SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

RTP

2008
REGIONAL TRANSPORTATION PLAN

Making the Connections

Aviation and Airport Ground Access Report

AVIATION

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The SCAG Region supports the nation's largest regional airport system in terms of number of airports and aircraft operations, operating in a very complex airspace environment. Exhibit 1 shows the SCAG regional air carrier airport system. The system has six established air carrier airports including Los Angeles International (LAX), Bob Hope (formerly Burbank), John Wayne, Long Beach, Ontario and Palm Springs. There are also four new and emerging air carrier airports in the Inland Empire and North Los Angeles County. These include San Bernardino International Airport (formerly Norton AFB), March Inland Port (joint use with March Air Reserve Base), Southern California Logistics Airport (formerly George AFB) and Palmdale Airport (joint use with Air Force Plant 42). The regional system also includes 45 general aviation airports and two commuter airports, for a total of 57 public use airports. Detailed profiles of the air carrier airports in the region can be found at the end of this chapter.

Southern California airports play a crucial role in international trade, particularly with Pacific Rim countries, and to the regional economy. The value of airborne commodity exports out of the Los Angeles Customs District are about equal to waterborne exports, and airborne export values would be significantly greater if service exports, including impacts from tourism, were added to total export values.

REGIONAL AVIATION CHALLENGES

There are significant challenges in meeting the future airport capacity needs of Southern California. Work on SCAG's 2004 Regional Transportation Plan (RTP) concluded that an Aviation Decentralization Strategy is needed to meet the forecast doubling of air passenger demand by 2030, from the current 90 million annual passengers (MAP) to 170 MAP. The four urban air carrier airports in Los Angeles and Orange counties—LAX, Bob Hope, Long Beach and John Wayne—are all highly constrained. Their collective acreage amounts to 5,540 acres, which is less than 17% of the 34,000 acres of Denver International, and less than the 7,700 acres of Chicago O'Hare. At 3,500 acres, LAX is a very small international airport despite being the third busiest airport in the country, and fifth busiest in the world in terms of passengers served. All of these urban airports have little room to expand because of severe encroachment by surrounding communities. In addition, two of these airports—Long Beach and John Wayne—have strict limits on allowable flights that are legally enforceable (one is a city ordinance and the other a court settlement agreement) since they predate the Federal Airport Noise and Capacity Act of 1990 (ANCA).

The challenge of regional aviation demand in Southern California is not limited to just the SCAG region. It is estimated that 15 to 20 percent of San Diego's air passengers and 2/3 of its air cargo is currently served by SCAG region airports because of inadequate airport capacity in San Diego. More than 40 commuter flights a day originate in San Diego County and land at LAX, because of inadequate long-haul and international service in San Diego. This places additional burdens on the limited runway capacity of LAX. San Diego International Airport is rapidly approaching its physical capacity constraint of 23 MAP, and a recent effort by the San Diego County Regional Airport Authority to find a new replacement airport was not successful. If San Diego does not solve its looming airport capacity problem, it will make the problem in the SCAG Region much worse.

AIRPORT OPPORTUNITIES

Fortunately, the region has available capacity to serve future demand at the new and emerging suburban airports in the Inland Empire (San Bernardino and Riverside counties) and North Los Angeles County. Ontario International Airport can accommodate up to 30 MAP (currently at 7.2 MAP) and help relieve LAX by becoming the region's second major international airport. Palmdale Airport, San Bernardino International, March Inland Port, and Southern California Logistics not only have ample available capacity, but can serve future demand with far fewer environmental impacts compared to the highly constrained urban airports. These airports can also serve future demand with relatively modest capital investments since they have much of the essential infrastructure already in place.

EXHIBIT 1 SCAG REGION REGIONAL AIR CARRIER SYSTEM

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

The 2004 RTP estimates that investments at the four new and emerging airports, needed to accommodate the forecast demand of 170 MAP, total about $4 billion in improvements. Adding needed investments at the other airports in the system (but not LAX), the required capital requirements at region airports total about $6.3 billion. This is a modest sum for serving an 80 MAP increase in demand over the next 25 years, compared to the exorbitant cost of building new airports to accommodate this demand.

The primary challenge of decentralizing demand to these airports relates to the fact that the core of aviation demand will continue to reside in the urban areas of Los Angeles and Orange counties. The greatest population and employment growth over the next 25 years is forecast to occur in the Inland Empire. The region is forecast to grow at a 1.25% annual growth rate as it adds about seven million people over from 2000 to 2035 (reaching a total of 23.5 million). Riverside and San Bernardino counties are forecast to grow by 3.4% and 1.9%, respectively, while Los Angeles and Orange counties will add population at rates less than 1%. The Inland Empire will also add jobs at significantly higher rates than the regional average.

However, by 2035 the bulk of future aviation demand (82%) will still remain in Los Angeles and Orange counties (currently 90% of total regional demand). The main reason for this is that Los Angeles and Orange counties will continue to generate higher rates of air passenger trips per capita compared to the rest of the region. Their high trip propensities relate to greater levels of disposable income, and high concentrations of activities that greatly depend on air travel. These activities include international trade, tourism, entertainment, business services and high technology.

AIRPORT DECENTRALIZATION AND GROUND ACCESS STRATEGY

The future challenge of meeting future aviation demand in the SCAG Region is inextricably tied to airport ground access, since in order to meet that demand the region will need to get future air passengers from the urban areas of Los Angeles and Orange counties to available airport capacity in the Inland Empire and North Los Angeles County. The challenge is complicated by the fact that the regional roadway system will be become increasingly unreliable, with daily delay on the system expected to more than double. This will place a great burden on the air traveler, who will have to allow for more time to get to the airport to catch his or her flight. It will make it difficult to expand the new airports with available capacity, since until they fully mature they will have few alternative flights to offer air travelers who miss their flights because of unreliable ground access. Unless the regional airport ground access system is substantially improved, many potential air travelers will choose not to fly at all, which will translate to substantial economic loss to the region. The 2004 RTP estimates that a constrained 2030 regional airport system with conservative assumptions about future airport ground access improvements translates to a loss of $18 billion and 131,000 jobs to the economy of Southern California.

SCAG adopted Regional Aviation Decentralization Strategy calls for making substantial airport ground access improvements throughout the region, in both the short term and long term. The short term program emphasizes relieving immediate bottlenecks around airports through arterial, intersection and interchange improvements, and increasing transit access to airports. Many of these improvements were programmed in the 2004 RTP, and are being updated for the 2008 RTP with strong local input from airport, city and county transportation planners.

SCAG is currently working with Los Angeles World Airports (LAWA) on planning and programming a regional system of FlyAways, based on the very successful Van Nuys FlyAway where passengers park their cars and take a bus to LAX. The locations of the proposed new FlyAways can be optimized by taking advantage of the region's developing high-occupancy vehicle (HOV) and light and heavy rail networks that can provide direct linkages to Ontario and Palmdale as well as LAX. Making seamless HOV and rail connections with enhanced service to those and other suburban airports will also comprise SCAG's short- and medium-range airport ground access strategy. The FlyAway, HOV and rail improvements to the suburban airports will help establish a pattern of

decentralization, by attracting a critical mass of passengers and airline service at those emerging airports.

Over the long term, SCAG aviation demand modeling indicates that the region will also need a system of high-speed rail to the suburban airports to reach our adopted aviation forecasts, which are moderate and even conservative when compared to other forecasts for the region such as those developed by the FAA. The high speed, reliability and predictability of high speed airport access will be needed to overcome mounting and increasingly unpredictable traffic congestion. For example, the initial operating segment of SCAG's proposed high-speed rail system from West Los Angeles to Ontario Airport will take only 30 minutes to travel from end to end, compared to over two hours by car in 2030. The regional high-speed rail system is an integral component of the 2008 RTP Preferred 2035 regional aviation demand forecast, as discussed further in this Report.

Recent History of Regional Aviation Planning in the SCAG Region

The latest regional aviation demand forecasts and policies developed for the 2008 RTP represent an evolution and refinement of aviation planning work that SCAG has conducted over the last two decades. They also reflect a regional consensus that has developed around key regional aviation issue. Regional aviation planning that SCAG has conducted during this time period is summarized below, to place current planning for the 2008 RTP in proper perspective.

MILITARY AIR BASE AND AIR CARGO PLANNING IN THE 1990S

In the 1990s, the focus of the SCAG Aviation Program shifted from airport site selection studies to assessing the potential commercial use of military air bases in the region. This was in response to a windfall of potential new airports that was presented with the closing or downsizing of a number of military air bases in two rounds of base closures in1991 and 1993. These included Norton Air Force Base (now San Bernardino International) March Air Force Base (now March Inland Port and March Air Reserve Base), George Air Base (now Southern California Logistics), and Marine Corps Air Station El Toro. SCAG aviation planners assessed the potential of these bases, as well as NAS Point Mugu in Ventura County, in a military air base study conducted in 1994. Detailed joint use feasibility studies of Point Mugu and March Air Force Base were also developed in 1994 and 1997.

The notable feature of all of these studies was that they employed sophisticated computer model technology to generate and allocate demand to existing and hypothetical airports. This technology is based upon extensive passenger surveys taken at all air carrier airports in the region that allow the model to replicate how different kinds of passengers would choose airports in a regional system that offers a variety of airport choices. This technology, called the Regional Aviation Demand Allocation Model (RADAM) was an enormous improvement over how SCAG aviation planners previously developed regional aviation forecasts. Previous forecasts employed relatively crude manual techniques and subjective judgment in trying to determine the potential of new airports to attract passengers and cargo to them in competition with established airports.

In 1992, SCAG aviation planners completed the region's first regional air cargo study, which documented evolving trends in the air cargo industry, such as the counties in the region that produced the most air cargo, and the potential of airports to serve only cargo and few or no passengers. The cargo estimation methodologies developed for that study, along with the RADAM technology, were applied to a military/civilian joint use study of March Air Force Base joint use study completed by SCAG in 1997. The main recommendations of that study were that there were no insurmountable obstacles to joint use of March AFB, and that the base had great potential as an all-cargo airport. The findings of that study set the stage for the signing of a joint use agreement between the U.S Air Force and the March Joint Powers Authority in 1997. After the March joint use study was completed, other former military bases in the In-

land Empire, including San Bernardino International and Southern California Logistics, also became interested in the all-cargo concept.

1998 REGIONAL TRANSPORTATION PLAN

SCAG's aviation system study for the 1998 Regional Transportation Plan (RTP) employed the RADAM modeling technology, and included all of the recently downsized or closed military airports, as well as Palmdale Airport, as potential new airports. This was in addition to the existing air carrier airport system of LAX, Ontario, Burbank, Long Beach, John Wayne and Palm Springs airports. However, the 1998 system study did not assume any capacity constraints at any of the airports, either legally enforceable policy constraints or physical capacity constraints. This produced an allocation of 94 million air passengers (MAP) to an unconstrained LAX in 2020, or 60% of the total regional forecast of 157 MAP. This forecast generated a considerable amount of debate and controversy. It was adopted by the Regional Council for the 1998 RTP, but only conditionally. The attached condition was that the issues associated with an unconstrained forecast would be revisited in the 2001 RTP and the process would be guided by an Aviation Task Force made up of elected officials, airport managers, representatives of the aviation industry and other public organizations. The Aviation Task Force has guided the system planning work performed for all subsequent RTPs.

2001 REGIONAL TRANSPORTATION PLAN

For the 2001 aviation system study, the Aviation Task Force defined a total of eight new system scenarios for modeling analysis in addition to the 1998 plan. In defining these scenarios, considerable attention was given to recognizing legally-enforceable policy constraints at airports, such as the 41 flights per day restriction at Long Beach which translated to 3 MAP, and the settlement agreement at John Wayne airport which at that time imposed an 8.4 MAP cap at John Wayne. All of the scenarios assumed market incentives to attract passengers to outlying airports including major ground access improvements to decrease travel times, full passenger awareness through marketing programs, free or low cost parking, and free shuttle service from major activity centers. All of them except the No Project Alternative also assumed an interregional high speed rail system that would connect most of the airports in the system. The scenarios were distinguished primarily by whether or not they assume capacity improvements at LAX from its previously proposed master plan, and whether or not they assume El Toro in the system. The No Project scenario also has Ontario constrained to its existing physical runway capacity of about 30 MAP.

During the middle of the system study, aviation staff decided to conduct a new capacity analysis for LAX and the Burbank Airport (now Bob Hope) to update capacity figures inherited from previous studies. The new capacity figures for LAX and Burbank were 78 MAP (runway capacity) and 9.4 MAP (terminal gate capacity), respectively. Some scenarios also incorporated an 86 MAP level for LAX that corresponded to the LAX Master Plan Alternative C. Also, the later scenarios eliminated NAS Point Mugu from the system, because the Navy went on record as opposing joint use of that facility.

The scenario that was adopted by SCAG for the 2001 RTP has been called a Decentralized Aviation Plan for several reasons. The Plan holds LAX to its physical capacity of 78 MAP; respects physical or legally-enforceable policy constraints at urban airports including Burbank, Long Beach and John Wayne; includes El Toro; and spreads the service of aviation demand to airports in the Inland Empire and north Los Angeles County to the extent possible. All of those outlying airports are unconstrained, assume market incentives to attract passengers to them, and are connected by a high-speed rail system. The adopted regional aviation forecast for the 2001 RTP was 167 MAP in 2025.

2004 REGIONAL TRANSPORTATION PLAN

Shortly after aviation system planning work for the 2004 RTP was initiated in March of 2002, Orange County voters approved Measure "W" that changed the Orange County General Plan to designate MCAS El Toro property for park and education compatible purposes. That same month the Department of Defense announced that it would sell El Toro land to private interests to be developed in a manner consistent with the new General Plan designation. The

Aviation Task Force subsequently decided not to include El Toro in any of the new regional aviation demand scenarios that were modeled and evaluated for the 2004 RTP. Other unfolding realities that were incorporated in the modeling included the sharp downturn of aviation passenger and cargo activity after the events of September 11, 2001, and the impacts of new security requirements on passenger demand at air carrier airports, particularly LAX.

The loss of El Toro as a potential commercial airport for the region presented a new set of challenges in developing a new Regional Aviation Plan for the 2008 RTP. This was because RADAM modeling demonstrated that even with very high population and growth rates in the Inland Empire and North Los Angeles County, the bulk of regional aviation demand in 2030 will still be concentrated in Orange County and western Los Angeles County. With John Wayne Airport constrained to it Settlement Agreement constraint of 8.4 MAP, Orange County was forecast to serve only about 1/3 of its aviation demand in 2030. The main challenge was how to decentralize locally-unmet aviation demand in the urban areas of Los Angeles and Orange counties to underutilized suburban airports in the Inland Empire and North Los Angeles Country with available capacities.

A total of six new regional aviation scenarios were modeled for the 2004 RTP, ranging from a highly constrained scenario to a completely unconstrained scenario, with a number of "moderate" scenarios in between. The 2001 plan assumed that a new runway would be constructed at Ontario Airport (for a total of three runways) but due to opposition by the City of Ontario, the airport was assumed to retain its existing two-runway configuration in all of the scenarios. A capacity analysis of Ontario concluded that it has an existing physical capacity of 30 MAP.

The Preferred Scenario that was adopted for the 2004 RTP held existing urban airports to their physical or legally-enforceable capacity constraints, and decentralized demand to suburban airports with available capacity to the maximum extent possible. An intra-regional high-speed rail system to those airports was assumed, which boosted demand served at those airports by making the airport access trip from urban areas much faster, and more convenient and predictable in the face of mounting traffic congestion. Market incentives at the suburban airports were assumed, and as well as incentives to use the high-speed rail system such as "integrated pricing" that would combine high-speed rail fares with air fares in the total ticket price. The adopted regional aviation demand forecast for the 2004 RTP was 170 MAP in 2030.

The Regional Aviation Plan adopted for the 2004 RTP also proposed an implementation plan/plan of action to be prepared following adoption of the 2004 RTP. It would include a regional airport ground access improvement plan, a regional airport financial plan, and a regional airport management plan. SCAG prepared an Airport Ground Access Element for the 2004 RTP that specified projects for each air carrier airport that are needed to keep ground access congestion in its service area at acceptable levels. Over the last three years SCAG has completed two regional airport management studies that evaluated alternative regional airport governance structures. SCAG aviation staff is currently working closely with the newly-reactivated Southern California Regional Airport Authority to implement the findings and recommendations of those studies.

Regional Aviation Forecasts for the 2008 Regional Transportation Plan

Recommended 2035 regional aviation demand forecasts for commercial airports in the regional aviation system, for air passengers and cargo, are shown in Table 1 and Table 2. The recommendations are for both the 2008 RTP (constrained plan) and the 2008 Strategic Plan. As discussed in a later sectionl, the variations of the 2035 Preferred regional aviation demand scenarios that were modeled only vary by the different configurations of the HSRT system that were assumed. The regional aviation demand forecasts for the 2008 RTP and 2008 Strategic Plan are therefore consistent with the HSRT systems that are recommended to be included in these plans. For the 2008 RTP, the 2035 regional aviation demand forecast is based on the Preferred Scenario that assumes the extended Initial Operating Segment (IOS) of the HSRT system, and for the 2008 Strategic Plan the forecast is based on the Preferred Scenario that

assumes the full HSRT system. Assumptions and parameters used to model all of the regional aviation demand scenarios are described later in the Report, under the section entitled, Aviation Demand Modeling and Forecasting for the 2008 RTP.

TABLE 1 2035 REGIONAL AIR PASSENGER DEMAND ALLOCATIONS FOR 2008 REGIONAL TRANSPORTATION PLAN AND STRATEGIC PLAN (IN MILLIONS OF ANNUAL AIR PASSENGERS - MAP)

Air Carrier Airports	2008 Regional Transportation Plan	2008 Strategic Plan
Bob Hope	9.4	9.4
John Wayne	10.8	10.8
LAX	78.9	78.9
Long Beach	4.2	4.2
March Inland Port	2.5	2.5
Ontario	31.6	31.6
Palmdale	6.3	12.9
Palm Springs	4.1	4.1
San Bernardino	9.4	9.4
So. Cal. Logistics	2.9	4.0
	Commuter Airports	
Imperial	3.5	3.5
Oxnard	1.7	1.7
Region Total	**165.3**	**173.0**

TABLE 2 2035 REGIONAL AIR CARGO DEMAND ALLOCATIONS FOR 2008 REGIONAL TRANSPORTATION PLAN AND STRATEGIC PLAN (X 1000 TONS)

Air Carrier Airports	2008 Regional Transportation Plan	2008 Strategic Plan
Bob Hope	86	86
John Wayne	45	45
LAX	2,496	2,496
Long Beach	134	134
March Inland Port	1,130	1,131
Ontario	1,959	1,959
Palmdale	781	812
Palm Springs	129	129
San Bernardino	1,290	1,290
So. Cal. Logistics	230	228
Region Total	**8,280**	**8,310**

Regional Aviation Policies

New regional aviation policies are recommended for the 2008 RTP with input from both the SCAG Aviation Task Force and the SCAG Aviation Technical Advisory Committee (ATAC). They respond to changing circumstances and new priorities in the regional aviation system. The recommended policies are divided into Aviation Guiding Principles and Aviation Action Steps, as follows:

AVIATION GUIDING PRINCIPLES

- Provide for regional capture of economic development opportunities and job growth created by the prospect of significant regional air traffic growth between now and 2035.
- Distribute maximum opportunity to Southern California airports where population and job growth are expected to be strong and where local communities desire air traffic for economic development.

- Reflect environmental, environmental justice and local quality of life constraints at existing airports that operate in built-out urban environments.
- Reflect that each county should have both the obligation and the opportunity to meet its own air traffic needs where feasible.
- Reflect that the region as a whole has an obligation to help pay the costs of airport environmental mitigation and ground access improvement in counties that serve a disproportionate share of regional air travel demand at their airports.

AVIATION ACTION STEPS

- Support capacity enhancements at existing and potential airports to handle anticipated increases in passengers and cargo volume where it is desired.
- Mitigate the effects of expanding airports and maximize air passenger and air cargo utilization of outlying airports in less-populated areas so that community impacts are minimized.
- Support the continued responsibility of SCAG for developing regional aviation and ground access plans for the region.
- Support the close cooperation between SCAG and other aviation organizations to facilitate the implementation of adopted regional aviation plans prepared by SCAG.
- Support legislative, marketing and ground access initiatives that promote the decentralization of aviation demand to under-utilized suburban airports where it is desired.
- Support more flexible use of airport revenues for off-airport ground access projects.
- Support giving priority to key airport ground access projects in the programming of transportation projects in the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP).
- Support a the development of a regional network of new flyaways that connect to multiple airports via HOV, light rail and commuter rail facilities, to help decentralize aviation demand to under-utilized suburban airports where it is desired.
- Support efforts to redesign the regional airspace system that may be needed to reduce significant conflicts and delays associated with future air traffic in SCAG's adopted 2035 regional aviation forecast.
- Support a more active role by the federal government in developing substantial incentives for airlines to upgrade their aircraft fleet to cleaner and quieter aircraft.

Aviation Demand Modeling and Forecasting for the 2008 RTP

For the 2008 RTP only three basic scenarios were modeled—an Unconstrained Scenario, a Constrained Scenario and a Preferred Scenario (with several variations, varied by different high-speed rail assumptions). This reflected a shrinking universe of possibilities with the loss of some potential commercial airports (i.e., El Toro and Point Mugu), and a regional consensus that had developed around some key issues. These consensus positions include a policy that LAX should be held to 78.9 MAP (LAX Settlement Agreement), that existing legally-enforceable policy and physical capacity constraints at urban airports should be respected, and that market incentives and ground access improvements should be used in the modeling to decentralize demand to suburban airport with the available capacity to the maximum extent possible.

New RADAM aviation demand modeling for the 2008 RTP incorporated updated assumptions about the impact of security screening at airports on passenger behavior, and the impact of rising fuel costs on air fares (a doubling of fuel prices in constant dollars by 2035 was assumed). For the first time air travel demand from San Diego County was assumed (San Diego International/ Lindbergh Field was constrained to its physical capacity of 22.9 MAP) and demand served by commuter airports in Southern California was included (i.e., Oxnard, Imperial and Palomar airports).

UNCONSTRAINED SCENARIO

The Unconstrained Scenario is a hypothetical scenario that assumes no physical or policy constraints at any air carrier airport in the region. In other words, each airport is allowed to expand without constraints and serve as much demand as it can. It is used as a benchmark to compare other scenarios with in terms of how close they come to serving unconstrained demand, and how much unserved or "latent" demand they represent.

The 2035 Unconstrained Scenario reached a regional total of 192.4 MAP in 2035 (and 215.4 MAP including unconstrained demand from San Diego County). This only slightly higher than the 192.0 MAP 2030 Unconstrained Scenario modeled for the 2004 RTP, mainly due to the assumed doubling of real fuel costs. The Unconstrained Scenario represents a 3.93 percent average annual growth rate from 2005 to 2035. This is less than the 4.44 percent growth rate from 2005 to 2025 for the FAA's unconstrained Terminal Area Forecast for the Western-Pacific Region.

CONSTRAINED SCENARIO

The 2035 Constrained Scenario represents a very conservative vision of the regional airport system. It assumes no high-speed rail system, no market incentives, and very conservative behavior on the part of the airlines in investing added flights at new and emerging airports. Like the other scenarios, it respects existing legally-enforceable policy and physical capacity constraints at urban airports.

In 2003 the Settlement Agreement at John Wayne Airport was amended to allow it to expand from 8.4 MAP to 10.8 MAP, so this new policy constraint was incorporated in the Constrained Scenario. A more detailed evaluation of the runway capacity constraint at Ontario Airport raised its constraint from 30.0 MAP to 31.6 MAP. The Bob Hope terminal gate constraint of 10.7 MAP that was used in the 2004 RTP was lowered to 9.4 MAP since Bob Hope Airport staff determined that the four remote aircraft parking gates assumed in the 2004 plan were no longer available for aviation uses. At the request of the March Joint Powers Commission, instead of assuming that March Inland Port was unconstrained, it was considered to be constrained by the 21,000 annual civilian operations allowed in the operative joint use agreement with the Air Force. A RADAM capacity analysis determined that this constraint equates to 2.5 MAP at March Inland Port, compared to an 8.0 MAP 2030 unconstrained forecast for March in the 2004 RTP. A refined capacity analysis of San Bernardino International's one-runway system produced a runway capacity constraint of 8.7 MAP. Neither March nor San Bernardino reached their capacity constraints in the Constrained Scenario due to its very conservative assumptions about future airline investment behavior.

The assumptions and parameters used to model the 2035 Constrained Scenario are as follows:

- LAX: Settlement Agreement - 78.9 MAP
- Bob Hope: Existing terminal/gate capacity – 9.4 MAP
- Long Beach: Flight restriction of 41 flights/day – 3.2 MAP
- John Wayne: New Settlement Agreement – 10.8 MAP
- Ontario: Existing runway) capacity – 31.6 MAP
- San Bernardino and Palmdale: Charter, corporate & commuter/short haul
- March and Southern California Logistics: Cargo, charter and corporate
- San Diego International: Existing runway capacity – 22.9 MAP
- Oxnard, Imperial and Palomar: Corporate, charter and commuter only (Oxnard & Palomar – constrained ops)
- Planned (RTP) ground access improvements
- No market incentives
- No high-speed rail
- Doubling of aircraft fuel costs

RADAM modeling for the Constrained Scenario produced a regional total of 145.9 MAP in 2035 (170.1 MAP including constrained demand from San Diego County). The Constrained Scenario for the 2004 RTP totaled 140.8 MAP in 2030.

PREFERRED SCENARIO

The Preferred Scenario is very similar to 2030 regional aviation system adopted for the 2004 RTP. It respects all legally-enforceable policy and physical capacity constraints at urban airports, with the changes modeled by the Constrained Scenario previously described. It assumes much more willingness on the part of the airlines to invest in new flights at new and emerging airports than in the Constrained Scenario, and a package of market and ground access incentives including the following:

- For Palmdale, ground access reliability would be the same as other airports. This assumes that additional access routes will be constructed to decrease the dependence of Rte. 14 in providing ground access to Palmdale Airport
- For Palmdale, future air trip propensities in the Antelope Valley increased by 15 percent to bring them closer to those in the San Fernando Valley. This assumes more high-income and high-tech employment in the Antelope Valley in the future
- For Palmdale, San Bernardino, March and Southern California Logistics airports: 100 percent of residents and 80 percent of non-residents are aware of airport choices. This assumes pervasive marketing campaigns, and automated internet-based booking systems
- Low-cost parking available at Palmdale, San Bernardino, March and Southern California Logistics airports
- Free shuttle service from major activity centers to Palmdale, San Bernardino, March and Southern California Logistics airports

Several variations of the Preferred Scenario were run, that varied by what they assumed for high-speed rail connections between airports. High-speed access tends to boost demand to airports with available capacity, particularly if it connects them to urban demand centers in Los Angeles and Orange counties. This is because it makes the access trip to those airports much faster, convenient and predictable in the face of mounting traffic congestion on major highways and surface streets in the future. The full intra-regional high-speed regional transport (HSRT) system is shown in Exhibit 2.

The Preferred Scenario that was modeled with the full HSRT system produced a 2035 regional demand total of 173.0 MAP (198.4 MAP including demand from San Diego County). This is very close to the adopted 2030 forecast for the 2004 RTP of 170.0 MAP. A variation of this scenario with the HSRT line extended to Palm Springs Airport instead of a March Inland Port constrained to 2.5 MAP boosted the 2035 regional demand total slightly, to 175.2 MAP (200.6 MAP including San Diego). A Preferred Scenario with no HSRT system reached 155.9 MAP in 2035 (177.9 MAP including San Diego).

The final variation of the Preferred Scenario that was modeled incorporated an abbreviated version of the HSRT system, which is the Initial Operating Segment (IOS) running from West Los Angeles to Ontario Airport, and extending west to LAX and east to San Bernardino International. This variation of the Preferred Scenario reached 165.3 MAP in 2035 (189.8 MAP including San Diego).

The 2035 modeling results of all three four variation of the Preferred Scenario by airport, compared to the allocations of the Constrained Scenario, are shown in Table 3.

EXHIBIT 2 PROPOSED HIGH-SPEED REGIONAL TRANSPORT SYSTEM

Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

TABLE 3 2035 AIR PASSENGERS ALLOCATIONS FOR REGIONAL AVIATION DEMAND SCENARIOS (IN MILLIONS OF ANNUAL AIR PASSENGERS – MAP)

Air Carrier Airports	Constrained Scenario	Preferred Scenario without HSRT	Preferred Scenario with HSRT Extended IOS	Preferred Scenario with HSRT full system (to March Inland Port)
Bob Hope	9.4	9.4	9.4	9.4
John Wayne	10.8	10.8	10.8	10.8
LAX	78.09	78.9	78.9	78.9
Long Beach	3.2	4.2	4.2	4.2
March Inland Port	0.6	2.5	2.5	2.5
Ontario	31.6	28.8	31.6	31.6
Palmdale	2.6	6.3	6.3	12.9
Palm Springs	4.1	4.1	4.1	4.1
San Bernardino	2.9	3.3	9.4	9.4
So. Cal. Logistics	0.7	2.4	2.9	4.0
Commuter Airports*				
Imperial	0.9	3.5	3.5	3.5
Oxnard	0.2	1.7	1.7	1.7
Region Total	**145.9**	**155.9**	**165.3**	**173.0**

* Existing commuter airports with potential to accommodate short-haul service

AIR CARGO FORECASTS

Air cargo forecasts were developed for each of the 2035 scenarios that were modeled, except for the Unconstrained Scenario. The forecasts ranged from 7.6 million tons for the Constrained Scenario to over 8.3 million tons for a Preferred Scenario with the full intra-regional HSR system. The adopted 2030 air cargo forecast for the 2004 RTP was 8.7 million tons. There are a variety of reasons why the new air forecast is lower than the adopted forecast in the last RTP. These include more domestic cargo being transported by truck and train, more international air cargo over-flying the region on longer-range aircraft or flying the Arctic Circle route with a stop at Anchorage, and high value-to-weight goods such as computers forecast to be lighter per unit volume. The 2035 modeling results of the air cargo forecasts are shown in Table 4. It should be noted that these forecasts are only for existing air carrier airports. Imperial Airport has potential to handle significant volumes of cross-border air cargo that are not included in these forecasts.

TABLE 4 2035 AIR CARGO ALLOCATIONS FOR REGIONAL AVIATION DEMAND SCENARIOS (X 1000 TONS)

Air Carrier Airports	Constrained Scenario	Preferred Scenario without HSRT	Preferred Scenario with HSRT Extended IOS	Preferred Scenario with HSRT full system (to March inland Port)
Bob Hope	86	86	86	86
John Wayne	45	45	45	45
LAX	2,621	2,574	2,496	2,496
Long Beach	109	139	134	134
March Inland Port	988	1,009	1,130	1,131
Ontario	2,086	2,117	1,959	1,959
Palmdale	463	658	781	812
Palm Springs	131	130	129	129
San Bernardino	831	1,072	1,290	1,290
So. Cal. Logistics	266	270	230	228
Region Total	**7,626**	**8,100**	**8,280**	**8,310**

AIRPORT GROUND ACCESS ELEMENT

The 2008 RTP may have localized ground access impacts at a number of airports. Particularly, the RTP will result in significant increases in airport activities (people as well as cargo) at Ontario, San Bernardino International, and Palmdale airports. RADAM modeling for the Preferred Scenario shows that

airport ground access deficiencies are concentrated near airport areas but that background congestion affects both airports and local communities.

The Airport Ground Access element for the 2008 RTP updates the list of arterial, intersection, interchange and transit improvements recommended by the 20004 RTP. These projects, consistent with RADAM modeling for the 2035 Preferred Scenario, are those that are needed to keep congestion within defined airport service areas for each airport at acceptable levels. They also reflect substantial input from local aviation and transportation planning staff from airports, cities and counties on local policies and priorities for airport ground access improvements.

The recommended airport ground access projects are divided into constrained projects that have funding commitments (i.e. the 2008 RTP) and unconstrained projects that do not have funding commitments (i.e., the 2008 Strategic Plan). Funding for the constrained projects total $2.3 billion, and funding for all projects in the Airport Ground Access Element, both constrained and unconstrained, total $5.2 billion.

Profiles of Air Carrier Airports in the Region

BOB HOPE AIRPORT (BUR)

1. Role in regional aviation system
   a. Bob Hope Airport in Burbank, California is a very convenient airport for its local service area comprising the cities of Burbank, Glendale and Pasadena, with good access to and from Los Angeles and the San Fernando Valley. Service is provided by Alaska, Aloha, American, Southwest, United, and US Airways, with frequent schedules along the West Coast and connecting flights across the entire country.
2. Recent passenger and cargo trends
   a. Air passenger and cargo activity are expected to increase steadily

TABLE 5 PASSENGER AND CARGO LEVELS AT BUR

	2000	2001	2002	2003	2004	2005	2006
Passenger (millions)	4.7	4.5	4.6	4.7	4.9	5.5	5.7
Cargo (million tons)	0.04	0.03	0.04	0.05	0.05	0.05	0.06

3. Airport location and acreage
   a. Location: 34° 12′ 02″ north latitude by 117° 21′ 31″ west longitude
   b. Acreage: Approximately 554.78 acres
4. Runway number and length
   a. Runway 15/33 – 6,886 feet long, 150 feet wide
   b. Runway 8/26 – 5,801 feet long, 150 feet wide
5. Terminal square footage and number of gates
   a. The BUR terminal is 212,000 square feet equipped with 14 gates
6. Hours of operation
   a. 24 hours General Aviation airport
   b. Commercial Service operations usually between 06:30 – 20:00 hours
7. Legal or physical capacity constraints
   a. The Airport Authority and the City of Burbank entered into an Airport Development Agreement in February 2005. The settlement outlines development guidelines for Bob Hope Airport over the next 10 years, including:

- The City will not change its zoning for the Airport, so that the Airport Authority may meet its facility needs consistent with that zoning for a period of seven years;
- The Airport Authority will not build a new passenger terminal for ten years and will not enlarge the current terminal during the agreement;

- The Airport Authority and City staff will jointly develop a strategy for addressing the desire for nighttime airport noise relief consistent with federal laws and procedures. This joint effort will include consideration of options within the Part 161 Study and options outside that process as well.

b. No stage 2 aircraft operations between 20:00 – 07:00

c. 14 aircraft parking positions/gates have a physical capacity of about 9.4 million air passengers (MAP)—SCAG analysis

8. Planned facility and ground access improvements

a. Construction of taxiway Delta to serve east west runway (est. 2008)

b. Parking restructuring

c. A new valet drop off/pickup zone

d. A new Pick-Up Center for a quicker exit from the airport

e. Reconstruction of I-5/Empire interchange with HOV access to the airport

f. Expansion of Burbank Bus Transit Center

g. Orange Line extension to the airport

JOHN WAYNE AIRPORT (SNA)

1. Role in regional aviation system

a. SNA is operated by the County of Orange and is the only commercial airport in Orange County. The service area includes 3 million people within the 34 cities and unincorporated areas of Orange County. In addition SNA is only one of two airports in Orange County to accommodate general aviation. SNA is served by three fixed-based operators and is home to more than 600 general aviation aircraft.

2. Recent passenger and cargo trends

a. SNA has served more than 100 million air passengers (MAP) since 1990. Designed to accommodate 8.4 MAP, the Riley Terminal has been serving approximately 9.6 MAP since 2006.

TABLE 6 PASSENGER AND CARGO LEVELS AT SNA

	2000	2001	2002	2003	2004	2005	2006
Passenger (millions)	7.77	7.32	7.90	8.53	9.27	9.62	9.61
Cargo (tons)	18,119	16,146	15,646	15,406	20,152	24,073	23,903

3. Airport location and acreage:

a. Location: 33° 40′ 32″ north latitude by 117° 52′ 5″ west longitude

b. Acreage: 500.82

4. Runway number and length

a. Runway 01L/19R – 5700 feet long, 150 feet wide

b. Runway 01R/19L – 2887 feet long, 75 feet wide

5. Terminal square footage and number of gates

a. Terminal A and Terminal B square footage total is 448,505 square feet (Each Terminal has approximately the same square footage, so if you divide this in half, you get approximately 224,250 square feet – Terminal B concourse is just slightly longer than Terminal A, but generally the square footage is close to equally split.).

b. SNA has 14 jet-bridges with 2 remote gates at each end of the terminal.

6. Hours of operation

a. The terminal operates daily from 0600 – 2230 daily.

b. The tower is staffed from 0530 – 2200 daily.

c. The Administration Building is staffed from 0730 – 1700 Monday – Friday.

d. Airside Hours of Operations:

- Departures: 0700 to 2200 (Monday – Saturday), 0800 to 2200 (Sunday)
- Arrivals: 0700 to 2300 (Monday – Saturday), 0800 to 2300 (Sunday)

7. Legal or physical capacity constraints

   a. 1985 – Settlement Agreement - A Federal court settlement was signed in 1985 by the County of Orange, the City of Newport Beach, the Airport Working Group (AWG), and the Stop Polluting Our Newport (SPON) to formalize the consensus reached between the County of Orange and the local communities on the nature and extent of airport improvements and defined operational and capacity limitations on those improvements.

   b. The 2003 Amendments of the 1985 Agreement allow John Wayne Airport to increase passenger levels to 10.3 MAP (through 12/31/10) then to 10.8 MAP (through 12/31/15) with a maximum of 85 flights per day. In addition, the amendment allow for the addition of new jet-bridges (not to exceed 20 total).

   c. General Aviation Noise Ordinance – The Orange County General Aviation Noise (GANO) establishes single event noise limits and other restrictions for aircraft operating at JWA.

8. Planned facility and ground access improvements

   a. Construction of a new terminal building south of the existing facility that would provide up to six passenger-loading bridges. Two of the six new passenger-loading bridges would be equipped to allow Federal Inspection Services (FIS), including Customs. The new terminal building facility and the existing facility would be connected via a concourse approximately 360 feet in length on the secure side of the terminal. The anticipated footprint of the facility is approximately 100,000 sq. ft. and is proposed as a multi-level structure encompassing an arrival level, departure level and mezzanine. Terminal design would allow access to all 20 passenger-loading gates from either the existing or proposed terminal building. An additional commuter area would be provided within the new terminal building facility to the south to accommodate commuter activity in the southernmost terminal. Passenger access to the commuter facilities would be on the lower level and access to these aircraft would be through ground loading.

   b. An extension of the existing terminal to the north, providing four passenger departure areas and hold rooms as well as ground boarding locations for commuter flights. Passenger access to these facilities would be via a new enclosed escalator adjacent to the existing stairway from the upper level passenger departure areas to the lower level and access to the aircraft would be through ground loading

   c. An extension of the hydrant fueling system to serve the passenger gates in the new terminal building and support aircraft refueling activities in the South Remain Overnight Area and cargo operations areas located south of the new terminal building. The hydrant fueling improvements would extend the existing hydrant fueling system to allow for hydrant fueling at up to 40 aircraft parking locations.

   d. Construction of a new multi-story parking structure sufficient to accommodate the authorized passenger levels that will be served at JWA. The parking structure would be located south of the existing east parking structure in the area currently used for valet parking. The parking structure footprint would be approximately 150,000 sq. ft. and provide up to 3,200 additional parking positions when completed. The proposed parking structure would be located within the onsite roadway improvements described below. The existing upper level roadway return would be demolished and the lower level return may be retained to improve on-site traffic flow and construction staging.

   e. Expansion of the existing apron area to allow for the parking of up to 34 total RON commercial aircraft. Twenty aircraft would be parked at gated positions, ten aircraft will be parked in remote, non-gated positions, and four will be commuter aircraft parked at non-gated positions. This would occur by extending the apron south of the current

terminal where the air cargo operations currently occur. The RON area would be increased by approximately 165,000 square feet and necessitate changes to the size and location of the transient apron currently located between the existing RON area and the first leasehold south of the RON. As a result of this RON expansion, air cargo operations would be moved further south to accommodate the new terminal building and facilities, but still remain on the east side of the Airport.

f. Modification of the lease holdings area on the east side of the Airport immediately south of the existing air carrier RON. This would include construction of a new hangar on the leasehold immediately south of the existing south RON. The strengthening of an existing transient apron would be required to accommodate the aforementioned improvements.

g. Provision of an additional right-turn lane on westbound Campus Drive to Bristol Street North, as required with Mitigation Measure T-1 in Final Program EIR 582. This turn lane would increase the number of turn lanes on Campus Drive to a total of three. The turn lane addition would be approximately 250 feet long and 15 feet wide. This improvement would require the relocation of the existing airport maintenance building, from the southeast corner of the Airport to an undeveloped parcel on the west side of the Airport in the vicinity of the existing airport administration building. The proposed maintenance facility will be located on a 2.4-acre site west of Aircraft Rescue and Fire Fighting (ARFF) Station 33. The new maintenance building would occupy a footprint of approximately 27,800 sq ft, and the gross facility including outbuildings will be approximately 32,000 sq ft. The existing maintenance facility on airport property on the corner of Campus Drive and Bristol would be demolished.

h. Modification of ancillary airfield components, such as relocation of helicopter landing pads required due to the aforementioned transient apron improvements and RON expansion, improvements to Taxiway 'C' to accommodate increased aircraft weights and to allow for two-way traffic during the morning bank of flights, and Taxiway 'A' improvements to support the increased length of the RON area and new terminal building, and other changes required by project design.

i. Relocation of various parking operations including on-site employee parking, valet parking, and rental car areas to accommodate the new terminal building.

j. Removal of the Edison 66 KV substation located south of the southwest parking structure and in the footprint of the new terminal building. When the substation is removed and prior to the start of construction on the new terminal building, Preferred Emergency (PE) gear will be installed or a secondary feed from the Michelson substation will be established on the Airport to avoid potential loss of electrical service. The selected temporary, back-up electric power source will be removed when the Airport installs an electric co-generation plant on site as part of a separate, independent project currently in design.

LONG BEACH AIRPORT (LGB)

1. Role in regional aviation system

   a. Known as the Region's "Easy in, Easy Out" Airport, LGB offers direct flights throughout the U.S. with convenient domestic and international connections. LGB offers easy access to the surrounding business centers and massive consumer markets. LGB is one of the world's busiest general aviation airports that serve privately-owned aircraft. With substantial general aviation activity LGB is an important reliever airport for LAX. Very strict noise regulations on commercial air operations have been put into place at LGB to protect the surrounding residential land uses. LGB currently accommodates about 3 Million Annual Passengers (MAP) and can potentially grow to somewhere between 4.2 to 5 MAP. In addition, Boeing Co. builds C-17 military airlifter aircrafts at LGB and Gulfstream has a completion/service center at LGB.

2. Recent passenger and cargo trends

a. In 2006 LGB dropped to 2.7 MAP because American Airlines ceased flying out of LGB. The flight slots have been re-allocated, and it is expected that 3 MAP should be reached in 2007. The decline in cargo tonnage is due to a reduction of all-cargo daily flights from 5 to 4. Approximately 49,947 tons of cargo passed through LGB in 2006. General aviation has been growing steadily with 333,824 general aviation operations in 2006, and has experienced over 23 percent growth so far in 2007.

TABLE 7 PASSENGER AND CARGO LEVELS AT LGB

	2000	2001	2002	2003	2004	2005	2006
Passenger (millions)	0.06	0.06	1.5	3.0	2.9	3.0	2.8
Cargo (million tons)	0.05	0.06	0.06	0.056	0.06	0.05	0.05

3. Airport location and acreage
   a. Location: 33° 49′ north latitude by 118° 09′ west
   b. Acreage: Approximately 1,170 acres
4. Runway number and length
   a. Runway 12/30 – 10,000 feet long, 200 feet wide
   b. Runway 7L/25R – 6,192 feet long, 150 feet wide
   c. Runway 7R/25L – 5,420 feet long, 150 feet wide
   d. Runway 16L/34R – 4,267 feet long, 75 feet wide
   e. Runway 16R/34L – 4,470 feet long , 75 feet wide
5. Terminal square footage and number of gates
   a. The LGB terminal is comprised of 56,320 square feet and includes 8 gates with 10 aircraft parking positions
6. Hours of operation
   a. 24 hours a day, 7 days a week (The Noise Compatibility Ordinance only permits airlines/commuters to schedule flights between the hours of 7am and 10pm)
7. Legal or physical capacity constraints
   a. The airport operates under the City of Long Beach's Airport Noise Compatibility Ordinance which limits the hours of operations for the airport. The Ordinance establishes cumulative noise budgets for airlines, commuters, charters, manufacturers, and general aviation. Airlines are guaranteed at least 41 daily flights (flights are defined as landings and takeoffs), and commuters are guaranteed at least 25 daily flights. Operational restrictions equivalent to a capacity of about 4.2 MAP
8. Planned facility and ground access improvements
   a. Long Beach City Council recently approved the design phase for terminal improvements; which include a terminal increase from 56,320 square feet to 89, 995 square feet.
   b. An increase in the number of aircraft parking positions from 10 to 12 slots has also been approved by City Council
   c. Additional on-site vehicular parking spaces have also been approved and will increase parking from 2,835 to 6,286 spaces.

LOS ANGELES INTERNATIONAL AIRPORT (LAX)

1. Role in regional aviation system
   a. LAX is the fifth busiest airport worldwide in terms of passengers and seventh worldwide in air cargo tonnage. LAX is served by approximately 80 passenger airlines, 20 cargo airlines and contributes more than $61 billion annually to the Southern California economy. LAX handles 70 percent of the passengers, 75 percent of the air cargo, and 95 percent of the international passengers and cargo traffic in the surrounding five counties. Approximately 408,000 jobs or one in twenty jobs are attributed to LAX operations in Southern California.

2. Recent passenger and cargo trends

   a. In 2005, more than 61 million passengers traveled through LAX. Rapidly becoming a major cargo center LAX has 1,000 cargo flights linking Los Angeles with the world. Its handling facilities include the 98-acre Century Cargo complex, the 57.4-acre Imperial complex, the Imperial Cargo Center and a number of terminals on the south side of the airport.

TABLE 8 PASSENGER AND CARGO LEVELS AT LAX

	2000	2001	2002	2003	2004	2005	2006
Passenger (millions)	67.3	61.6	56.2	55.0	60.7	61.5	61.0
Cargo (million tons)	2.0	1.8	1.9	1.9	2.1	2.1	2.1

3. Airport location and acreage

   a. Location: 33° 56′ north latitude by 118° 24′ west longitude

   b. Acreage: 3,425

4. Runway number and length

   a. Runway 24R/6L – 8,925 feet long, 150 feet wide

   b. Runway 24L/6R – 10, 285 feet long, 150 feet wide

   c. Runway 25R/7L – 12, 090 feet long, 150 feet wide

   d. Runway 25L/7R – 11,095 feet long, 200 feet wide

5. Terminal square footage and number of gates

TABLE 9 LAX TERMINAL SQUARE FOOTAGE AND NUMBER OF GATES

Terminal	Square Footage	Gates
1	365,750	15
2	486,653	10
3	300,766	13
TBIT	993,244	12
4	354,039	13
5	489,875	13
6	404,856	13
7	601,936*	11
8		9
Remote	N/A	28

**LAWA: Terminal 7 & 8 use the same baggage and ticketing counter and work cohesively, thus there is no reason to distinguish between the square footage*

6. Hours of operation

   a. 24 hours a day, 7 days a week

7. Legal or physical capacity constraints

   a. Million annual passengers (MAP) are limited to 78.9 million passengers

8. Planned facility and ground access improvements in 2008 RTP Airport Ground Access Element

   a. Airport Surface Street Access Project Modifications are projects aimed to alleviate ground access congestions and to complement future growth.

   - Project deleted or modified from the 2004 RTP (either initiated, completed or at the request of officials at Los Angeles World Airports and/or cities of Los Angeles and El Segundo):

     - Widen Sepulveda from Manchester to El Segundo to 5 lanes in each direction except for Sepulveda Tunnel—changed from Manchester to Lincoln

- Reconfigure Sepulveda southbound to Imperial westbound off-ramps to three lanes plus an emergency lane--deleted
- Add two additional turning lanes to the Century/Sepulveda intersection--deleted
- Widen Arbor Vitae (from I-405 to Sepulveda) to four lanes in each direction and two left turn lanes at Aviation and Airport intersections—left turn lanes deleted
- Widen Sepulveda between Lincoln and Centinela to provide bus/carpool priority lanes--deleted
- From Hughes Terrace to Fiji Way—widen up four lanes in each direction and various intersection improvements—under construction
- From Jefferson Blvd. to Fiji Way—widen from three to four through lanes in each direction, plus a fifth lane in each direction for ramp connect—under construction
- From I-105 to SR 90, add two HOV lanes and sound walls—under construction
- Rosecrans/Aviation intersection—lane additions and bridge widening—completed
- Arbor Vitae from La Brea to I-405—widening from two to four lanes with a left turn lane--completed

• Projects added (at the request of officials from Los Angeles World Airports and/or cities of Los Angeles and El Segundo):
  - Improve intersection at Aviation and Airport
  - Construct Pershing to new West Terminal interchange to a new arterial standard with three lanes in each direction and dual turning lanes
  - Add a second left-turn lane northbound and southbound on Centinela
  - Grade separation on Douglas between El Segundo to Rosecrans for Green Line

9. December 7, 2004 – City Council approved LAX Master Plan, Alternative D and Final Environmental Impact Report, with LAX Specific Plan approved on January 20, 2005.

   a. LAX Specific Plan "Green Light" Projects (i.e., "Baseline" Phase I master plan projects that are eligible for immediate recommendations by the LAWA Executive Director to the Board of Airport Commissioners)

   • South Airfield Improvements – Extend the life of Runway 25L and to relocate it approximately 50 feet south to accommodate a new center taxiway between the south runways. The new center taxiways will improve airfield safety and reduce runway incursions. $333 million project cost. Summer 2008 Estimated Completion.
   • Intermodal Transportation Center (ITC) – A new ITC located at the northeast corner of Imperial Highway and Aviation Boulevard will provide the primary short-term parking for the airport and transit access (including pedestrian access to a Green Line light rail station) as well as access to the Central Terminal Area (CTA) via the Automated People Mover System.
   • Consolidated Rental Car Facility
   • Automated People Mover System
   • Tom Bradley International Terminal (TBIT) airside/landside improvements. Program features baggage handling system automation and Explosive Detection System (EDS) installation. TBIT new large aircraft gate modifications to accommodate the A-380 and B-747 dual loading at the north and south end of terminal. Mechanical, electrical and plumbing upgrades. Signage, paging, airline information display updates. Critical elevator/escalator upgrades. Security upgrades – CCTV, ACAMS. Americans with Disabilities Act (ADA) compliance and fire/life safety upgrades. First Class/Business Class lounge upgrades. Interior finish improvements. $723.5 million project cost. Construction

begins January 2007 with a projected completion date of December 2009.

- Reconfigured Tom Bradley International Terminal (TBIT) – New hold rooms and departure gates capable of handling wide-body aircraft will be added to the west side of TBIT to replace the existing remote hardstands on the west end of the airfield.
- West Employee Parking – A new 12,000-space parking structure will be constructed on the west end of the airport to provide improved and consolidated employee security screening facilities. By locating this facility on the west side of the airport employee related traffic will be separated from local and passenger traffic.
- Expanded FlyAway Program – The FlyAway program will offer customers exclusive access to the internal CTA curb front.

b. LAX Specific Plan "Yellow Light Projects" (i.e., projects that must meet additional requirements prior to the Executive Director seeking an LAX Plan compliance, through a Specific Plan restudy)

- Center Taxiways – The airport's north runway system will be reconfigured to accommodate a center taxiway and improve the separation between the runways. Runway 24L of the south runway system will be relocated approximately 340 feet south, which will require the demolition of existing Terminals 1, 2, and 3, and the northern portion of the Tom Bradley International Terminal (TBIT).
- Construction of Ground Transportation Center (GTC) – The GTC will be built in the northeast end of the airport and will serve as parking and curbside passenger pick-up and drop-off. This facility will replace the existing drop-off/pick-up curbside and long-term parking in Lot C.
- Roadway for the GTC
- Automated People Mover system connecting the GTC to the CTA

MARCH INLAND PORT (MIP), IATA CODE IS RIV

1. Role in regional aviation system
   a. MIP currently operates as an all-cargo airport serving regional air cargo demand for both domestic and international air cargo services
2. Recent passenger and cargo trends
   a. The airport currently is not accommodating passenger commercial operations
   b. DHL is a major cargo carrier that has operations at MIP. The forecast for cargo tonnage is expected to increase based on the current available figures.

TABLE 10 PASSENGER AND CARGO LEVELS AT MIP

	2000	2001	2002	2003	2004	2005	2006
Passenger (millions)	0	0	0	0	0	0	0
Cargo (million tons)	0	0	0	0	0	9.24	43.96

3. Airport location and acreage
   a. Location: 34° 52′ 50″ north latitude by 117° 15′ 34″ west longitude
   b. Acreage: Approximately 300 acres
4. Runway number and length
   a. Runway 14/32 – 13,300 feet long, 200 feet wide
   b. Runway 12/30 – 3,010 feet long, 100 feet wide
5. Terminal square footage and number of gates
   a. None
6. Hours of operation
   a. 24 Hours
7. Legal or physical capacity constraints

a. Upon announcement in 1993 by BRAC of realignment of March AFB to an air reserve base, the adjoining jurisdictions formed the March Joint Powers Authority (JPA) to address base reuse at March AFB. The March JPA, in addition to being designated as the federally recognized reuse authority for the former active duty base, has also assumed other responsibilities. These responsibilities are carried out by governing bodies under the governance umbrella of the March JPA. These authorities include:

- The March Joint Powers Redevelopment Agency – responsible for the redevelopment of 6,500 acres of the former active base and approximately 450 acres adjacent to the base in the industrial area of the City of Moreno Valley.
- A streamlined the development process with the transferred of land use authority to March JPA from the County of Riverside. The establishment of building codes and standards by the March JPA.
- Management of airport development and operation through March Inland Port Airport Authority (MIPAA).

b. The Joint Use Agreement between the U.S. Air Force and the March JPA, signed in May, 1997, limits the base to 21,000 annual civil operations and 51,426 annual military operations (the civil operations are equivalent to about 2.5 MAP—SCAG analysis)

c. Costs associated to later night and early morning operations (23:00 – 07:00) may be shared with carriers on a negotiated fee basis

d. Current cargo users account for approximately 5,000 of the 21,000 allowable annual civilian operations.

8. Planned facility and ground access improvements

a. March Inland Port has over 600,000 square footage of future Ramp area planned for constructed. All planned facilities will be engineered to meet or exceed load requirements and to be fully stressed to accommodate aircraft up to 900,000 pounds.

b. Upgrading of Van Buren/I-215 interchange

ONTARIO INTERNATIONAL AIRPORT (ONT)

1. Role in regional aviation system

a. ONT is well situated to serve the future aviation needs of the Inland Empire and the Southern California Region for both cargo and passengers. Demand for air transportation will be created by the Inland Empire's rapid population growth; as well as its growth as a manufacturing and distribution center and the limited potential for expansion at LAX and other regional airports. The airport is the centerpiece of one of the fastest-growing transportation regions in the U.S. ONT is a medium-hub, full-service airport with commercial jet service to major U.S. cities and through service to many international destinations.

2. Recent passenger and cargo trends

a. ONT offers over 380 daily flights to every major U.S. city; which has facilitated the increase in passenger traffic over the past 10 years. In 2006, 7 million passengers and 602,326 tons of air freight traveled through ONT. Due to its location at the center of a rapidly developing freight movement system that includes the airport, two railroads, four major freeways and an expanding network of freight forwarders; ONT is served by nine major U.S. air freight carriers.

TABLE 11 PASSENGER AND CARGO LEVELS AT ONT

	2000	2001	2002	2003	2004	2005	2006
Passenger (millions)	6.8	6.7	6.5	6.5	6.9	7.2	7.0
Cargo (million tons)	0.5	0.5	0.5	0.6	0.6	0.6	0.5

3. Airport location and acreage

a. Location: 34° 03′ north latitude by 117° 36′ west longitude

b. Acreage: more than 1,700

4. Runway number and length

a. Runway 26R/8L – 12,200 feet long, 150 feet wide

b. Runway 26L/8R – 10, 200 feet long, 150 feet wide

5. Terminal square footage and number of gates

a. Terminal 2 – 265, 000 square feet

b. Terminal 4 – 265,000 square feet

c. International Arrivals Terminal – 40,500 square feet

d. ONT has 35 gates

6. Hours of operation

- 24 hours a day, 7 days a week

7. Legal or physical capacity constraints

a. Current policy prohibits flight training (touch and go's) by jet powered aircraft

b. Current policy prohibits engine run-ups during late night hours (2200-0700)

c. Current policy provides for the continuation of airport noise monitoring

d. Current policy designates airport staff to deal with noise management issues

e. Current policy establishes a 24-hour noise complaint telephone line

f. Two-runway configuration has a physical capacity of 31.6 MAP (SCAG analysis)

8. Planned facility and ground access improvements

a. When passenger traffic at ONT reaches 10 MAP in two consecutive years, a third terminal will be constructed

b. Pacific Gateway Cargo Center Project: the approximately 96-acre project would consist of roughly one million square feet of interior space as well as approximately one million square feet of aircraft parking areas ("ramps"). The proposed project site also would include roads and surface lots for trucks and automobile parking. The construction site is west of the old terminal at the northwest corner of ONT. The EIR (Environmental Impact Report) for the project has been completed, and both the EIR and the lease are expected to be approved by the Board of Airport Commissioners in September or October 2007.

c. Planned grade separations at South Milliken, North Grove and San Antonio

d. Planned interchange improvements at I-10 and Grove, Vineyard and Euclid, and SR 60 at Mountain, Archibald, Euclid, Haven and Airport Dr.

e. Planned extension of Metro Gold Line to airport

PALM SPRINGS INTERNATIONAL AIRPORT (PSP)

1. Role in regional aviation system

a. PSP is one of the fastest growing airports in the U.S. and is expected to continue growing in relation to the forecasted growth in the Coachella Valley. Currently PSP is competing against the other airports in the Southern California region for passenger traffic. As the Coachella Valley population continues to grow, it is anticipated that PSP will play an integral part in the local and regional aviation demands.

2. Recent passenger and cargo trends

a. In 2006 PSP was ranked the sixth fastest growing airport in the U.S. and is projected to increase by 8 percent by 2050. Passenger growth is expected to continue at approximately 5% average year over year - cargo N/A.

TABLE 12 PASSENGER AND CARGO LEVELS AT PSP

	2000	2001	2002	2003	2004	2005	2006
Passenger (millions)	1.28	1.17	1.11	1.25	1.37	1.42	1.53
Cargo (tons)	N/A	N/A	N/A	113	104	75	27

3. Airport location and acreage

a. Airport location: 33° 49′ north latitude and 116° 30′ west longitude

b. Acreage: 900 acres

4. Runway number and length

a. Runway 13R/31L – 10,000 feet long, 150 feet wide

b. Runway 13L/31R – 4952 feet long, 75 feet wide

5. Terminal square footage and number of gates

a. Bono Concourse 75,000sq.ft., 8 Gates:

b. Main Terminal 100,000sq.ft., 0 Gates after 9/15/07;

c. Regional Concourse 18,000sq. ft., 8 Gates (Completed September 2007)

6. Hours of operation

a. 24 hours a day, 7 days a week

7. Legal or physical capacity constraints

a. None

8. Planned facility and ground access improvements

a. New FAA control tower location search underway, expected completion 2012

b. New consolidated rental car facility is on hold pending master plan

c. New baggage claim processing facility is on hold pending capital improvement review

d. Terminal expansion: all estimates are subject to review when 2003 Master Plan Update is updated again in 2008. No information at this time

PALMDALE REGIONAL AIRPORT (PMD)

1. Role in regional aviation system

a. PMD is located in the Antelope Valley, in the northeast portion of the city of Palmdale, on a 60-acre site on United States Air Force Plant 42. PMD is approximately 60 miles northeast of Downtown Los Angeles off State Highway 14.

b. PMD is one of four airports owned and operated by LAWA, a City of Los Angeles department which also owns and operates Los Angeles International, Ontario International and Van Nuys. PMD serves the Antelope and Santa Clarita Valley areas as a regional airport providing short haul and feeder air service into larger hub airports. PMD is viewed as playing a key role in meeting the future demand for air travel in Southern California.

2. Recent passenger and cargo trends

a. Regional Jet (RJ) Service to San Francisco International began on June 7, 2007 at LA/Palmdale. United Express offers two daily roundtrip regional jet flights to San Francisco International Airport, where travelers can connect to flights serving domestic and international destinations. There was no commercial service at the airport in 2006. About 4,900 passengers used the airport in 2005. No cargo service.

TABLE 13 PASSENGER AND CARGO LEVELS AT PMD

	2000	2001	2002	2003	2004	2005	2006
Passenger	NA	NA	NA	NA	0	4,877	65
Cargo	0	0	0	0	0	0	0

3. Airport location and acreage

a. Location: 34° 37′ 45″ north latitude by 117° 05′ 04″ west longitude

b. Acreage: LAWA currently leases 61.75 acres of land from the United States Air Force (USAF) under a Joint Use Agreement (JUA) that allows civilian operations on Air Force Plant 42 (AF Plant 42). LAWA also owns 17,750 acres adjacent to and to the east of AF Plant 42 available for future development.

4. Runway number and length
   a. Runway 7/25 – 12,002 feet long, 150 feet wide
   b. Runway 4/22 – 12,001 feet long, 150 feet wide
   c. Runway 72/252 – 6,000 feet long, 75 feet wide
5. Terminal square footage and number of gates
   a. The passenger terminal located on leased property on Air Force Plant 42 is 9,000-square feet served by an 11,000-square yard apron for parking civilian aircraft. There are no contact gates. The apron can accommodate up to two narrow body jet aircraft. The former SR Technics aircraft maintenance facility located on Site #9 is owned by LAWA and consists of approximately 312 acres adjacent to A.F. Plant 42 Hours of operation
6. Terminal hours: 8 a.m. to 7 p.m. daily
   a. The terminal is staffed by airport police 24 hours, but is open to the public from 0600-2230, daily.
   b. The control tower is staffed from 0530-2200, daily. Operations do not occur when the tower is closed.
   c. A morning commercial flight will be added departing at 0600 in September so that will extend the hours for commercial operation. LAW is working with the military and FAA to extend the tower hours of operation.
   d. General aviation operations are not allowed at PMD at any time unless they are connected with the military or military contractors on the base.
7. Legal or physical capacity constraints
   a. LAWA's estimate for airfield capacity at PMD is:

   Annual Service Volume (ASV): 225,000

   VFR Hourly Capacity (Operations/Hour): 77

   IFR Hourly Capacity (Operations/Hour): 59

   b. LAWA's Joint Use Agreement with the Air Force currently allows up to 50 commercial operations per day but provides for a process to increase that limit to as high as 400 operations per day with the permission of the military.
8. Planned facility and ground access improvements
   a. Space is available on the 61.75 acre leased site for expansion of the passenger terminal facility and for development of future cargo facilities. There is also land available to the south of the terminal area to expand the leasehold with Air Force approval. The Joint Use Agreement with the U.S. Air Force (USAF) sets forth procedures for the use of AF Plant 42 as a joint military/civilian use airport, defines the level of commercial operations that can take place by domestic civilian operators, and specifies guidelines for the use of the acreage owned by LAWA. The USAF has determined that at least 50 civilian commercial operations per day can be accommodated without detriment to the military mission of AF Plant 42. The JUA allows for incremental growth of operations levels up to 400 civilian operations per day with the approval of the USAF. The lease site itself can be expanded to accommodate at least the 1 Million Annual Passengers forecasted to use the facility in 2030. LAWA is working with the City of Palmdale, the MTA and Caltrans to identify needed ground access improvements. These could include enhanced Metrolink service to the airport. Additional detail on the LA/Palmdale Master Plan is below.
9. LA/Palmdale Regional Airport Master Plan

   LAWA is in the process of developing a new Master Plan for LA/Palmdale Regional Airport (PMD). The purpose of the Master Plan is to analyze the local and regional issues that impact the airport and to address the following considerations: (1) determine the need to develop additional capacity at PMD through 2030, given the airport's current local market area; (2) determine the potential for PMD to play a larger role in the regional aviation system by accommodating demand beyond its market area considering the distance and travel time from the population cen-

ters; and (3) develop a plan that balances airport, economic and community goals in an environmentally sensitive and fiscally responsible manner.

The SCAG 2004 Regional Aviation Plan (RTP) proposes that a share of the total regional passenger and air cargo demand in the future be accommodated at PMD. The 2004 RTP Regional Aviation Plan proposes that PMD could play a significant role in accommodating passenger demand beyond its traditional service area if a high-speed rail system were developed that would allow easy access to PMD from the Los Angeles basin. SCAG also proposes significant changes in the way both the airports and the airlines do business today in order to stimulate growth of airline service at PMD. Many of these proposed changes would require changes in federal regulations regarding the ways that airports can set fees and spend money. With these services implemented, SCAG believes that PMD could attract as much as12.8 MAP by 2030.

Since the ability of the region to fully implement the SCAG Aviation Plan is uncertain at this time, LAWA has forecasted the demand for passenger air services at PMD to be 1.14 MAP by 2030 and has selected this forecast as a basis for master planning. This forecast was based on expected population and employment growth within the airport's traditional service area. The service area primarily covers the Antelope and Santa Clarita Valleys and portions of the San Fernando Valley. The Master Plan forecasts were limited by the existing and forecasted population and employment growth within the airport's defined market area and the isolation of the airport from the regional population center in the general Los Angeles basin.

The PMD Master Plan is being developed in three phases. Phase I, Determination of Airport Requirements, included the collection and documentation of data regarding existing facilities at PMD, other aviation facilities in the region, and the community issues at large; the development of forecasts of aviation demand for the next 30 years; an analysis of existing airport capacity; and a determination of future airport facility requirements.

Phase II, Analysis of Alternative Development Plans, included the formulation of alternative development scenarios for the entire airport site, recommendations for use of land not required for aviation purposes, and an analysis of the local and regional roadway systems affecting PMD.

Phase III, Airport Improvement Implementation Plan, includes a 30-year implementation plan and environmental analyses, the Airport Layout Plan, cost estimates and an Airport Capital Improvement Plan, and a financial implementation strategy.

The Master Plan is currently in the final stages of Phase II, which will end with the completion of a Draft Master Plan. A Notice of Preparation for the environmental documentation was released in January 2005 to collect comments on the proposed plan and any alternatives that should be considered.

Three alternative improvement concepts have been developed to expand PMD facilities to meet the forecasted demand. All alternatives assume that PMD continues to share the AF Plant 42 airfield, but propose expansion of passenger and cargo facilities on and off AF Plant 42. All alternatives also include airside, landside and roadway improvements built in phases keyed to passenger and cargo growth. Improvements will include passenger terminal expansion; additional aircraft gates for passenger and cargo operations; expansion of airside facilities such as aprons and taxiways; expansion of automobile parking lots; construction or expansion of access roads; construction of air cargo facilities; and construction of support facilities.

Alternative 1, the Proposed Action, includes expansion of the terminal and apron within the existing terminal area on AF Plant 42 and development or expansion of additional facilities on AF Plant 42 outside the current leasehold. Alternative 2 includes development of a terminal building, apron and cargo facilities within an area on LAWA property called Site 9, with a connecting taxiway to the AF Plant 42 airfield. Alternative 3 includes development of a terminal building, apron and cargo facilities east of AF Plant 42, entirely on vacant LAWA property. All alternatives

include a commercial/industrial development on LAWA property south of Avenue P. Commercial development of non-aviation property will help finance future infrastructure development.

LAWA is also developing a long-range strategic plan for PMD to show how the airport will accommodate passenger demand beyond 2030 or demand generated by the development of a high-speed rail system to PMD as suggested in the SCAG Aviation Plan in the 2004 RTP. The plan proposes a phased move to LAWA property as passenger volumes approach about 3 MAP. At that point, further investment in expansion on the Plant 42 leasehold would not be cost effective. Phased development of a new airport on LAWA owned property would be initiated, beginning with passenger terminal development. At build-out, the strategic plan will propose an airport that can handle at least the 12.8 MAP suggested by the SCAG plan, with two runways developed on LAWA property and connections to the AF Plant 42 airfield for additional capacity.

SAN BERNARDINO INTERNATIONAL AIRPORT (SBD)

1. Role in regional aviation system
   a. SBD provides an optimal location for air cargo and logistics management for companies conducting businesses in Los Angeles, Southern California, Mexico and the US inter-mountain regions of Denver, Salt Lake City, Las Vegas and Phoenix. Centrally located just 60 miles (96.5 kilometers) east of the Los Angeles International Airport (LAX), SBD is surrounded by major interstate freeways (I-10, I-215 and I-30-/I-210), enjoys an excellent local surface transportation access, is in a congestion-free air corridor and is located within two miles of a major intermodal BNSF Railway facility. SBD is well positioned as a consolidation/distribution center for both air cargo and ground shipments.
2. Recent passenger and cargo trends
   a. No scheduled commercial passenger flights have taken place at SBD since 1998. However, commercial charter operators have utilized SBD (irrespective of the terminal building) during the 2000 – 2005 periods.
   b. In 2002 it was estimated that approximately 12 large all-cargo aircraft used SBD (9 Antonov AN-24's, 2 Boeing 747's and 2 Convair 640's). Specific cargo operation information is not available. In addition, numerous cargo aircraft operate at SBD commonly through the FBO.

TABLE 14 PASSENGER AND CARGO LEVELS AT SBD

	2000	2001	2002	2003	2004	2005	2006
Passenger	249	217	234	1084	206	44	N/A
Cargo (million tons)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SBD: Specific cargo information is not available.

3. Airport location and acreage
   a. Location: 34° 05′ 43″ north latitude by 117° 14′ 06″ west longitude
   b. Acreage: Approximately 1,300 acres
4. Runway number and length
   a. Runway 6/24 – 10,001 feet long, 200 feet wide
5. Terminal square footage and number of gates
   a. From 2000 – 2005 SBD was equipped with two passenger gates at its 66,560 square feet terminal building.
6. Hours of operation
   a. SBD is open 24 hours per day, 365 days per year, and a 24 hour prior notification is required for commercial passenger operations
7. Legal or physical capacity constraints
   a. Airfield capacity is affected by:
   - Traffic coordination with other airports
   - High terrain affecting ILS minimums

8. Planned facility and ground access improvements
   a. Widening projects between Waterman and Mt. View Ave. – widen from 2 – 4 lanes between Tippecanoe and Mt. View, adding curbs, sidewalks and lighting
   b. Widening of 3rd and 5th streets from Tippecanoe to Palm
   c. Improvement to shoulder on Victoria, Del Rosa and Sterling Ave. from 3rd to 6th Streets.
   d. A new 4-lane bridge at Mountain View over the Santa Ana River
   e. Extension of Mountain View from Palm Meadow to I-10
   f. Upgrading of Waterman/I-10 and Mill/I-215 interchanges
   g. There is no near term plan for constructing a passenger terminal on the north end of the airfield--the existing terminal is being expanded and refurbished. The cargo terminal construction is listed on the Airport Capital Improvement Plan, but funding has not been programmed.
   h. The airport's air traffic control tower is being refurbished and will be operational in early 2008
   i. 40 new small hangars and a several large hangars on the runway's east side to be constructed

SOUTHERN CALIFORNIA LOGISTICS AIRPORT (VCV)

1. Role in regional aviation system
   a. The Southern California Logistics Airport specializes in goods movement and is a potential world class facility for serving international and domestic air cargo needs. The airport provides ground, air and rail transportation for the "fastest-to-market" delivery. The airport is capable of accommodating both military and commercial aircrafts. The Southern California Logistics Airport facility features two intercontinental runways including a 15,050 foot runway, allowing the heaviest aircraft direct, non-stop access to any destination in the world and a 10,000 foot runway. The air control tower operates 24 hours a day and has emergency response capabilities that are comparable to the world's largest airports.
2. Recent passenger and cargo trends
   a. PAX (military personnel for the National Training Center (NTC) and Twenty Nine Palms) board aircraft on the open ramp through the NTC leasehold.
   b. Cargo was below 1,000 during 2003, 2004, and 2005. Right now it is hovering at around 1,000 tons annually. Signs suggest it will continue to increase.

TABLE 15 PASSENGER AND CARGO LEVELS AT VCV

	2000	2001	2002	2003	2004	2005	2006
Passenger (millions)	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Cargo (million tons)	0.006	0.007	0.001	<0.001	<0.001	<0.001	0.001

3. Airport location and acreage
   a. Location: 34° 35′ 50″ north latitude by 117° 22′ 58″ west longitude
   b. Acreage: 3,000 acres
4. Runway number and length
   a. Runway 17/35 – 15,050 feet long, 150 feet wide
   b. Runway 03/21 – 9,168 feet long, 150 feet wide
5. Terminal square footage and number of gates
   a. Terminal Building is approximately 10,000 square feet
   b. No gates
6. Hours of operation
   a. 24 hours a day, 7 days a week
7. Legal or physical capacity constraints

a. None

8. Planned facility and ground access improvements

   a. A two lane road adjacent to I-15 is being increased to a four lane road which should be completed within a 12 month period.

   b. Construction of additional large maintenance hangars and corporate aircraft hangars.

   c. Construction a new fuel farm within the next 12 months.

   d. Runway 3/21 will be reconstruction within the next couple of years.

Airport Ground Access Element

1. INTRODUCTION/PURPOSE AND NEEDS

In 2007 the SCAG Region served a total of 89.5 million air passengers (MAP), a 15 percent increase over the 77.8 MAP served in 2002, and a doubling of the 44.7 MAP served in 1984. The 2008 Regional Transportation Plan (Preferred Aviation Plan) forecasts 165.3 MAP by 2035, or an 85 percent increase over the next 28 years, which is consistent with past growth trends.

Currently, six active commercial service airports handle the majority of passenger air traffic: Bob Hope, John Wayne, Long Beach, Los Angeles International, Ontario and Palm Springs airports. Limited commercial commuter service also exists at Oxnard and Imperial County airports. Passengers are currently concentrated at the urban airports with LAX serving 69 percent of the regional total. This concentration of demand coupled with increased general (background) traffic demand and airport capacity limitations have produced access problems for passengers and cargo movements.

In an effort to address the competing issues of meeting the air demand need in the Region, recognizing the traffic congestion near airports due to general traffic demand, and increasing air services closer to growth areas, SCAG has developed a 2035 Preferred Aviation Plan. The forecast demand of 165.3 MAP in the Preferred Aviation Plan is allocated to the 10 existing and future air carrier airports as shown in the following table, including Bob Hope (BUR), John Wayne (JWA), Los Angeles International (LAX), Long Beach (LGB), March Inland Port (MAR), Ontario (ONT), Palm Springs (PSP), Palmdale (PMD), San Bernardino International (SBI), and Southern California Logistics (SCL) airports.

TABLE 16 CURRENT (2007) AND 2035 PREFERRED AVIATION AIR PASSENGERS (MILLIONS OF AIR PASSENGERS (MAP))

	BUR	JWA	LAX	LGB	MAR	ONT	PSP	PMD	SBI	SCL	TOT
2007	5.92	9.98	61.90	2.91	0	7.21	1.61	0	0	0	89.53
2035	9.4	10.8	78.9	4.2	2.5	31.6	4.1	6.3	9.4	2.9	160.1

In addition, the 2008 RTP includes a 2035 passenger forecasts for two current commuter airports, Imperial and Oxnard, which were not included in the 2004 RTP. Those airports are forecast to accommodate scheduled air carrier service with passenger levels reaching 2.5 MAP and 1.7 MAP respectively. When those airports are added to the total, a total 2035 forecast for the Preferred Aviation Plan reaches 165.3 MAP. Compared to the 89.53 MAP served in 2035, this forecast represents a 3.0 percent average annual growth rate, which is consistent with actual regional passenger growth from 2001 to 2007.

The 160.1 MAP forecast for the ten current air carrier airports in 2035 is about 10 MAP less than the 170.0 MAP forecast for 2030 in the 2004 RTP. The reasons for this smaller forecast, even though it is five years farther out, include the following:

- Instead of the full inter-regional high-speed regional transport (HSRT) system assumed in the 2004 RTP, only the "Extended IOS" from LAX to San Bernardino International was assumed, with no HSRT segments extending to Palmdale or Southern California Logistics airports.
- At the request of the March Joint Powers Authority, the forecast for March Inland Port was reduced from 8.0 MAP in the 2004 RTP to 2.5 MAP, to be consistent with commercial operational limitations in the base's joint use agreement with the US Air Force.

- At the request of the Burbank-Glendale-Pasadena Airport Authority, the forecast for Bob Hope Airport was reduced from 10.7 MAP in the 2004 RTP to 9.4 MAP, since three remote airport parking positions were no longer assumed (the authority notified SCAG that the land was privately owned and unavailable for future aircraft parking).
- In the 2035 forecast modeling, a slowdown in regional passenger growth since 2003 was reflected, and a doubling of real fuel costs by 2035 was assumed, both of which dampened the forecast of future demand.

As discussed below, the reduced demand forecast for several airports, particularly March Inland Port and Palmdale Airport, also reduced airport-related traffic congestion and need for ground access improvements in and around those airports to alleviate that congestion.

Future air carrier demand will be largely met by utilizing available capacity at suburban airports in the eastern and northern areas of the Region, to make up for capacity constraints at the urban airports. Two suburban airports with little or no existing air carrier operations, Palmdale and San Bernardino International airports will grow to the approximate size of the current Ontario Airport in terms of passengers served. Cooperation between airport authorities is necessary to ensure efficient usage of this available capacity. Using the capacity promoted a decentralized system that relieves pressure on constrained, urbanized airports and the Region's surface transportation infrastructure. Air cargo operations will be similarly decentralized under the 2035 Preferred Aviation Plan.

The Preferred Aviation Plan attempts to distribute long haul and international service to suburban airports to the north and east of the dominant urban airports. Palmdale is one of the targets for this redistribution process. The 2035 Preferred Aviation Plan incorporates the proposed HSRT system, but only the Extended IOS from LAX to San Bernardino International Airport. This report analyzes and identifies the ground transportation improvements and that will be required to achieve an efficient airport ground access system for the 2035 Preferred Aviation Plan. HSRT facilities and issues (e.g., alignments, stations, ridership and access issues) are addressed in other sections of the 2008 RTP.

If the Preferred Aviation Plan is to become a reality, ground accessibility must not be a limiting factor in the efficient operation of the individual airports. Background traffic congestion will continue to grow, and impact several of the 10 commercial air-carrier airports. Therefore, some of the improvements are focused on freeways and interchanges. Other improvements are focused on arterial streets between freeways and airports. Additional improvements are internal to the airports, including roadways, parking, and transit facilities. These needed improvements, in many cases, must work with other projects already accounted for within the RTP. These include the HSRT system, freeway and interchange improvements, transit and other roadway projects.

Since the 2035 individual airport forecasts in the 2008 RTP are very similar to the 2030 forecasts in the 2004 RTP, the ground access project lists are very similar as well. The main difference is that several airports require fewer projects to alleviate forecast congestion because of lower demand forecasts and airport-related ground access congestion as previously noted. Projects that have been deleted from the 2008 RTP ground access project list because they have been completed since the 2004 RTP was issued, or are no longer needed, are summarized by airport later on in this report.

Some of the airport ground access projects identified in this Airport Ground Access Element or portions thereof are contained in the 2008 RTP Constrained Plan project list. Projects not in the Constrained Plan are needed for the efficient operation of these airports in terms in terms of alleviating forecast ground access congestion, but are beyond the current resources of the financially constrained 2008 RTP. They would be subject to further evaluation for potential inclusion in future RTP updates.

2. APPROACH/METHODOLOGY

2.1. PROJECTS NEEDS ANALYSIS AND SELECTION

2.1.1. Introduction

The ground access projects for the 2030 Preferred Aviation Plan were modeled using the

Regional Airport Demand Allocation Model, (RADAM) Version 9.11. This is the latest and most sophisticated version of the model that has been specifically configured to reflect changes that have occurred in the aviation industry and regional airport ground access since September 11, 2001.

The modeling addressed conventional ground access as well as the state-of-the-art HSRT system (Extended IOS), the principal transit feature of the Preferred Aviation Plan. The HSRT system occupies the highest echelon on the airport ground access hierarchy, since it allows for the rapid movement of passengers from constrained urban to unconstrained suburban airports as a central component of the Preferred Aviation Plan's decentralization strategy. The ground access improvements are in addition to HSRT access to airports assumed in the Preferred Aviation Plan.

This ground access effort specifically focused on integrated modeling of the impacts of the Preferred Aviation Plan on future ground access infrastructure including HSRT. Therefore, the improvement projects specifically apply to the Preferred Aviation Plan and are not necessarily relevant or transferable to other airport forecasts.

Finally, the improvement projects were designed to enhance the airport system's ability compete with airports outside of the SCAG region. Enabling air passengers to access their flights in a timely fashion, in a region that faces rapidly increasing traffic congestion on a surface transportation system that connects suburban airports with urban population and employment centers, will be a daunting challenge. The ability to meet this challenge has enormous economic implications for the region--an efficient airport system will be an essential prerequisite for the region to participate in expanding national and global economies of the future. The ground access projects identified in this report, in conjunction with HSRT, were designed to insure the highest efficiency levels for the SCAG airport system as a gateway to domestic and international air passenger markets in the face of mounting ground access congestion.

Study areas were defined in coordination with SCAG staff for all of the existing and future airports. Study area boundaries were based on initial airport traffic projections as well as on opportunities to develop effective improvement projects directly benefiting each of the airports in the Preferred Aviation Plan.

Although discrete study areas were delineated for each of the airports, the analysis did not exclude traffic generated by other airports sharing common roadways. To the contrary, the cumulative effects of all the airports in the system were reflected as additional traffic on shared infrastructure, including HSRT ridership.

2.1.2. Summary of Access Project Needs Analysis and Selection Methodology

2.1.2.1. Integrated Approach to Airport Ground Access

Conventional ground access studies rely on a simple relationship between the existing MAP (million annual passengers) and traffic observed entering and leaving an airport. This number is then applied to the forecasted MAP level of a particular airport to yield future airport traffic in isolation from other airports in the system. This approach lacks the sophistication that is critical to accurately reflecting the vast spectrum of physical airport and behavioral air passenger attributes that affect ground access in an interactive multi-airport system. To overcome this obstacle, the 2035 Preferred Aviation Plan relied on an advanced configuration of the RADAM 9.11 Model for identifying roadway deficiencies and improvement projects.

The modeling of the Preferred Aviation Plan was based on a complex airport system and an intricate set of behavioral assumptions, which could not be ad-

dressed by statistically based models. Therefore, the ground access modeling utilized a model that integrates all aspects of airport operations from arriving aircraft (by aircraft type, engine type, seating and load factor), through the airport runways, gates and terminals, all the way to the nearest cross-streets comprising the passenger's final destination. In essence, this modeling combined airport passenger and truck forecasts with behavioral aspects of passengers, truck surveys, SCAG demographic and background traffic forecasts, and airport portfolios and flight schedules, to generate the resulting airport ground access impacts.

In contrast to individual airport traffic studies, the integrated methodology provides simultaneous modeling of air passenger and cargo traffic generated by all ten air carrier airports in a dynamically interactive ground access system. In this system, traffic from all ten airports competes for capacity of shared infrastructure. For example, traffic associated with SBI, ONT and MAR will simultaneously draw on the capacity of shared local freeways and arterials. Due to its projected size (78.9 MAP) and an exclusive long haul and international flight portfolio, LAX traffic also draws on the capacity of facilities serving other airports in the system.

Most importantly, the integrated approach to ground access allowed for an internally consistent evaluation of projects for all the airports using the same standards, interpretations and platforms for all model inputs and assumptions, including regional aviation forecasts, regional demographics, HSRT, and background and airport traffic. Thousands of modeling calibrations –needed to incorporate air passenger airport and mode choice behavior into the modeling process were based on extensive RADAM databases of over 300,000 domestic and international passenger surveys taken at all air carrier airports in the region since 1993.

One of the advantages of this integrated methodology is its high sensitivity for testing of projects from different perspectives. For example, modeling can quantify how a minor change in a load factor on a single flight, or a change in the ratio of business-to-non-business passengers on the same flight will individually and cumulatively affect traffic at a particular intersection at a given time. Or, conversely, how many passengers will be delayed by congestion at a certain intersection on their way to a specific flight and how that will affect the airplane's departure time and load factor. This sensitivity was highly useful for generating a realistic evaluation and ranking of improvement projects for all airports under the Preferred Aviation Plan.

Previous traffic studies and other information, such as ground counts, generated by local jurisdictions were reviewed. Various aspects of airport ground access were discussed with local officials (including planning staff from cities adjacent to airports) and airport staff to obtain local input and perspectives

All of the assumptions regarding airport facilities and capacities, operational characteristics, market incentives, passenger attributes and high speed rail service to airports associated with the 2035 Preferred Aviation Plan were scrutinized and approved by the SCAG Aviation Task Force (ATF) and the Aviation Technical Advisory Committee (ATAC).

2.1.2.2. Approach to Airport, Background & Connecting Passenger Traffic

The modeling of the Preferred Aviation Plan began with RADAM databases containing a wealth of information on air passengers ranging from their current and historical propensities to fly, airport choice behavior, airport travel routes, historical travel patterns and high-speed train propensities, to regional and international air passenger origins and destinations.

2.1.2.2.1. Technical Approach to Traffic Assignment

In order to achieve consistency with SCAG's transportation planning, total regional traffic (combined airport and background traffic) was imported from the SCAG's regional model into RADAM for the year 2035. Airport trips were deducted from total traffic in the SCAG model to yield background or ambient traffic. This background traffic was then combined in the RADAM model with airport traffic stemming from the Preferred Aviation Plan. As expected, traffic resulting from smaller airports in outlying areas (e.g. SCL) required little in terms of traffic redirection or re-assignment to alternate, less congested airport access routes.

Generally, airport and background traffic integrated well without exceeding roadway capacities and the need for significant re-assignments to alternate routes. This is in contrast to urban airports with congested ground access, which required significant redistribution of both airport and background traffic in the face of unacceptable roadway overloads.

In conventional assignment models, all traffic (background and airport-related) is combined and generically redirected based on a simple re-calculation of exact passenger travel times from a local trip origin to a destination airport. Background and airport trips are treated exactly the same as they are re-assigned from overly congested roadways to alternative routes in an effort to reduce or equalize their travel times. However, RADAM modeling for the 2035 Preferred Aviation Plan specifically accounted for behavioral differences between the various air passenger categories, and applied discrete re-assignment rules to each category.

Different re-assignment rules were applied to residents and non-residents, commuters and non-commuters, frequently flying residents taking short-haul flights, first-time international visitors, etc. This behavioral approach to modeling is necessary to achieve realistic results. For example, first-time international visitors tend to stay on major arterials and freeways providing the most direct access to an airport regardless of congestion, whereas frequently flying, resident business passengers often divert to more indirect routes to avoid traffic choke points. These discrete traffic re-assignments of air passengers, including specific redirection rules, were based on extensive RADAM surveys taken at all air carrier airports in the SCAG region.

2.1.2.2.2. Approach to Deficiency Analysis

In statistically based models, all trips generated by the various land uses are assigned to the roadways even if the roadways are already well over their physical capacity. This results in traffic volumes that are unrealistically high on certain freeways and arterials, often exceeding their physical capacity by more than 50%. In the Preferred Aviation Plan, the modeling shifted some background traffic overloads to alternate routes or off-peak periods, and shifted some background and airport trips to other modes of transportation such as HSRT. In some cases, it even suppressed some discretionary background trips to avoid unrealistically high traffic to roadway capacity ratios.

2.1.2.2.3. Circuitous Airport Travel

Airport traffic is also compounded by another, often ignored phenomenon of air passengers, particularly visitors, getting lost on their way to or from an airport. In some cases, this is due to intuitively confusing roadway signage (i.e., US 101 North and South at the I-405/US 101 interchange6), and in other cases it is due to differences in urban topography compared to other cities, especially in the Far East and Europe. "Lost traffic" adds more indirect and circuitous trips to ground access. To be more realistic, the Preferred Aviation Plan simulated lost travel to airports through a technique called Asymmetric Logic. However, in the future it was assumed that improved airport signage, GPS and other onboard technologies will reduce, although not eliminate, "lost traffic". The regional HSRT system will eliminate some lost travel in the vicinity of airports with direct and convenient connections to airport terminals.

2.1.2.2.4. Route Reliability Approach

Some airports in the region suffer from having only one main access route to and from major demand centers, which can greatly impede their accessibility if that route is subject to high levels of congestion and/or traffic accidents. For example, PMD (forecast of 6.3 MAP in 2035) is served by a single freeway (SR-14) from the south. Should the freeway suffer from significant congestion, as projected, or high closure rates (due to accidents), this will lower PMD's overall passenger forecast (reflected in the forecast for PMD in the 2035 Constrained Scenario of 2.6 MAP). Therefore, the Aviation Task Force approved the assumption that necessary improvements would be made to SR-14 to boost its "route reliability" status in the Preferred Aviation Plan. Unlike the 2004 RTP, the 2008 RTP does not assume HSRT rail access to PMD. However, the 6.3 MAP forecast for PMD in the 2035 Preferred Aviation Plan does assume greatly improved ground access to PMD through planned or programmed projects,

including HOV and transit improvement to SR-14, improvements to SR-118 to the west, and the construction of the High Desert Corridor to the east.

2.1.2.2.5. Connecting Passenger Ground Access Impacts

In conventional ground access studies, connecting passengers are often assumed to remain at the airport and are not accounted for in ground access. The modeling of the Preferred Aviation Plan used RADAM surveys to reflect air passengers who temporarily leave the airport for hotels, restaurants and other local attractions using conventional ground access such as hotel shuttle vans. Furthermore, the modeling showed that more connecting passengers would leave airports by HSRT and then return for their scheduled departure, taking advantage of HSRT's precise schedule and predictable, on-time performance.

Behavioral RADAM modeling also showed that some connecting passengers would extend their stay by catching later flights, with more flights available at future airports under the Preferred Plan, in order to visit local destinations, thereby contributing to local economies.

2.1.2.2.6. On-Site Traffic Surveys

Baseline traffic conditions of airport and background traffic were established based on on-site field surveys using uniform methods and standards for all study areas for the same time periods, as opposed to differentially collected, and sometimes outdated, information from various sources.

Ground counts of combined airport and background traffic were compared with regional model outputs for existing conditions. Differences between actual counts and the Regional Transportation Model outputs were noted and accounted for in the modeling of future background traffic conditions. A number of trip generation counts were also taken at selected land uses (i.e. shopping centers) to develop more realistic background traffic. Selected roadways, intersections and freeway segments were digitally recorded to provide visual augmentation to computer simulations.

2.1.2.3. Technical Summary of the Modeling Sequence

Passengers are generated for each passenger cluster (passenger origin or destination identified by nearest cross streets, 3,200 total in the SCAG Region) based on RADAM surveys, perceived travel times to airports and SCAG demographic data. Air passengers are then allocated to airports based on meeting their expressed travel needs with the combination of airport attributes at each airport such as airport portfolios, available flights, etc. The initial airport attributes are incrementally refined to accommodate specific passenger demands within constraints imposed by the Preferred Plan assumptions (i.e. LAX at 78.9 MAP). Once these refinements are made, specific flights are developed in accordance with the airport system assumptions. Flights are scheduled based on passenger demand, and physical airport parameters (gates, taxiways runways, etc.) consistent with the assumptions approved by the Aviation Task Force.

For arriving passengers, aircraft types, load factors, arrival times, and processing through the terminals (including security, immigrations/customs, etc.) are used to determine when they will embark on the ground access portion of their journey. For departing passengers, discrete time-before-departure characteristics (from the survey database) are used to determine when the different passenger categories (resident, non-resident, etc.) leave for different types of lights (i.e. commuter, short haul). Ground access trips are then generated for each arriving aircraft by passenger category, mode choice and destination within or outside of the region. Truck traffic is based on allocations of tonnage to airports for several air cargo categories (express, freight, mail, e-commerce). Truck traffic is subsequently merged with other traffic (through passenger-car-equivalent/PCE methods).

Air passenger assignments are based on historical RADAM surveys of routes typically taken by the different passenger categories (i.e., business and pleasure) for different types of flights (by haul type) during peak and off-peak hours. For example, assignments for business passengers going on commuter flights are different from all-inclusive tour passengers going on international flights during peak hours. In addition, assignments are based on routes that

were historically favored by passengers going from specific RADAM zones to different airports. Truck assignments are also based on surveys of historical truck travel patterns and take into account differences in truck type and cargo category.

Passenger trips compete for roadway capacity with background and truck traffic. Different categories of air passengers are either retained or diverted from overloaded roadways based on discrete rules. Background trips are re-assigned according to different rules than air passenger or truck trips. Some background traffic is dynamically shifted to alternate routes, to off-peak periods, to other modes of transportation, or in some cases, it is suppressed to avoid unrealistically high overcapacities. Capacity deficiencies are noted and improvement projects developed based on standard engineering methods (ICU's, v/c ratios, etc.) The entire package of projects is then tested to insure that ground access does not cause unacceptable delays to flights, or more importantly, do not change the adopted MAP forecasts for the individual airports.

2.1.2.4. RADAM HSRT Model Methodology

2.1.2.4.1. HSRT Partnership Model

The ground access mode choice is based on a two-fold process, with separate modeling streams for HSRT and conventional ground access. HSRT allocations are not simply shares of total trips, as is the case with conventional models. In these models the total number of trips is run through several mode choice equations, which incrementally split the total number of trips into different modes of transportation such as HSRT. This methodology lacks sufficient sophistication to reflect the unique generation characteristics of HSRT ridership. Surveys of over 126,000 high-speed rail passengers (taken on TGV, ICE and Japanese high-speed-rail systems) confirm that HSRT ridership is based on a wide range of behavioral attributes, which cannot be addressed by conventional mode choice models by simply splitting a fixed number of total trips into several categories. Therefore, the RADAM HSRT Model is a separate, or a so called "partnership model", nested within the overall model architecture where it works in tandem with the rest of the models, rather than as a subordinate model. Because it is a "partnership model", it can be run independently from the RADAM airport, traffic, and economic models. In that capacity, it features its own generation, distribution, and passenger allocation functions (as well as a non-airport passenger allocation function). After being generated, HSRT ridership is then merged with conventional mode choice distributions to produce a more realistic replication of the behavioral aspects of HSRT ridership.

2.1.2.4.2. HSRT Effects on Land Use

As a major transportation advancement, HSRT will significantly impact land use and development due to its superior airport accessibility, on-time performance, reliability, comfort and ability to reach speeds in excess of 180 mph. Companies that rely on air transportation will locate closer to HSRT stations and alignments for reliable and efficient access to airports in the face of mounting regional highway congestion. This will increase HSRT ridership propensities around HSRT facilities. Therefore, land use modeling is a significant function of the RADAM 9.11 model, which generates "catalytic land use configurations" in the vicinity of HSRT stations and alignments. These configurations are specifically quantified in terms of modified population and employment forecasts (by general sic code) for zones around HSRT stations and alignments. A variety of different catalytic land use configurations can be generated in conjunction with existing and future land use patterns. However, the modeling of the Preferred Aviation Plan used the Preferred Plan Forecast for socio-economic input into RADAM and did not specifically address land uses in the vicinity of HSRT stations and alignments.

2.1.2.4.3. HSRT Ridership Generation

In conventional models, HSRT ridership is a simple percentage of a fixed number of total trips based on factors such as comparative costs with other modes of transportation and trip lengths.

In the modeling of the 2035 Preferred Aviation Plan, HSRT ridership was generated from the "bottom up" based on passenger propensities for HSRT ridership derived from an extensive survey database. The generation of HSRT passen-

gers is based on 97,000 surveys in Southern California, identifying historical as well as current propensities for HSRT ridership for 3,200 traffic analysis zones (TAZ's) in the SCAG region. This geographic delineation insures consistency with SCAG's demographic and traffic forecasts, which are based on the same zone system. HSRT ridership is generated through unique equations for each TAZ or selected conglomerations of zones sharing similar attributes. Unlike conventional models, the generation phase of RADAM distinguishes between baseline, induced and catalytic HSRT passenger demand. The modeling of the Preferred Aviation Plan used factors such as route reliability assumptions, integrated airfare/HSRT pricing, perceptions of congestion and travel times as well as sensitivities to on-time performance to more realistically project behavioral attributes affecting induced HSRT ridership. Catalytic passenger demand was reflected in increased HSRT ridership propensities around HSRT stations and alignments.

2.2. GROUND ACCESS PROJECT IDENTIFICATION AND SELECTION

2.2.1. Ground Access Project Development Process

Projects developed for each of the study areas were based on a number of considerations.

However, the overriding goal of these projects was to improve airport access to the highest degree possible to insure high efficiency of the proposed 2035 decentralized airport system and its competitiveness with airports outside of the SCAG region. An overview of the overall airport ground access identification and selection process is depicted in the figure below.

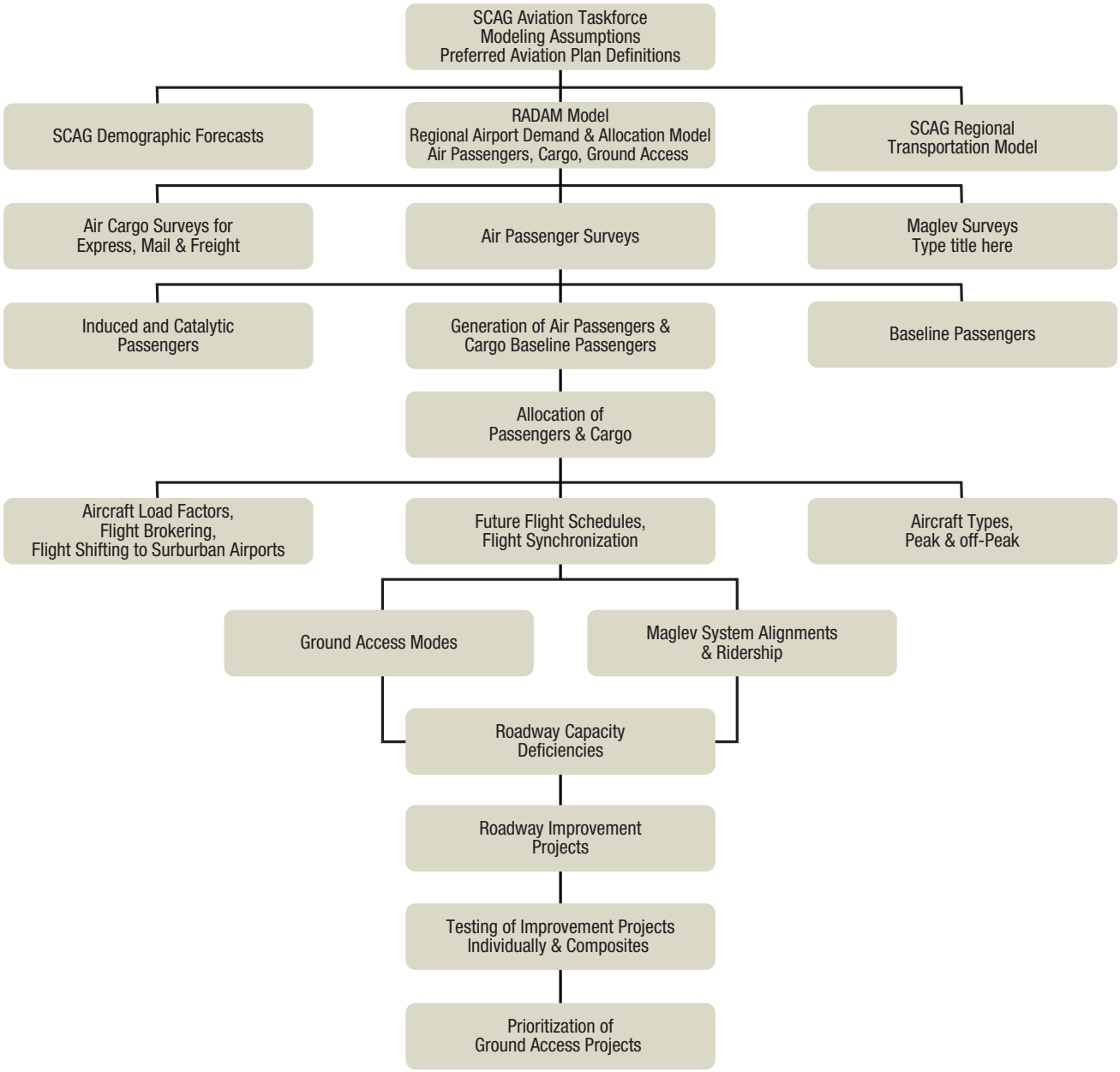
The modeling of the Plan generated air passenger trips for several passenger categories (e.g. business, non-business, inclusive tours, resident, non-resident and part-time resident passengers). Air cargo trips were also generated for different cargo categories including general freight, express, e-commerce, as well as HSRT cargo (express and high-value cargo). Traffic flows generated by the various passenger and cargo trips were used individually and cumulatively to identify roadway capacity deficiencies. The already funded, Baseline projects were included in the 2030 roadway system. The identified improvement projects are in addition to HSRT assumed in the Preferred Aviation Plan.

2.2.2. Approach to Capacity Deficiency Modeling

Projects were based on standard traffic engineering methods and criteria including intersection capacity utilization (ICU), mid-block v/c ratios (as generated the SCAG Transportation Model), freeway weaving area analysis, interchange ramp analysis, passenger-car-equivalents for truck traffic as well as refined (level of service) airport parking demand analysis. Essentially, all these techniques examined the relationship between the forecasted traffic volumes and nominal roadway capacities. The capacities for different roadway categories used in the modeling are consistent with SCAG's regional transportation model.

Efforts were also made to mitigate congestion in the vicinity of airports by providing alternate routes for background and through traffic. For, example, improvements on Imperial Highway would help channel some northbound traffic away from LAX by providing an alternative route to Playa Vista. This would help in reducing congestion on Sepulveda Blvd. in the vicinity of LAX, including the Sepulveda Tunnel. The development of projects for the ten airports was facilitated by the synchronized modeling of airports, flight schedules and HSRT in conjunction with conventional ground access. In synchronized modeling of several airports in the system, ground access times are an important factor affecting airport forecasts in terms of air passenger and cargo demand. Consequently, major ground access improvements could reduce travel times to certain airports and make them more attractive to passengers and cargo. This would result in increased forecasts for airports with substantially improved ground access and reduced forecasts for the remaining airports with fewer ground access improvements. Since the Aviation Task Force adopted specific airport forecasts, as well as the regional total of 165.3 MAP, the improvement projects were balanced to insure consistency with these forecasts and the regional total in the Preferred Aviation Plan. Improvement projects were developed based on (a) severity of capacity deficiency as expressed by volume/capacity ratios; (b) effectiveness in alleviating congestion on principal

OVERVIEW OF GROUND ACCESS PROJECT IDENTIFICATION AND SELECTION PROCESS



ground routes; (c) ability to relieve background and through traffic to free up capacity for air passenger and air cargo truck traffic; and (d) ability to forestall the loss or diversion of passengers and cargo to other competing regions.

3. MODIFICATIONS TO GROUND ACCESS PROJECT LISTS BY AIRPORT

As discussed in section 1 above, the airport ground access project list in the 2008 RTP is very similar to the list in the 2004 RTP since their demand forecasts are also very similar. the are very similar as well. The main difference is that several airports require fewer projects to alleviate forecast congestion because of lower demand forecasts and airport-related ground access congestion. Major projects that have been deleted from the 2008 RTP ground access project list because they have been initiated or completed since the 2004 RTP was issued, or are no longer needed, are summarize below. Also, projects that have been added, deleted or modified compared to the 2004 RTP project list, because of changed priorities as expressed by local officials, are noted as well. Airports not listed below did not have any substantial changes to their ground access project lists from the 2004 RTP to the 2008 RTP.

3.1 BOB HOPE AIRPORT (BUR)

Projects deleted or modified (either initiated, completed or at the request of officials from the City of Burbank):

- BUR 2—Upgrade capacity of Hollywood/Thornton Intersection by adding two additional turning lanes and increased turn lane storage capacity—under design.
- BUR 3—Add one additional lane in each direction on Hollywood Blvd. from San Fernando to Hollywood/Edison—revised to delete lane additions south of Empire
- BUR 5—Upgrade Whitnall/Alameda Intersection (additional turning lanes)—deleted
- BUR 6—Add interchange ramps at Buena Vista and I-5 interchange—deleted
- BUR 7—Construct a modified interchange at Empire and I-5—deleted

Projects added (at the request of officials from the City of Burbank):

- BUR 5—Empire Transit Center—construct a multi-modal bus transit center in the vicinity of Empire Ave. and Hollywood Way adjacent to the BUR Metrolink/Amtrak station
- BUR 6—Construct a Clybourn Ave. grade separation west of BUR to directly connect Vanowen St. to Empire Ave. (to provide continuous arterial from Rte. 5 and new Empire Ave interchange to North Hollywood and improve east-west access in the Golden State area of Burbank)
- BUR 10—Intersection flaring at 35 major intersections for additional turn lanes, including Hollywood Way, Buena Vista St., Victory Blvd., Empire Ave., and Vanowen St. (with no widening of Hollywood Way south of Empire)
- BUR 13-- Extend the MTA Orange Line East from its current terminus at the North Hollywood Red Line Station to Bob Hope Airport. Metrolink Station or Empire Area Transit Center (costs currently unavailable)

3.2 LOS ANGELES INTERNATIONAL AIRPORT (LAX)

Project deleted or modified (either initiated, completed or at the request of officials at Los Angeles World Airports and/or cities of Los Angeles and El Segundo):

- LAX 1—Widen Sepulveda from Manchester to El Segundo to 5 lanes in each direction except for Sepulveda Tunnel—changed from Manchester to Lincoln
- LAX 2—Reconfigure Sepulveda southbound to Imperial westbound off-ramps to three lanes plus an emergency lane--deleted
- LAX 9—Add two additional turning lanes to the Century/Sepulveda intersection--deleted
- LAX 12—Widen Arbor Vitae (from I-405 to Sepulveda) to four lanes in each direction and two left turn lanes at Aviation and Airport intersections—left turn lanes deleted
- LAX 17/26—Widen Sepulveda between Lincoln and Centinela to provide bus/carpool priority lanes--deleted
- LAX 20--From Hughes Terrace to Fiji Way—widen up four lanes in each direction and various intersection improvements—under construction
- LAX 21—From Jefferson Blvd. to Fiji Way—widen from three to four through lanes in each direction, plus a fifth lane in each direction for ramp connect—under construction
- LAX 23—From I-105 to SR 90, add two HOV lanes and sound walls—under construction
- LAX 24—Rosecrans/Aviation intersection—lane additions and bridge widening—completed
- LAX 27—Arbor Vitae from La Brea to I-405—widening from two to four lanes with a left turn lane--completed

Projects added (at the request of officials from Los Angeles World Airports and/or cities of Los Angeles and El Segundo):

- LAX 8—Improve intersection at Aviation and Airport
- LAX 17—Construct Pershing to new West Terminal interchange to a new arterial standard with three lanes in each direction and dual turning lanes
- LAX 26—Add a second left-turn lane northbound and southbound on Centinela
- LAX 27—Grade separation on Douglas between El Segundo to Rosecrans for Green Line

3.3 MARCH INLAND PORT (MAR)

Projects deleted, primarily due to a forecast reduction from 8.0 MAP in the 2004 RTP to 2.5 MAP in the 2008 RTP:

- MAR 5—Widen ramps at I-215/SR 60 interchange

- MAR 13—Add one lane in each direction on Alessandro from Day to Troutwein
- MAR 14—Add two turning lane configuration to Alessandro/Frontage intersection

3.4 ONTARIO INTERNATIONAL AIRPORT (ONT)

Projects deleted, because they have been completed:

- ONT 3—Add two lanes in each direction plus turning lanes on Archibald from Guasti south to I-10 interchange
- ONT 6—Add two lanes in each direction on I-10 from I-15 interchange to Euclid
- ONT 7—Add two lanes in each direction on SR 60 from I-15 to Euclid
- ONT 11—Add WB and EB off-ramps at I-10 and Grove
- ONT 14—Reconfigure and upgrade I-10/Milliken interchange and add one lane in each direction on Milliken from I-10 to airport

Projects added (at the request of official from Los Angeles World Airports and/or City of Ontario)

- ONT 11--North Milliken Ave., railroad grade separation at Airport Drive
- ONT 12--North Grove Ave., railroad grade separation and intersection widening art Airport Drive
- ONT 14—Add one lane in each direction on Guasti Road (east of Haven) and on Euclid (at SR-60)
- ONT 17--SR 60: Upgrade Vineyard interchange, widen Vineyard from 4 to 6 lanes
- ONT 18-- San Antonio Ave. railroad grade separation (Holt-Mission)
- ONT 19— South Milliken Ave railroad grade separation at Mission
- ONT 20— State St. railroad grade separation at Bon View
- ONT 21— Campus Ave railroad grade separation at State
- ONT 22— North Vineyard Ave. railroad grade separation at Holt
- ONT 23— South Archibald Ave. railroad grade separation at Mission
- ONT 24— Interchange Upgrades at Sr. 60 and Mountain; I-10 at Vineyard Ave.; SR. 60 at Archiblad and at Euclid; I-10 at Euclid; Airport and Airport Dr.
- ONT 25— Airport Dr. improvements: Rochester Ave to Wineville Ave., Signalization of Kettering/Airport Dr.
- ONT 26-- Metro Gold Line Light Rail Foothill Extension (cost estimates currently unavailable)

3.5 PALMDALE AIRPORT (PMD)

Projects added (at the request of officials from the City of Palmdale):

- PMD 13—Rancho Vista Bl. (Ave. P)--railroad grade separation at Sierra Highway and Union Pacific/Metrolink line.
- PMD 14—Construct a connector from PMD to Palmdale Transportation Center at Clock Tower Plaza Dr. near Sierra Hwy (which can also serve as a future HSRT station)

3.6 SAN BERNARDINO INTERNATIONAL AIRPORT (SBI)

Projects added (primarily at the request of officials from San Bernardino County and/or the San Bernardino International Airport Authority)

- SBI 10—"New Gateway to SBI" project: construct a four-lane bridge on Mountain View over the Santa Ana River and extension of Mountain View from Palm Meadows Drive to I-10

4. AIRPORT GROUND ACCESS PROJECT LISTS BY AIRPORT

The following table lists recommended airport ground access projects by air carrier airport. A general description of each project is given. Projects that

have been added or modified compared to the 2004 RTP project lists have the designation of "08" attached to their project number.

S.No	Project Description
BUR-1	Upgrade internal BUR terminal area circulation system including ingress/egress to parking facilities.
BUR-3-08	Add 1 additional lane in each direction on Hollywood Bl. (from San Fernando to Empire);
BUR-4	Upgrade capacity of Hollywood/Alameda intersection (additional turning lanes and storage).
BUR-5-08	Empire Area Transit Center: Construct a multi-modal bus transfer center in the vicinity of Empire Ave and Hollywood Way adjacent to BUR Metrolink/Amtrak station.
BUR-6-08	Construct a Clybourn Ave. Grade Separation west of BUR to directly connect Vanowen St. to Empire Ave. (to provide and continuous arterial from Rte. 5 and the new Empire Ave. interchange to North Hollywood and improve east-west access in the Golden State area of Burbank.
BUR-7	Construct a modified interchange at Empire Ave and I-5 interchange. Add N/B and S/B (auxiliary) lanes at I-5/Empire (from Burbank Bl. To Empire)
BUR-8	Add auxiliary lanes on I-5 (from Burbank Bl. To Buena Vista)
BUR-9	Add HOV lanes (from 8-10 lane configuration) on I-5 (from Rte. 134 to Rte. 170)

S.No	Project Description
BUR 10-08	Intersection flarings at 35 major intersections for additional turn lanes. Includes Hollywood Way, Buena Vista St., Victory Bl., Empire Ave., and Vanowen St. (No widening of Hollywood Way south of Empire)
BUR-11	Construct HOV lanes on I-5 (between SR110 and SR14). HOV lanes from Rte. 134 to Rte. 170 only included as part of the Rte. 5 HOV/Empire Ave. Interchange project
BUR-12	Burbank Transit Station project. Improve access, parking and platforms at BUR Metrolink Station. Provide better linkage to the Empire Area Transit Center
BUR-13-08	Extend the MTA Orange Line East from its current terminus at the North Hollywood Red Line Station to Bur. Metrolink Station or Empire Area Transit Center
JWA-1	Improve capacity of JWA terminal internal circulation system. Upgrade SNA-ingress at Michelson/MacArthur intersection.
JWA-2	Construct an internal HSR station roadway system at the Irvine Spectrum (to accommodate 1,510 peak hour vehicle trips).
JWA-3	Add 1 lane in each direction on MacArthur (from I-405 to Michelson).
JWA-4	Add 1 lane in each direction on Michelson (from MacArthur to Von Karman).
JWA-5	Add 1 lane in each direction on I-405 (from Bristol to Rte.133); Add auxiliary lane (from MacArthur to Culver).

S.No	Project Description
JWA-6	Upgrade the Bristol/I-405 interchange (add 1 lane to all on and off-ramps)
JWA-7	Add 1 lane in each direction on SR 55 (from Rte.73 IC to I-405 IC);
JWA-8	Add S/B auxiliary lane (from MacArthur on-ramp to Jamboree Bl. interchange to Culver Dr. off-ramp
JWA-9	Add 1 lane in each direction on Rte.73 (from Jamboree to SR 55); Add auxiliary N/B auxiliary lane to Rte. 73 (from Birch to SR 55)
JWA-10	Upgrade the Sand Canyon/I-405 interchange (add 1 lane to each on and off-ramp).
JWA-11	Add 1 lane to the southbound off-ramp and the north-bound on-ramp at Irvine Center Dr./I-405 interchange
JWA-12	Add 1 N/B ramp and W/B right-turn lane on Paularino at SR 55.
JWA-13	Widen Von Karman overcrossing by 1 lane in each direction.
JWA-14	Add HOV lanes in each direction near SR 55 interchange (98 STIP)

S.No	Project Description
JWA-15	I-405/SR 55 interchange south Transitway existing 4 MF 1 HOV on SR 55 and I-405 existing 5 MF and 1 HOV, add HOV direct Transitway from SR 55 to I-405.
JWA-16	SJHC, 15 mile Toll Road I-5 (in San Juan Capistrano and Rte. 73 in Irvine, existing 3 MF each direction, add 1 MF in each direction, plus auxiliary and PCE traffic climbing lanes (reference: SCAG/TCA MOU 4/5/01).
LAX-1	Widen Sepulveda (from Manchester to Lincoln) to 5 lanes in each direction plus left-turn lanes except for the Sepulveda Tunnel.
LAX-3	Widen Imperial (from Del Mar to Rte. 405 interchange) from 3 to 4 lanes in each direction.
LAX-4	Construct Rte. 105 westbound to Sepulveda northbound off-ramps to 3 lanes plus an emergency lane configuration.
LAX-5	Reconfigure Pershing to a divided major arterial standard with 4 lanes in each direction and turning lanes (from Imperial to Manchester).
LAX-6	Construct major intersection at Imperial and Pershing with 3-lane turning lanes in each direction.
LAX-7	Construct Pershing to new West Terminal interchange to a major arterial standard with 3 lanes in each direction and dual turning lanes.
LAX-8 -08	Improve intersection at Aviation Bl. And Airport Bl.

S.No	Project Description
LAX-10	Widen Aviation (from Arbor Vitae to Century) to 4 lanes in each direction. Widen Aviation from Century to Manhattan Beach Bl. to 3 lanes in each direction.
LAX-11	Upgrade Florence/Rte. 405 interchange. Add 2 lanes to each on-, and off-ramp.
LAX-12	Widen Arbor Vitae (from Rte. 405 to Sepulveda) to 3 lanes in each direction.
LAX-13	Upgrade La Tijera/Sepulveda intersection. Add 1 additional turning lane from southbound La Tijera to southbound Sepulveda and from northbound Sepulveda to northbound La Tijera.
LAX-14	Reconstruct Rte. 405 southbound off-ramp to La Cienega southbound to a major arterial 4-lane standard.
LAX-15	Widen La Cienega from Arbor Vitae to Century Bl. to 3 lanes in each direction.
LAX-16	In Inglewood construct south half of IC on Arbor Vitae.
LAX 17-08	Construct Pershing to new West Terminal interchange to a major arterial standard with 3 lanes in each direction and dual turning lanes.
LAX-18	Add Northbound HOV Lane (over Sepulveda Pass from I-10 US-101. (Southbound HOV from US-101 to Waterford Opened in Feb., 2002; Southbound HOV from Waterford to I-10 is in the Baseline Project ID# LA195900).

S.No	Project Description
LAX-19	Near Marina Del Rey from Hughes Terrace to La Tijera Blvd., Widen from 7 to 8 lanes, Add left Turn Lane, Modify Signals. (2001 CFP 8104). Planned for construction by Caltrans.
LAX-22	Near Marina Del Rey at Culver Blvd. - Overcrossing Demolish Existing Overcrossing & Replace with New 6-Lane Overcrossing with Longer Span - Widen from 4 to 6 Lanes.
LAX-25	Alameda Street from SR-1 to Henry Ford, Widen from 4 to 6 Lanes (CAT2, CFP 2144).
LAX-26-08	Add a 2nd left-turn lane northbound and southbound at Centinela Ave
LAX-27-08	Grade Separation on Douglas (between El Segundo and Rosecrans for Green Line)
LAX–28–08	Additional left-turn lanes on La Cienega (Northbound) and Centinela (Southbound)
LGB-1	Widen Lakewood by 1 lane in each direction (from I-405 to Carson)
LGB-2	Upgrade capacity of lakewood/Wardlow intersection.
LGB-3	Upgrade ramps at Rte. 405 IC/lakewood interchange (Add 1 lane to the S/B lakewood to N/B .Rte.405 on-ramp; Add 1 lane to S/B Rte. 405 to Lakewood Off-ramp.

S.No	Project Description
LGB-4	Widen Wardlow by 1 lane in each direction (from lakewood to Bellflower)
LGB-5	Upgrade Spring Street to 4 lanes (from Orange to Cherry); upgrade Spring/ Lakewood intersection.
LGB-6	Capacity improvements to Rte. 405 including HOV lanes (see LAX Projects)
MAFB-1	Construct connector road from Rte 215/Van Buren interchange east to new March AFB passenger terminal (Divided major arterial configuration, 4 lanes in each direction, including turning lanes, emergency shoulder).
MAFB-2	Construct an internal airport roadway system including airport passenger and employee parking (3 lanes in each direction with double turning lanes).
MAFB-3	Construct internal air cargo terminal 6-lane roadway system including truck parking and ramp access facilities for higher PCE truck traffic movements.
MAFB-4	Reconstruct the Rte 215/Van Buren interchange (3 lane on-, and off-ramp configuration including wide turning lanes for high PCE truck traffic).
MAFB-6	Construct major intersection at Imperial and Pershing with 3-lane turning lanes in each direction.
MAFB-7	Construct Pershing to new West Terminal interchange to a major arterial standard with 3 lanes in each direction and dual turning lanes.

S.No	Project Description
MAFB-8	Upgrade Rte. 215/Cactus interchange (additional turning lane from W/B Cactus to S/B Rte. 215)
MAFB-9	Construct connector between Rte 215/Oleander (Kuder) interchange and new air cargo terminal at MAR AFB (major arterial, capable of higher PCE truck traffic, 3 lanes in each direction).
MAFB-10	Add 2 lanes in each direction on Oleander (from Rte. 215 to Perris).
MAFB-12	Improve Cactus (add 1 lane in each direction from Rte 215/Cactus IC to Perris Bl.)
MAFB-15	Improve Rte 60 (Caltrans: add 2 lanes from 215/60 interchange to Redlands).
ONT-1	Upgrade ONT internal circulation system to accommodate 30 MAP, curbside, parking ingress/egress inclusive.
ONT-2	Construct an internal HSRT station roadway system of 4 lanes in each direction (to accommodate 2,341 peak hour vehicle trips).
ONT-5	Add 2 lanes to on-, off-ramps at I-10/Archibald interchange
ONT-6-08	Construct a Grade Separation at Milliken/Union Pacific Alhambra Line

S.No	Project Description
ONT-7-08	Upgrade SR 60: Grove interchange to 6 lanes
ONT-8-08	Widen Holt by 2 lanes in each direction (from I-10 ramps west City Limits).
ONT-9	Widen Vineyard by 2 lanes in each direction (from Airport to I-10 interchange).
ONT-10-08	Widen Grove by 1 lane in each direction, including turning lanes, (from I-10 to Holt Bl.. Add W/B and E/B off-ramps on I-10 at Grove. Configure all ramps to 3-lane configuration.
ONT-11-08	Grade Separation North Milliken Ave. Rail Grade Separation at Airport Dr.
ONT-12-08	Grade Separation North Grove Ave. Railroad Grade Separation and intersection widening
ONT-13-08	Add 1 lane in each direction on Mission (from Grove to Archibald) and from Archibald to Haven
ONT 14-08	Add 1 lane in each direction on Guasti Road (east of Haven) and on Euclid (at SR 83)
ONT-15	Add 1 lane in each direction on I-15 (from Rte. 60 to I-10).

S.No	Project Description
ONT–17–08	SR 60: Upgrade Vineyard interchange, widen Vineyard from 4 to 6 lanes
ONT-18-08	San Antonio Ave. Railroad Grade Separation (Holt-Mission)
ONT-19-08	South Milliken Ave Railroad Grade Separation at Mission
ONT 20-08	State St. Railroad Grade Separation at Bon View
ONT 21-08	Campus Ave Railroad Grade Separation at State
ONT-22-08	North Vineyard Ave. Railroad Grade Separation at Holt
ONT-23-08	South Archibald Ave. Railroad Grade Separation at Mission
ONT-24-08	Interchange Upgrades at Sr. 60 and Mountain; I-10 at Vineyard Ave.; SR. 60 at Archiblad and at Euclid; I-10 at Euclid; Airport and Airport Dr.
ONT-25-08	Airport Dr. improvements: Rochester Ave to Wineville Ave., Signalization of Kettering/Airport Dr.

S.No	Project Description
ONT-26-08	Metro Gold Line Light Rail Foothill Extension to airport
PMD-1	Construct airport terminal connector road from Ave P to the new PMD passenger terminal
PMD-2	Construct internal airport circulation system based on an 8-lane configuration (with shoulders and emergency lanes) including internal parking facilities).
PMD-3	Widen Ave P to 4 lanes in each direction including turning lanes (from Rte. 14 to 50th St east of PMD). Configure Ave P as a major arterial capable of high PCE truck traffic.
PMD-4	Add on-ramps from W/B Ave P to N/B Rte 14 (2-lane on-ramps with shoulder) capable of carrying higher PCE truck traffic.
PMD-5	Add S/B off-ramp from Rte 14 to Ave P (2-lane off-ramp with shoulder) capable of higher PCE truck traffic.
PMD-6	Improve Ave P intersection capacity at 20th St., 30th St, Sierra and 50th Ave by adding two turning lanes in each direction.
PMD-7	Construct a high capacity intersection at P Ave and 25th St. with 3 lanes in each direction, dual turning lanes, and shoulders.
PMD-8	Add 1 lane in each direction on Sierra (between Palmdale Blvd. and Ave M.

S.No	Project Description
PMD-9	Add 1 lane in each direction on Ave M including turning lanes (from Rte 14 to 50th St)
PMD-10	Widen 50th St. by 2 lanes in each direction (from Ave M to Ave R); improve 50th St/R Ave intersection capacity.
PMD-11	Widen 30th Street (from Palmdale Bl. to Ave P) including 2-lane turning lanes at P Ave.
PMD-12	Add 2 lanes in each direction on Rte. 14 from Pearblossom Hwy to Ave M including HOV lanes (heavy directional AM/PM traffic volumes hampering peak period airport access from LA Basin)
PMD-13-07	Rancho Vista Bl. (Ave P) grade seperation at Sierra Highway/Railroad tracks (Union Pacific & Metrolink) 7th Ranking out of 120 projects by LA County
PMD-14-08	Construct a connector from PMD to Palmdale Transportation Center at Clock Tower Plaza Dr. near Sierra Hwy. (which can serve as a future HSRT station)
PSP-1	Upgrade internal PSP terminal area circulation system including parking facilities (to accommodate 3.2 MAP). Upgrade terminal area ingress/egress from Tahquitz Canyon
PSP-2	Add 1 lane in each direction on Ramon Rd (from Sunrise to El Cielo) to a continuous 4-lane major arterial configuration.
PSP-3	Upgrade El Cielo/Ramon Rd. intersection for higher PCE air cargo truck traffic.

S.No	Project Description
PSP-4	Add 1 lane in each direction on Farrell (from Ramon Rd. to Vista Chino)
PSP-5	Upgrade intersection of Indian Canyon and Tahquitz Canyon Rd
PSP-6	Upgrade 1-10/Date Palm interchange ramps to a 2-lane configuration.
PSP-7	Add 1 additional left and right turning lanes from Tahquitz to Palm Canyon.
PSP-8	Upgrade 1-10/Gene Autry Trail interchange ramps to a 2-lane configuration. modify Gene Autry Trail from 2 to 6 lanes (from 1-10 interchange to Salvia Rd.)
PSP-10	Modify Gene Autry Trail from Salvia Rd. to Vista Chino to a 6-lane configuration.
PSP-11	Construct bridges on Gene Autry Trail at the railroad crossing and at Whitewater River.
PSP-12	Widen Indian Canyon Drive to a 6-lane configuration (from Union Pacific Rail Road to 1-10).
SBI-1	Upgrade internal circulation system to the SBI passenger terminal at Leland Norton Way and Rialto. Construct 6-lane major arterial configuration with double turning lanes and emergency lanes.

S.No	Project Description
SBI-2	Construct a truck traffic access road (4-lane major arterial configuration with shoulder) to the SBI Air Cargo Terminal at Perimeter Road. Upgrade Perimeter Road-3rd Street/Leland Norton Way for high PCE truck traffic.
SBI-3	Add 2 lanes in each direction on Waterman (from 9th Street to Rialto and from Vanderbilt to the I-10 IC).
SBI-4	Upgrade Rialto to a continuous, divided 6-lane configuration (from Waterman to Rte. 215)
SBI-5	Upgrade the I-10/Waterman interchange (add 1 additional on-, and off-ramp in each direction designed for higher PCE truck traffic).
SBI-6	Add 2 lanes in each direction on 3rd Street (from Waterman to Alabama/Palm) to a 6-lane configuration; Construct diagonal 6-lane connection form 3rd Street to 5th Street east of Alabama.
SBI-7	Upgrade 5th Street to a 6-lane major arterial configuration with turning lanes and improved capacity intersections at 3rd Street diagonal connector, Palm, Waterman, and La Rosa.
SBI-8	Upgrade Harry Sheppard Bl. (from Leland Norton Way to Tippecanoe).
SBI-9	Upgrade the Rte. 215/Mill interchange (add 1 lane to each on-, and off-ramp designed for higher PCE truck traffic).
SBI-10-08	New Gateway to SBD project: Construct a 4-lane bridge on Mountain View over the Santa Ana River (extention of Mountain View from Palm Meadows Drive to I-10).

S.No	Project Description
SCL-1	Construct airport terminal connector road from Air Base to terminal building (along Cory to Phantom); Construct connector road from Air Base to air cargo terminal in the southwest corner of the base.
SCL-2/3	Improve and upgrade existing internal circulation system (Cory from base to Phantom; Cory segment from Starfighter to Sabre; intersection Worley/Phantom) including access to on-site HSRT terminal
SCL-4	Widen Air Base (add 2 lanes in each direction from U.S. 395 to National Trails intersection)
SCL-5	Add 2 lanes to southbound on-ramps and northbound off-ramps at I-15/National Trails IC. Add 1 additional lane to southbound off-ramps and northbound on-ramps at I-15/National Trails IC.
SCL-6	Add 2 additional turning lanes in each direction on National Trails at I-15.
SCL-7	Improve National Trails/Air Base intersection in conjunction with National Trails/Rancho intersection (part of Construction of Rancho extension project from Adelanto to National Trails)
SCL-8	Add 1 lane in each direction to National Trains from I-15 to Barstow.
SCL-9	Widen National Trails/RR underpass (approx. 3.49 mi north of Air Base) to 2 lanes in each direction.
SCL-10	Add N/B mixed flow lane w. aux lane (from N/) Mojave Dr. IC to Stoddard Wells Rd.

S.No	Project Description
SCL-11	Construct 6 lane freeway (at I-15/SR395) JCT t0 S/O Framington Rd.) from SR 18 to Purple Sage plus 4lane expressway from Purple Sage to Framington
SCL-12	Widen El Evado Rd, Palmdale Rd to Air Base Rd., Palmdale to Hopland, Hopland to Air Base (from 2 to 4 lanes with LT lanes)