2016-2040 RTP/SCS
Aviation Demand Forecast,
Airport Ground Access Analysis,
and Aviation Economic Impact Analysis

Presentation to ATAC
The Team

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Aviation Forecasts
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Airport Capacity Constraints
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Ground Access Analysis
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Model Trip Tables
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Economic Impact Analysis
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Work Flow
Schedule

- Methodologies & Procedures: Summer '14
- Data Collection: Fall '14
- Ground Access Inventory: Winter '15
- Analysis of Airport Capacity Constraints: Spring '15
- Regional Aviation Demand Forecasts: Summer '15
- Ground Access Analysis: TODAY
- Regional Airport Economic Impact Analysis: TODAY
- Model Trip Tables: TODAY
- Aviation Element: TODAY
Aviation Forecasts

Top-Down

• Using regional economic and demographic trends to forecast overall regional demand
  o Population
  o Economic Growth

• Macro-economic techniques to understand demand in the region
  o **Overall regional** economic and demographic trends
  o **Specific sub-regional** economic and demographic activity
    – Income
    – Wealth
    – Economic output
Aviation Forecasts

Bottom-Up

• Micro-economic techniques to allocate demand within the region
  o Using historical activity and airport-specific factors to build up overall demand
  o Airline, airport, and other transportation services
  o Ground access and convenience

• Look at trends and activity in individual markets
  o California
  o Western Continental US (Short- & Medium-haul)
  o Domestic Long-haul (including Alaska, Hawaii, and U.S. Territories)
  o International (Canada, Caribbean & Latin America, Trans-Atlantic, and Trans-Pacific)
After top-down and bottom-up forecasts are complete, we compare and reconcile the two.

Currently, we’re just beginning the top-down regional analysis, while gathering data from you for the subsequent analyses.
Airport Capacity Constraints

Airfield constraints

- Based on the future airfield layout (2040) provided by the airports
- Estimate the annual service volume (ASV) according to the FAA Advisory Circular 150/5060-5 *Airport Capacity and Delay*
- Airfield capacity is estimated based on ASV and the pattern of each airport
Airport Capacity Constraints

Terminal constraints (# of gates)

- Based on the future terminal gate layout (2040) provided by the airports
- Estimate the maximum gate capacity by maximizing the usage of each gate (e.g., # of turns, seating capacity, and load factors)
Ground Access Analysis

Review 2012 RTP/SCS Project List
- Identify status of projects on list
- Review planned improvements with airports and other agencies (e.g., Metro, Caltrans)
- Coordinate with SCAG re 2016 RTP/SCS Project List

Identify deficiencies
- With input of airports
- Consider high-level solutions
Model Trip Tables

After overall demand has been allocated to airports, by subregion, use demographic data to allocate to TAZ level

• Deliver in two formats
  o Excel file
  o GISDK script/TransCAD trip tables

• Integration into RTP/SCS model
  o Possibly after mode choice to highway and transit assignment
  o Diurnal (time of day) factors from existing air passenger/TSA data

Bob Hope Airport Trip Distribution
Economic Impact Analysis

Demonstrate the impact of airports on economic activity in the region

- Review studies that have been done of individual airports and regionally
- Consolidate and demonstrate overall economic impact to region
Data Request

**Aviation Data Needs Request for the 2016-2040 RTP/SCS**

Please submit all documents to Mr. Ryan N. Hall, SCAG Aviation Specialist, by **September 30, 2014** in electronic format. Contact hall@scag.ca.gov or 213-236-1935 if you have any questions.

**Capacity Analysis and Demand Forecasting Data Needs**

- Existing airport layout plan, terminal layout plan, apron/gate layout showing the allocation of gates
- Busy day flight schedule (preferably 2012)
- Latest Airport Master Plan reports or similar technical study on capacity analysis
- Ultimate airport layout plan showing the runway configurations
- Ultimate aircraft parking plan with the terminal layout (showing the gate allocations for different airplane design group)
- Number of based aircraft
- Percentage of time in VFR, IFR and in different runway operation modes
- Traffic enplane/deplane statistics
  - Annually, for 2012 and previous years as available to 1990
- Aircraft operations
  - Annually, for 2012 and previous years as available to 1990
  - Broken down by passenger, cargo, and general aviation operations
- Cargo volume
  - Annually, for 2012 and previous years as available to 1990
- Any air passenger surveys that have been conducted for the airport
- Any aviation demand forecasts that your airport has prepared that you are able to share

**Ground Access Data Needs**

- Review and update of attached project list
- Any ground access studies or traffic impact assessments for the airport overall or planned projects

**Economic Impact Analysis Data Needs**

- Any economic impact analysis that have been conducted for the airport
Discussion
Key Tasks—Aviation Forecasts

- Airbus, Boeing and FAA Forecasts
- Historical Air Traffic Data
- Historical Socioeconomic and Demographic Data
- Forecasts of Socioeconomic and Demographic Trends
- Trend Forecasts
- Demand Allocation
- Econometric Models
- Airline Strategy and Development
- Baseline Projection
- Quantitative Risk Analysis
- Risk Factors
- Final Passenger and Cargo Forecasts
- Aircraft Movement Data
- Aircraft Movement Forecasts
- Airline Fleet Plans and Technology Trends
### Forecast Probability Range

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Passengers (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 0</td>
<td>10</td>
</tr>
<tr>
<td>Year 5</td>
<td>15</td>
</tr>
<tr>
<td>Year 10</td>
<td>20</td>
</tr>
<tr>
<td>Year 15</td>
<td>25</td>
</tr>
<tr>
<td>Year 20</td>
<td>30</td>
</tr>
</tbody>
</table>

- **Average**
- 25th / 75th Percentile Range
- 10th / 90th Percentile Range
- 5th / 95th Percentile Range
Year 10 Probability Distribution

Mean Value: 22.3 million passengers

Probability

Passenger Traffic (Millions)
Mode of Arrival—Survey vs Model

![Graph showing daily trips by district and mode for survey and APM data.]

The graph compares the mode of arrival for daily trips by district and mode for survey and APM data. The x-axis represents different districts, and the y-axis shows the number of daily trips. The graph includes a legend indicating the different modes of arrival such as dropoff, drive, rental, limo, taxi, on-call, and transit.