



Main Office

818 West Seventh Street
12th Floor
Los Angeles, California
90017-3435
t (213) 236-1800
f (213) 236-1825
www.scag.ca.gov

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CONTINUED SPECIAL MEETING OF THE

TRANSPORTATION COMMITTEE

Please Note Date and Time
Thursday, August 6, 2015
9:00 a.m. – 10:00 a.m.

SCAG Main Office
818 W. 7th Street, 12th Floor
Board Room
Los Angeles, CA 90017
(213) 236-1800

See Videoconference Locations on next page

If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Tess Rey-Chaput at (213) 236-1908 or via email at REY@scag.ca.gov. Agendas & Minutes for the Transportation Committee are also available at: <http://www.scag.ca.gov/committees/Pages/default.aspx>

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Palm Desert, CA 92260

South Bay Cities Council of Governments (SBCCOG)

South Bay Environmental Services Center
20285 S. Western Avenue, Suite 100
Torrance, CA 90501



Transportation Committee

Members – August 2015

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* 4. Hon. Sean Ashton	<i>Downey</i> District 25
* 5. Hon. Rusty Bailey	<i>Riverside</i> District 68
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* 10. Hon. Joe Buscaino	<i>Los Angeles</i> District 62
11. Hon. Don Campbell	<i>Brawley</i> ICTC
12. Hon. Diana Lee Carey	<i>Westminster</i> OCCOG
* 13. Hon. Jonathan Curtis	<i>La Canada Flintridge</i> District 36
* 14. Hon. Gene Daniels	<i>Paramount</i> District 24
* 15. Hon. Paul Eaton	<i>Montclair</i> District 9
* 16. Hon. Felipe Fuentes	<i>Los Angeles</i> District 54
* 17. Hon. Jeffrey Giba	<i>Moreno Valley</i> District 69
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* 20. Hon. Jan Harnik	<i>Palm Desert</i> RCTC
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22. Hon. Carol Herrera	<i>Diamond Bar</i> SGVCOG
* 23. Hon. Steve Hofbauer	<i>Palmdale</i> District 43
* 24. Hon. Jose Huizar	<i>Los Angeles</i> District 61
* 25. Hon. Jim Hyatt	<i>Calimesa</i> District 3
* 26. Hon. Jim Katapodis	<i>Huntington Beach</i> OCTA
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30. Hon. James C. Ledford	<i>Palmdale</i> North L. A. County
* 31. Hon. Antonio Lopez	<i>San Fernando</i> District 64
* 32. Hon. Clint Lorimore	<i>Eastvale</i> District 4
* 33. Hon. Ray Marquez	<i>Chino Hills</i> District 10



Transportation Committee

Members – August 2015

<u>Members</u>		<u>Representing</u>
* 34. Hon. Michele Martinez	<i>Santa Ana</i>	District 16
* 35. Hon. Andrew Masiel, Sr.		Pechanga Band of Luiseño Indians
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* 58. Hon. Michelle Steel		Orange County
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61. Hon. Olivia Valentine	<i>Hawthorne</i>	SBCCOG
* 62. Hon. Cheryl Viegas-Walker	<i>El Centro</i>	District 1
* 63. Hon. Chuck Washington		Riverside County
* 64. Hon. Michael Wilson	<i>Indio</i>	District 66
65. Mr. Gary T. Slater	<i>Caltrans, District 7</i>	Ex-Officio Member

* Regional Council Member

CONTINUED SPECIAL MEETING TRANSPORTATION COMMITTEE AGENDA

Adjourned from Thursday, July 23, 2015 to Thursday, August 6, 2015
9:00 AM – 10:00 AM

The Transportation Committee may consider and act upon any of the items listed on the Special Meeting Agenda regardless of whether they are listed as Information or Action Items.

CALL TO ORDER & PLEDGE OF ALLEGIANCE

(Hon. Alan Wapner, Chair)

PUBLIC COMMENT PERIOD – Members of the public desiring to speak on items on the Special Meeting Agenda, must fill out and present a speaker’s card to the Assistant prior to speaking. Comments will be limited to three (3) minutes. The Chair may limit the total time for all comments to twenty (20) minutes.

REVIEW AND PRIORITIZE AGENDA ITEMS

ACTION ITEMS

	<u>Time</u>	<u>Page No.</u>
1. <u>2016- 2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) – Regional Aviation Forecasts Update [Unfinished Business with Supplemental Report]</u> <i>(Naresh Amatya, Acting Director, Transportation Planning)</i>	Attachment 40 mins.	1
Recommended Action: Provide policy direction to staff to facilitate regional passenger demand distribution estimated at 136.2 MAP (million annual passengers) in 2040 to the regional airports.		
2. <u>2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) – Highways and Arterials Guiding Principles and Framework Update</u> <i>(Naresh Amatya, Acting Director, Transportation Planning)</i>	Attachment 15 mins.	27
Recommended Action: Recommend that the Transportation Committee approve the proposed guiding principles and framework for the development of the Highways and Arterials component of the 2016 RTP/SCS.		

CONTINUED SPECIAL MEETING TRANSPORTATION COMMITTEE AGENDA

Adjourned from Thursday, July 23, 2015 to Thursday, August 6, 2015
9:00 AM – 10:00 AM

INFORMATION ITEM

	<u>Time</u>	<u>Page No.</u>
3. <u>2016- 2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) Update – Aviation Ground Access Analysis</u>	Attachment 5 mins.	33

CHAIR'S REPORT

(Hon. Alan Wapner, Chair)

STAFF REPORT

ADJOURNMENT

DATE: August 6, 2015 (Continued from July 23, 2015)

TO: Transportation Committee (TC)

FROM: Ryan N. Hall, Regional Aviation Planning Specialist, hall@scag.ca.gov, 213-236-1935

SUBJECT: 2016 - 2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) – Regional Aviation Forecasts Update

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:

Provide policy direction to staff to facilitate regional passenger demand distribution estimated at 136.2 MAP (million annual passengers) in 2040 to the regional airports.

EXECUTIVE SUMMARY:

At the July 23, 2015 TC meeting, staff presented the overall regional aviation demand forecast of 136.2 MAP in 2040 and received positive feedback. The TC was then presented with four (4) options for distributing the passenger demand to the regional airports. Based on feedback from regional stakeholders and committee members, staff was directed to collaborate with three (3) specific airports on their forecasts: Palmdale Airport, San Bernardino International Airport and John Wayne Airport. Staff has successfully reached consensus with these airports and has prepared an Updated Aviation Demand Forecast by airport for 2040.

BACKGROUND:

At the July 23, 2015 Transportation Committee meeting staff provided an update on the regional aviation demand forecast being prepared for the 2016- 2040 RTP/SCS (see attached staff report and Power Point presentation from July 23rd meeting). During the presentation staff acknowledged the general themes of the correspondence received by the Transportation Committee Chairman, the Honorable Alan Wapner, and provided responses when appropriate.

The overall regional forecast methodology was discussed in detail and staff received positive feedback from both the airport sponsors in the room (and via letters submitted into the record) as well as from TC members. There was general consensus that 136.2 MAP (million annual passengers), based on an average annual growth rate of 1.65% was reasonable given the region's demographics, economy, historical trend and the U.S. GDP. By comparison, SCAG's regional population is expected to grow annually by only 0.7% during the same period.

Staff presented four possible scenario options for the distribution of demand amongst the regional airports:

Unconstrained- assumes legal and policy barriers do not exist and airlines and passengers can choose any airport.

REPORT

Policy/Physical Constraints- assumes legal and policy barriers are intact and the physical capacity of each airport is kept at an industry accepted reasonable level.

New Hub Option- assumes a low cost carrier would start a new hub at one of the underutilized airports in the Inland Empire or North Los Angeles County.

Fast Growth Regionalization Option- assumes more robust economic growth will occur in the Inland Empire and North Los Angeles County.

These scenario options provided a framework for discussion and questions. Over the course of the meeting staff was asked to work with three specific airports regarding the forecast allocations (Palmdale, San Bernardino International Airport and John Wayne Airport). Since the July 23rd TC meeting, SCAG staff has collaborated successfully with each of these airports and has developed acceptable draft 2040 forecasts which are technically accurate and meet the community's needs. The proposed adjustments resulting from this collaboration is described below.

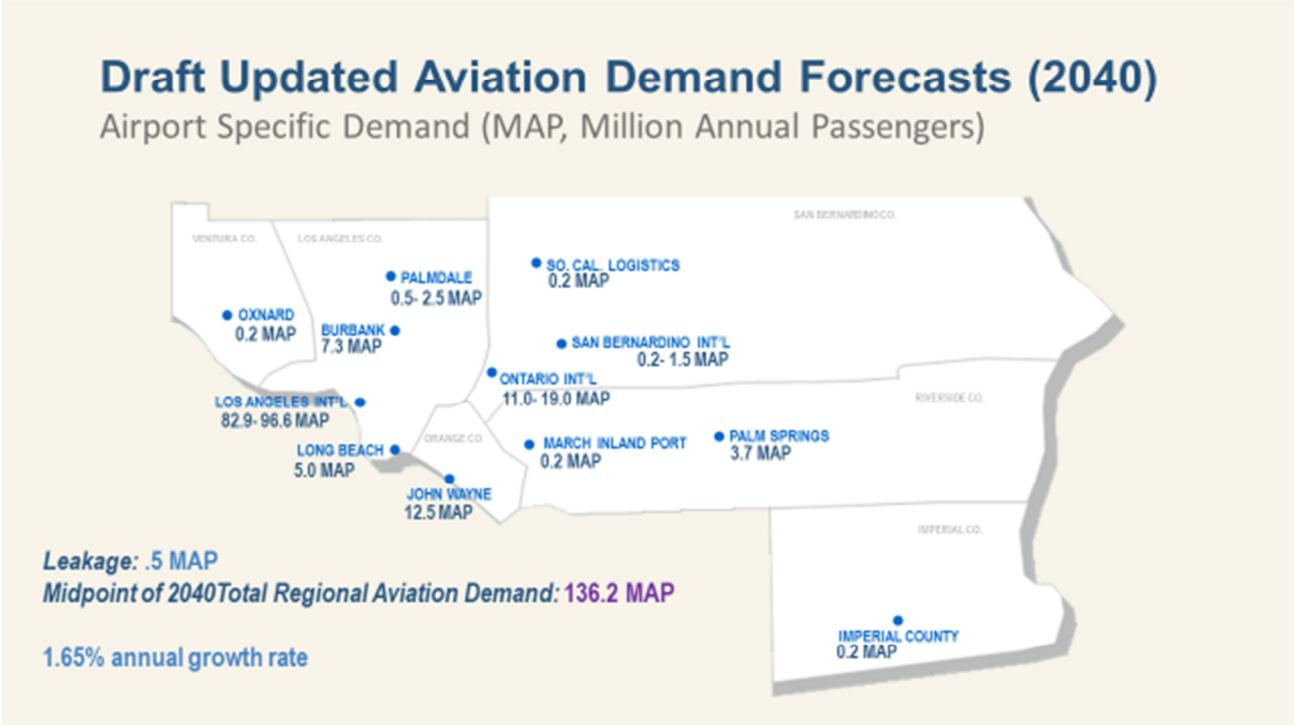
Palmdale Airport (PMD): 0.5 - 2.5 MAP was developed recognizing the potential Palmdale has to emerge as a new hub airport, in combination with faster than expected economic growth in northern Los Angeles County but also recognizing that this forecast hinges on the airport's ability to handle commercial service with an FAA FAR Part 139 operating certificate (the operating certificate needed by an airport to have commercial flights).

San Bernardino International Airport (SBD): 0.2 - 1.5 MAP is based on the airport's ability to handle both international and domestic passengers currently. The airport has identified a niche market which can likely be successful, even given its proximity to both Ontario International Airport and Palm Springs International Airport.

John Wayne Airport (SNA): 12.5 MAP is the agreed upon forecast demand by the County of Orange, John Wayne Airport staff and SCAG staff for 2040. The range of numbers previously shown was meant for discussion purposes. Staff recognizes the Settlement Agreement as being legally enforceable, and this collaboration is largely an administrative fix to the draft forecast.

Based on this follow-up agreement with these three airports agreement with the draft forecast numbers above, staff has prepared the "Draft Updated Aviation Demand Forecasts (2040)" figure which is depicted in the map below. The total regional demand in 2040 is still about 136.2 MAP, which represents the middle of the range for the airports that are assigned ranges. The higher end of the range represents approximately a 10% increase in total demand (149 MAP) over the middle point and the lower range represents a 10% reduction or 123.5 MAP. Even the lower range still translates to an annual growth of about 1.2%, which is still significantly higher than the growth rate for the overall population of 0.7%.

Staff was also able to focus on specific demand numbers for other airports in the region and tighten the ranges where possible, given the Committee's discussion on July 23, 2015. Ranges have been eliminated at John Wayne Airport, March Inland Port, Palm Springs, Southern California Logistics Airport and Oxnard Airport.



Additionally, during the July 23, 2015 TC meeting there was discussion regarding the regional share of demand that each airport currently serves, and will serve in the future. Based on this discussion, staff has prepared a table that summarizes the 2014 market share and the forecast 2040 market share, by airport.

Share of Demand by Airport

2014 based on actual data and 2040 based on Draft Forecast Ranges

	BUR	LAX	LGB	ONT	PMD	PSP	SBD	SNA	TOTAL
2014 Share	4.3%	76.1%	3.0%	4.5%	0.0%	2.1%	0.0%	10.1%	100%
2040 Share	5.4%	65.7%	3.7%	11.0%	1.0%	2.7%	0.6%	9.20%	100% ^A

^A Due to rounding the numbers may not add up to 100%. Imperial County Airport (IPL), March Inland Port (RIV), Oxnard Airport (OXR) and Southern California Logistics Airport (VCV) each account for .1% of the regional share in 2040 and are not reflected in the table (.4% of the total combined demand).

CONCLUSION AND NEXT STEPS:

SCAG staff has collaborated with airport staff on the forecast demand numbers leading up to the July 23, 2015 TC meeting, and has continued this dialogue in the week since. The narrowing of the ranges was done based on this input from the airports, TC dialogue and elimination of the theoretical numbers used for illustrative purposes. The proposed airport specific distribution of the 136.2 MAP presented today is generally accepted by the airport sponsors in the region. Staff is seeking policy direction from the TC that will allow for the completion of the Aviation Element for inclusion in the Draft 2016- 2040 RTP/SCS.

Staff will incorporate policy direction from TC as the Draft 2016- 2040 RTP/SCS Aviation Element is prepared. Additionally, the ground access analysis, air cargo and general aviation forecasts will be included and a regional summary of aviation economic impact work will highlight the economic benefit of aviation. Policy strategies will be developed based on direction from the TC as well. Aviation allows for business to flourish in Southern California - it is vital to anticipate market conditions and prepare our airports for future airline business models and passenger preferences.

FISCAL IMPACT:

This task is currently budgeted in the FY15 OWP.

ATTACHMENTS:

1. PowerPoint Presentation: “Regional Aviation Forecasts Update: Continued from July 23, 2015 TC Meeting”
2. July 23, 2015 Staff Report: 2016- 2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) – Regional Aviation Forecasts Update



2016 2040 RTPSCS

REGIONAL AVIATION DEMAND FORECAST UPDATE
CONTINUED FROM JULY 23, 2015

Transportation Committee

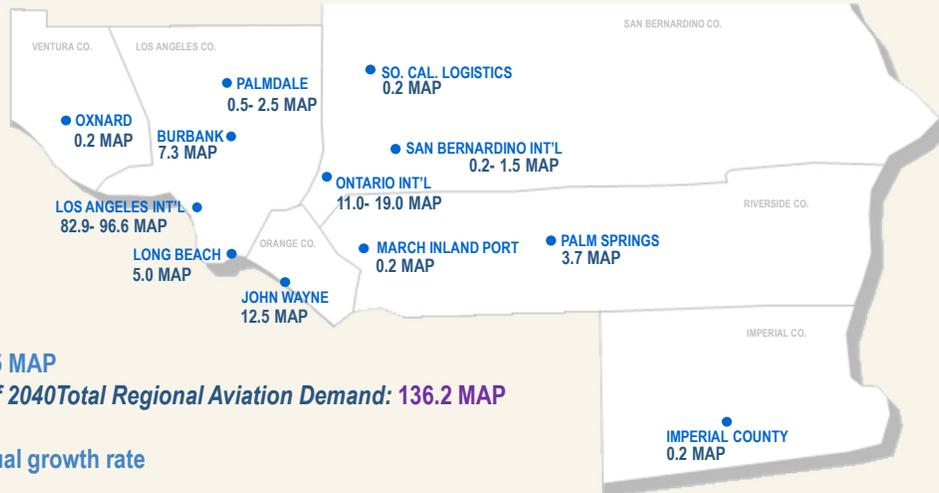
Mr. Ryan N. Hall
SCAG Aviation Specialist
August 6, 2015

Direction Given at the July 23, 2015 TC Meeting

- At the July 23, 2015 TC Meeting staff received positive feedback from both the Aviation Technical Advisory Committee and the TC on the Total Regional Demand of
 - 136.2 MAP in 2040
 - 1.65% Annual growth rate
- Based on feedback from both airport operators and committee members staff was directed to work with three specific airports to resolve discrepancies:
 - PMD (Palmdale)
 - SBD (San Bernardino International)
 - SNA (John Wayne Airport)

Draft Updated Aviation Demand Forecasts (2040)

Airport Specific Demand (MAP, Million Annual Passengers)



Share of Demand by Airport

2014 based on actual data and 2040 based on Draft Forecast Ranges

	<u>BUR</u>	<u>LAX</u>	<u>LGB</u>	<u>ONT</u>	<u>PMD</u>	<u>PSP</u>	<u>SBD</u>	<u>SNA</u>	<u>TOTAL</u>
2014 Share	4.3%	76.1%	3.0%	4.5%	0.0%	2.1%	0.0%	10.1%	100%
2040 Share	5.4%	65.7%	3.7%	11.0%	1.0%	2.7%	0.6%	9.20%	100% ^A

^A Due to rounding the numbers may not add up to 100%. Imperial County Airport (IPL), March Inland Port (RIV), Oxnard Airport (OXR) and Southern California Logistics Airport (VCV) each account for .1% of the regional share in 2040 and are not reflected in the table (.4% of the total combined demand).

TC Recommended Action

- Provide policy direction to staff to facilitate regional passenger demand distribution estimated at **136.2 MAP** (million annual passengers) in 2040 to the regional airports

2016
2040 **RTPSCS**



Thank you!

Learn more about the SCAG Aviation Program by visiting www.scag.ca.gov or contact:

Mr. Ryan N. Hall
SCAG Aviation Specialist
hall@scag.ca.gov



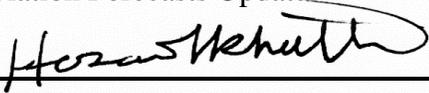
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DATE: July 23, 2015

TO: Transportation Committee (TC)

FROM: Ryan N. Hall, Regional Aviation Planning Specialist, hall@scag.ca.gov, 213-236-1935

SUBJECT: 2016- 2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) – Regional Aviation Forecasts Update

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:

Provide policy direction to staff to facilitate regional passenger demand distribution estimated at 136.2 MAP (million annual passengers) in 2040 to the regional airports.

EXECUTIVE SUMMARY:

As a follow up to the June 4, 2015 Transportation Committee (TC) meeting on regional aviation forecast, staff will provide an update on the demand forecast and initiate a discussion to consider policy direction to develop airport specific demand allocation to each of our regional airport assets. SCAG staff, with the assistance of consultant team, has developed a regional aviation demand forecast in 2040 as 136.2 MAP (million annual passengers) based on industry accepted data, tools and methodology. This technical work was presented to the Aviation Technical Advisory Committee (ATAC) on April 25, 2015, which was positively received. As a next step in the demand forecast process, staff has developed four (4) possible scenario options (Unconstrained, Physical/Policy, New Hub and Fast Growth Regionalization) to facilitate a policy discussion at the Special TC meeting today. Staff is seeking policy direction on these options in order to prepare the Aviation Element for the 2016 RTP/SCS. One practical option is to adopt a range for each of the regional airports based on the four scenario options presented in a map towards the end of this memo.

BACKGROUND:

At the June 4, 2015 Transportation Committee (TC) meeting, staff presented the overarching vision and goals, airport capacity analysis for the four urbanized capacity constrained airports, and overall regional aviation demand in 2040 in preparation of the Aviation Element of the 2016-2040 RTP/SCS. The focus of the vision and goals is to treat the aviation system like a for-profit business, rather than a public utility. The airlines can easily relocate assets between airports and world regions with little or no warning. A fundamental premise is that any passenger that uses a SCAG region airport is good for the regional economy.

Four (4) of the region's airports are capacity constrained, meaning that demand to use them is greater than the airfield or terminals will allow. The other airports in the region also have theoretical capacities but given the current trend, it is highly unlikely that demand will exceed capacity at these airports in 2040. Airfield capacity is determined by looking at the number/length/width/orientation/spacing of runways, typical arrival/departure patterns (usually dictated by weather or noise impacts), taxiway configuration, percentage of time there is poor visibility, mix of commercial airline flights versus general aviation, difficulty of the airspace adjacent to the airport, etc. Terminal capacity is determined by analyzing the number and size of gates/parking positions, aircraft fleet mix, airline

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characteristics/schedules/turn times, load factors (percentage of occupied seats), and the size of gate hold rooms and the flexibility for different airline/aircraft types. The terminal capacity in general is more subjective to determine than airfield capacity. Current research has demonstrated that access to the airport is not a barrier for capacity. Passengers will continue to purchase tickets even if airport access is challenging (for example drive an alternate route or stay at an airport adjacent hotel). The capacity numbers were presented and have subsequently been updated to reflect additional comments received from the airports. Note that legal constraints are not taken into account during this task. The following table summarizes the capacity to handle passengers at each of these four capacity constrained/urbanized airports.

Airport Capacity Constraints

MAP (Million Annual Passengers)

AIRPORT	CONSTRAINT			
	AIRFIELD	TERMINAL	POLICY	OVERALL
BUR	7.3	12.2	--	7.3
LAX	82.9- 96.6	103.6	78.9 ^a	78.9- 96.6
LGB	9.5	6.6	5.0 ^b	5.0
SNA	16.2 ^c	15.4	12.5 ^d	12.5

^aLAX Settlement Agreement expires in 2015. The number of gates is limited to 153.
^bGrandfathered noise control ordinance permits 41 commercial and 25 "commuter" (GTW < 75,000 lbs) per day.
^cWith minor airfield infrastructure improvements the capacity can increase to 16.9 MAP (County of Orange JWA Settlement Agreement, Alternative C).
^dAlthough Settlement Agreement expires in 2030, County Board action would be required to increase MAP limit

The future demand for flights from residents and non-residents, that are traveling for business/leisure/visiting friends and relatives is determined based on population growth, the U.S. GDP (plus the world economic outlook as well as the California and SCAG region economies [including jobs, income, personal wealth]) and historical trends. Using these inputs, the overall regional demand is generated as a total number of potential passengers for the SCAG region as a whole. In Southern California more than half of the passengers using our airports are visitors to the region- the U.S. GDP is by far the most important predictor of potential visitors to our region. Furthermore, unlike many other regions in the U.S. there is a relatively long-term positive outlook for continued growth in our region, which should bode well for greater future air travel demand to and from our region.

Using this approach, in 2040, the total regional aviation demand is forecast to be approximately 136.2 MAP (million annual passengers). As a reference, the regional total demand was 88 MAP in 2013. So the projected growth in air travel demand between 2013 and 2040 is approximately 55%, which is equivalent to a 1.6% annual growth rate, consistent with aviation forecasts being conducted in other large



metropolitan areas. It should be noted that this is a significantly higher rate of growth than the general population growth, which is estimated at an annual rate of 0.7% during this same period. However, compared to previous RTP cycles this forecast is relatively conservative, but consistent with the overall trends in the industry. The Aviation Technical Advisory Committee (ATAC) reviewed this forecast at their April 25, 2015 meeting and generally expressed support for the forecast. In addition, they provided valuable input which was incorporated into this document.

The following table provides a historical context for how the regional aviation demand forecast has evolved over the last several RTP/SCS cycles and how the current forecast fits in that context.

Comparison to previous RTP forecasts

- 1998 RTP—157.4 MAP in 2020
- 2001 RTP—167 MAP in 2025
- 2004 RTP—170 MAP in 2030
- 2008 RTP—165.3 MAP in 2035
- 2012-2035 RTP—145.9 MAP in 2035 (Baseline Scenario)

Draft 2016 RTP/SCS forecast is **136 MAP** in 2040

- 1.6% annual growth rate
- Population forecast since 2012 has declined
- Events since 9/11, including the sharp increase in fuel prices in the early 2000s followed by the financial crisis, have resulted in consistently less aggressive forecasts of aviation demand

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At the June TC meeting some of the members sought clarification related to methodology and assumptions used in generating the demand forecast. Staff will be prepared to provide further clarification on these issues at the upcoming meeting. A point of clarification is that the regional total demand forecast in 2040 was developed with the basic premise that there will be no unmet demand in the region. In other words, the regional total aviation demand in 2040 was generated independent of the number of airports, their geographic locations, and potential capacity constraints. Clarification was also sought about why the capacity analysis was limited to the four constrained urban airports. As explained earlier, the reason for limiting the capacity analysis to these four airports is that, given the current trend, from a technical standpoint, it is highly unlikely that demand will exceed at the other regional airports by 2040. Questions were also raised why some of the airports were not allocated any passenger in 2040. The work presented at the June meeting was intended to set the stage for a discussion of policy options to generate a fair, equitable and technically sound allocation of demand to each of the regional airports. Staff is seeking policy direction to move forward with aviation planning work for the region to be considered for inclusion in the Draft 2016 RTP/SCS.

Scenario Options for Airport Specific Demand Allocation

For discussion purposes, given the total regional forecast of 136.2 MAP in 2040, four scenario options that utilize different policy outcomes have been developed that could result in different airport growth patterns. The details and key assumptions for each of the Scenario Options are discussed further in this section.

First, in the way of background, in the 2012-2035 RTP/SCS, the regional aviation demand forecasts were updated using the adopted 2008 RTP data, with updates coinciding with various government and commercial aviation outlooks (the FAA, ICAO, Boeing, Airbus, the airlines, Airports Council International, etc.).

Passenger demand was forecasted between 130-164 MAP in 2035. This includes legal capacity constraints (John Wayne at 10.8 MAP; LAX at 78.9 MAP; and Long Beach at 4.2 MAP). Since the adoption of the 2012-2035 RTP, these numbers have changed due to legal updates. The range of scenarios (high, low and baseline) assume that all passengers will be served by an airport in the region with no leakage (passengers who use airports outside of this region (for example, flying directly into Santa Barbara and driving to Ojai or a traveler in Barstow driving to Las Vegas for a flight) and no unmet demand (meaning every person that desires to take a flight can find a flight at an acceptable fare from the preferred airport).

Additionally, the demand for air cargo in 2035 was estimated as 5.61 million tons and a decline of general aviation operations by 32% (consistent with U.S trends). Policy considerations for ground access, airport finance and airport land use compatibility were also adopted.

Potential demand at each airport was determined and then the aggregate of all the airports was reported as the overall regional demand forecast. This approach yielded a range of regional demand between 130-164 MAP, about 20% uncertainty. For the 2016-2040 RTP/SCS, the approach used was to determine the overall regional demand and then examine geography, market conditions and passenger behavior to identify four potential airport specific scenario options (described below) for discussion purposes.

There are technical assumptions that are consistent across all four scenario options.

- The mix of business, leisure and visiting friends/relatives passengers stays roughly the same as it is today. The type of traveler impacts the amount and type of spending done while on the trip (leisure passengers are more cost sensitive).
- It is assumed that more than half of the passengers using our airports will be from outside the region.
- In three of the four options the ratio of connecting passengers remains at about 17%.
- We assume that there are not significant new legal operating parameters for U.S. flag carriers (or foreign flag carriers operating in the United States).

- Airlines have different business models that provide the traveler with options (fare, comfort, fees, and flight schedules). It is widely anticipated that additional new airlines will be established (and unfortunately, likely fail) over the forecast period. We assume the same types of airlines will operate in the region in 2040 as today.
- It is assumed that aircraft will continue to be quieter, more fuel efficient, technologically advanced and safer. The need for quality trained aviation professionals is still a pressing need-today, as well as it will be in 2040. It is assumed that the shortage of aviation professionals will not constrain the region's ability to meet the demand.
- Airports are assumed to be similar as today, with constantly evolving form, function and aesthetic.
- There will not be significant new airspace congestion (and accompanying legislation/congestion mitigation) due to the use of Unmanned Aircraft Systems (UAS), commonly referred to as 'drones'.
- No additional military bases in Southern California will be closed or have their mission significantly reduced as part of the Base Realignment and Closure Commission (BRAC) process.
- Ownership and the management practices of the regions' airports has a profound impact on the day to day operations of the facilities and the passenger experience provided. Yet, in the long term 2040 time frame the various management styles do not impact demand.
- Lastly, in what is perhaps Southern California's greatest aviation asset- we assume that the percentage of days that are VFR conditions (Visual Flight Rules) remains constant. In other words, we assume that the Southern California weather will remain sunny into the future.

With these assumptions staff has developed four possible scenario options, utilizing different policy considerations that can guide how airport and airline growth could occur recognizing that airlines are for-profit businesses and can/will relocate assets if necessary.

Unconstrained Scenario

- What would happen if each airport could physically accommodate all passengers who desire to use it, there were no legal/policy constraints, they could access the airport and there were no negative environmental considerations?
- The unconstrained forecast is used as a planning baseline to truly understand desired passenger behavior. Note that for airports without current commercial service the unconstrained option isn't as relevant since demand is going to adjacent airports, with service.

Physical/Policy Constraints Scenario

- The size and configuration of the airports remains similar as today (not including projects that are already included in adopted master plans)

- No additional or new encroachment or incompatible land uses are developed in airport influence areas
- Legal restrictions put in place prior to the 1990 Airport Noise and Capacity Act (ANCA) are grandfathered in and continue to be enforced. It is assumed that no additional airports will put restrictions in place (requiring an FAA Part 161 study that have extremely low success rate)
- Legal/policy constraints without a sunset date remain (LGB, SNA)
- Agreements that are post 1990 ANCA are not assumed to be enforced due to their legality
- Constraining airports in the region could result in unmet demand or leakage
- This option represents the most likely scenario based on technical evidence

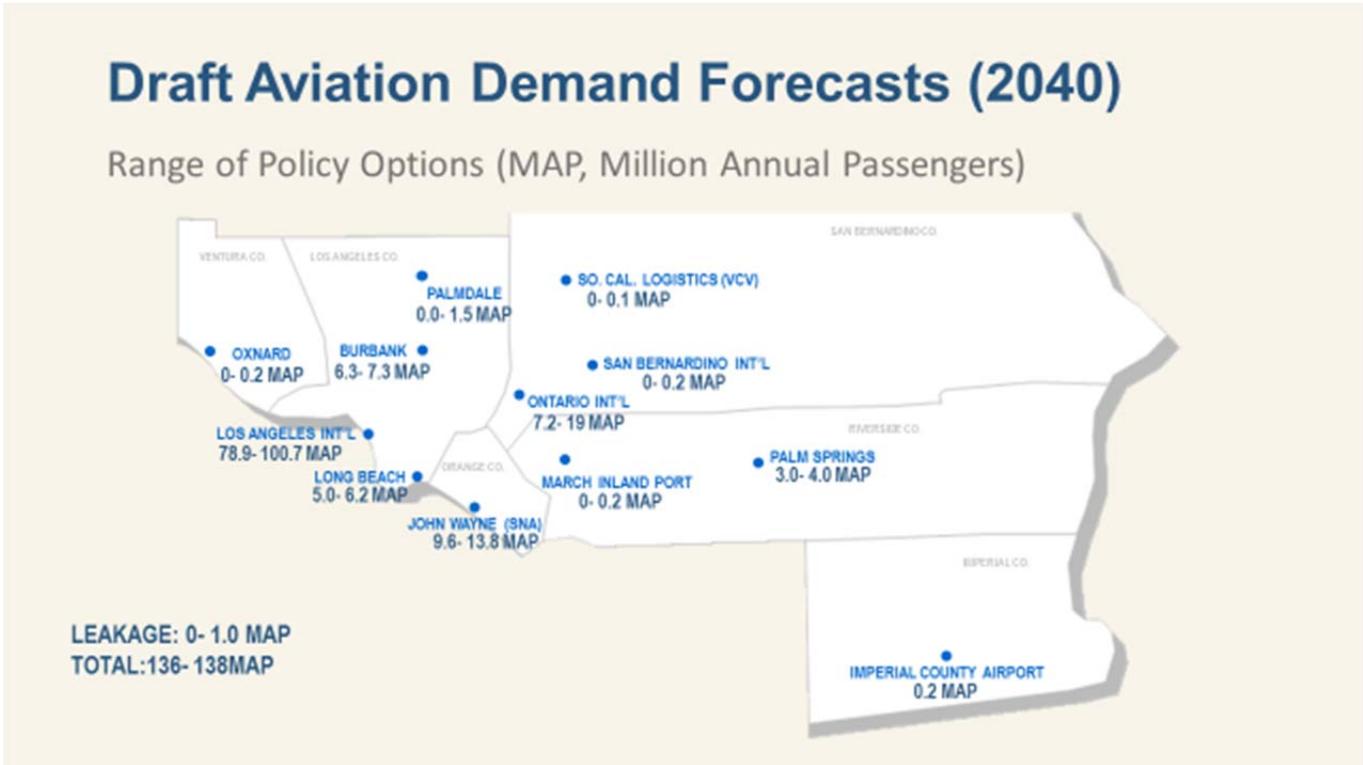
“New Hub” Option Scenario

- What would happen if a low-cost carrier established a new hub serving the West Coast, Mexico or Canada?
- Potential for new/additional nonstop markets and economic growth
- By examining development patterns at other medium hub airports in the United States this option represents what would happen if an airline formed a hub at one of the emerging airports (PMD, ONT, SBD, RIV, VCV or PSP). The commitment for an airline to develop and grow a hub operation is a long, painstaking process. Given today’s aviation industry airports are extremely conservative when luring a new hub. Recent examples include San Francisco (SFO) and Virgin America; or Detroit (DTW) and Spirit. It is far more common to have a hub airline reduce service- Memphis and Cincinnati have faced major reductions by Delta; Cleveland by United; St. Louis by American Airlines.
- If an airline developed a hub operation at one of the airports mentioned above demand would be reduced at the other adjacent airports.
- With this option it is vital to realize that ANY of the airports desiring additional service (ONT, SBD, RIV, VCV or PSP) could attract an airline. This option is included to demonstrate the region-wide implications (overall positive).

Fast Growth Regionalization Option Scenario

- What would happen if the U.S. GDP (and CA/SCAG region economy) grows more quickly than anticipated
- Population growth, plus job/income growth happens more rapidly in the developing suburban areas of the region
- Activity centers (businesses, tourist activities, universities, hospitals) also concentrate in clusters near emerging airports.

Based on the evaluation of these four scenario options, the map provided below in this memo presents a potential range of airport specific demand for each of the twelve (12) regional airports in 2040. Airport specific demand allocation associated with each of the airports for each of the scenario options are presented in the attached power point presentation. Each option includes the total regional aviation demand and the potential leakage (to other airports outside the region). Potential range of total regional demand is 136 to 138 MAP depending on the potential policy choices the region will make.



CONCLUSION AND NEXT STEPS:

These forecasts were developed using industry accepted forecasting methodology for aviation system planning. While individual airports may see declines in the passenger forecasts, there is no reason that market forces, community engagement and unforeseen events can prompt unexpected growth. The SCAG region has a strong demand for air travel through 2040 and the risk is not losing passengers or activity to other airports in adjacent jurisdictions, but to other regions completely. Ownership and management of our region’s airports can impact the ability for airlines to provide flights at reasonable prices, but does not impact the future demand. Visitors may simply bypass Southern California, residents could decide not to take a discretionary trip or they will be unable to find a flight at an acceptable price. Air service is added when passengers utilize existing service.

Staff is seeking policy direction from the TC that will facilitate allocation of aviation demand to each of our regional airports in a way that is fair, equitable, technically sound and maximizes the utility of all of our airport assets in support of our growing our economy. ***One practical option is to adopt a range for each of the regional airports based on the four scenario options presented in a map towards the end of this memo.***

REPORT

Staff will incorporate policy direction from TC as the Draft 2016-2040 RTP/SCS Aviation Element is prepared. Additionally, the ground access analysis, air cargo and general aviation forecasts will be included and a regional summary of aviation economic impact work will highlight the economic benefit of aviation. Policy strategies will be developed based on direction from the TC as well. Aviation allows for business to flourish in Southern California- it is vital to anticipate market conditions and prepare our airports for future airline business models and passenger preferences.

FISCAL IMPACT:

This task is currently budgeted in the FY15 OWP.

ATTACHMENT:

PowerPoint Presentation: “Regional Aviation Forecasts Update”



2016 2040 RTPSCS

REGIONAL AVIATION DEMAND FORECAST UPDATE

Transportation Committee

Mr. Ryan N. Hall
SCAG Aviation Specialist
July 23, 2015

Aviation Community Feedback

March Inland Port (RIV)

Los Angeles World Airports (LAX)

City of Palmdale

San Bernardino International Airport Authority (SBIAA)

Alliance for a Regional Solution to Airport Congestion (ARSAC)

County of Orange- John Wayne Airport

County of Riverside Economic Development Agency

The Polaris Group

National Business Aviation Association

Summary of Aviation Community Feedback

- Capacity analysis discrepancies based on expiration of legal constraints
- Perception of lack of regionalization
- Local (jurisdiction) growth is under-accounted in airport specific forecasts
- Overall regional demand forecast is lower than previous RTP's, but likely more accurate
- Lack of analysis on general aviation airports
- Possible inclusion of the Jacqueline Cochran Regional Airport in future RTP cycles
- Leakage and market cannibalization assumptions are not accurate

Our Airports are Assets

Combined, the SCAG Region Airports:

Serve **169** nonstop destinations daily in **37** countries

Have **1,200** daily departures

Have over **170,000** daily departing seats on **64** airlines

No lengthy tarmac delays

Consistently above 80% on time arrivals and departures

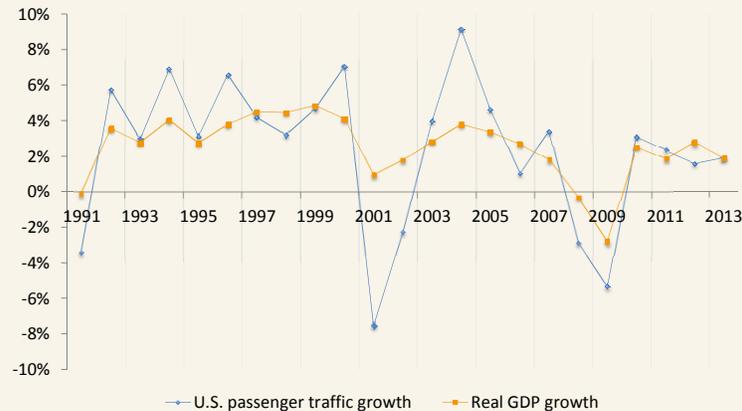


Source: Innovata Schedules via Diio, March 2015

Regional Aviation Forecasts

Recap of June 4 Presentation

- Forecast methodology is based on relationship between regional, national, and international economies and demand for air travel



Passenger Types

Three types of passengers:

- Business
- Leisure
- Visiting friends and relatives (VFR)

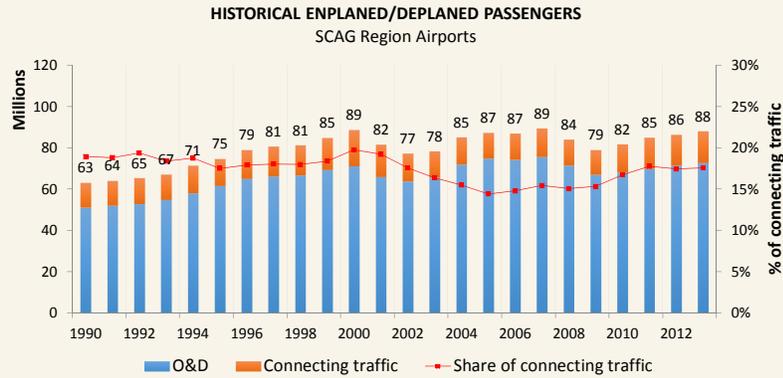
The concept of O&D passengers:

- Origin & Destination (O&D) passengers at an airport are those for whom the airport is the beginning or the end of their air travel. (They leave the airport.)
- Enplaned/Deplaned passengers are all passengers at an airport who get on or off an airplane. This includes connecting passengers who never leave the airport.
Enplaned + Deplaned = Total Pax

Total Pax = O&D Pax + Connecting Pax

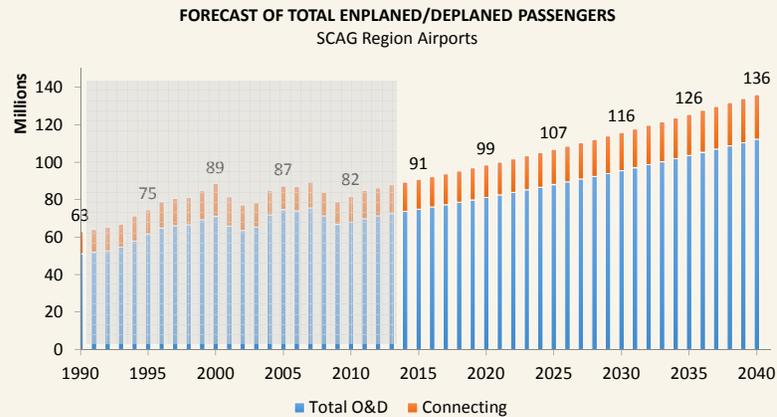
Historical SCAG Region Aviation Growth

Total enplaned traffic at SCAG Region Airports increased from 63.0 MAP in 1990 to 88.0 MAP in 2013



Regional Aviation Demand Forecast

Total enplaned traffic is expected to increase from 88.0 MAP in 2013 to 136.2 MAP in 2040



Airport Capacity Constraints

MAP (Million Annual Passengers)

AIRPORT	CONSTRAINT			
	AIRFIELD	TERMINAL	POLICY	OVERALL
BUR	7.3	12.2	--	7.3
LAX	82.9- 96.6	103.6	78.9 ^a	78.9- 96.6
LGB	9.5	6.6	5.0 ^b	5.0
SNA	16.2 ^c	15.4	12.5 ^d	12.5

^a LAX Settlement Agreement expires in 2015. The number of gates is limited to 153.

^b Grandfathered noise control ordinance permits 41 commercial and 25 "commuter" (GTW < 75,000 lbs) per day.

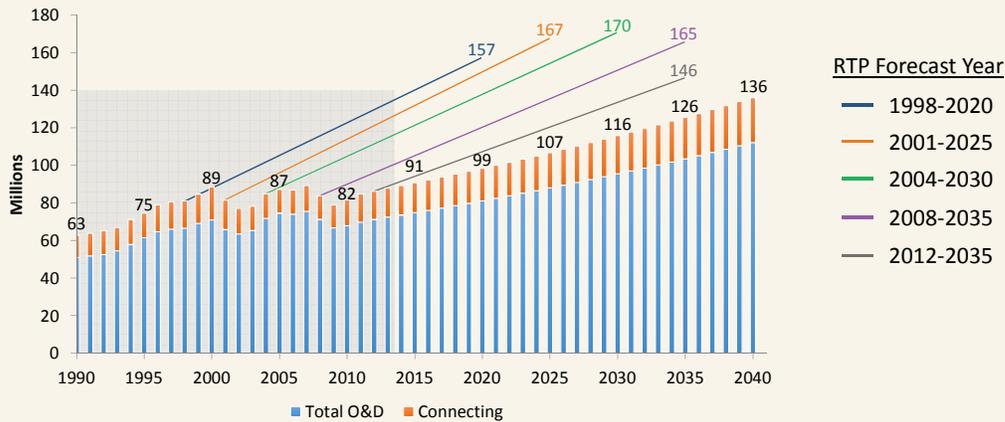
^c With minor airfield infrastructure improvements the capacity can increase to 16.9 MAP (County of Orange JWA Settlement Agreement, Alternative C).

^d Although Settlement Agreement expires in 2030, County Board action would be required to increase MAP limit

Factors Increasing the Constraints

- Bigger airplanes
 - Within ADG III (737, A321), airlines are pushing manufacturers to produce larger planes
 - At the high end, 747 losing out to A380
 - Aircraft continue to be quieter and more fuel efficient
- Higher load factors
- Airlines are better at "right sizing" the aircraft and the destination
- More commercial and fewer GA operations at most airports
- Airfield technology improvements
 - NextGen, runway status lights, high speed exit taxiways, etc

Comparison to previous RTP forecasts



11

Aviation Element Highlights from the adopted 2012- 2035 RTP/SCS

- Range of 130- 164 MAP in 2035
 - Policy decision to include legal capacity restrictions:
 - John Wayne at 10.8 MAP; LAX at 78.9 MAP; Long Beach at 4.2 MAP (due to legal updates the 2015 numbers may be different)
 - The range of scenarios assume that all passengers will be served by an airport in the region
 - No leakage and no unmet demand
- 5.61 million tons of air cargo
- Forecast decline of general aviation operations by 32%
- Policy considerations for ground access, airport finance and airport land use compatibility

Overall Regional Aviation Forecast for 2040

- 1.6% Annual growth rate

Total O&D passenger movements to the region increase from:

72.6 MAP in 2013 to

112.2 MAP in 2040

Total enplaned/deplaned passengers increase from:

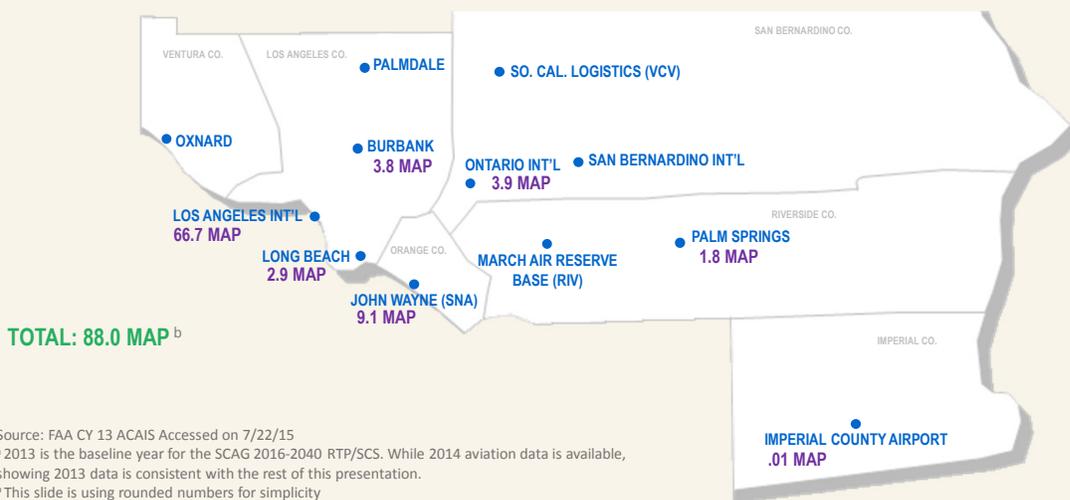
88.0 MAP in 2013 to

136.2 MAP in 2040

	POPULATION GROWTH IN 2040	EMPLOYMENT GROWTH IN 2040
SCAG Region	0.7%	1.0%
Inland Empire	1.1%	1.9%
North LA County and SBdo High Desert	1.4%	1.8%

Overall Regional Aviation Demand and Airport Specific Demand for 2013^a

Number of Passengers in MAP (Million Annual Passengers)^b



Airport Specific 2040 Demand Forecasts

Four Growth Options

Unconstrained

- What would happen if each airport could physically accommodate all passengers who desire to use it, there were no legal/policy constraints, they could access the airport and there were no negative environmental considerations?

Physical/Policy constraints

- Physical constraints on the airfield and terminals remain
- Legal/policy constraints without a sunset date remain (LGB, SNA)
- Constraining airports in the region could result in unmet demand or leakage

“New Hub” Option

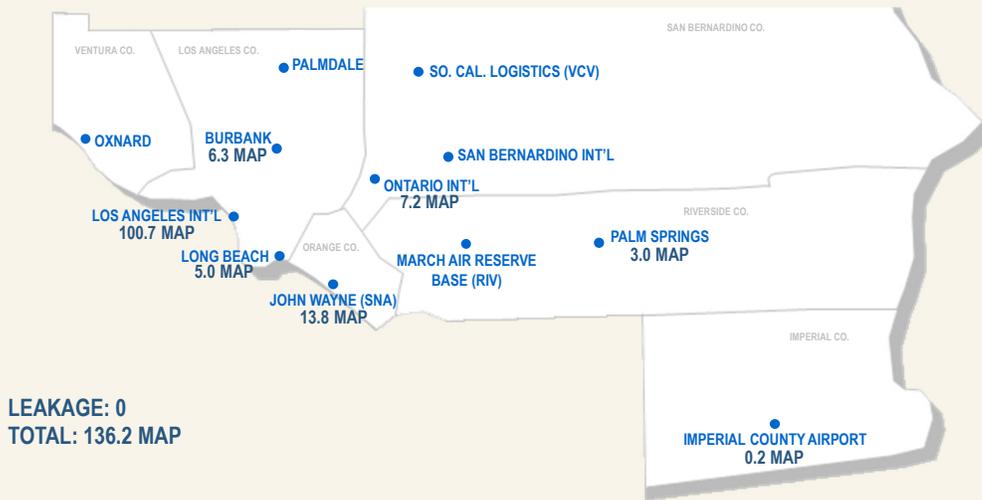
- What would happen if a low-cost carrier established a new hub serving the West Coast, Mexico or Canada?
- Potential for new/additional nonstop markets and economic growth

Fast Growth Regionalization

- What would happen if the U.S. GDP (and CA/SCAG region economy) grows more quickly than anticipated
- Population growth, plus job/income growth happens more rapidly in the developing suburban areas of the region
- Activity centers (businesses, tourist activities, universities, hospitals) also concentrate in clusters near emerging airports

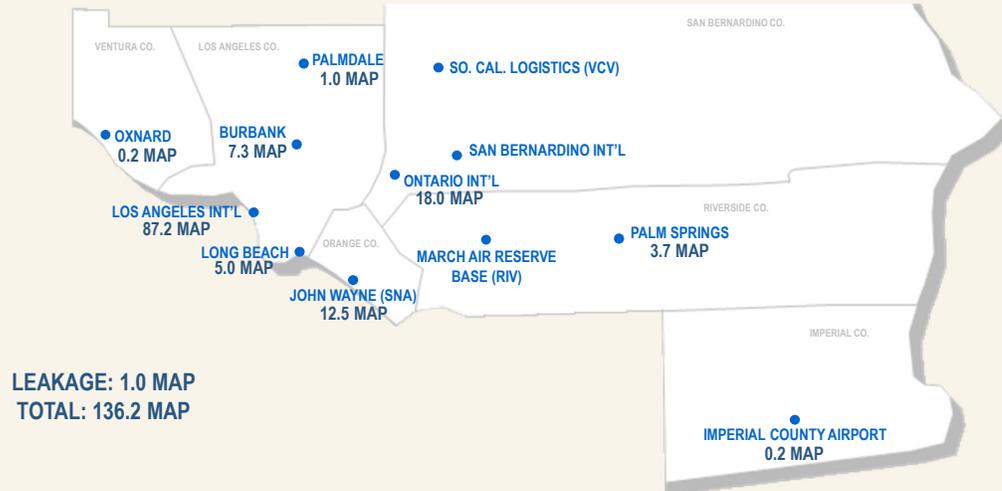
Draft Airport Demand Forecasts (2040)

Unconstrained Forecast in MAP (Million Annual Passengers)



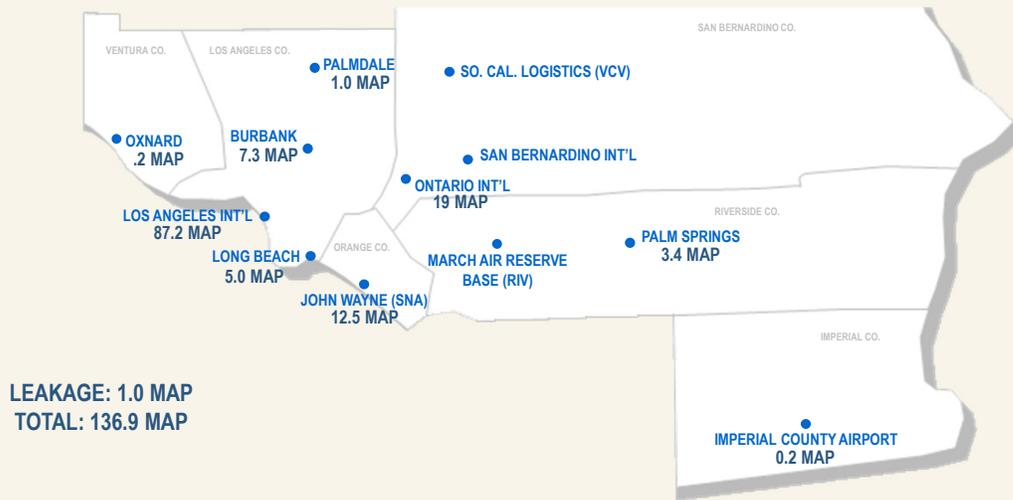
Draft Airport Demand Forecasts (2040)

Physical/Policy Constraint Forecast in MAP (Million Annual Passengers)



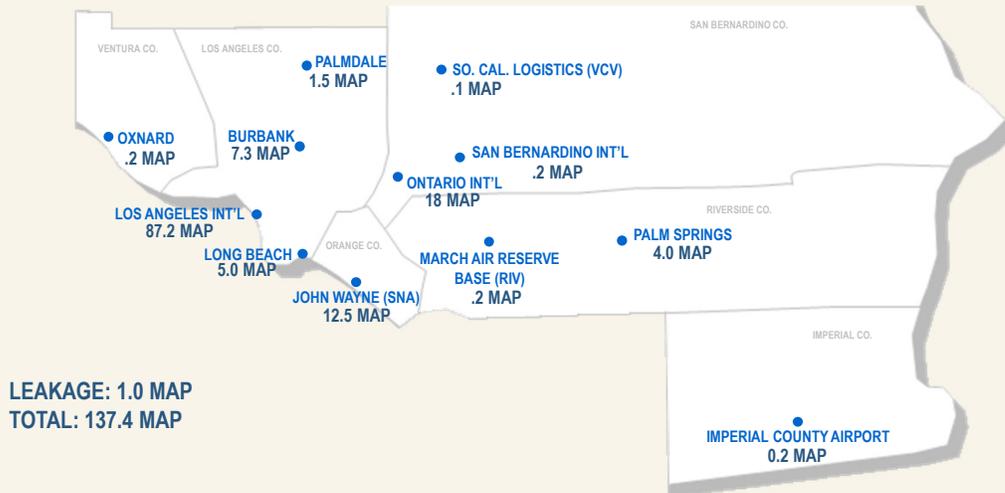
Draft Airport Demand Forecasts (2040)

“New Hub” Forecast in MAP (Million Annual Passengers)



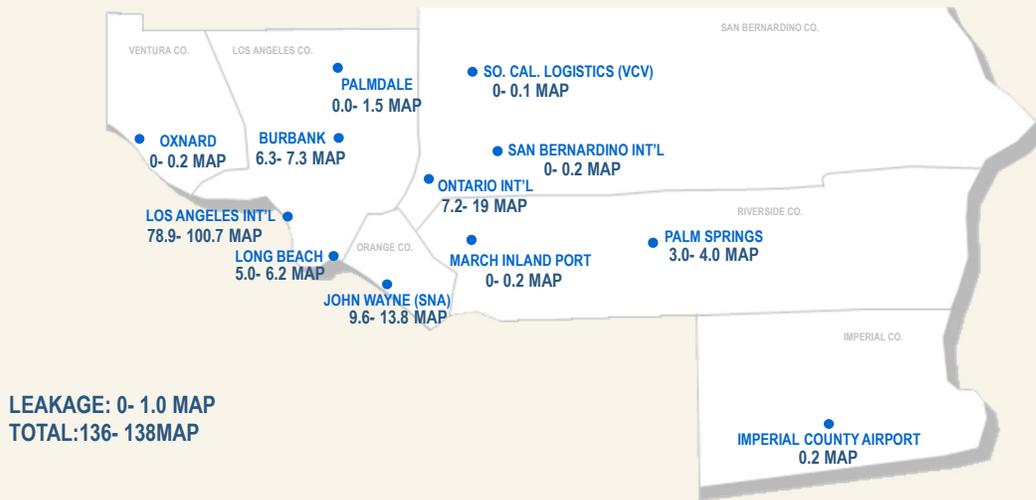
Draft Airport Demand Forecasts (2040)

Fast Growth Regionalization Forecast in MAP (Million Annual Passengers)



Draft Aviation Demand Forecasts (2040)

Range of Policy Options (MAP, Million Annual Passengers)



TC Recommended Action

- Provide policy direction to staff to facilitate regional passenger demand distribution estimated at **136.2 MAP** (million annual passengers) in 2040 to the regional airports

2016
2040 **RTPSCS**



Thank you!

Learn more about the SCAG Aviation Program by visiting www.scag.ca.gov or contact:

Mr. Ryan N. Hall
SCAG Aviation Specialist
hall@scag.ca.gov



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DATE: July 23, 2015

TO: Transportation Committee (TC)

FROM: Naresh Amatya, Acting Director, Transportation, (213) 236-1885, amatya@scag.ca.gov

SUBJECT: 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy
(2016 RTP/SCS) – Highways and Arterials Guiding Principles and Framework Update

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:

Recommend that the Transportation Committee approve the proposed guiding principles and framework for the development of the Highways and Arterials component of the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS).

EXECUTIVE SUMMARY:

On July 2, 2015, staff provided an overview of Highways and Arterials strategies that were included in the 2012-2035 RTP/SCS, in addition to on-going activities that will serve as the basis for the 2016-2040 RTP/SCS Highways and Arterials section. In response to comments received from the Transportation Committee (TC), staff will be presenting a set of revised guiding principles and framework for Highways and Arterials for incorporation into the 2016-2040 RTP/SCS.

STRATEGIC PLAN:

This item supports SCAG's Strategic Plan Goal 1, Improve Regional Decision Making by Providing Leadership and Consensus Building on Key Plans and Policies, a) create and facilitate a collaborative and cooperative environment to produce forward thinking regional plans.

BACKGROUND:

Highways and Arterials Guiding Principles and Framework Overview

At the July 2 Transportation Committee meeting, staff provided a brief overview of the Highways and Arterials element of the 2012-2035 RTP/SCS with a focus on the proposed guiding principles and framework for the development of the Highways and Arterials component of the 2016 RTP/SCS. Proposed guiding principles and framework builds on the success of the 2012-2035 RTP/SCS and is grounded on the mobility pyramid (**FIGURE 1**) established by this plan.

The mobility pyramid is based upon a foundation of system monitoring and evaluation, which is an important first step in developing appropriate solutions to roadway safety, reliability and mobility challenges. Secondly, maintaining and preserving our existing infrastructure assets in a "state of good repair" is essential towards maximizing the productivity of our transportation network. Further up the mobility pyramid, smart land use, demand management (TDM), and value pricing strategies are at the forefront towards reducing travel demand on our roadways, followed by transportation systems management (TSM) measures which serve to increase the productivity of the existing multimodal transportation system and thereby reducing the need for intrusive and costly expansion. Moving towards the top of the mobility pyramid are operational improvements which typically include relatively more

REPORT

labor and capital intensive improvements including auxiliary lanes, interchange re-configuration, ramp metering and other ITS and technology based strategies that will improve operational efficiencies and overall congestion. Lastly, given that critical gaps and congestion chokepoints still exist within the network, the mobility pyramid acknowledges the need for improvements beyond TSM and TDM strategies so as to close gaps within the system and provide adequate access where there is a demonstrated need for it.

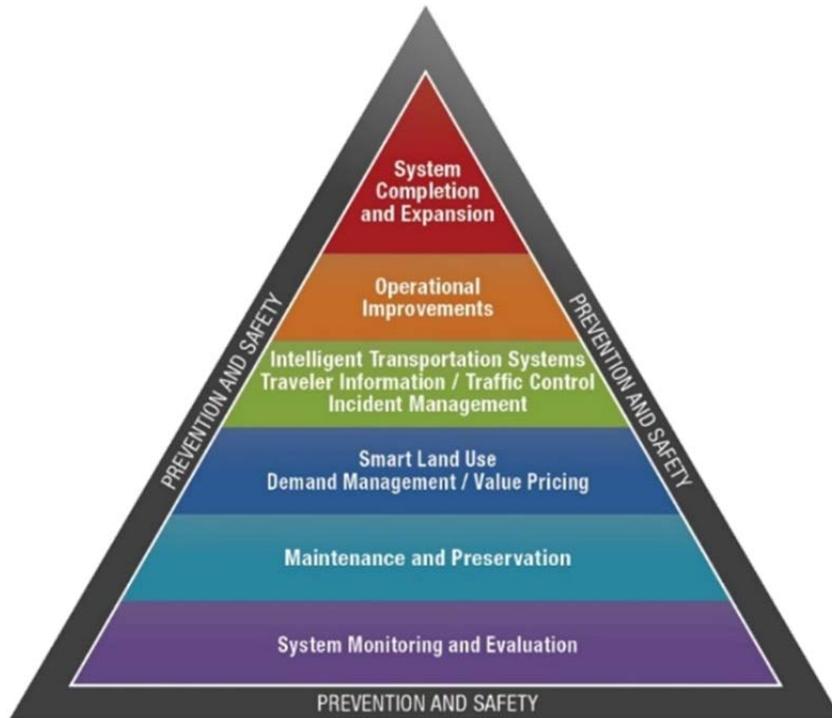


FIGURE 1 – Mobility Pyramid

Based on this approach adopted in the 2012-2035 RTP/SCS, staff presented an updated framework and guiding principles at the Transportation Committee meeting on July 2, 2015. Staff received good input from the Transportation Committee at that meeting, which can be summarized as:

- Support considering life cycle costs of capital projects included in the RTP/SCS
- Support maintaining local control of new funding dedicated for system preservation
- Support policies and system improvements that will encourage seamless operation of our roadway network from user perspective

Based on the input received, staff proposes the updated framework and guiding principles as follows:

- Protect and preserve what we have first, supporting ‘Fix it First’ principle, including the consideration of life cycle costs beyond construction
- Support local control of new funding dedicated to system preservation

REPORT

- Focus on achieving maximum productivity through strategic investments in system management and demand management
- Focus on adding capacity primarily to:
 - Close gaps in the system
 - Improve access where needed
- Support policies and system improvements that will encourage seamless operation of our roadway network from user perspective
- Propose new roadway capacity only after exhausting all other options (required by federal statute related to Congestion Management Process (CMP))
- Complement road capacity projects with demand management strategies and other complimentary improvements such as transit service and bikeways where feasible (required by federal CMP)

In support of these guiding principles, staff proposes to reflect the following in the Highways and Arterials element of the 2016 RTP/SCS.

- Continue to emphasize the importance of system preservation and consideration of life cycle costs of capital projects
- Continue to support investments that will improve system productivity
- Continue to support projects that are already underway and those that are identified in the current RTP/SCS
- Continue to support new projects that will close gaps in the system and/or improve access where it is currently inadequate
- Focus on addressing non-recurring congestion with new technology
- Support Complete Street opportunities where feasible and practical
- Continue to support the regional HOT Lane network
- Support projects that are consistent with the Southern California Regional Intelligent Transportation System (ITS) Architecture

FISCAL IMPACT:

No fiscal impact. Staff work required for the 2016-2040 RTP/SCS development is already included in this year's budget.

ATTACHMENT:

PowerPoint Presentation: "Highways and Arterials Guiding Principles and Framework Update for the 2016-2040 RTP/SCS"



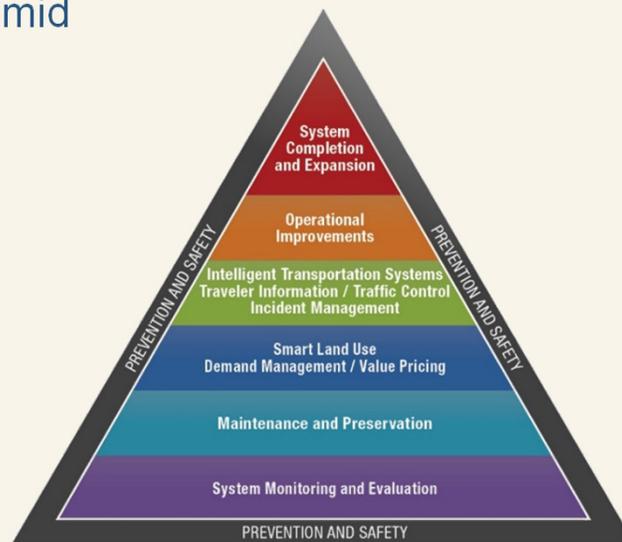
2016 2040 RTPSCS

HIGHWAYS AND ARTERIALS GUIDING PRINCIPLES AND FRAMEWORK UPDATE

Transportation Committee

Naresh Amatya
July 23, 2015

Highway Element Philosophy Mobility Pyramid



Transportation Investments Have More Impact If Built On This Foundation

Guiding Principles

- Protect and Preserve what we have – Fix it First, including the consideration of life cycle costs beyond construction
- Support local control of new funding dedicated to system preservation
- Focus on achieving maximum productivity through system management and demand management
- Focus on adding capacity primarily to:
 - close gaps in the system
 - improve access where needed
- Support policies and system improvements that will encourage seamless operation of our roadway network from user perspective
- Propose new road capacity projects only after exhausting all other options (required under federal CMP)
- Complement road capacity projects with demand management strategies and other complementary improvements such as transit service and bikeways where feasible (federal CMP)

What to Expect in the 2016 RTP/SCS

- Continue to emphasize the importance of system preservation and consideration of life cycle costs of capital projects
- Continue to support investments that will improve system productivity
- Continue to support projects that are already underway and those that are identified in the current RTP/SCS
- Continue to support new projects that will close gaps in the system and/or improve access where it is currently inadequate
- Focus on addressing non-recurring congestion with new technology
- Support Complete Street opportunities where feasible and practical
- Continue to support the regional HOT Lane network
- Support projects that are consistent with the Southern California Regional Intelligent Transportation System (ITS) Architecture



Thank you !

Learn more by visiting www.scag.ca.gov. SCAG Staff Contact: Amatya@scag.ca.gov



DATE: July 23, 2015

TO: Transportation Committee (TC)

FROM: Ryan N. Hall, Regional Aviation Planning Specialist, hall@scag.ca.gov, 213-236-1935

SUBJECT: 2016- 2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) Aviation Ground Access Analysis Update

EXECUTIVE DIRECTOR'S APPROVAL: 

RECOMMENDED ACTION:

For Information Only - No Action Required.

EXECUTIVE SUMMARY:

The aviation demand passenger forecast is the basis for determining where and how passengers get to the airport. Ground access to the regions' airports is an important part of the Aviation Element because it is the nexus to the rest of the Regional Transportation Plan (RTP). This analysis is done in three steps: determine where passengers are coming from, assign what airport they are going to and by what mode.

BACKGROUND:

In 2012, there were approximately 67 million air passenger trips that started or ended in the SCAG region. (This total does not include passengers who only had connecting trips through one of the region's airports, as those passengers do not use the region's ground transportation network.) Those 67 million annual air passenger trips translate to just over 200,000 daily ground trips between an airport in the region and another point in the region (for example: home, a hotel, business or tourist attraction). Therefore, it is important that the travel demand model accurately reflect this large number of trips.

One component of the work effort for the Aviation Element of the 2016-2040 RTP/SCS is the development of "trip tables" that represent these air passenger trips for incorporation in SCAG's travel demand model. The travel demand model divides the SCAG region into over 4,000 traffic analysis zones (TAZs) that each represent a portion of the region, usually about the size of a census tract. The air passenger trip tables include the number of passengers from each TAZ who travel to and from each airport in the region on a typical weekday. These tables include not only resident trips, but also visitors (for both business and leisure). This distinction is relevant since more than half the passengers using SCAG airports are visitors and in general will not be as familiar with alternate travel modes or routes.

The 2016 RTP/SCS model will include a 2012 base year and a 2040 forecast year. Therefore, trip tables must be developed for both the base year and the forecast year. The base year trip tables are developed to match data about current travel patterns in the region. In a second step, the forecast year trip tables are developed by applying the methodology developed for the base year to SCAG's forecast socioeconomic data.

The development of the base year trip tables follows three steps described below: trip generation, trip distribution, and mode choice (called "mode of arrival" for air passenger trips).

The **trip generation** step involves the calculation of the number of air passenger trips that start or end in each zone, without regard to which airport the trips are going to, or how they are getting there. The process involves developing mathematical relationships between socioeconomic data (such as population and employment) and the number of air passenger trips generated. These relationships are then applied to each TAZ to calculate the number of air passenger trips to and from each zone, as illustrated in the attached presentation.

The **trip distribution** step matches each air passenger trip generated in the region to an airport. In the base year model, trip distribution must match the reported total number of passengers at each airport. The distribution of trips to airports is based on many factors, including ground travel time to the airports, the destinations served by each airport, airfare, awareness of alternate options and the frequency of service.

The **mode choice** (or “mode of arrival”) step takes the information from the trip generation and distribution steps and assigns a mode of travel based on the modes. Each air passenger trip depends on the mode available at each airport and at passengers’ ground origins (drive-alone, taxi, transit, shuttle, etc.). For each airport, a model based on passenger survey data was developed to determine the modes of arrival of ground access trips from different parts of the SCAG region. Mode of arrival is important for the ground access analysis because different modes of arrival result in different numbers of vehicle trips using the ground transportation network. For example, if a passenger is dropped off at an airport by a spouse or friend, two ground trips (one to the airport and one back home) are generated for every air trip. However, if a passenger drives by him- or herself to an airport, then only a single ground trip is generated for each air trip.

After staff receives policy direction on the passenger activity levels for individual airports the methodology described above for the development of base year trip tables will be applied to the forecast 2040 socioeconomic data to develop forecast trip tables.

FISCAL IMPACT:

This task is currently budgeted in the FY16 OWP.

ATTACHMENT:

PowerPoint Presentation: “2016 RTP/SCS Airport Ground Access Analysis”



2016 2040 RTPSCS

AIRPORT GROUND ACCESS ANALYSIS

Transportation Committee

Ryan N. Hall
July 23, 2015

Ground Access Analysis

Task is to create model trip tables for incorporation into the RTP/SCS model that reflect ground trips from the region to each airport.

- Develop a methodology to model base-year (2012) data
- Apply same methodology to future forecasts

Ground Access Analysis

Ground access methodology involves requires several steps

- Trip Generation
- Trip Distribution
- Mode of Arrival

Ground Access Analysis

Trip Generation

- How many air passenger trips does each part of the region generate?
 - Draw on passenger surveys conducted by airports that ask about trip origins
 - Identify socio-economic data that SCAG already has that correlate with the number of airport trips from each subregion
 - Apply correlations to each model zone (~4000)

Ground Access Analysis

How many airport trips does each part of the region generate?

- Because of small sample size in passenger surveys, data were aggregated into subregions that would have similar relationships with each airport



Ground Access Analysis

Trip Generation

- How many airport trips does each part of the region generate?
 - Identify socio-economic data that SCAG already has that correlate with the number of airport trips from each subregion
 - Apply correlations to each model zone (~4000)

	Resident	Visitor
Business	??	??
Non Business	??	??

Ground Access Analysis

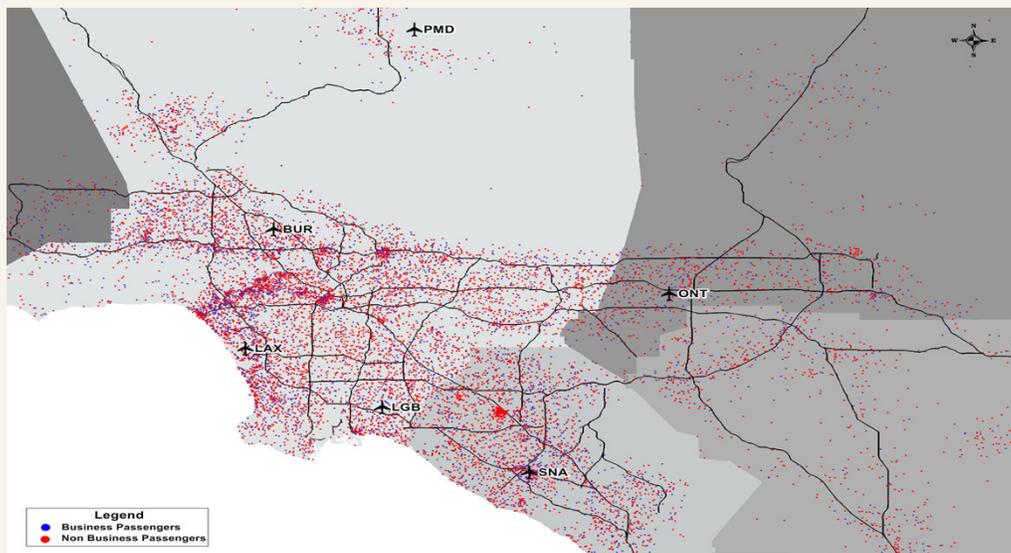
Trip Generation

- How many airport trips does each part of the region generate?
 - Identify socio-economic data that SCAG already has that correlate with the number of airport trips from each subregion
 - Apply correlations to each model zone (~4000)

	Resident	Visitor
Business	High Income Workers	Professional Employment
Non Business	Income Weighted Population	Hospitality Employment

- Adjustments for county, weekend destinations, and central business districts

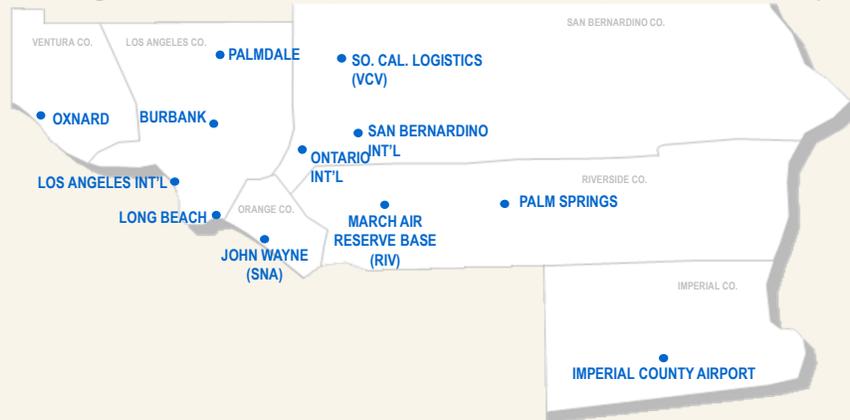
Regional Air Passenger Productions



Ground Access Analysis

Trip Distribution

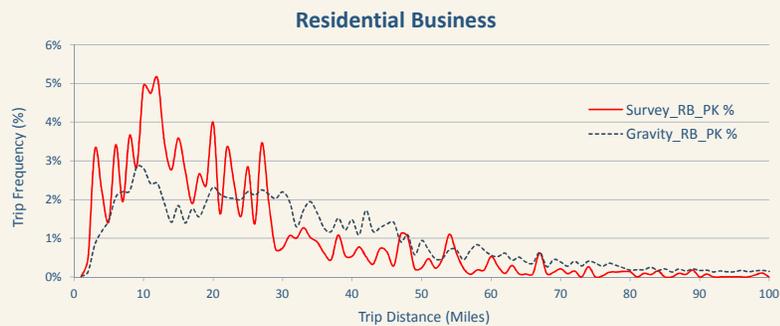
- Which trips go to which airport?
 - Based on ground travel time, destinations served, and service frequency



Ground Access Analysis

Trip Distribution

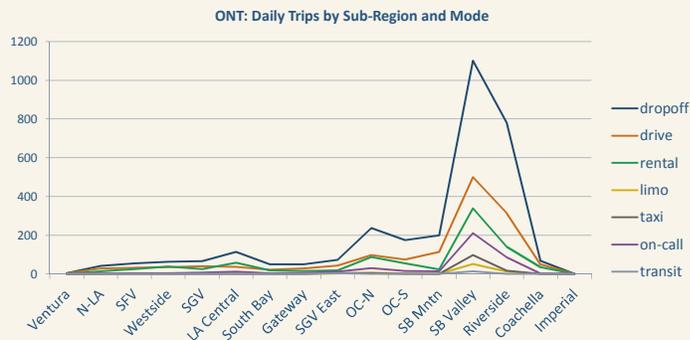
- Which trips go to which airport?
 - Based on ground travel time, destinations served, and service frequency
 - Match distribution of trip lengths from passenger surveys



Ground Access Analysis

Mode of Arrival

- What mode of transportation do passengers use to get to the airport?
 - Based on distribution of modes from passenger surveys and available modes at each airport



Ground Access Analysis Next Steps

- Convert Production-Attraction **person** trips tables to Origin-Destination **vehicle** trip tables
 - Difference between drop-off (1 air passenger trip = 2 round trip vehicle trips) and drive alone (1 air passenger trip = 1 round trip vehicle trip)
- Split daily trip tables into the five time periods used in the model
 - Different airports have different peak travel times
- Apply methodology to 2040 scenario, as directed by Transportation Committee



Thank you!

Learn more by visiting www.scag.ca.gov.

SCAG Staff Contact: Ryan N. Hall, hall@scag.ca.gov, 213-236-1935

