
1. Commercial Passenger Optimization
   A. Full build-out of the ITC and north side terminal at SDIA
   B. Preserve SDIA airfield capacity for commercial passenger service
   C. Enhance commercial passenger service at McClellan-Palomar Airport
   D. Introduce commercial passenger service at Brown Field

2. Enhanced Utilization of Tijuana
   A. Tijuana Rodriguez International Airport focus on commercial service
   B. Aviation passenger cross border facility (currently proposed)
   C. Cross border airport terminal

3. California High Speed Rail
   Stations at downtown LA, ONT Airport and:
   A. Station at downtown San Diego
   B. Station at SDIA

4. General Aviation Optimization
   A. Enhance McClellan-Palomar Airport for high-end / corporate general aviation
   B. Enhance Brown Field for high-end / corporate general aviation
   C. Enhance Gillespie Field for mix-use general aviation

5. Air Cargo Optimization
   A. Introduce cargo service at Brown Field
Summary of Findings – Alternative Scenario Families 1 and 4

**Scenarios 1 and 4 Have Minimal Impact on Regional Demand and Varying Costs**

- **Commercial 1A**: ITC and north side terminal at SDIA
- **Commercial 1C**: Passengers at CRQ
- **GA 4A**: CRQ high-end GA Updated
- **GA 4B**: SDM high-end GA
- **GA 4C**: SEE mixed-use
- **Commercial 1B**: SDIA passengers operations only
- **GA 4A** updated to reflect activity with no commercial service at McClellan-Palomar

### Demand accommodated over the Baseline in 2030

- **Estimated cost** ($ millions)
  - 0
  - 150
  - 300
  - 450
  - + 1B
- **Demand (million enplanements)**
  - 0
  - 0.5
  - 1
  - 1.5

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Remaining Alternative Scenario Findings

- Enhanced Utilization of Tijuana Airport
- California High Speed Rail
Current Access to Tijuana Airport / Scenario 2A

Ground Transportation is Used to Cross the Border and Access Tijuana Airport
Scenario 2B: Aviation Passenger Cross Border Facility

Tijuana Ticketed Passengers Use New Border Crossing Facility on the U.S. Side
Scenario 2C: Cross Border Airport Terminal

**U.S. Passengers Use New Cross Border Airport Terminal on the U.S. Side**
### Scenario 2A: Tijuana Airport Focus on Commercial Service

#### Details and Facility Requirements

<table>
<thead>
<tr>
<th>Scenario Description</th>
<th>Evaluation Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Improved border access and crossings (Project Smart Border 2010); does not include new border crossings</td>
<td></td>
</tr>
<tr>
<td>- Increased shuttle and bus service from LA region and San Diego</td>
<td>- Upgrade terminal and concourses – improve concessions, refurbish holdrooms, expand ticket counters, paint/carpet/lighting</td>
</tr>
<tr>
<td>- Some increases in air service to Mexican and international markets; limited increases in service to U.S. markets</td>
<td></td>
</tr>
<tr>
<td>- Key model assumptions</td>
<td>- Bus terminal at TIJ to accommodate additional U.S. shuttle bus activity</td>
</tr>
<tr>
<td>- TIJ capacity increased in Baseline Scenario from approximately 2.5M to 7M enplanements; costs assumed to be incurred by GAP and not included in the costs estimate</td>
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<tr>
<td>- Weighted average wait time for existing crossings (San Ysidro, Otay Mesa and Tecate) is approximately 45 minutes (CBP’s website); border crossing time reduced by 40% over the Baseline Scenario</td>
<td></td>
</tr>
<tr>
<td>- No change to border crossing costs</td>
<td>- Cultural factors</td>
</tr>
<tr>
<td></td>
<td>- Travel time from downtown San Diego</td>
</tr>
<tr>
<td></td>
<td>- Cooperation with Grupo Aeroportuario del Pacifico</td>
</tr>
</tbody>
</table>

Cost estimate: $30M  
Implementation timeline: 2010  
Source: San Diego Regional Chamber of Commerce website
Scenario 2A – Effect on Tijuana Airport

Border Improvements Are Projected to Result in More Passengers Using Tijuana Airport

Note: The capacity of TIJ is assumed to increase as part of the Baseline Scenario from approximately 2.5M annual enplanements to approximately 7M annual enplanements. The costs to increase capacity are assumed will be incurred by GAP, and are not included in the RASP costs estimates.

Historical and Projected Enplaned Passengers
Tijuana International Airport

Passenger enplanements (millions)


TIJ Capacity*
Scenario 2A – Effect on SDIA

Increased Usage of Tijuana Marginally Alleviates Mid-term Capacity Constraint at SDIA

**Historical and Projected Enplaned Passengers**
San Diego International Airport

- **SDIA Capacity**

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</tr>
</thead>
<tbody>
<tr>
<td>Passengers (millions)</td>
<td>9</td>
<td>15</td>
<td>12</td>
<td>3</td>
<td>18</td>
<td>15</td>
<td>12</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td>18</td>
<td>15</td>
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<td>3</td>
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<td>6</td>
<td>3</td>
<td>18</td>
<td>15</td>
<td>12</td>
<td>9</td>
</tr>
</tbody>
</table>

*Decrease in SDIA enplanements a result of region-wide competitive changes in airfare and service. Model output includes passengers choosing other regional airports in addition to Tijuana due to competitive changes.*
Scenario 2A – Effect on Suppressed Demand

Increased Usage of Tijuana Alleviates Suppressed Demand by Approximately 2 Years

Suppressed Aviation Passenger Demand
San Diego County Residents and Visitors

- Black line: RASP Baseline
- Green line: Scenario 2A
### Scenario 2B: Aviation Passenger Cross Border Facility

#### Details and Facility Requirements

- Cross-border facility offering U.S. passengers exclusive and convenient access to Tijuana Airport; similar to a new pedestrian port of entry
- Facility includes vehicle parking; customs/border control; and landside “connection” or bridge to Tijuana Airport
- Exclusive use for ticketed passengers traveling in or out of Tijuana Airport; ticketing, security screening and baggage handling on Mexican side in the existing terminal
- Key model assumptions
  - Necessary roadway improvements to Highway 905 and Otay Mesa Rd. to maintain roadway level of service assumed in the Baseline Scenario
  - Assumes application of a user fee to access the facility

#### Evaluation Factors

<table>
<thead>
<tr>
<th>Facility requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIJ Terminal and Concourses</td>
</tr>
<tr>
<td>- Improve concessions, refurbish holdrooms, expand ticket counters</td>
</tr>
<tr>
<td>Cross Border Facility</td>
</tr>
<tr>
<td>- 50,000 SF facility w/ bridge to TIJ</td>
</tr>
<tr>
<td>- Multimodal curbfront</td>
</tr>
<tr>
<td>- Automobile parking</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost and implementation timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost estimate $165M</td>
</tr>
<tr>
<td>Implementation timeline 2012</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Cultural factors</td>
</tr>
<tr>
<td>- Travel time from downtown San Diego and northern San Diego County</td>
</tr>
<tr>
<td>- Cooperation with Grupo Aeroportuario del Pacifico (GAP) is imperative</td>
</tr>
</tbody>
</table>
Scenario 2B – Effect on Domestic Airport Choice

Airport Choice for **Domestic Trips by San Diego Residents and Visitors in 2030**

**Baseline Scenario**

- SDIA: 97%
- McClellan-Palomar: 3%
- 5 LA Airports: 0%
- Tijuana Rodriguez: 0%

**Scenario 2B**

- SDIA: 99%
- McClellan-Palomar: 1%
- 5 LA Airports: 0%
- Tijuana Rodriguez: 0%

The Cross Border Facility **does not** materially affect passenger choice of airport for domestic travel
Scenario 2B – Effect on International Airport Choice

Airport Choice for International Trips by San Diego Residents and Visitors in 2030

Baseline Scenario

<table>
<thead>
<tr>
<th>Airport</th>
<th>Baseline</th>
<th>Scenario 2B</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDIA</td>
<td>53%</td>
<td>47%</td>
</tr>
<tr>
<td>McClellan-Palomar</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>5 LA Airports</td>
<td>41%</td>
<td>38%</td>
</tr>
<tr>
<td>Tijuana Rodriguez</td>
<td>2%</td>
<td>11%</td>
</tr>
</tbody>
</table>

The Cross Border Facility does affect passenger choice of airport for international travel. Use of Tijuana Airport increases from 2% to 11% of San Diego County residents and visitors.
Scenario 2B – Attractiveness to Potential Passengers

**Cross Border Facility Attracts More Passengers From the LA Region than San Diego County**

**Enplaned San Diego County Residents and Visitors Using Tijuana International Airport**

**Enplaned LA Basin Residents and Visitors Using Tijuana International Airport**

- **RASP Baseline**
- **Scenario 2B**
Scenario 2B – Effect on Tijuana Airport

Improved Accessibility Attracts Approx. 30% Additional Passengers to that Airport

Historical and Projected Enplaned Passengers
Tijuana International Airport

Note: The capacity of TIJ is assumed to increase as part of the Baseline Scenario from approximately 2.5M annual enplanements to approximately 7M annual enplanements. The costs to increase capacity are assumed will be incurred by GAP, and are not included in the RASP costs estimates.
Scenario 2B – Effect on SDIA

But Only Marginally Alleviates Mid-term Capacity Constraint at SDIA

Historical and Projected Enplaned Passengers
San Diego International Airport

Passenger enplanements (millions)

- Decrease in SDIA enplanements as a result of region-wide competitive changes in airfare and service. Model output includes passengers choosing other regional airport's in addition to Tijuana due to competitive changes.
Scenario 2B – Effect on Suppressed Demand

Cross Border Facility Alleviates Suppressed Demand by Approximately 2 Years

Suppressed Aviation Passenger Demand
San Diego County Residents and Visitors

- **RASP Baseline**
- **Scenario 2B**

- Suppressed enplanements (millions)
- Years: 2006 to 2030
### Scenario Description

- New passenger terminal linked to Tijuana Airport constructed on the U.S. side of the border to facilitate processing of U.S. passengers utilizing Tijuana Airport
- All flights to the U.S. considered “international” even if passengers are checked-in on the U.S. side
- Includes parking and redundant Mexican/U.S. passenger processing facilities (ticketing, security screening, baggage handling, and customs border control, etc.)
- U.S. airport level of service standards
- Key model assumptions
  - Application of a user fee
  - TIJ airport capacity increased from 7M to 10M enplanements

<table>
<thead>
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<td>TIJ Terminal and Concourses</td>
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<td></td>
<td>• Automobile parking</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost and implementation timeline</th>
<th>Cost estimate: $235M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation timeline: 2020</td>
<td>Source: Jacobs Consultancy team based on average terminal expansion unit costs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Political and regulatory factors</td>
</tr>
<tr>
<td>• Travel time from downtown San Diego and northern San Diego County</td>
</tr>
<tr>
<td>• Cooperation with Grupo Aeroportuario del Pacífico (GAP) and between U.S. and Mexican governments imperative</td>
</tr>
</tbody>
</table>
### Scenario 2C – Effect on Tijuana Airport

**Cross Border Terminal Attracts Same Number of Passengers as the Cross Border Facility**

#### Historical and Projected Enplaned Passengers

<table>
<thead>
<tr>
<th>Year</th>
<th>Enplaned Passengers (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>2</td>
</tr>
<tr>
<td>2009</td>
<td>3</td>
</tr>
<tr>
<td>2010</td>
<td>4</td>
</tr>
<tr>
<td>2011</td>
<td>5</td>
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<tr>
<td>2012</td>
<td>6</td>
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<td>2013</td>
<td>7</td>
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<tr>
<td>2014</td>
<td>8</td>
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<tr>
<td>2015</td>
<td>9</td>
</tr>
<tr>
<td>2016</td>
<td>10</td>
</tr>
<tr>
<td>2017</td>
<td>11</td>
</tr>
<tr>
<td>2018</td>
<td>12</td>
</tr>
</tbody>
</table>

**Note:** The capacity of TIJ is assumed to increase to 10M annual enplanements as a result of the additional terminal facilities (Scenario 2C only). Scenario 2B shown for comparison purposes only and modeled assuming the capacity of TIJ is 7M annual enplanements.
Scenario 2C – Effect on SDIA

**Increased Usage of Tijuana Marginally Alleviates Capacity Constraint at SDIA**

**Historical and Projected Enplaned Passengers**
San Diego International Airport

- **SDIA Capacity**

- **Passenger enplanements (millions)**

- **2008**
- **2009**
- **2010**
- **2011**
- **2012**
- **2013**
- **2014**
- **2015**
- **2016**
- **2017**
- **2018**
- **2019**
- **2020**
- **2021**
- **2022**
- **2023**
- **2024**
- **2025**
- **2026**
- **2027**
- **2028**
- **2029**
- **2030**

- **RASP Baseline**
- **Scenario 2C**
Scenario 2C – Effect on Suppressed Demand

Cross Border Terminal Alleviates Suppressed Demand by Approximately 2 Years

Suppressed Aviation Passenger Demand
San Diego County Residents and Visitors

- RASP Baseline
- Scenario 2C

![Graph showing Suppressed enplanements (millions) from 2006 to 2030]
Summary of Findings

Evaluation Matrix Compares Relative Costs and Benefits (Based on Model Findings)

- **Estimated cost ($ millions)**
  - Commercial Passenger Optimization
  - General Aviation Optimization
  - Enhanced Utilization of Tijuana

- **Demand accommodated over the Baseline in 2030**
  - (million enplanements)

- **Tijuana 2A**
  - Enhance Border Crossing

- **Tijuana 2B**
  - Cross Border Facility

- **Tijuana 2C**
  - Cross Border Terminal

- **Commercial 1A**
  - ITC and north side terminal at SDIA

- **Commercial 1B**
  - SDIA passengers operations only

- **Commercial 1C**
  - Passengers at CRQ

- **GA 4A**
  - CRQ high-end GA

- **GA 4B**
  - SDM high-end GA

- **GA 4C**
  - SEE mixed-use
HSR Stations Included in the Model

- **San Diego County (All Proposed Stations)**
  - Major Station: Downtown or SDIA
  - Minor Stations:
    - University City
    - Escondido
- **LA region (Major Stations Only)**
  - LA Union Station
  - Ontario Airport (ONT)
- **Operational assumptions**
  - Express/Semi-Express – stops at major stations only
  - Local/Regional – stops at all stations

HSR can be used (1) as a replacement for intra-California air travel; or (2) to access a California Airport
Potential Use of HSR as an Alternate to Air Travel (Intra-California Travel Only)

High Speed Rail Defined

To Northern California

Proposed High Speed Rail

Sacramento
San Francisco
Ontario Airport
Los Angeles
San Diego

San Diego Station

1. [Diagram of trip from San Francisco to San Diego]
2. [Diagram of trip from Los Angeles to San Diego]
3. [Diagram of trip from Sacramento to San Diego]

Interactive Map...
Mixed-Mode Defined

Use of HSR for Airport Access
## Mode Comparison

### Different Time and Cost Assumptions for Various Mode Choices

<table>
<thead>
<tr>
<th>Mode</th>
<th>Total Time</th>
<th>Total Cost</th>
</tr>
</thead>
</table>
| Air Only Trip (Baseline) | Time to get to airport + Air boarding time (75 min) + Flight time       | Cost of driving to airport + Flight ticket cost  
model-driven              |
|                       |                                                                            |                                                                            |
| HSR Only Trip         | Time to get to HSR station + HSR boarding time (15 min) + HSR travel time | Cost of driving to HSR station + HSR ticket cost           |
|                       |                                                                            |                                                                            |
| Mixed Mode Trip       | Time to get to HSR station + HSR boarding time (15 min) + HSR travel time  + Connection time (if any) + Air boarding time (75 min) + Flight time | Cost of driving to HSR station + HSR ticket cost + Connection cost (if any) + Flight ticket cost  
model-driven           |

Red text source = SANDAG/SCAG
Green text source = California High Speed Rail Authority
Blue text = Official Airline Guide
Black text = RASP Model
### Scenario Description

- Downtown HSR station connected to SDIA via trolley or bus
- SDIA trolley/bus station adjacent to/integrated with ITC
- Options for connectivity between downtown and SDIA include trolley service (existing trolley lines with new/additional trolleys during peak) and new bus route (with new/additional busses)
- Matched California HSR Authority’s estimates and assumptions for “83% Scenario”

### Evaluation Factors

#### Facility requirements

- **Bus Option:**
  - 5 additional busses
  - Curbside pick-up and drop-off can be accommodated at the ITC
- **Trolley Option:**
  - 2 trolleys for dedicated service
  - New trolley station with pedestrian bridge adjacent to/integrated with ITC (use existing trolley alignment between downtown and SDIA)

#### Cost and implementation timeline

- Cost estimate and allocation of costs among funding sources unknown
- Implementation timeline: 2025 to 2030 to coincide with California HSR implementation

#### Other considerations

- Interface with other transit modes
- Parking availability is constrained
Scenario 3B: HSR Station at SDIA

Details and Facility Requirements

Scenario Description

- HSR alignment/station would be developed on the north side of SDIA, adjacent/connected to the ITC (Baseline project)
- HSR station would offer direct pedestrian access to the ITC, including auto parking, CONRAC, and passenger processing (Scenario 1A)
- Key modeling assumptions regarding connection times
  - SDIA HSR station to SDIA 10 min / $0
  - ONT HSR Station to ONT 10 min / $0

Evaluation Factors

- Facility requirements
  - HSR alignment and station at SDIA
  - Expand (Baseline ITC) auto parking facilities for non-aviation use

- Cost and implementation timeline
  - Cost estimate and allocation of costs among funding sources unknown
  - Implementation timeline: 2025 to 2030 to coincide with California HSR implementation

- Other considerations
  - Air - rail Interface enhanced
  - Regional benefits offered by a comprehensive intermodal transit center
Regional Demand / Capacity Findings

More LA Region Passengers on HSR May Allow for Enhanced Air Service

Note: Results shown for Scenario 3A; differences between scenarios are immaterial.
Scenarios 3A and 3B: California HSR

Less Air Passengers to N. California From SDIA May Allow for Enhanced / Long-Haul Air Service

Historical and Projected Enplaned Passengers
San Diego International Airport

Capacity provided by passenger shift to HSR induces air service changes. Intra-California flights assumed to be replaced by new domestic (long-haul) flights.
### Impact of HSR Connection at Ontario Airport

**HSR Connection to ONT is Not an Attractive Option for San Diego County Residents**

Average time and cost from North/South in San Diego County to ...  

<table>
<thead>
<tr>
<th></th>
<th>SDIA</th>
<th>ONT</th>
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<tbody>
<tr>
<td></td>
<td>North County</td>
<td>South County</td>
</tr>
<tr>
<td></td>
<td>North County</td>
<td>South County</td>
</tr>
<tr>
<td>Via High Speed Rail</td>
<td>$28</td>
<td>$17</td>
</tr>
<tr>
<td>Access Time</td>
<td>155 min</td>
<td>123 min</td>
</tr>
<tr>
<td>Via Other GT Modes</td>
<td>$15</td>
<td>$73</td>
</tr>
<tr>
<td>(e.g. car, trolley)</td>
<td>123 min</td>
<td>178 min</td>
</tr>
<tr>
<td>Access Cost</td>
<td>$17</td>
<td>$77</td>
</tr>
<tr>
<td></td>
<td>99 min</td>
<td>189 min</td>
</tr>
</tbody>
</table>

Note: Access time and cost estimates include all steps of a travel, discussed on slide 35, excluding air fare and flight time. (i.e. SDIA access time via other GT modes includes, 1)ground access to the airport and 2) 75 minute boarding time.)

HSR connection to Ontario Airport is not an attractive alternate for San Diego County residents and visitors because both access costs and time are substantially higher compared to direct access to SDIA. Moreover, Ontario Airport would not provide alternate capacity for San Diego because the airport is projected to be as congested as SDIA when mixed-mode via HSR is introduced in 2027.
Scenario 3A: California HSR – Station Downtown San Diego

Airport Choice for Northern California Trips by San Diego Residents and Visitors in 2030

Baseline Scenario

- SDIA: 94%
- McClellan-Palomar: 6%

Scenario 3A

- SDIA: 74%
- McClellan-Palomar: 25%
- 5 LA Airports: 1%
- HSR Only: 0%
- Mixed Mode: 0%

Approximately, 25% of San Diego County residents and visitors are projected to use HSR for trips to Northern California versus existing airport choices – SDIA and McClellan Palomar.
Comparison of HSR Station Locations (Downtown vs. SDIA)

Airport Choice for Northern California Trips by San Diego Residents and Visitors in 2030

Scenario 3A (Downtown Station)
- SDIA: 74%
- McClellan-Palomar: 0%
- 5 LA Airports: 0%
- HSR Only: 1%
- Mixed Mode: 25%

Scenario 3B (SDIA Station)
- SDIA: 90%
- McClellan-Palomar: 8%
- 5 LA Airports: 2%
- HSR Only: 0%
- Mixed Mode: 0%

Approximately 16% less San Diego County residents and visitors are projected to use HSR for trips to Northern California if the station is at SDIA.
A Station Downtown San Diego is Projected to Attract More HSR Riders

Air to Rail Diversion in 2030
San Diego County Residents and Visitors

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Divert to HSR</th>
<th>Continue to use SDIA and other airports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown SD (3A)</td>
<td>0.1%</td>
<td>99.9%</td>
</tr>
<tr>
<td>SDIA (3B)</td>
<td>1.1%</td>
<td>98.9%</td>
</tr>
</tbody>
</table>

Access to SDIA by Mode Choice in 2030
San Diego County Residents and Visitors

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Via HSR</th>
<th>Via Ground Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown SD (3A)</td>
<td>0.1%</td>
<td>99.9%</td>
</tr>
<tr>
<td>SDIA (3B)</td>
<td>1.1%</td>
<td>98.9%</td>
</tr>
</tbody>
</table>

Visitors to San Diego prefer a downtown HSR station location; County residents see marginal benefit. HSR station at SDIA attracts slightly more mixed-mode travelers.
Scenarios 3A and 3B – Effect on Suppressed Demand

Both HSR Scenarios Have Similar Effects on the Region’s Suppressed Demand

Suppressed Aviation Passenger Demand
San Diego County Residents and Visitors

Downtown station initially attracts more passengers to HSR. But ultimately, both scenarios have similar effects on the region’s suppressed demand.
Summary of Findings

**Evaluation Matrix Compares Relative Costs and Benefits**

### Estimated cost ($ millions)

- **Commercial 1A**: ITC and north side terminal at SDIA
- **Commercial 1B**: SDIA passengers operations only
- **Commercial 1C**: Passengers at CRQ
- **Tijuana 2A**: Enhance Border Crossing
- **Tijuana 2B**: Cross Border Facility
- **Tijuana 2C**: Cross Border Terminal
- **GA 4A**: CRQ high-end GA
- **GA 4B**: SDM high-end GA
- **GA 4C**: SEE mixed-use
- **HSR 3A & 3B**: HSR stations at SDIA or downtown San Diego

### Demand accommodated over the Baseline in 2030 (million enplanements)

- **Demand accommodated over the Baseline in 2030 (million enplanements)**
- **Demand accommodated over the Baseline in 2030 (million enplanements)**
Summary of Key High Speed Rail Findings

- Approximately, 25% of San Diego County residents and visitors are projected to switch to HSR for trips to northern California versus existing airport choices – SDIA and McClellan Palomar

- Mixed mode (utilizing HSR to access an airport) does not attract significant passengers:
  - It is quicker and more cost effective to drive directly to the closest airport (SDIA)
  - At the end of the planning period, both Ontario and SDIA are projected to be near their capacities, and therefore, neither becomes an alternate to the other

- Given the proximity to the city center, a downtown HSR station attracts more passengers from air travel modes to HSR

- Two travel modes (air and rail) compete if the HSR station is located at SDIA versus downtown

- Approximately 16% of San Diego County residents and visitors switch to HSR for trips to northern California if the station is at SDIA because 83% of air fare is not enough difference to make up for the almost 2.5 hours time difference

- A HSR station at SDIA attracts slightly more mixed-mode travelers because the time to connect between modes (rail to air) is reduced
### Scenarios 1E / F: Up-gauge SDIA Aircraft Fleet Mix

**Hypothetical Scenarios Assuming all Narrow-body or Increased Wide-body Fleet Mix**

<table>
<thead>
<tr>
<th>Scenario Description</th>
<th>Evaluation Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Authority policy:</strong></td>
<td>Facility requirements</td>
</tr>
<tr>
<td>– Encourage air carriers to use larger capacity aircraft at SDIA</td>
<td>Commercial Service – None</td>
</tr>
<tr>
<td>– GA and air cargo encouraged via price controls to use alternative airports</td>
<td>GA/Cargo – SDIA-similar and/or higher level of service facilities at surrounding airports</td>
</tr>
<tr>
<td><strong>Key model assumptions</strong></td>
<td>Cost estimate: $188M (same as Scenario 1B)</td>
</tr>
<tr>
<td>(Operations x Average Seat x Load Factor)/2 = (285,900 x 140.2 x 80.1%) / 2 = 16 million annual enplanements</td>
<td>Implementation timeline: unknown</td>
</tr>
<tr>
<td></td>
<td>Other considerations</td>
</tr>
<tr>
<td><strong>Implementation Constraints</strong></td>
<td>• Likely legal concerns based on access restrictions</td>
</tr>
<tr>
<td>1. Access restrictions for a federally funded transportation facility are highly limited</td>
<td>• No legal mechanism to require GA or cargo users to vacate SDIA</td>
</tr>
<tr>
<td>2. SDIA’s fleet mix is already favorable (nearly optimized) as the Airport has a relatively low proportion of regional jets and turboprops</td>
<td></td>
</tr>
<tr>
<td>3. Market forces normally prevail; air carriers “right size” seat capacity based on destination, service, and demand</td>
<td></td>
</tr>
</tbody>
</table>
Scenarios 1E / F: Up-gauge SDIA Aircraft Fleet Mix

The Capacity of SDIA Is Projected to Increase if the Fleet Mix Were “Artificially” Up-gauged

Narrow Body – B737 (Typical Southwest Fleet)

- 140.2 Seats/Aircraft
- 285,000 Aircraft Ops/Year
- 80.1% Load Factor


Note: Baseline capacity assumes 139.5 seats/aircraft with 80.1% Load Factor
Scenarios 1E / F: Up-gauge SDIA Aircraft Fleet Mix

**Historical and Projected Enplaned Passengers**
San Diego International Airport

- **SDIA Capacity – Scenario 1F**
  - Scenario 1F increases SDIA’s capacity beyond long-term forecast demand

- **SDIA Capacity – Scenario 1B & 1E**

- **SDIA Capacity - Baseline**

Scenarios 1E is equivalent to Scenario 1B – Reserving SDIA’s Airfield Capacity for Commercial Operations
Summary of Findings (Updated)

Evaluation Matrix Compares Relative Costs and Benefits

- **Estimated cost (\$ millions)**
  - **Commercial 1A**: ITC and north side terminal at SDIA
  - **Commercial 1B & 1E**: SDIA passengers operations only & Narrow-body fleet
  - **Commercial 1C**: Passengers at CRQ
  - **Tijuana 2B**: Cross Border Facility
  - **Tijuana 2C**: Cross Border Terminal
  - **Tijuana 2A**: Enhance Border Crossing
  - **GA 4A**: CRQ high-end GA
  - **GA 4B**: SDM high-end GA
  - **GA 4C**: SEE mixed-use

- **Demand accommodated over the Baseline in 2030 (million enplanements)**
  - **HSR 3A & 3B**: HSR Stations at SDIA & downtown San Diego
  - **Tijuana 2A**: Enhance Border Crossing
  - **Commercial 1A & 1B**: ITC and north side terminal at SDIA

- **Evaluation Matrix**
  - Commercial Passenger Optimization
  - General Aviation Optimization
  - High Speed Rail
  - Enhanced Utilization of Tijuana

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**Estimated cost**

- More than 1B
- 1.5 billion
- 1.0 billion
- 0.5 billion

**Demand accommodated**

- 1.5 billion
- 1.0 billion
- 0.5 billion
- 0
Summary of Current Model Findings

**There is No ONE “Silver Bullet”**

**Enhanced Tijuana**

- Tijuana scenarios have a less than expected effect on suppressed demand relative to the Baseline:
  - Significant portions of demand accommodated at Tijuana Airport prior to 2030 generated in LA Region
  - By 2030, many San Diego residents are projected to use Tijuana Airport for Mexico trips with or without the Cross Border Facility/Terminal

- Access to Tijuana Airport via the proposed CB Facility offers an additional international gateway for San Diego residents and visitors; use of the airport for international travel increases from 2% to 11%

- Improved accessibility to Tijuana Airport attracts approximately 30% additional passengers to that airport, but this only marginally alleviates the mid-term capacity constraint at SDIA

- There does not appear to be any benefit to expanding a Tijuana Cross Border Facility into a Cross Border Terminal

**California High Speed Rail**

- California HSR could play a role to alleviate the region’s aviation capacity problems by accommodating suppressed demand relative to the Baseline; these benefits may increase beyond 2030

- While downtown San Diego HSR station shows higher air-rail diversion than a station at SDIA, their overall benefits to the region are similar

**Larger Aircraft Policy**

- A narrow-body fleet mix at SDIA provides the same relative benefits to the region as Commercial Scenario 1B: Reserving SDIA Capacity for Commercial Operations; SDIA’s fleet mix is already favorable (nearly optimized) as the Airport is projected to have a relatively low proportion of regional jets and turboprops
Next Steps / Outreach
### Detailed Schedule and Work Plan – Project is On Schedule

#### 2010

- **July**
  - Identify scenario details
  - Evaluate and model the baseline scenario
- **August**
  - Preliminary modeling of scenarios
- **September**
  - Evaluation and final modeling of all scenarios
- **October**
  - Identify financial considerations and other implementation factors
- **November**
  - Progress briefing with Senator Kehoe
  - Distribute invitations & media advisory
- **December**
  - Final briefing with Senator Kehoe
  - Draft / Final Report

#### 2011

- **January**
  - Draft and distribute news release and Annual Update
- **February**
  - Update presentation and website
- **March**
  - Final report

**Plan Open Houses**
- Secure locations
- Draft elected officials invitations
- Draft e-mail invitation for EDCs
- Draft media advisory

**RASP Subcommittee Meeting**
- RASP Board Committee Meeting
- RASP Subcommittee Meeting
- Public Open House
- Airport Advisory Group briefings
- Presentation to SDCRAA Board
- Presentation to SANDAG Board
- Draft / Final Report

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**Important Dates**

- **December 9, 2010**: RASP Subcommittee Meeting

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**Technical Work Task**
- Plan Open Houses
- Identify scenario details
- Evaluate and model the baseline scenario
- Preliminary modeling of scenarios
- Evaluation and final modeling of all scenarios
- Identify financial considerations and other implementation factors
- Progress briefing with Senator Kehoe
- Distribute invitations & media advisory
- Final briefing with Senator Kehoe
- Draft / Final Report

**Other Events**
- Final report
- Update presentation and website
- Final briefing with Senator Kehoe
- Draft and distribute news release and Annual Update
Next Steps

- **Technical work efforts**
  - Complete technical analysis of scenarios
  - Prepare Draft Report

- **Documentation**
  - Coordinate Draft Report with RASP Subcommittee and Study Area airport sponsors
  - Address input and prepare final report

- **Airport Authority Board considers final RASP report in early 2011**

- **Report and findings provided to SANDAG for inclusion in AMAP / 2011 RTP update**
RASP Public Outreach

Completed and Pending Outreach Summarized Below

Completed

- **Speakers bureau (x20 presentations)**
  - Chambers of Commerce
  - Economic Development Corporations
  - Community organizations
  - Airport advisory groups
- **2009 Annual Update newsletter**
  - Distributed at all RASP presentations
  - E-mailed to list of more than 400 stakeholders and keep-informed contacts
- **Open houses (September 2010)**
  - 4 regional open houses held September 2010
- **Media relations**
  - 1 media briefing
  - 10 media placements

Planned

- **Open house (January/Tentative)**
  - Present complete draft findings
- **2010 Annual Update (January)**
  - E-mail to list of more than 500 elected officials, stakeholders and keep-informed list
- **Presentations (December-February)**
  - SANDAG
  - County Board of Supervisors
  - Airport Advisory groups
  - San Diego City Council Rules Committee
- **Letter to San Diego County mayors with executive summary and offer presentation on findings (March)**
- **Media relations (Ongoing)**
Supplemental Information
**Matched California HSR Authority’s Estimates and Assumptions for “83% Scenario”**

- **Calibration based on inputs from SANDAG, SCAG, and California High Speed Rail Authority**
- **HSR fare = 83% of average airfares**
- **HSR travel time between San Diego and San Francisco approximately 4 hours**
- **Culminating station in San Diego is downtown Santa Fe Station**
- **Passengers arrive at the HSR station 15 minutes prior to departure; compared to 75 minutes for air**
- **Phase 1 HSR (San Francisco to LA) assumed to be open 2019; Phase 2 (LA to San Diego) assumed open in 2027**
- **For trips to northern California, passengers would travel only on express and semi-express trains; and board at the closest major HSR station [RASP assumption]**