4.3 Surface Transportation

4.3.1 On-Airport Surface Transportation

4.3.1.1 Introduction

The on-airport surface transportation section addresses traffic-related issues inside the boundaries of the airport, including the roadway, curbfront, and parking systems adjacent to the terminal buildings, commercial vehicle staging areas, remote parking facilities for both passengers and employees, rental car facilities, transit systems, Automated People Mover (APM), and pedestrian activities. Technical Reports 3a, *On-Airport Ground Transportation Report*, and S-2a, *Supplemental On-Airport Surface Transportation Technical Report,* contain detailed information regarding existing transportation operations, traffic modeling efforts, and analysis of future on-airport conditions. Off-airport surface transportation issues are addressed in Section 4.3.2, *Off-Airport Surface Transportation*.

4.3.1.2 General Approach and Methodology

The on-airport surface transportation analysis was conducted by generating pedestrian and traffic volumes directly from the design day (peak month [August], average weekday) passenger forecast. On-airport surface transportation data was analyzed as summarized below, and the resulting data was used in the off-airport surface transportation analysis as the airport-generated traffic. As a result, both the on- and off-airport surface transportation analyses used the design-day passenger forecast as their base information.

To address potential on-airport surface transportation impacts under CEQA, this analysis compared the No Action/No Project Alternative and the four build alternatives to the environmental baseline. Additionally, for purposes of disclosure and in accordance with standard NEPA analysis, the four build alternatives were compared to projected conditions under the No Action/No Project Alternative:

- **Environmental Baseline:** Existing airport conditions (1996); used as a basis of comparison for CEQA, with the No Action/No Project Alternative and the four build alternatives.
- **No Action/No Project:** Required under NEPA, the future conditions that would exist if the airport activity were allowed to operate with its existing facilities, without any significant surface transportation facility improvements.

To ensure that each road segment was analyzed during its specific peak hour, the following three peak hours were analyzed. This information was also used in the off-airport surface transportation analysis.

- **Airport peak hour (11:00 a.m. to 12:00 noon):** derived from the design day passenger schedule, and generally considered to be the worst traffic hour for on-airport facilities and those off-airport roads that are more influenced by airport activity than by non-airport traffic.
- **Morning and evening commuter "rush hours" (8:00 a.m. to 9:00 a.m. and 5:00 p.m. to 6:00 p.m.):** derived from existing traffic data and generally considered to be the worst traffic hour for off-airport roads. This information was also used in the off-airport surface transportation analysis.

The study area shown in **Figure F4.3.1-1**, Road System Serving LAX, consists of the airport terminal curbs and circulation roads (Central Terminal Area or CTA and west side) and the access roads and ramps immediately leading to the terminal areas. Also included are all public and employee parking areas, rental car areas, and commercial vehicle staging areas. Project components on the perimeter of the airport, such as the ring road and the LAX Expressway, are addressed in Section 4.3.2*, Off-Airport Surface Transportation*.

To define the existing airport conditions, an initial survey reviewed available traffic data and previously prepared reports and conducted specific surveys of on-airport traffic and parking in March and April 1995. These surveys obtained (1) traffic volumes on roadways in the CTA and on other roadways, (2) vehicle classification data (i.e., number and classification of vehicles), (3) curbside dwell time and utilization data, (4) parking accumulation data for employee and privately-operated parking facilities, and (5) commercial vehicle staging facility data. To ensure consistency with the other airport analyses conducted for the EIS/EIR, the traffic surveys coincided with air passenger surveys also conducted at that time.

In August 1996 and March 1997, additional traffic data was collected to update the initial effort. At that time, data was collected regarding (1) traffic volumes on the passenger terminal and other roadways in the CTA, (2) vehicle classification data, (3) driveway volumes at selected privately-operated rental car facilities, (4) parking accumulation data for employee and privately-operated parking facilities, and (5) driveway volumes on Imperial Highway, Aviation Boulevard, and Century Boulevard.

To ensure that the data from 1995, 1996, and 1997 remains valid, traffic volumes entering and exiting the CTA were tabulated for the Year 2000 and compared to the original data. The findings of that comparison are described below in subsection 4.3.1.3, *Affected Environment/Environmental Baseline.*

The analysis methodology for specific types of on-airport surface transportation facilities is provided below; detailed information regarding the analysis of these facilities is provided in Technical Report 3a, *On-Airport Ground Transportation Report*.

It should be noted that the demand for most airport surface transportation facilities is not based on total airport passengers. Rather, it is based on origin and destination (O&D) passengers only, which are the passengers who begin or end their trips in the Los Angeles region. It excludes connecting passengers, which are those passengers who connect from flight to flight, since they do not use the airport's surface transportation system. Connecting passengers are, however, included in many passenger demand figures such as million annual passengers (MAP).

Forecasts of O&D passengers are different than the forecasts of total passengers and, as a result, the requirements for surface transportation facilities will not necessarily follow the same trends as the airport's total passenger forecasts. Furthermore, unlike most other airport facilities, the demand for most surface transportation facilities is based on the peak hour of activity, not annual or daily activity. Peak hour activity is typically more variable than daily or annual activity, and usually exhibits very different trends.

Roadways and Curbfront

Roadway demand was calculated for the CTA based on existing traffic counts conducted in August 1996 on each roadway segment. Curb lane demand was calculated based on the number of vehicles accessing the curb, dwell times, vehicle types, and associated average vehicle length. Where double parking is allowed, curb length capacity was increased by 50 percent to account for partial utilization of the double park lane for picking up and dropping off passengers. As a result, this lane was assumed to provide no contribution to the "through" lane capacity. Also, to account for curb demand typically fluctuating within the peak hour, the constant hourly curb demand was increased by 25 percent, producing a conservative final demand estimate.

Future access demands for roadways and curbfronts were developed and quantified using the Advanced Landside Planning System (ALPS) computer simulation model. The "engine" of this industry-accepted model is the design day flight schedule for each alternative, which was processed to produce person-trip generation data for essentially all types of airport passengers, visitors, and employees. Those people using the surface transportation facilities were quantified within ALPS based on the percent of passengers originating and terminating, their associated visitor ratios, and the percent of passengers connecting. The surface transportation population types were modeled to represent the various transportation modes that air passengers use to access and egress the airport (i.e., private autos, rental car, taxi, shuttle, etc.). The population types were further subdivided by trip purpose (i.e., drop-off at curbfront then exit airport, or go directly to parking and walk to terminal, etc.). Finally, the actual travel patterns were created for each trip mode and purpose, between each surface transportation origin/destination node. The output of this model was then used in the off-airport surface transportation analysis, so that the airport data used off-airport was consistent with the on-airport analysis.

Impacts to the on-airport surface transportation system were determined by comparing the hourly vehicular volumes to the capacity of each roadway segment. The capacities of the roadways and their corresponding free flow traffic speeds, reflect the guidelines provided in the 1994 *Highway Capacity Manual*[151] and in the FAA Advisory Circular No. 150/5360-13.[152] A summary of the capacities and free

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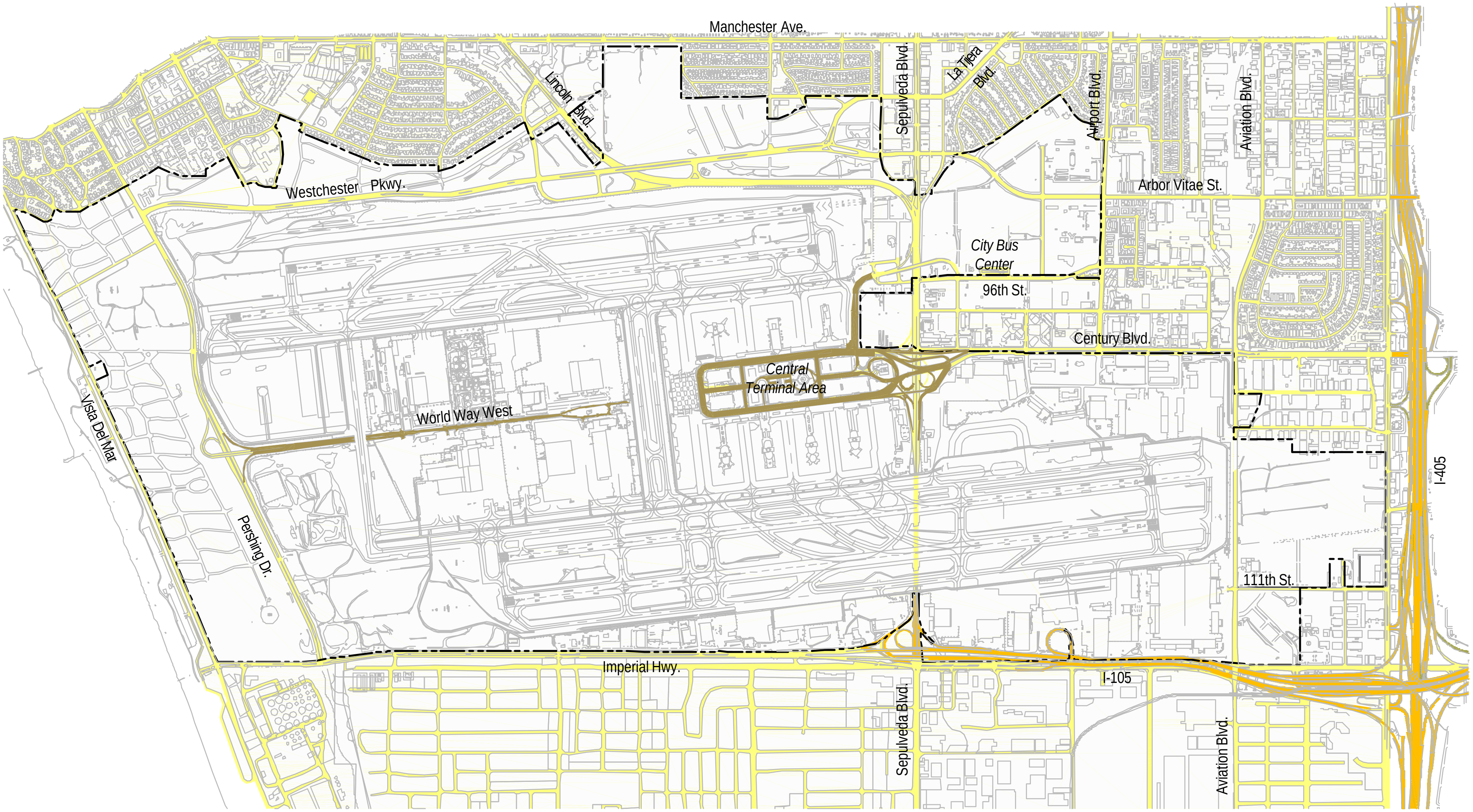
151 Transportation Research Board, Highway Capacity Manual, Special Report 209, 1994.

152 Federal Aviation Administration, FAA Advisory Circular No. 150/5360-13, Planning and Design Guidelines for Airport: Terminal Facilities, January 19, 1994.



LEGEND

- Airport Property Boundary
- Freeways
- Arterial/Local Roads
- Internal Airport Roads

Prepared by: Landrum & Brown, October 2000

LAX Master Plan Final EIS/EIR	Road System Serving LAX	Figure F4.3.1-1

flow speeds for various types of roadways is provided in **Table F4.3.1-1**, Roadway Capacity and Corresponding Free Flow Speeds.

Table F4.3.1-1

Roadway Capacity and Corresponding Free Flow Speeds

Road Type	Capacity (vph[1])	Free Flow Vehicle Speed (mph[2])
Main access roads (Westchester Pkwy., Imperial Hwy., Century Blvd., etc.)	1,500 to 1,700	45 or greater
Transitions from main access roads to curb approaches	1,000 to 1,500	35 or greater
Curbs, approaches	600 to 900	30 or greater
Ramps (loop, recirculation)	700 to 1,000	25
Curbfront "through" lanes	600 to 850	25 or less

[1] vph = vehicles per hour.
[2] mph = miles per hour.

Source: JKH Mobility Services, Inc., 2000.

Roadway capacity levels of service (LOS) were also defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. This LOS is the measure of effectiveness of the roadway segment that was standardized in the 1994 *Highway Capacity Manual*. Related to the volume/capacity (v/c) ratio, the LOS provides a qualitative measure of the operating conditions of a roadway segment and reflects the distances required on the airport roadway segments to allow drivers to weave between merging and diverging points and to make decisions between vehicle entrances and exits. The planning assumptions and methodologies were also used to develop and analyze future roadway concepts for the airport. Definitions of LOS and the corresponding v/c ratios are provided in **Table F4.3.1-2**, Level of Service Definitions Relative to Intersections and Roadway Links.

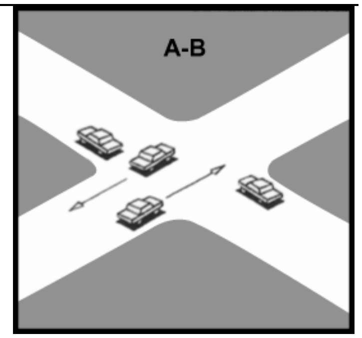
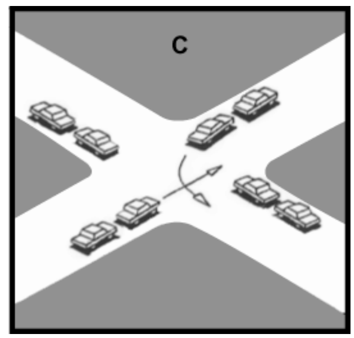
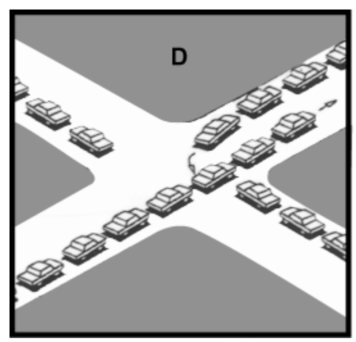
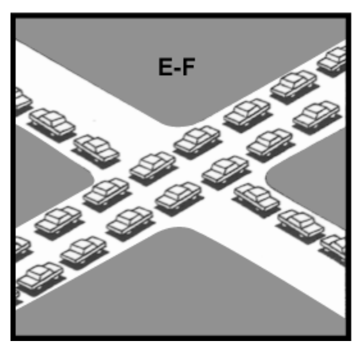
Parking

Using survey data available at the time, parking analyses were conducted in August 1996 and March 1997 to identify the existing vehicular demand in each lot. The future demand was calculated by first assuming a direct demand increase according to the future O&D flight forecast. Parking demand was then adjusted to account for expected increases in future vehicle occupancy from 1.45 to 1.50 and resulting mode split changes (type of vehicle that passengers and employees use to get to and from the airport).

Due to the typically high correlation of public parking demand to parking rates (i.e., "elasticity"), it is possible that a change in parking rates or parking rate schedule at any of the airport's public parking facilities or off-airport private parking lots could alter the demand for any lot or garage. However, determining the extent of such a change cannot be adequately determined without a detailed parking rate analysis, which is not typically conducted for this type of environmental analysis. Consistent with typical environmental studies, a continuation of the baseline (1996) parking rate structure was assumed in this analysis.

Table F4.3.1-2

Level of Service Definitions Relative to Intersections and Roadway Links

LOS[1]	Interpretation	V/C[2]	
A	**Uncongested operations**; for intersections, all vehicles clear in first green light opportunity.	0.000-0.600	
B	**Uncongested operations**; for intersections, all vehicles clear in first green light opportunity.	0.601-0.700	
C	**Light congestion**; for intersections, occasional backups on critical approaches.	0.701-0.800	
D	**Moderate congestion**; for intersections, vehicles required to wait through more than one green light opportunity during short peaks.	0.801-0.900	
E	**Severe congestion**; for intersections, some long-standing lines on critical approaches, with blockage occurring if traffic signal does not provide for protected turning movements.	0.901-1.000	
F	**Total breakdown with stop-and-go operations.**	1.001+	

1 Level of Service.
2 Volume to Capacity Ratio.

Source: Transportation Research Board, Highway Capacity Manual, 1994.

Transit Systems

Transit was analyzed by using existing field surveys and a 1993 LAX air passenger survey to determine the number of passengers and employees currently using the transit system. Future demand was then determined according to expected changes in future Green Line operating characteristics, and experience at other major airports that offer transit service. A 2001 LAX passenger survey report, which has not yet been finalized by LAWA, revealed that the percentage of LAX air passengers using transit to access the airport has remained nearly the same since 1993.

Commercial Vehicle Staging Area

The commercial vehicle staging area was surveyed to determine the maximum number of commercial vehicles that currently use the lot to the north of 96th Street and west of Sepulveda Boulevard. Assuming no significant change in the future operating characteristics of the lot, future demand was calculated by increasing the existing demand according to the future O&D demand forecast, adjusted to account for expected mode changes.

Rental Car

On-airport rental car demand was defined based on the current number of stalls required as determined from field surveys. Future demand was determined according to the forecast of O&D passengers and mode changes for LAX.

Pedestrians/Inter-Terminal Circulation

People mover systems in all build alternatives were designed to adequately accommodate the anticipated passenger demand. Pedestrian demands and automated people mover (APM) design characteristics were determined by using the future design-day forecasts, in conjunction with the ALPS model. Passenger demand was determined between terminals and between remote concourses and terminals. Categories included secure passengers (behind a security checkpoint), non-secure landside passengers (who have not proceeded through a security checkpoint or have exited the secured area), and sterile passengers (international passengers who have flown into LAX and must clear FIS [Federal Inspection Services]).

Using the passenger demand results from the ALPS model, the computer model LEGENDS© was then used to determine the most efficient design for the APM. The LEGENDS© model is an industry-accepted model that provides the most appropriate configuration of secure (stations only accessible by secure passengers), non-secure (stations only accessible by non-secure passengers), and sterile (stations only accessible by sterile passengers) routes, together with the most efficient and effective APM characteristics for each route, such as the number and size of cars, headways, etc.

Construction

Alternatives A, B, and C

Construction impacts were identified and policy recommendations were made to minimize peak hour traffic impacts to motorists at or near the airport. Peak hour traffic impacts were analyzed for each of the two construction phases of Alternative C. The peak hour construction traffic demands for Alternative C are comparable to Alternatives A and B, even though Alternatives A and B would ultimately require the construction of more facilities (e.g., runways). This is because the long-term construction phasing plans will spread out the construction activity over a long enough period that activity during the peak hour will be similar for Alternatives A, B, and C, even though the total construction activity may be greater for Alternatives A and B.

The airport traffic volumes represent peak summer airport operations. The peak construction period traffic demands were applied to the airport peak period traffic demands, regardless of when the construction peak occurred. Therefore, the resulting traffic volumes and impacts depict the worst case scenario.

Evaluating construction impacts required two primary tasks: addition of the construction traffic to the airport-related ground access demands, and reviewing where construction projects would adversely impact the on-airport ground access operations (e.g., detours, road closures, etc.). Each construction phase was analyzed for short-term capacity deficiencies, and recommendations were made for minimizing construction impacts.

Alternative D

The construction analysis for Alternative D follows the same general approach and methodology as used in the evaluation of the other alternatives; however, given that Alternative D involves substantially more modifications to the CTA and the related on-airport surface transportation system than the other alternatives, the analysis of Alternative D includes a more extensive evaluation of impacts to this system during the peak construction period. Based on the anticipated construction phasing of the components of Alternative D, the peak construction period would occur in the Year 2008.[153] In addition to construction traffic, the number of origin and destination (O&D) passengers affects ground transportation forecasts. The airport traffic volumes used in this analysis represent peak summer airport operations. For Alternative D, the peak construction period traffic demands were determined to occur in the second quarter of 2008 and, similar to the approach used in evaluating the other alternatives, were added to the airport peak period traffic demands on an average summer weekday. The resulting traffic volumes and impacts depict the highest construction traffic scenario.

Evaluating construction impacts required two primary tasks: adding the construction traffic to the airport-related ground access demands, and reviewing the routes of the construction traffic model to determine where construction projects would adversely impact the on-airport ground access operations (e.g., detours, road closures, etc.). The construction scenario was analyzed in particular for capacity deficiencies that are expected to occur during this period.

To conduct the capacity analyses for the construction phases of Alternative D, traffic conditions were modeled with the ALPS computer modeling program used for the analysis of 2015 on-airport traffic conditions. Assumptions were made for the construction model with respect to the transportation network, trip generation, and trip distribution. These assumptions are detailed in Section 7.2.2 of Technical Report S-2a, *Supplemental On-Airport Surface Transportation Technical Report*.

Airport traffic volumes were based on the air passenger and staff requirements from flight schedules developed specifically for the analysis of Alternative D. The construction trips were based on information provided by URS Corporation and MARRS Services, Inc.[154]

The on-airport roadway forecasts for Alternative D were divided into "terminal area" (on-site) and "remote facilities" (off-site), assuming that on-site facilities can only be accessed through airport-owned roadways. Off-site facilities could be accessed from non-airport owned roadways.

For Alternative D, the Year 2008 terminal area forecasts included the CTA. The ITC and some of the construction staging areas were categorized as remote facilities, since access could occur from both on-site and off-site roadways. The additional remote facilities, such as rental car lots, off-site parking facilities and some construction staging areas, were included under the category of "indirect" areas. Forecasts for the remote and indirect facilities are synonymous to driveway counts and included private autos and shuttle buses. The shuttle buses were also counted in the CTA or ITC area forecasts when appropriate.

4.3.1.3 Affected Environment/Environmental Baseline

LAX presently has one primary access system serving the passenger terminal area. This area, known as the Central Terminal Area (CTA), is accessed only from the east and requires use of local and arterial streets for access. The CTA is a "horseshoe" shaped system with close-in parking provided interior to the horseshoe. The curb system was built in 1961 as a single level with terminal activity on the north and south sides. However, because the curb system was clearly becoming overloaded by the late 1970s, a second curbing level was added in 1984. At the same time, a new international terminal was added to the CTA to accommodate the demand expected from the 1984 Summer Olympics, as well to reflect the

153 The peak construction traffic year of 2008 for Alternative D is different from the peak construction activity year of 2005 used in the air quality analysis for Alternative D, based on certain construction equipment emissions, which include on-road vehicles and off-road vehicles/equipment, being highest in 2005.

154 MARRS Services, Inc., LAX Master Plan Alternative D: Enhanced Safety and Security Plan, Compilation of Draft Environmental Impact Statement (DEIS) Construction Impacts Input Data, (Excluding Crossfield Taxiway Projects), prepared for URS Corporation, May 21, 2003.

increasing international passenger activity. The CTA system has essentially remained unchanged since 1984.

The CTA, illustrated in **Figure F4.3.1-1**, accommodates all of the origin/destination (O&D) passenger traffic using LAX. The lower level curb accommodates arriving passenger activity and the upper level accommodates departing passengers, both in a counter-clockwise circulation pattern. All passenger vehicles to and from the south or east pass through the Century Boulevard/Sepulveda Boulevard interchange, while vehicles to and from the north are directed either through the Century Boulevard/Sepulveda Boulevard interchange, or through the 96th Street interchange with Sepulveda Boulevard.

Passengers accessing the CTA use many modes of travel; however, the overwhelming majority of vehicles in the CTA (about 72 percent) are private vehicles. As discussed in detail in Technical Report 3a, *On-Airport Ground Transportation Report*, the next highest percent of vehicles in the CTA is taxicabs, at less than 7 percent of the total. Other notable modes of travel include rental car vans at less than 6 percent, and Van Nuys FlyAway buses at less than ½ percent. Because a bus can accommodate many more passengers than a private vehicle (over 17 passengers currently use the average scheduled bus vs. 1.45 passengers using the average private vehicle), buses tend to consume much less landside capacity per passenger than private vehicles, even though they are larger. As a result, the benefits to the airport landside system of enticing more people to use buses such as the Van Nuys FlyAway are readily apparent.

After the second level roadway was built in 1984, the CTA accommodated airport traffic with a relatively good LOS during most hours of the day. However, the CTA demand has exceeded its capacity in recent years, significantly deteriorating the level of service. **Figure F4.3.1-2**, Existing Roadway and Curbfront Levels of Service, illustrates the 1996 levels of service on the circulation roadways in the CTA as well as on the curbside areas in front of each terminal. The demand on CTA circulation roads was over capacity at the critical entrance and exit, and it approached capacity in several other areas. Also, the curbside demand exceeded its capacity on all nine lower level curbs, and on seven of the nine upper level curbs. This congestion continues to worsen CTA traffic, causing further vehicle recirculation and exacerbating congestion. The end result has been considerable frustration and delay for passengers.

In addition to demand exceeding the CTA capacity, six primary circumstances have compounded CTA traffic congestion:

- **The large majority of traffic in the CTA (72 percent) is low-occupancy private vehicles.** As discussed above, this is an inefficient system. This high percentage of private vehicles, although typical at other major airports as well, generally reflects the desire of most people in the LA region to drive their own cars.
- **Two round-trips are often generated when one would suffice.** As the curbfront and close-in parking system become more congested, many airport passengers have a non-passenger drop them off at the airport and come back to pick them up when they return. As a result, two round-trips are generated when only one should be necessary. This increases demand on both the regional road system and in the CTA. Currently, over 75 percent of all private vehicles are driven by a third party that drops off a passenger and leaves, and then returns again to pick up the passenger.
- **The increasing demand regularly tests the CTA design.** When the CTA was designed, today's magnitude of passenger demand was not contemplated. Even when the upper level was added in 1984, passenger demand was about 65 percent of today's level. Its design requires all vehicles entering the CTA to merge adjacent to the Terminal 1 curbfront, and most exiting vehicles to merge at the World Way South interchange near Century Boulevard, adjacent to Terminal 7-8, as illustrated in **Figure F4.3.1-1**. Although two internal recirculation roads (East Way and West Way) allow some vehicles to by-pass the westernmost terminals, all vehicles have to funnel through these two critical areas. Also, five signalized intersections and 16 signalized pedestrian crosswalks further impede traffic circulation within the CTA. While these signals are necessary to assist safe traffic and pedestrian circulation, they introduce significant delay and backup of circulating traffic.
- **There are a large number of rental car shuttles circulating in the CTA.** Because there is no consolidated shuttle service for rental car companies, each company operates its own shuttles in the CTA, with a relatively low vehicle occupancy of 3.6 passengers per shuttle.

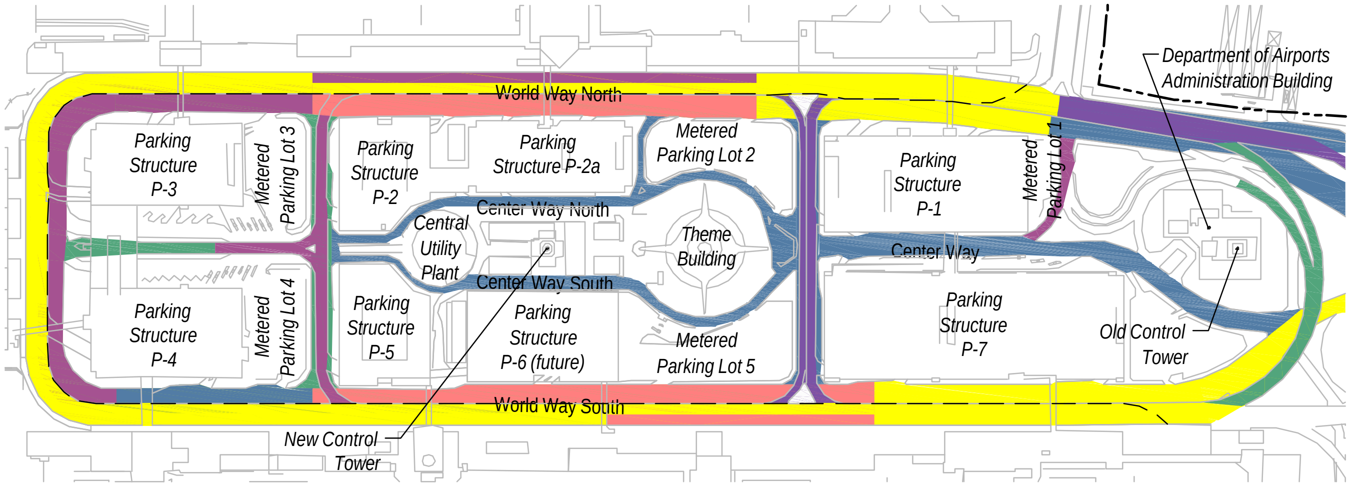
- **Insufficient close-in parking capacity results in additional internal road congestion.** Motorists who attempt to park in a garage and find it full often circle through the CTA road system again searching for an open garage, thus doubling the on-airport congestion impact of that particular trip. This is further discussed in the next subsection, *Public Parking*.
- The design and location of the Tom Bradley International Terminal (TBIT) further exacerbates congestion. Two problems are especially detrimental to the CTA:
  - The design of TBIT's curbside area, with two 90-degree turns at either end, closely spaced pedestrian crosswalks, and its location at the far end of the horseshoe, often causes congestion and delays to vehicles passing by the terminal. Even though this situation has a detrimental impact on CTA traffic conditions, it would not be reflected in **Figure F4.3.1-2,** which shows the by-pass lanes operating at LOS C and D on TBIT's upper and lower levels, respectively. **Figure F4.3.1-2** reflects only vehicle demand compared to the roadway capacity; it does not reflect the influence of external elements on traffic flow, such as roadway geometry and pedestrian crossings.
  - Because TBIT is located at the west end of the CTA, its traffic affects the entire CTA curbfront because drivers heading to TBIT must pass the terminals at the east end. (At the terminals located near the east side of the CTA, traffic can bypass the CTA's west end by using internal cross streets.)

Although the second level addition considerably improved the curbfront operation after 1984, the introduction of TBIT passengers, combined with growing passenger demand in the other terminals, has resulted in a curbfront operation that regularly breaks down during peak periods. The upper level curbside demand exceeds the available curbside length during the peak hour by about 60 percent, while the lower level demand exceeds capacity by nearly 50 percent. The most pronounced congestion regularly occurs at TBIT and Terminals 1, 7 and 8.

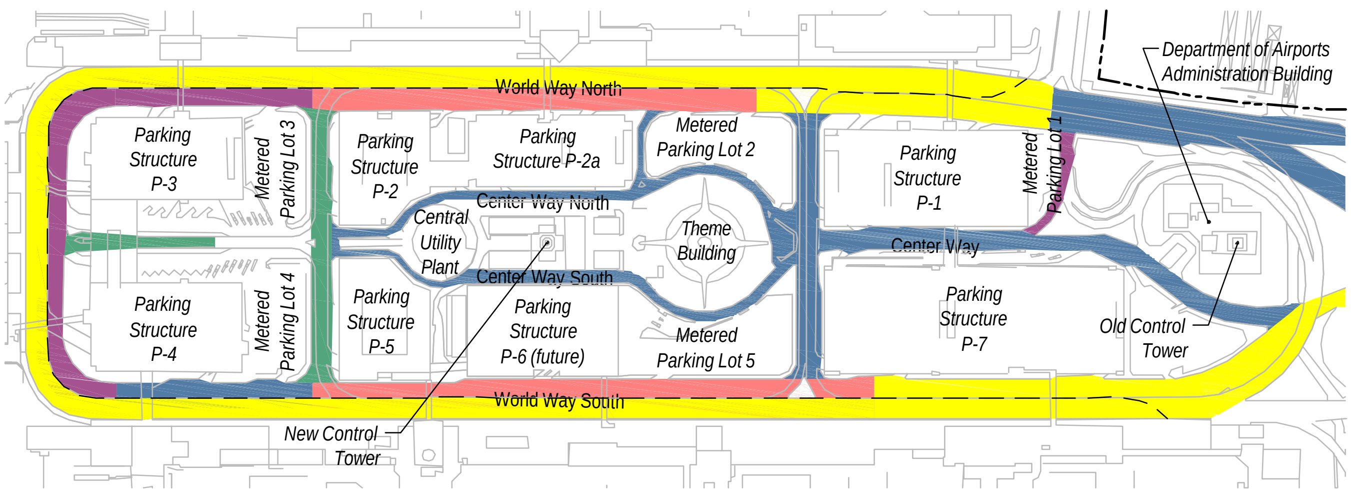
To determine if any material changes took place on the airport's roadways, traffic conditions were surveyed for Year 2000 conditions. Between 1996 and 2000, a portion of Avion Drive, which provides internal access to the Century Cargo Complex, was relocated south of Century Boulevard. This roadway realignment does not change the overall on-airport surface transportation characteristics. The primary circulation roadway (World Way) and the primary access roads (Lincoln Boulevard, Sepulveda Boulevard, Century Boulevard, Pershing Drive, and Imperial Highway) remain unchanged relative to the 1996 baseline conditions.

CTA traffic count information was collected from LAWA's in-pavement traffic count program. The airport peak hour traffic data were collected in August 1996, while the traffic count data for morning and evening commuter peak hours (including both inbound and outbound CTA traffic counts) were collected in March 1997. It is important that any comparisons to Year 2000 data be performed for the same period of the year as the 1996/97 data was collected to ensure consistency in airport activity. Therefore, for comparison to August 1996 traffic counts, the corresponding Year 2000 data were obtained for inbound and outbound CTA volumes during the airport peak hour on Friday, August 4, 11, and 18, 2000. The data was averaged to produce traffic volumes representative of a typical Friday in August. To compare to March 1997 data, corresponding data was collected on March 17 and 24, 2000, which produced a comparison for the commuter peak hours.

The inbound and outbound CTA traffic volumes fluctuated according to peak hour aviation activity (see **Table F4.3.1-3**, CTA Traffic Comparison, Baseline to Year 2000). In 2000, CTA traffic was approximately seven percent higher than baseline conditions during the airport peak hour, about six percent lower during the morning commuter peak hour, and about two percent higher during the evening commuter peak hour. These trends accurately reflect changing LAX aviation activity between 1996 and 2000. Although the daily passenger activity increased in Year 2000, the activity occurring during the morning commuter peak hour decreased as activity shifted to adjacent hours.



Upper Level



Lower Level

Note: Color indication closest to terminal building represents curbing activity LOS.

Color indication closest to interior of CTA (parking area) represents "through" roadway activity LOS.

Although parking structure P6 is currently operational, it was not open in 1996, the year used in this analysis as the Environmental Baseline. Therefore it is indicated in this report as a future parking structure. This site is assumed as a surface lot in the Environmental Baseline.

LEGEND

Volume-to-Capacity Ratio	Level of Service
< 0.6	A
0.60 to 0.69	B
0.70 to 0.79	C
0.80 to 0.89	D
0.90 to 0.99	E
≥ 1.0	F

Source: Leigh Fisher Associates, October 2000

LAX Master Plan
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Existing Roadway and Curbside Level of Service

Figure
F4.3.1-2

Table F4.3.1-3

CTA Traffic Comparison, Baseline to Year 2000

Time Period	CTA Traffic Inbound	CTA Traffic Outbound	CTA Traffic Total
A.M. Commuter Peak Hour			
March 1997[1]	4,100	3,280	**7,380**
March 2000[2]	3,760	3,170	**6,930**
Percent Increase/(Decrease) between 1997 and 2000	(8.3%)	(3.4%)	**(6.1%)**
Airport Peak Hour			
August 1996 [3]	5,910	5,380	**11,290**
August 2000 [4]	6,500	5,600	**12,100**
Percent Increase/(Decrease) between 1996 and 2000	10.0%	4.1%	**7.2%**
P.M. Commuter Peak Hour			
March 1997[5]	4,160	4,480	**8,640**
March 2000[6]	4,390	4,410	**8,800**
Percent Increase/(Decrease) between 1997 and 2000	5.5%	(1.6%)	**1.9%**
Combined Peak Hours			
1996/97	14,170	13,140	**27,310**
2000	14,650	13,180	**27,830**
Percent Increase/(Decrease) between 1996/97 and 2000	3.4%	0.3%	**1.9%**

1 Peak hour defined as 8:00 a.m. to 9:00 a.m.; Source: Update Existing Conditions to 1996, On-Airport Transportation; June 9, 1998; Leigh Fisher Associates.
2 Average of peak hour traffic on March 17 and 24, 2000.
3 Peak hour defined as 11:00 a.m. to 12:00 noon.; Source: Update Existing Conditions to 1996, On- Airport Transportation; June 9, 1998; Leigh Fisher Associates.
4 Average of peak hour traffic on August 4, 11, and 18, 2000.
5 Peak hour defined as 5:00 p.m. to 6:00 p.m.; Source: Update Existing Conditions to 1996, On-Airport Transportation; June 9, 1998; Leigh Fisher Associates.
6 Average of peak hour traffic on March 17 and 24, 2000.

Source: Los Angeles World Airports, LAX AVI Traffic Count Data; Landrum & Brown, 2003.

The results of the surveys completed for Year 2000 conditions showed no material or consistent change in traffic growth or reduction in on-airport traffic since August 1996/March 1997. Although some traffic did shift between peak hours, the overall change in traffic was minimal. The slight increase in the combined peak hour traffic volumes (1.9 percent for total traffic) indicates that the continued use of the 1996/97 traffic volumes as the baseline for analysis is a conservative approach, since the lower 1996/97 volumes would result in a larger change in traffic resulting from the projects. This would lead to an indication of more impacts resulting from the build alternatives. Further, there were no material infrastructure changes that were not already anticipated between 1996/97 and 2000 (i.e., improvements that were already planned and approved, as accounted for in the No Action/No Project Alternative).

In Year 2000, the physical configuration of the CTA roadways and curbfront was essentially the same as in the 1996 baseline conditions. Further, consistent with the traffic volume data shown in **Table F4.3.1-3**, observations of curbfront operations in Year 2000 indicate that this circumstance was materially unchanged from 1996/97.

Therefore, the baseline analysis conducted in 1996/1997 remains valid.

Public Parking

The airport provides both close-in and remote parking for short-term and long-term parking patrons, as illustrated in **Figure F4.3.1-3**, Existing (1996) Parking Levels of Service. Approximately 8,441 close-in garage and surface lot parking stalls are provided interior to the CTA, with inbound access from the CTA roads on both the upper and lower level curbs. Traffic exiting the parking lots is exclusively directed to the lower level roadway.

The number of spaces and the peak period use of each parking lot is shown in **Table F4.3.1-4,** Public Parking Supply Versus Usage.[155] The airport parking system as a whole operates with excess capacity, primarily in remote Parking Lots B and C; however, several of the close-in parking garages within the CTA regularly fill to capacity during peak periods. Filled lots add to the roadway congestion within the CTA for two primary reasons. First, motorists who attempt to park in a garage and find it full recirculate on the CTA road system to search for an open garage. Should drivers find other garages to also be full, they may make additional recirculation trips, each adding to an already congested CTA. Motorists who encounter a closed parking garage will often wait at the entrance until the garage opens. Because the entrances to the garages are designed to accommodate only one to two vehicles, a queue will quickly form at the closed garage entrance that backs onto the CTA circulation roads, blocking the free flow of traffic. This is common at Garages P-1, P-3, P-4, P-5, and P-7. This condition can often last for several minutes before parking spaces become available and some vehicles are allowed to enter. Of course this cycle can be repeated shortly thereafter once the vacated spaces are again filled.

Table F4.3.1-4

Public Parking Supply Versus Usage

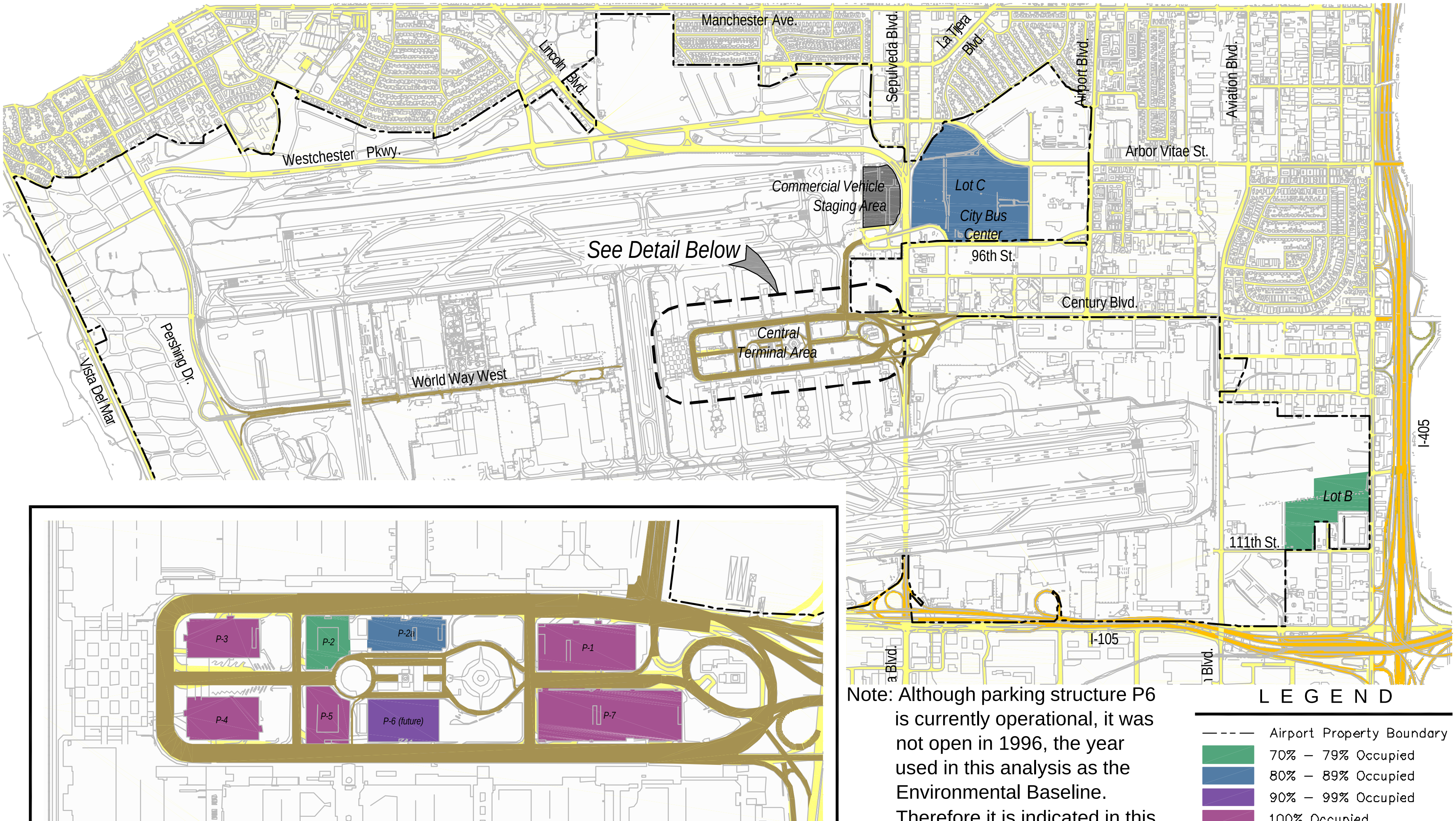
Lot[1]	Toll-booth Controlled Spaces	Peak Accumulation[2]	Percent Occupied[3]
P-1	1,099	1,100	100
P-2	673	530	79
P-2A	683	545	80
P-3	1,166	1,260	100
P-4	1,069	1,070	100
P-5	713	715	100
P-6	295	290	98
P-7	1,596	1,590	100
Sub-Total	**7,294**	**7,100**	**97[3]**
Long-term			
B	4,838	3,410	70
C	8,147	6,820	84
Sub-Total	**12,985**	**10,230**	**79[3]**
TOTAL	**20,279**	**17,330**	**85[3]**

1 Excludes 1,147 metered spaces in CTA and 12,500 stalls provided by the private sector. Also excludes 686 net additional stalls resulting from CTA parking garage P-6, which opened in the year 2000 (after the 1996 baseline year).
2 The highest number of occupied stalls during the survey period.
3 Average percent occupied.

Source: Leigh Fisher Associates, using data provided by LAWA Parking Services for the week of August 11-17, 1996.

Second, two trips are often generated in the CTA and on the surrounding road system when only one would have been necessary. Repeat passengers have learned that close-in parking is often filled. Therefore, a third party often drops off and picks up a passenger, which adds two round-trips to the CTA and surrounding road system when only one would have sufficed if the motorist had been able to park at the airport. Other passengers drive to the terminal, drop off other passengers in the travel party with their luggage, and then drive out to an off-airport lot. Both of these responses result in excess CTA trips, and affect both the CTA and the surrounding road system. Although increasing the short-term parking rates could reduce this impact by encouraging some motorists to go straight to long-term parking and avoid entering the CTA, a significant unmet demand clearly exists for short-term parking that must be addressed.

155 Although parking garage P-6 replaced a 295-stall surface parking lot in the year 2000, the existing conditions scenario does not account for the parking garage, since "existing conditions" is defined in this analysis as the year 1996. Therefore, parking garage P-6 is considered as part of the future No Action/No Project Alternative.



Detail of Central Terminal Area

Note: Although parking structure P6 is currently operational, it was not open in 1996, the year used in this analysis as the Environmental Baseline. Therefore it is indicated in this report as a future parking structure. This site is assumed as a surface lot in the Environmental Baseline.

LEGEND

- Airport Property Boundary
- 70% – 79% Occupied
- 80% – 89% Occupied
- 90% – 99% Occupied
- 100% Occupied

Prepared by: Landrum & Brown, October 2000

LAX Master Plan
Final EIS/EIR

Existing (1996) Parking Levels of Service

Figure
F4.3.1-3

Several privately-owned parking facilities also operate near the airport. The operators provide courtesy shuttle services to transport passengers to and from the airport. Privately-operated parking lots provide approximately 12,500 spaces off-airport. A survey of these facilities in June 1997 indicates that the lots were between 75 percent and 100 percent occupied.

Table F4.3.1-5, Public Parking Comparison, Baseline to Year 2000, provides a comparison of the public parking demands at LAX from the August 1996/March 1997 baseline to Year 2000. Similar to the CTA traffic comparison, there is no material or consistent change in the parking demand between the baseline years and Year 2000. The March comparison shows that parking slightly decreased between the baseline year and 2000, while the August analysis shows that parking slightly increased during that month.

Therefore, the baseline analysis conducted in 1996/1997 remains valid.

Table F4.3.1-5

Public Parking Comparison, Baseline to Year 2000

	Airport Parking Vehicles			
Time Period	**CTA**	**Lot B**	**Lot C**	**Total**
March				
Year 1997	557,394	13,308	29,371	**600,073**
Year 2000	537,211	15,073	35,276	**587,560**
Percent Increase/(Decrease) between 1997 and 2000	(3.6%)	13.3%	20.1%	**(2.1%)**
August				
Year 1996	753,818	17,165	37,835	**808,818**
Year 2000	781,863	19,437	46,094	**847,394**
Percent Increase/(Decrease) between 1996 and 2000	3.7%	13.2%	21.8%	**4.8%**

Source: Los Angeles World Airports, Parking Data; Landrum & Brown, 2003.

Employee Parking

Employee parking is provided by LAWA at Lot D (1,802 spaces) and Lot E (1,465 spaces). Specific tenants provide other employee parking. Peak accumulation for the employee lots occurs between 4:00 p.m. and 5:00 p.m. on weekdays, during which time Lot D is approximately 90 percent occupied, and Lot E is approximately 65 percent occupied.

Commercial Vehicle Staging Facilities

LAWA provides approximately ten acres north of 96th Street and west of Sepulveda Boulevard as a staging area for taxicabs, door-to-door vans, charter/tour buses, and limousines. These commercial vehicles remain parked in the staging facility until dispatched to the CTA curbside or tour bus areas. Total peak accumulation of commercial vehicles does not exceed the capacity of the holding lot.

Rental Car Facilities

All rental car agencies with on-airport concession agreements with LAX use courtesy shuttles to transport airport customers between the terminals and ready car and return car areas. Between 1996 and 2000, the total number of rental car companies that served the airport and the total acreage in which the facilities for the car rental agencies were located did not materially change. Therefore, the baseline analysis conducted in 1996/1997 remains valid.

Pedestrians/Inter-Terminal Circulation

LAX does not currently have an APM system, nor is an APM planned as part of the No Action/No Project Alternative. Passengers and employees are transported between terminals in the CTA via a rubber tire inter-terminal shuttle. This shuttle service also serves remote parking Lots B and C. Because the number of shuttles can easily be adjusted to satisfactorily accommodate ridership demand, adequate service can be provided; however, each shuttle adds to the congestion on the CTA curbfront and access system. Passengers and employees can also walk between terminals and from terminals to short-term parking structures via sidewalks, crosswalks, and pedestrian bridges connecting terminals to CTA parking structures. However, congestion on sidewalks, curbfront, and access roads can make it difficult to walk more than a short distance, particularly for passengers carrying luggage.

4.3.1.4 Thresholds of Significance

4.3.1.4.1 CEQA Thresholds of Significance

A significant on-airport surface transportation impact would occur if the direct and indirect changes in the environment that may be caused by the particular build alternative would potentially result in one or more of the following future conditions:

Roads and Curbs

- The project (LOS) is C and the project-related increase in V/C over the environmental baseline is 0.08 or greater; or
- The project LOS is D and the project-related increase in V/C over the environmental baseline is 0.04 or greater; or
- The project LOS is E or F and the project-related increase in V/C over the environmental baseline is 0.02 or greater.

These thresholds are consistent with traffic study guidelines from the City of Los Angeles Department of Transportation.[156]

Public and Employee Parking

- The project causes demand to regularly exceed the capacity of the on-airport and off-airport public parking.
- The project causes demand to regularly exceed the capacity of the employee parking.

This threshold was developed to address potential capacity constraints in the airport parking system.

On-Airport Rental Car

- The project causes demand to exceed the capacity of the rental car lots.

This threshold was developed to address potential capacity constraints in the airport rental car system.

Construction

- The project generates sufficient construction-related traffic to disrupt normal background (i.e., non-construction) traffic operations.

This threshold was developed to address potential construction-related impacts.

These thresholds of significance are utilized because they address the potential environmental concerns and impacts relative to on-airport surface transportation associated with the Master Plan build alternatives; namely, adequate operation of the road and curbfront system; the ability of passengers and employees to adequately access parking facilities; the ability for commercial vehicles to use the airport without a detrimental impact on public transportation facilities; the ability of on-airport rental car operators to adequately serve the airport; and the ability of background traffic to adequately operate during construction. It is acknowledged that a breakdown of traffic conditions on the on-airport surface transportation system could queue traffic onto the off-airport surface transportation system and impact that system as well. Any poor traffic conditions on the off-airport roadway system, even if caused by on-airport traffic congestion, are addressed in Section 4.3.2, *Off-Airport Surface Transportation.*

4.3.1.4.2 Federal Standards

There are no federal standards that define significance thresholds for on-airport surface transportation impacts.

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156 Los Angeles Department of Transportation (LADOT), Traffic Study Policies and Procedures. November 1993 (revised April 1999).

4.3.1.5 Master Plan Commitments

As concluded in subsection 4.3.6, *Environmental Consequences*, implementation of any of the Master Plan alternatives would have potential impacts on on-airport surface transportation. In recognition of these potential impacts LAWA has included the commitments listed below in the Master Plan, coded "ST" for surface transportation. Other commitments relevant to surface transportation are included in Section 4.3.2, *Off-Airport Surface Transportation*.

- **ST-1. Adequate West Terminal Design (Alternatives A, B, and C).**

  The West Terminal Area surface transportation system and curbfront, commercial vehicle staging areas, and APM systems will be designed to adequately accommodate all forecast vehicular activity through 2015.

- **ST-2. Non-Peak CTA Deliveries (Alternatives A, B, C, and D).**

  Deliveries to the CTA terminal reconstruction projects will be limited to non-peak traffic hours whenever possible.

- **ST-3. Construction Traffic Uses Upper Level (Alternatives A, B, and C).**

  All construction traffic required to travel through the CTA will use the upper level roadways whenever practical and feasible since the upper level roadways are typically less congested than lower level roads. Four curb areas will be designated for construction deliveries. Each curb area will be a minimum length of one hundred feet, to allow terminal access for construction vehicles. Two of the curb areas will be located on World Way North and two will be located on World Way South. One of the curb areas will be in close proximity to Tom Bradley International Terminal.

- **ST-4. Limited Short-Term Lane Closures (Alternatives A, B, and C).**

  When construction of any new ramps at the Century Boulevard/Sepulveda Boulevard interchange or the APM elevated structures requires short-term lane closures, the lane closures will be for as brief a period as practical, with a goal that closures would last for no more than twelve consecutive hours at a time and would principally be scheduled for non-peak periods.

- **ST-5. Additional Lot C Shuttles (Alternatives A, B, and C).**

  Additional shuttles, as needed, will be added between the Remote Public Parking Lot C and the CTA to accommodate the closure of parking areas when the CTA Parking Expansion project is being constructed.

- **ST-6. Removal of Spoil Material (Alternatives A, B, and C).**

  The spoil material that is removed from the APM and Commercial Vehicle Road (CVR) tunneling projects in the CTA vicinity will be stockpiled and subsequently removed from a point west of the CTA to minimize interruptions in the CTA curb operations.

In addition, the following Master Plan commitments are applicable to Alternative D only. Other commitments relevant to surface transportation are included in Section 4.3.2, *Off-Airport Surface Transportation*.

- **ST-7. Adequate GTC, ITC, and APM Design (Alternative D).**

  LAWA will ensure that the surface transportation system and curbfront for the GTC and ITC, commercial vehicle staging areas, and APM systems will be designed to adequately accommodate all forecast vehicular activity through 2015.

- **ST-8. Limited Short-Term Lane Closures (Alternative D).**

  When construction of any new ramps at the Century Boulevard/Sepulveda Boulevard interchange or construction for the GTC, ITC, or APM elevated structures require short-term lane closures, the lane closures will be for as brief a period as practical and with a goal that closures would principally be scheduled for non-peak periods.

4.3.1.6 Environmental Consequences

As described in the Analytical Framework discussion in the introduction to Chapter 4, the basis for determining impacts under CEQA is different from that of NEPA. Under CEQA, the impacts of a proposed project and alternatives are measured against the "environmental baseline," which is normally the physical conditions that existed at the time the Notice of Preparation was published (i.e., June 1997, or 1996 when a full year of data is appropriate, for the LAX Master Plan Draft EIS/EIR). As such, the CEQA analysis in this Final EIS/EIR uses the environmental baseline, or in some cases an "adjusted environmental baseline," as the basis by which to measure and evaluate the impacts of each alternative. Under NEPA, the impacts of each action alternative (i.e., build alternative) are measured against the conditions that would otherwise occur in the future if no action were to occur (i.e., the "No Action" alternative). As such, the NEPA analysis in this Final EIS/EIR uses the No Action/No Project Alternative as the basis by which to measure and evaluate the impacts of each build alternative (i.e., Alternatives A, B, C, and D) in the future (i.e., at buildout in 2015 or, for construction-related impacts, selected future interim year). Based on this fundamental difference in the approach to evaluating impacts, the nature and significance of impacts determined under CEQA are not necessarily representative of, or applicable to, impacts determined under NEPA. The following presentation of environmental consequences should, therefore, be reviewed and considered accordingly.

4.3.1.6.1 Operations Impacts

On-airport surface transportation (vehicular and pedestrian) forecasts were developed for analysis year 2015 with the forecasting procedures discussed in subsection 4.3.1.2, *General Approach and Methodology*.

4.3.1.6.1.1 No Action/No Project Alternative

The No Action/No Project Alternative includes one additional parking garage in the Central Terminal Area. Although this garage, called garage P-6, opened in 2000, the analysis accounts for it only in a future (Year 2015) scenario, since the existing conditions baseline was defined as the Year 1996. This garage provided 686 additional close-in parking stalls in the CTA. This is the only consequential on-airport surface transportation improvement in the No Action/No Project Alternative.

Roadways

Table F4.3.1-6, On-Airport Ground Transportation Forecasts (Vehicles) No Action/No Project Alternative, summarizes the on-airport surface transportation vehicle forecasts attributed to airport-related facilities for analysis years 1996 and 2015. The detailed traffic forecasts and assignments are provided in Technical Report 3a, *On-Airport Ground Transportation Report*.

Table F4.3.1-6

On-Airport Ground Transportation Forecasts (Vehicles) No Action/No Project Alternative

Location	1996[1]		2015[1]	
	Inbound	Outbound	Inbound	Outbound
AM Peak Hour				
Central Terminal Area	3,604	3,385	5,301	5,061
Eastern Remote Facilities	1,151	695	1,538	1,196
Airport Peak Hour				
Central Terminal Area	6,043	5,396	7,485	6,470
Eastern Remote Facilities	1,804	1,588	1,904	1,743
PM Peak Hour				
Central Terminal Area	3,225	4,530	4,655	6,389
Eastern Remote Facilities	1,010	1,237	1,531	1,739

[1] Forecasts indicate number of vehicles, which includes a mix of passenger cars, taxis, shuttle buses, limos, etc. Excludes cargo and ancillary trips.

Source: 1996 Data - Leigh Fisher Associates; All other data - JKH Mobility Services, 2000.

Table F4.3.1-7

Year 2015 Impact Comparison, On-Airport Surface Transportation

	Env. Baseline		NA/NP Alternative			Alternative A				Alternative B				Alternative C				Alternative D			
Location/Level	V/C[1]	LOS[2]	V/C[1]	LOS[2]	Difference from Env. Base.	V/C[1]	LOS[2]	Difference From Env. Base.	Signifi-cant Impact?	V/C[1]	LOS[2]	Difference from Env. Base.	Signifi-cant Impact?	V/C[1]	LOS[2]	Difference From Env. Base.	Signifi-cant Impact?	V/C[1]	LOS[2]	Difference From Env. Base.	Signifi-cant Impact?
Inbound Upper																					
Century	0.50	A	0.50	A	0.00	0.36	A	-0.14	No	0.27	A	-0.23	No	0.40	A	-0.10	No	N/A[4]	N/A	N/A	No
N. Sepulveda	N/A	N/A	N/A	N/A	N/A	0.39[4]	A	N/A	No	0.56[4]	A	N/A	No	0.52[4]	A	N/A	No	N/A[4]	N/A	N/A	No
S. Sepulveda	0.67	B	0.84	D	0.17	0.55	A	-0.12	No	0.64	B	-0.03	No	0.76	C	0.09	Yes	N/A[4]	N/A	N/A	No
Inbound Lower																					
Century	0.68	B	0.51	A	-0.17	0.16	A	-0.52	No	0.11	A	-0.57	No	0.15	A	-0.53	No	N/A[4]	N/A	N/A	No
N. Sepulveda	N/A	N/A	N/A	N/A	N/A	0.58[4]	A	N/A	No	0.60[4]	A	N/A	No	0.74[4]	C	N/A	No	N/A[4]	N/A	N/A	No
S. Sepulveda	0.58	A	1.60	F	1.02	0.38	A	-0.20	No	0.40	A	-0.18	No	0.51	A	-0.07	No	N/A[4]	N/A	N/A	No
Outbound Upper																					
Century	0.61	B	0.33	A	-0.28	0.24	A	-0.37	No	0.22	A	-0.39	No	0.33	A	-0.28	No	N/A[4]	N/A	N/A	No
N. Sepulveda	N/A	N/A	N/A	N/A	N/A	0.23[4]	A	N/A	No	0.30[4]	A	N/A	No	0.36[4]	A	N/A	No	N/A[4]	N/A	N/A	No
S. Sepulveda	0.27	A	0.20	A	-0.07	0.14	A	-0.13	No	0.20	A	-0.07	No	0.28	A	0.01	No	N/A[4]	N/A	N/A	No
Outbound Lower																					
Century	0.34	A	0.45	A	0.11	0.23	A	-0.11	No	0.21	A	-0.13	No	0.19	A	-0.15	No	N/A[4]	N/A	N/A	No
N. Sepulveda	1.31	F	1.44	F	0.13	0.86	D	-0.45	No	0.79	C	-0.52	No	1.00	E	-0.31	No	N/A[4]	N/A	N/A	No
S. Sepulveda	0.75	C	0.87	D	0.12	0.55	A	-0.20	No	0.55	A	-0.20	No	0.58	A	-0.17	No	N/A[4]	N/A	N/A	No
World Way Upper																					
Terminal 1	1.18	F	1.52	F	0.34	0.67	B	-0.51	No	0.69	B	-0.49	No	0.84	D	-0.34	No	N/A[4]	N/A	N/A	No
TBIT	0.71	C	0.82	D	0.11	0.40	A	-0.31	No	0.34	A	-0.37	No	0.65	B	-0.06	No	N/A[4]	N/A	N/A	No
Terminal 8	1.16	F	1.09	F	-0.07	0.63	B	-0.53	No	0.65	B	-0.51	No	0.87	D	-0.29	No	N/A[4]	N/A	N/A	No
World Way Lower																					
Terminal 1	1.26	F	1.39	F	0.13	0.64	B	-0.62	No	0.59	A	-0.67	No	0.74	C	-0.52	No	N/A[4]	N/A	N/A	No
TBIT	0.83	D	1.60	F	0.77	0.60	A	-0.23	No	0.68	B	-0.15	No	0.85	D	0.02	No	N/A[4]	N/A	N/A	No
Terminal 8	1.14	F	1.46	F	0.32	0.80	C	-0.34	No	0.71	C	-0.43	No	0.94	E	-0.20	No	N/A[4]	N/A	N/A	No
Inbound GTC																					
Century	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.88	D	N/A[4]	No
Imperial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.67	B	N/A[4]	No
Aviation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.28	A	N/A[4]	No
La Cienega	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.28	A	N/A[4]	No
Outbound GTC																					
Century	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.57	A	N/A[4]	No
Imperial	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.60	B	N/A[4]	No
Aviation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.77	C	N/A[4]	No
La Cienega	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.25	A	N/A[4]	No

[1] V/C = Volume to Capacity Ratio
[2] LOS = Level of Service. Range: A (good) - F (breakdown).
[3] N/A = Not Applicable
[4] A new facility replaces the corresponding No Action/No Project facility.

Source: JKH Mobility Services, Inc., 2002.

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Table F4.3.1-7, Year 2015 Impact Comparison, On-Airport Surface Transportation, shows the operating conditions of the key on-airport roadway segments in 2015 for all alternatives. As shown, the No Action/No Project Alternative would compound the existing airport peak-hour capacity deficiencies in 2015. Much of the upper and lower levels of World Way would be expected to operate at LOS F (at or over capacity).

Curbfront

Table F4.3.1-8, Year 2015 Curbfront Requirements, summarizes the curbfront analyses for 2015 for all alternatives. For the No Action/No Project Alternative, the available curbfront length (including 50 percent of the double-park lane) would be exceeded on the lower level in 2015 by about 26 percent.

Table F4.3.1-8

Year 2015 Curbfront Requirements

	2015[1]		
	Required Length (Feet)	**Available Length (Feet)[2]**	**Demand/Capacity**
No Action/No Project			
Central Terminal Area (CTA)			
Upper Level	5,501	8,875	62%
Lower Level	19,274	15,325	126%
Alternative A			
Central Terminal Area			
Upper Level	3,244	8,875	37%
Lower Level	8,862	15,325	58%
Proposed Western Terminals			
Upper Level	4,635	11,350	41%
Lower Level	11,850	11,350	104%
Tunnel	1,163	3,000	39%
Alternative B			
Central Terminal Area			
Upper Level	3,575	8,875	40%
Lower Level	8,523	15,325	56%
Proposed Western Terminals			
Upper Level	4,900	12,960	38%
Lower Level	12,150	12,960	94%
Tunnel	1,238	3,000	41%
Alternative C			
Central Terminal Area			
Upper Level	4,049	8,875	46%
Lower Level	10,358	15,325	68%
Proposed Western Terminals			
Upper Level	2,395	4,600	52%
Lower Level	5,899	6,900	85%
Middle (Commercial) Level	2,601	4,600	57%
Alternative D			
Ground Transportation Center (GTC only)			
Upper Level	3,309	5,940[3]	56%
Lower Level	7,066	8,910[3]	79%

1 Analysis represents design day, peak hour traffic conditions.
2 Source for CTA length: LAX Master Plan: Existing Conditions Working Paper, dated April 19, 1996, with allowances for planned improvements.
3 Values reflect usable curb length, as discussed in Technical Report S-2a, *Supplemental On-Airport Surface Transportation Technical Report*.

Source: JKH Mobility Services, 2002.

Public Parking

Year 2015 daily public parking demand estimates are shown in **Table F4.3.1-9**, Year 2015 Public Parking Requirements. For the No Action/No Project Alternative, parking demand would exceed the planned parking capacity of 35,612 spaces by almost 3 percent by 2015.

Table F4.3.1-9

Year 2015 Public Parking Requirements

	2015			
Alternative	**Originating Daily Passengers**	**Daily Demand (spaces)**	**Planned Capacity (spaces)[1]**	**Demand/Capacity**
No Action/No Project	87,280	36,600	35,612	102.8%
Alternative A	108,355	35,636	36,621	97.3%
Alternative B	108,355	35,636	34,401	103.6%
Alternative C	108,113	35,636	39,441	90.4%
Alternative D	95,026	35,636	35,002	101.8%

[1] Includes close-in parking (short and long-term), remote public parking and private parking.

Source: Landrum & Brown, Inc., 2003.

Note that in Table F4.3.1-9, the number of daily originating passengers is expected to be essentially the same for Alternatives A, B, and C in 2015. This may seem counter-intuitive, since there is a clear difference in million annual passengers (MAP) expected from these alternatives in the forecast years. However, the parking demand is based primarily on the number of O&D passengers, which are those passengers who begin or end their trip in the Los Angeles region and do not connect from one flight to another inside the airport. Future parking demand was calculated by first assuming a direct demand increase according to the future O&D flight forecast. This demand was then adjusted to account for expected increases in future vehicle occupancy from 1.45 to 1.50 and changes in the mode of travel that passengers and employees use to get to and from the airport. The lower MAP demand expected by Alternative C is expected to be primarily due to fewer connecting passengers, not O&D passengers. This would also be the case for Alternative D. Therefore, the daily parking demand forecasts are the same for Alternatives A, B, C, and D.

Employee Parking

Year 2015 employee parking demand estimates are shown in **Table F4.3.1-10**, Year 2015 Employee Parking Requirements. Under the No Action/No Project Alternative, the capacity of 8,990 parking stalls would be deficient by about 3,400 stalls by 2015.

Table F4.3.1-10

Year 2015 Employee Parking Requirements

	2015		
Alternative	**Daily Demand (spaces)**	**Planned Capacity (spaces)**	**Demand/Capacity**
No Action/No Project	12,400	8,990	137.9%
Alternative A	12,400	12,000	103.3%
Alternative B	12,400	13,748	90.2%
Alternative C	12,400	14,265	86.9%
Alternative D	12,400	13,600	91.2%

Source: Landrum & Brown, Inc., 2003.

Rental Car Facilities

Year 2015 rental car area demand estimates are shown in **Table F4.3.1-11**, Year 2015 Rental Car Area Requirements. Under the No Action/No Project Alternative, the Year 2015 demand of 3.4 million square feet would be about 170,000 square feet less than the anticipated capacity of 3.57 million square feet.

Table F4.3.1-11

Year 2015 Rental Car Area Requirements

	2015		
Alternative	**Demand (million square feet)**	**Planned Capacity (million square feet)**	**Demand/Capacity**
No Action/No Project	3.4	3.57	95.2%
Alternative A	3.4	3.4	100.0%
Alternative B	3.4	3.4	100.0%
Alternative C	3.4	3.4	100.0%
Alternative D	3.4	3.4[1]	100.0%

1 Alternative D includes additional rental car facilities that Alternatives A, B, and C do not include, such as a longer-term vehicle storage area. Therefore, the total Rental Car capacity in Alternative D is 7.87 million square feet, as discussed in subsection 4.3.1.6.1.5, exceeding the demand by about 4.47 million square feet.

Source: Landrum & Brown, Inc, 2003.

Pedestrian/Inter-Terminal Circulation

The No Action/No Project Alternative does not have any provision for pedestrian conveyance systems, such as an APM. The inter-terminal bus system would continue in service, as would shuttles to all remote parking facilities. Some passengers would walk between adjacent terminals when connecting between flights on different airlines, as they do today. A specific quantification of inter-terminal pedestrian trips was not addressed since the capacity of the bus operations can be expanded to meet the demand and sidewalk capacity between the terminals is considered to be sufficient.

4.3.1.6.1.2 Alternative A - Added Runway North

Alternatives A and B have similar West Terminal Area curbfront designs. This design, which is illustrated in cross section in **Figure F4.3.1-4**, Curbfront Cross-Sections, includes a west-facing terminal building with a two-level curbfront adjacent, and a remote curbfront opposite the primary curb. The remote curb would allow curbing activity on both its east and west sides. The primary terminal curb would accommodate northbound traffic, while the remote curb would accommodate southbound traffic on its east side and northbound traffic on its west side. Close-in parking would be provided in a 12,000 stall garage immediately west of the remote curb, and remote parking would be provided in a garage on the southwest corner of the airport.

A rental car area and commercial vehicle staging area would be split between a garage south of the West Terminal Area, with supplemental rental car and commercial vehicle staging areas also provided on the east side of the airport.

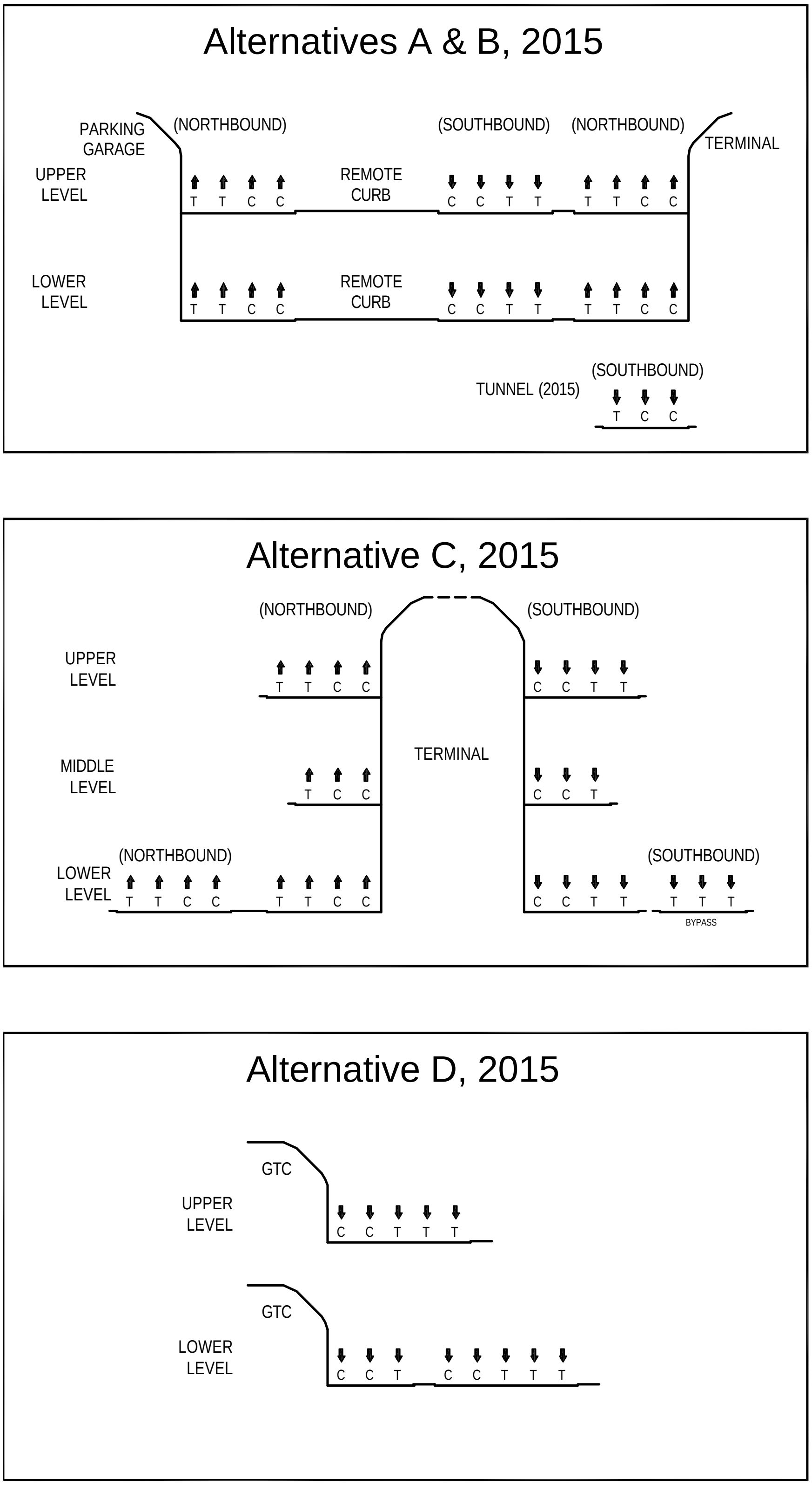
A people mover would be provided between the close-in garage and the TBIT, making intermediate stops at the West Terminal Area and each satellite concourse. All passengers bound to or from the west side satellite concourses would be required to ride the system to reach their destination. Because both the east and west side terminal complexes would have separate remote parking and rental-car facilities, some originating or terminating passengers would need to ride the system between the east and west ends of the airport if they need to arrive at a gate on the opposite end from where they parked. Also, a spur line from the Green Line light rail system would be constructed from the existing station at Aviation Boulevard and Imperial Highway directly to the west terminal complex by 2015. Joint funding for this extension would be pursued. Examples of potential funding sources include federal funds (e.g., TEA-21), local funds through the MTA Call for Projects process, and airport funds for that portion of the extension used exclusively by airport passengers and employees.

Also, LAWA would select a site and finalize plans for the relocation and expansion of the LAX Transit Center currently located east of Sepulveda Boulevard and north of 96th Street. This would be done in coordination with transportation and airport planners, and through a cooperative process involving LACMTA and other affected transit providers. The facility would be located and designed to maintain or improve current levels of service while accommodating demand associated with buildout of the LAX Master Plan. The new facility would be operational or transitional plans would be in place prior to any demolition, construction or circulation changes that would affect the existing LAX Transit Center. The relocation process for the facility would ensure that transit service would not be temporarily degraded.

The CTA curbfront and access system infrastructure would remain virtually unchanged from the existing infrastructure.

Roadways

Table F4.3.1-12, On-Airport Ground Transportation Forecasts (Vehicles) Alternative A, summarizes the Alternative A on-airport surface transportation forecasts attributed to airport-related facilities for analysis year 2015, with Year 1996 data also shown for comparison. The overall ground access impacts on the CTA for Alternative A for 2015 would be less than 1996 conditions.



NOTE:
C: Curb Lane
T: Through Lane

Prepared by: Landrum & Brown, September 2000

LAX Master Plan
Final EIS/EIR

Curbfront Cross-Sections

Figure
F4.3.1-4

Table F4.3.1-12

On-Airport Ground Transportation Forecasts (Vehicles)
Alternative A

	1996[1]		2015[1]	
Location	**Inbound**	**Outbound**	**Inbound**	**Outbound**
AM Peak Hour				
Central Terminal Area	3,604	3,385	2,989	2,636
Eastern Remote Facilities	1,151	695	737	628
Western Terminal Area	0	0	3,164	2,815
Western Remote Facilities				
Employee Parking	0	0	119	96
Airport Peak Hour				
Central Terminal Area	6,043	5,396	3,936	3,621
Eastern Remote Facilities	1,804	1,588	1,149	1,089
Western Terminal Area	0	0	6,080	6,335
Western Remote Facilities				
Employee Parking	0	0	161	81
PM Peak Hour				
Central Terminal Area	3,225	4,530	2,785	3,282
Eastern Remote Facilities	1,010	1,237	647	930
Western Terminal Area	0	0	3,964	4,545
Western Remote Facilities				
Employee Parking	0	0	110	190

1 Forecasts indicate number of vehicles which include a mix of passenger cars, taxis, shuttle buses, limos, etc., excluding cargo and ancillary trips.

Source: 1996 Data - Leigh Fisher Associates; all other data - JKH Mobility Services.

Table F4.3.1-7 shows the on-airport facilities that would be affected by the Master Plan alternatives, compared to the environmental baseline. As shown, Alternative A would not result in any significant roadway impact.

When compared to the No Action/No Project Alternative, Alternative A would improve all roadway segments. The most dramatic improvements would be on both the upper and lower levels of World Way, where levels of service would improve from LOS D/F to LOS A/B/C.

Curbfront

Alternative A would relocate much of the air passenger demand from the CTA to the new West Terminal Area. Therefore, the curbfront demand in the CTA would actually be about 34 percent less than the baseline (1996) demand. As a result, the CTA operations would significantly improve over existing operations and would be vastly improved compared to the No Action/No Project Alternative. This would be a highly beneficial impact.

As shown in **Table F4.3.1-8**, the available curbfront length (including 50 percent of the double-park lanes) should be adequate to serve demands on both the eastern and western curbfronts through 2015. The total West Terminal Area curb demand of 17,648 feet would be less than the 25,700 feet of available curb length provided. However, the current preliminary design concept of the West Terminal, with the upper level curbs accommodating all ticketing passengers and the lower level accommodating all baggage claim passengers, would cause excess demand on the lower level and excess capacity on the upper. There are several ways that this lower level deficiency could be remedied. For example, increased police enforcement on the lower level could be used to reduce vehicle dwell times and the corresponding demand, or some private vehicles (for example, VIPs) could be allowed to use the middle level curb. As a result, and because of Master Plan Commitment ST-1, Adequate West Terminal Design (Alternatives A, B, and C), this is a less than significant impact.

When compared to the No Action/No Project Alternative, the operations of the CTA curb would be improved with Alternative A. The lower level would show the most dramatic improvements, improving from operating at over 126 percent of capacity under the No Action/No Project Alternative scenario, to operating at only 58 percent of capacity by 2015.

Public Parking

As shown in **Table F4.3.1-9**, the planned parking capacity of 36,621 spaces in 2015 would be sufficient to meet the estimated demands with about 1,000 excess stalls. Therefore, this is a less than significant impact.

When compared to the No Action/No Project Alternative, the public parking operations in Alternative A would improve in 2015. In 2015, the public parking system under the No Action/No Project Alternative would operate at about 103 percent of capacity, while Alternative A would operate at about 97 percent.

Employee Parking

As shown in **Table F4.3.1-10**, the employee parking stall demand by 2015 would be about 12,400 stalls, approximately 400 stalls more than the 12,000 stalls to be provided in Alternative A. However, the demand for these 400 stalls could use the excess capacity in the public parking system that is expected to be available in Alternative A. Therefore, this is a less than significant impact.

When compared to the No Action/No Project Alternative, employee parking for Alternative A would significantly improve. In 2015, the No Action/No Project Alternative would operate well over capacity, at about 138 percent, while Alternative A would operate at about 103 percent.

Rental Car Facilities

As shown in **Table F4.3.1-11**, the rental car ready-and-return demand would be 3.4 million square feet by 2015, which includes all on-airport ready-and-return requirements. (It is anticipated that long-term auto storage and support will be provided off-site.) This demand would be fully accommodated in Alternative A. Therefore, this would be a less than significant impact.

The demand for rental car space in the No Action/No Project Alternative would be under its capacity by 170,000 square feet by 2015. Because the Alternative A rental car capacity was designed to meet the requirement of 3.4 million square feet in 2015, its demand/capacity ratio is at 100 percent.

Pedestrian/Inter-Terminal Circulation

The APM analysis for Alternative A is detailed in Technical Report 3c, *People Mover Technical Report*. The APM system was designed to adequately accommodate the ridership demands, reflected in the ALPS simulation model results for APM ridership during the airport peak hours (11:00 a.m. to 4:00 p.m.) in the year 2015. The non-secure route would reach a high demand with the peak link flows between the West Terminal Area and the first satellite concourse. The peak hourly flows for the non-secure route would reach 8,309 passengers per hour per direction (pphpd) between 11:00 a.m. and 12:00 noon.

These flows are indicative of the capacity requirements that the APM system must have; however, they must be considered in light of additional surge effects that would occur within the hour. The fact that Alternative A would process all international arrivals through Federal Inspection Services (FIS) facilities at their arrival concourse before boarding the APM system would reduce any surge effects because passenger flow is metered by the FIS capacity. Through adequate design of the APM system, ensured by Master Plan Commitment ST-1, Adequate West Terminal Design (Alternatives A, B, and C), this would be a less than significant impact.

Consistency with Adopted Plans

Alternative A was reviewed for consistency with the following transportation plans:

- Southern California Association of Governments (SCAG) Regional Transportation Plan.
- Los Angeles County Congestion Management Program.
- City of Los Angeles General Plan, Transportation Element.
- Coastal Transportation Corridor Specific Plan, administered by the City of Los Angeles.

- Transportation Improvement and Mitigation Program for South Central Los Angeles Community Plan Area.
- City of El Segundo General Plan.
- City of Hawthorne Circulation Element.

Few policies in these transportation plans apply to the surface transportation element of the LAX Master Plan. Of those policies that do, no surface transportation component of Alternative A conflicts with these policies.

4.3.1.6.1.3 Alternative B - Added Runway South

The Alternative B West Terminal Area curbfront, parking, and access system would be the same as in Alternative A. Unlike Alternative A, the rental car area south of the West Terminal Area complex would be a consolidated rental car area, accommodating all on-airport rental car activity in one garage. The garage would have a footprint of approximately 850,000 square feet and include four levels, for a total of 3.4 million square feet. The Alternative B APM system would connect the consolidated rental car garage with the close-in west parking garage, the West Terminal Area, all satellite concourses, and the TBIT. All rental car patrons would be required to ride the APM system, including those bound to or from the east side CTA, who may board or alight at designated CTA terminal stations. A separate sterile APM route would be provided to carry international arrival passengers to the West Terminal Area and TBIT FIS facilities. Also, a spur line from the Green Line light rail system would be constructed from the existing station at Aviation Boulevard and Imperial Highway directly to the west terminal complex by 2015.

The CTA curbfront and access system infrastructure would remain virtually unchanged from the existing infrastructure.

Roadways

Table F4.3.1-13, On-Airport Ground Transportation Forecasts (Vehicles) Alternative B, summarizes the Alternative B on-airport surface transportation forecasts attributed to airport related facilities for analysis year 2015, with Year 1996 data also shown for comparison. The overall ground access impacts on the CTA for Alternative B for 2015 would be less than 1996 conditions.

Table F4.3.1-13

On-Airport Ground Transportation Forecasts (Vehicles) Alternative B

	1996[1]		2015[1]	
Location	Inbound	Outbound	Inbound	Outbound
AM Peak Hour				
Central Terminal Area	3,604	3,385	2,959	2,538
Eastern Remote Facilities	1,151	695	439	294
Western Terminal Area	0	0	3,282	3,190
Western Remote Employee Parking	0	0	119	96
Airport Peak Hour				
Central Terminal Area	6,043	5,396	3,928	3,628
Eastern Remote Facilities	1,804	1,588	608	613
Western Terminal Area	0	0	6,271	6,691
Western Remote Employee Parking	0	0	161	81
PM Peak Hour				
Central Terminal Area	3,225	4,530	2,789	3,278
Eastern Remote Facilities	1,010	1,237	467	608
Western Terminal Area	0	0	4,095	4,822
Western Remote Employee Parking	0	0	155	191

1 Forecasts indicate number of vehicles which include a mix of passenger cars, taxis, shuttle buses, limos, etc. Excluding cargo and ancillary trips.

Source: 1996 Data - Leigh Fisher Associates; all other data - JKH Mobility Services.

Table F4.3.1-7 shows that most on-airport facilities would be significantly improved by Alternative B compared to the environmental baseline. As shown, Alternative B would not result in any significant roadway impact.

Because Master Plan Commitment ST-1, Adequate West Terminal Design (Alternatives A, B, and C), assures that the west complex would operate at an acceptable LOS, the west terminal road system would operate acceptably.

When compared to the No Action/No Project Alternative, Alternative B would improve all roadway segments. The most dramatic improvements would be on both the upper and lower levels of World Way, where levels of service would improve from LOS D/F to LOS A/B/C.

Curbfront

Because the project would relocate much of the air passenger demand from the CTA to the new West Terminal Area, the curbfront demand in the CTA would actually be about 34 percent less than the baseline (1996) demand. (This is similar to Alternative A.) Therefore, the CTA operations would significantly improve over existing operations and would be vastly improved compared to the No Action/No Project Alternative. This would be a highly beneficial impact.

As shown in **Table F4.3.1-8**, the available curbfront length (including 50 percent of the double park lane) would be adequate to serve demands on both the eastern and western curbfronts through 2015. The total West Terminal Area curb demand of 18,288 feet would be less than the 28,920 feet of available curb length provided. As a result, and because of Master Plan Commitment ST-1, Adequate West Terminal Design (Alternatives A, B, and C), this would be a less than significant impact.

When compared to the No Action/No Project Alternative, the operations of the CTA curb would be improved with Alternative B. The lower level would show the most dramatic improvements, improving from operating at over 125 percent of capacity under the No Action/No Project Alternative scenario, to operating at only 56 percent of capacity by 2015.

Public Parking

As shown in **Table F4.3.1-9**, the estimated demand for parking spaces in 2015 (35,636) would be 104 percent of planned capacity. However, it is anticipated that either private parking vendors would meet the excess parking demands, or the excess capacity provided for employee parking in Alternative B could be made available for this public parking. Therefore, this would be a less than significant impact.

Under the No Action/No Project Alternative, the public parking system would operate at about 103 percent of capacity in 2015, while Alternative B would be at about 104 percent.

Employee Parking

As shown in **Table F4.3.1-10**, the employee parking stall demand of 12,400 stalls in 2015 would be sufficiently accommodated by the 13,748 stalls to be provided in Alternative B. Therefore, this would be a less than significant impact.

When compared to the No Action/No Project Alternative, employee parking for Alternative B would significantly improve. In 2015, the No Action/No Project Alternative would operate well over capacity, at about 138 percent, while Alternative B would operate at about 90 percent.

Rental Car Facilities

As shown in **Table F4.3.1-11**, the rental car ready and return demand would be 3.4 million square feet by 2015. (It is anticipated that long-term auto storage and support will be provided off-site.) This demand would be fully accommodated in Alternative B. Therefore, this would be a less than significant impact.

The demand for rental car space in the No Action/No Project Alternative would be under its capacity by 170,000 square feet by 2015. Because the Alternative B rental car capacity was designed to meet the requirement of 3.4 million square feet in 2015, its demand/capacity ratio is at 100 percent.

Pedestrian/Inter-Terminal Circulation

The APM analysis for Alternative B is detailed in Technical Report 3c, *People Mover Technical Report*. The APM system was designed to adequately accommodate the ridership demands, reflected in the

ALPS simulation model results for APM ridership during the airport peak hours (11:00 a.m. to 4:00 p.m.) in the year 2015. The peak link hourly flow rate would reach 7,271 passengers per hour per direction (pphpd) outbound from the West Terminal Area station in the 11:00 a.m. to 12:00 noon hour. The highest demand on the sterile system would reach 3,274 pphpd traveling westbound to the West Terminal Area from the satellite concourses during the hour of noon to 1:00 p.m. Through adequate design of the APM system, ensured by Master Plan Commitment ST-1, Adequate West Terminal Design (Alternatives A, B, and C), this would be a less than significant impact.

Consistency with Adopted Plans

Alternative B was reviewed for consistency with the following transportation plans:

- Southern California Association of Governments (SCAG) Regional Transportation Plan.
- Los Angeles County Congestion Management Program.
- City of Los Angeles General Plan, Transportation Element.
- Coastal Transportation Corridor Specific Plan, administered by the City of Los Angeles.
- Transportation Improvement and Mitigation Program for South Central Los Angeles Community Plan Area.
- City of El Segundo General Plan.
- City of Hawthorne Circulation Element.

Few policies in the reviewed transportation plans apply to the surface transportation element of the LAX Master Plan. Of those policies that do, no surface transportation component of Alternative B conflicts with these policies.

4.3.1.6.1.4 Alternative C - No Additional Runway

The Alternative C West Terminal design is dual-sided, with a triple-level curbfront on both the east and west sides. The upper level curb would accommodate departing (ticketing) passengers, the middle level would accommodate all commercial vehicles, and the lower level would accommodate arriving (bag claim) passengers. The east side curb would have one set of curb lanes on each level, with a separate bypass road (see **Figure F4.3.1-4**). It would accommodate southbound traffic. The west side curb would accommodate northbound traffic and would include one set of curb lanes on the upper level and middle level curbs, and two sets of curb lanes on the lower level. (The northbound by-pass road would be located along the Pershing Drive corridor.)

The close-in and remote parking system would be the same as in Alternatives A and B, and, like Alternative B, a consolidated rental car area and commercial vehicle staging area would be provided south of the West Terminal Area complex. The APM system would extend from the consolidated rental car area to the close-in garage, the West Terminal Area, and the satellite concourses, to the Tom Bradley International Terminal (TBIT). An APM circulator system would also be provided within the CTA, allowing all CTA passengers to ride the APM for access to other airport terminals and to the west side facilities. Four distinct routes would operate on four individual guide-way lanes. A non-secure route would operate from the west remote parking/rental car area (RAC) facility to the loop around the east side CTA with the final stop at Terminal 4. The CTA circulator would be a separate non-secure loop. In addition, a secure route would be provided, as well as a sterile route carrying all international arrivals from the satellite concourses on the west side to the FIS facility in the West Terminal Area. Also, a spur line from the Green Line light rail system would be constructed from the existing station at Aviation Boulevard and Imperial Highway directly to the west terminal complex by 2015.

The on-airport rental car activity would be consolidated in a garage on the southwest corner of the airport, which would have a footprint of approximately 850,000 square feet and include four levels, for a total of 3.4 million square feet. The CTA curbfront and access system infrastructure would remain virtually unchanged from the existing infrastructure.

Roadways

Table F4.3.1-14, On-Airport Ground Transportation Forecasts (Vehicles) Alternative C, summarizes the Alternative C on-airport surface transportation forecasts attributed to airport-related facilities for analysis year 2015, with Year 1996 data also shown for comparison.

Table F4.3.1-14

On-Airport Ground Transportation Forecasts (Vehicles) Alternative C

Location	1996[1] Inbound	1996[1] Outbound	2015[1] Inbound	2015[1] Outbound
AM Peak Hour				
Central Terminal Area	3,604	3,385	3,630	3,439
Eastern Remote Facilities	1,151	695	546	371
Western Terminal Area	0	0	3,150	3,125
Western Remote Employee Parking	0	0	115	93
Airport Peak Hour				
Central Terminal Area	6,043	5,396	4,821	4,256
Eastern Remote Facilities	1,804	1,588	683	713
Western Terminal Area	0	0	4,675	5,205
Western Remote Employee Parking	0	0	143	103
PM Peak Hour				
Central Terminal Area	3,225	4,530	3,711	5,075
Eastern Remote Facilities	1,010	1,237	400	878
Western Terminal Area	0	0	2,810	3,025
Western Remote Employee Parking	0	0	73	125

1 Forecasts indicate number of vehicles which include a mix of passenger cars, taxis, shuttle buses, limos, etc., excluding cargo and ancillary trips.

Source: 1996 Data - Leigh Fisher Associates; all other data - JKH Mobility Services.

Table F4.3.1-7 shows the on-airport facilities that would be significantly affected by Alternative C, compared to the environmental baseline. As shown, Alternative C would improve most of the operations of on-airport surface transportation facilities, with the most notable exception of the inbound upper level ramp from southbound Sepulveda Boulevard in 2015, which would be significantly impacted. Because of the anticipated 2015 flight schedules for Alternatives A, B, and C, there is expected to be more peak hour traffic on this ramp in Alternative C than in Alternatives A or B by that time. As a result, even though the ramp geometry is the same in Alternatives A, B, and C, Alternative C has a greater 2015 impact on this ramp than does Alternative A or B. Further, this two-lane ramp cannot be safely widened, due to 1) geometric constraints at its exit from the Sepulveda tunnel, and 2) the design of its merge area with the inbound CTA access road from Century Boulevard and the upper level recirculation road merge in the same location. Therefore, this would be a significant and unavoidable impact.

Master Plan Commitment ST-1, Adequate West Terminal Design (Alternatives A, B, and C), would assure that the west complex would operate at an acceptable LOS D or better.

Alternative C would improve all roadway segments which are not LOS A under the No Action/No Project Alternative. Those facilities which are LOS A under the No Action/No Project Alternative would remain at LOS A under Alternative C.

Curbfront

Under Alternative C, the terminal would be in a different configuration than Alternatives A and B. However, like Alternatives A and B, Alternative C would relocate much of the air passenger demand from the CTA to the new West Terminal Area. Therefore, the curbfront demand in the CTA would actually be about 21 percent less than the baseline (1996) demand. As a result, the CTA operations would significantly improve over baseline operations and would be vastly improved compared to the No Action/No Project Alternative. This would be a highly beneficial impact.

As shown in **Table F4.3.1-8**, the available curbfront length (including 50 percent of the double park lane) would be adequate to serve demands on both the eastern and western curbfronts through 2015. The total West Terminal Area curb demand of 10,895 feet would be less than the 16,100 feet of available curb length provided. As a result, and because of Master Plan Commitment ST-1, Adequate West Terminal Design (Alternatives A, B, and C), this would a less than significant impact.

When compared to the No Action/No Project Alternative, the operations of the CTA curb would be improved with Alternative C. The lower level would show the most dramatic improvements, improving from operating at over 125 percent of capacity under the No Action/No Project Alternative scenario, to operating at only 68 percent capacity under Alternative C in 2015.

Public Parking

As shown in **Table F4.3.1-9**, the planned parking capacity of 39,491 spaces in 2015 would exceed the estimated demand by about 3,800 spaces. Therefore, this would be a less than significant impact.

Alternative C would have the best public parking operations of the build alternatives. When compared to the No Action/No Project Alternative, the public parking operations in Alternative C would improve in 2015. By 2015, the public parking system under the No Action/No Project Alternative would be at 103 percent of capacity, while Alternative C would be at 90 percent.

Employee Parking

As shown in **Table F4.3.1-10**, the employee parking stall demand of 12,400 stalls in 2015 would be sufficiently accommodated by the 14,265 stalls to be provided in Alternative C. Therefore, this would be a less than significant impact.

When compared to the No Action/No Project Alternative, employee parking for Alternative C would significantly improve. In 2015, the No Action/No Project Alternative would operate well over capacity, at about 138 percent, while Alternative C would operate at about 87 percent.

Rental Car Facilities

As shown in **Table F4.3.1-11**, the rental car ready and return demand would be 3.4 million square feet by 2015. (It is anticipated that long-term auto storage and support will be provided off-site.) This demand would be fully accommodated in Alternative C. Therefore, this would be a less than significant impact.

The demand for rental car space in the No Action/No Project Alternative would be under its capacity by 170,000 square feet by 2015. Because the Alternative C rental car capacity was designed to meet the requirement of 3.4 million square feet in 2015, its demand/capacity ratio is at 100 percent.

Pedestrian/Inter-Terminal Circulation

The APM analysis for Alternative C is detailed in Technical Report 3c, *People Mover Technical Report.* The APM system was designed to adequately accommodate the ridership demands, reflected in the ALPS simulation model results for APM ridership during the airport peak hours (11:00 a.m. to 4:00 p.m.) in the year 2015. The secure route would reach a high demand with the peak link flows between the West Terminal Area and the first satellite concourse. The peak hourly flows for the secure route would reach 4,691 passengers per hour per direction (pphpd) between 12:00 noon and 1:00 p.m.

Following the simulation analyses of Alternative C, it was determined that a further reduction in peak hour demand could be accomplished on the secure system by shifting some airside satellite concourse passengers bound to/from the West Remote Parking/RAC station to the non-secure route. This shift would require all non-secure trains to stop at all airside concourses as would the secure route trains, along with the corresponding requirement that security check points be provided at each airside concourse. The resulting peak hourly link volume would be 3,972 pphpd on the secure route. As a result of Master Plan Commitment ST-1, Adequate West Terminal Design (Alternatives A, B, and C), the APM would be adequately designed to accommodate all demand, and this would be a less than significant impact.

Consistency with Adopted Plans

Alternative C was reviewed for consistency with the following transportation plans:

- Southern California Association of Governments (SCAG) Regional Transportation Plan.
- Los Angeles County Congestion Management Program.
- City of Los Angeles General Plan, Transportation Element.
- Coastal Transportation Corridor Specific Plan, administered by the City of Los Angeles.

- Transportation Improvement and Mitigation Program for South Central Los Angeles Community Plan Area.
- City of El Segundo General Plan.
- City of Hawthorne Circulation Element.

Few policies in the reviewed transportation plans apply to the surface transportation element of the LAX Master Plan. Of those policies that do, no surface transportation component of Alternative C conflicts with these policies.

4.3.1.6.1.5 Alternative D - Enhanced Safety and Security Plan

A complete description of the facilities associated with Alternative D is provided in Chapter 3, *Alternatives*. The features of Alternative D that are relevant to the analysis of on-airport surface transportation are summarized below.

The Alternative D on-airport landside system would be composed of four primary facilities: the CTA, the GTC, the ITC, and a RAC. Each component would provide specific ground transportation functions.

Alternative D would alter passenger and employee access to the CTA. Vehicle access to the CTA would be limited to LAWA FlyAway buses and other vehicles that are cleared to drive on the secure airside of the airport, like airport operations, police and fire protection. The GTC would be the primary access point for all passenger drop-off and pick-up, and for private vehicle parking. It would accommodate all private vehicle curbing, as well as both short-term and long-term parking. Vehicles would access the GTC from eastbound Century Boulevard, northbound Aviation Boulevard, southbound La Cienega Boulevard, westbound Imperial Highway, or 111th Street. Traffic exiting the GTC could directly access eastbound or westbound Century Boulevard, as well as La Cienega Boulevard, 111th Street and Imperial Highway by using the proposed on-airport roadway system. A 230,000 square foot commercial vehicle holding area would be provided adjacent to the GTC for staging of taxis, limousines, door-to-door vans, and other commercial vehicles. The APM would connect the GTC with the CTA.

The ITC would serve as the connection point between the airport, Green Line, and regional transit such as the Metropolitan Transportation Authority buses. In addition, the ITC would provide parking facilities for the public and large buses. The APM would directly connect the ITC to the CTA, with a stop at the RAC facility.

On-airport car rental companies would be located in a consolidated campus, or RAC facility, bordered by the Carl E. Nielsen Youth Park on the north, Airport Boulevard to the east, 98th Street to the south, and Sepulveda Boulevard on the west. The facility would include a direct pedestrian bridge to the APM system. There would be a three-level, 150,000 square foot customer service facility adjacent to the APM system and the ready/return garage. The ready/return garage would consist of a four-level facility that would accommodate 9,000 ready/return spaces.

The following section discusses the environmental consequences related to implementation of Alternative D.

Roadways

Table F4.3.1-15, On-Airport Ground Transportation Forecasts (Vehicles) Alternative D, summarizes the Alternative D on-airport surface transportation forecasts attributed to airport-related facilities for 2015, with Year 1996 data also shown for comparison. The traffic forecasts during the peak hour are based on the O&D demand that occurs during the peak hour of the peak month/average day. The peak hour trips generated by Alternative D are different from those of the No Action/No Project Alternative, even though the MAP volumes for the two scenarios are comparable. This is due to the respective differences in O&D demand characteristics between the two scenarios.

Table F4.3.1-15

On-Airport Ground Transportation Forecasts (Vehicles) Alternative D

Location	1996[1]		2015[1]	
	Inbound	Outbound	Inbound	Outbound
AM Peak Hour				
Central Terminal Area	3,604	3,385	602[2]	602[2]
Eastern Remote Facilities	1,151	695	N/A	N/A
Intermodal Transportation Center	N/A[3]	N/A	1,606	1,187
Indirect (non CTA or ITC)	N/A	N/A	1,248	940
Ground Transportation Center	N/A	N/A	2,775	2,487
Airport Peak Hour				
Central Terminal Area	6,043	5,396	24	24
Eastern Remote Facilities	1,804	1,588	N/A	N/A
Intermodal Transportation Center	N/A	N/A	2,866	2,971
Indirect (non CTA or ITC)	N/A	N/A	1,506	1,414
Ground Transportation Center	N/A	N/A	5,817	5,972
PM Peak Hour				
Central Terminal Area	3,225	4,530	665[2]	665[2]
Eastern Remote Facilities	1,010	1,237	N/A	N/A
Intermodal Transportation Center	N/A	N/A	1,339	1,694
Indirect (non CTA or ITC)	N/A	N/A	1,032	1,459
Ground Transportation Center	N/A	N/A	2,724	3,024

1 Forecasts indicate number of vehicles, which includes a mix of passenger cars, taxis, shuttle buses, limos, etc. Excludes cargo and ancillary trips.
2 The vast majority of these trips would be service vehicles and deliveries, with the remainder consisting of FlyAway shuttles.
3 N/A = Not Applicable.

Source: 1996 Data - Leigh Fisher Associates; all other data - JKH Mobility Services, 2002.

When assigned to the surrounding street network, these vehicle forecasts resulted in the on-airport facility impact analysis summarized in **Table F4.3.1-7**. All of the ramps and road segments presented in this table are internal airport ramps and roads, which connect to/from the off-airport arterial streets shown. The impacts analysis of the arterial streets themselves is addressed in Section 4.3.2, *Off-Airport Surface Transportation*.

Based on the fact that Alternative D proposes a substantially different on-airport roadway system than currently exists, and is also substantially different from that of any of the other alternatives, a direct comparison of roadway impacts between Alternative D and No Action/No Project Alternative is not possible. As such, Alternative D would have no notable impacts to the existing on-airport roadway system relative to the environmental baseline or to No Action/No Project Alternative.

In general, each of the new internal roads serving LAX would be designed under Alternative D to operate at LOS D or better. This is a much better level of service than would exist in No Action/No Project Alternative for the existing CTA "horseshoe" and the existing ramps feeding the CTA. It would also be a better level of service than exists today in the CTA. As a result, the overall level of on-airport roadway performance under Alternative D is substantially better than the No Action/No Project Alternative. Under Alternative D, only one roadway segment is projected to operate in 2015 at LOS D and none would operate at LOS F; whereas, under the No Action/No Project Alternative, there would be nine such segments operating at LOS D or worse in 2015.

The basic function of the CTA as being the on-airport roadway system under the environmental baseline and the No Action/No Project Alternative would be replaced by the GTC, ITC, and APM, and elimination of public access to the CTA under Alternative D. This substantial change in the on-airport roadway system, and the attendant roadway impacts, is evidenced in the comparisons presented in **Table F4.3.1-7**. In examining the on-airport roadway impacts that are specific to Alternative D, as presented in the subject table, all of the affected roadway segments would operate at LOS D or better. No significant impact relative to on-airport roadways is expected to occur under Alternative D. Further, Master Plan Commitment ST-7, Adequate GTC, ITC, and APM Design (Alternative D), would ensure that the facilities on the east side are adequately designed to accommodate the generated traffic at an acceptable level of service.

Curbfront

By 2015, curbfront demand in the CTA would be nearly eliminated, since only FlyAway buses and maintenance/service/delivery and other non-public vehicles would have direct access to the CTA. All other activity would be relocated to the GTC. Not only would the CTA curb areas be reconstructed for the FlyAway buses by that time, but the GTC curb areas would also be complete. The GTC would become the primary access center for private vehicles and most commercial vehicles and would accommodate almost all private vehicle curbing, as well as both short-term and long-term parking. Master Plan Commitment ST-7, Adequate GTC, ITC, and APM Design (Alternative D), would ensure that the GTC curbs are designed to adequately handle the curbfront demand with acceptable levels of service.

The preliminary plan of the GTC curbfront includes an upper departures level with five lanes (two curbing and three through lanes) and a lower arrivals level with a total of eight lanes (four curbing and four through lanes). The eight lower level lanes are grouped into two curbfronts as shown in **Figure F4.3.1-4**. As shown in **Table F4.3.1-8**, the available curbfront demand and curbfront length in the GTC are both substantially smaller than in the CTA for the No Action/No Project Alternative and for Alternatives A, B, and C. The primary reason is that the GTC design is much more efficient than the CTA in any of the other alternatives. For example, substantially fewer commercial and private vehicles stop on the arrivals level in the GTC than in the CTA in the other alternatives:

- ♦ Commercial Vehicles - The CTA configuration in the No Action/No Project Alternative, and the CTA plus West Terminal configurations in Alternatives A, B, and C, have eight or more functional curbfronts on the arrivals level. Most commercial vehicles must stop at all or most curbfronts in order to see if any passengers are present and waiting to be picked up. By comparison, Alternative D has only two arrivals curbfronts. This reduced number of curbfronts, along with the fact that Alternative D requires essentially no rental car shuttle courtesy vehicles, is responsible for the difference in commercial curb activity between alternatives.
- ♦ Private Autos - Alternative D provides a much more convenient means (via the APM) for passengers to reach their parked automobiles from the terminal "door" than do Alternatives A, B, and C. In Alternative D, the distance from the APM station (i.e., the equivalent terminal "door") to the garage parking spaces is relatively close, plus there is no need to cross any active roadways. By comparison, the other alternatives require passengers to cross the active curbfront and the 6-lane loop road, enter the parking garage in the CTA, and then travel up and through the parking garage to find their vehicles. As a consequence, the number of travel parties that drop off passengers in the CTA before recirculating and parking has been estimated to be larger with the other alternatives than with Alternative D.

As shown in **Table F4.3.1-8**, the GTC would have adequate curb capacity to serve the demand in 2015. As such, the impacts of Alternative D relative to curbfront operations in 2015 would be less than significant.

In comparison to the No Action/No Project Alternative, curbfront conditions, relative to supply and demand, would be substantially better under Alternative D, as can be seen in **Table F4.3.1-8**.

Public Parking

In Alternative D, all public parking in the CTA would be demolished and relocated to facilities on the east side of the airport. By 2015, parking structures in the GTC and ITC would provide a total of approximately 16,642 close-in parking spaces. Additionally, the surface lot north of 111th Street would be incorporated into Lot B to provide approximately 5,470 remote parking spaces. There would also be approximately 12,890 parking stalls located off-airport by private parking providers, providing a total of about 35,002 parking spaces in Alternative D.

More O&D passengers are expected in all build alternatives--including Alternative D--than in the No Action/No Project Alternative, even though the anticipated number of annual passengers is the same between the No Action/No Project Alternative and Alternative D. This is due to the fact that the build alternatives better accommodate O&D passengers. There would be fewer connecting passengers in

Alternative D than in the No Action/No Project Alternative, however, resulting in similar MAP levels between these alternatives. In general, the increased O&D demand would result in increased parking demand under the build alternatives. Further, it is important to accommodate O&D passengers as much as possible in any future airport plan and sufficient airport parking should be provided to meet all of the potential O&D demand. While **Table F4.3.1-9** shows the estimated year 2015 demand for 35,636 spaces to be about 600 stalls more than the system's capacity under Alternative D, the resulting imbalance of about 1.8 percent would only emerge during the highest-demand parking periods. Further, mitigation measures adopted as part of the air quality analysis would help to improve the level of service for parking, as shown in Table S-24 of Appendix S-E, *Supplemental Air Quality Impact Analysis*. These demand management techniques and systems, such as installation of a parking space identification program, should increase the efficiency of the parking system. As a result, the demand is not expected to regularly exceed the capacity, and the public parking impact would be less than significant.

When compared to the No Action/No Project Alternative, public parking operations in Alternative D would slightly improve in 2015. The No Action/No Project Alternative would be at about 103 percent of capacity, while Alternative D would be at about 102 percent.

Employee Parking

Employee parking would be provided in a 12,400 stall garage on the west side of the airport, south of World Way West, and in the existing 1,200 stall garage in the Century Cargo Complex. As shown in **Table F4.3.1-10**, the 2015 capacity of 13,600 employee parking stalls should exceed the demand of 12,400 stalls by about 1,200, whereas, by comparison, the parking demands for the environmental baseline is 100 percent of the planned capacity. Therefore, adequate employee parking should be available and the impact of Alternative D would be less than significant.

When compared to the No Action/No Project Alternative, employee parking for Alternative D capacity would improve. By 2015, employee parking capacity under the No Action/No Project Alternative would be deficient by over 3,400 stalls, while Alternative D would function with 1,200 excess stalls.

Rental Car Facilities

A new consolidated RAC would be located west of the GTC and would serve all customers of "on-airport" rental car companies. This state-of-the-art consolidated facility would be different than the facilities proposed in Alternatives A, B, and C, in that on-airport space would be provided for not only ready/return space (as accommodated in Alternatives A, B, and C), but for many other rental car uses as well. These other uses include a customer service building, a station for the APM, and vehicle storage space. Extra tenant spaces would also include storage/overflow parking, car wash bays, fueling/vacuum stations, queuing lanes for car wash and fuel/vacuum, and maintenance buildings. As a result of this comprehensive approach to the consolidated rental car facility, Alternative D offers a much larger space dedicated to the RAC than do the other alternatives. Approximately 4.47 million square feet is provided in addition to the 3.4 million square feet required, for a total of 7.87 million square feet of RAC space.

The RAC in Alternative D would better serve the needs of both the rental car companies and the public than would the other alternatives, including the No Action/No Project Alternative, as shown in **Table F4.3.1-11**. The on-airport rental car demand associated with Alternative D would not exceed the capacity of the proposed RAC; thus, impacts would be less than significant.

Pedestrian/Inter-Terminal Circulation

The LAX Transit Center, currently located east of Sepulveda Boulevard and north of 96th Street, would be replaced in Alternative D by the ITC, to be located north of Imperial Highway and east of Aviation Boulevard. The ITC would be designed to maintain or improve current levels of service while accommodating the demand associated with the buildout of the LAX Master Plan. The new facility would be operational (or transitional plans would be in place) prior to any demolition, construction, or circulation changes that would affect the existing LAX Transit Center. The process for relocating the facility's services would ensure that transit service would not temporarily be degraded.

A new APM would be provided to connect the CTA, GTC, ITC and RAC facilities. The APM analysis is detailed in Technical Report S-2c, *Supplemental Automated People Mover Technical Report*. All air passengers and airport visitors would be required to use the APM to access the CTA, except for patrons of the FlyAway buses, which would have direct access to the CTA using its existing roadway system. The plan for the APM includes a four-lane guideway linking the GTC and the CTA with four stations in the CTA and two stations in the GTC. The system would be configured to allow passengers to take the shortest route to his or her intended destination. Passengers would be directed to these routes by signage located at each of the APM station locations. A separate dual-lane APM system would be developed linking the ITC with the CTA, with an intermediate stop at the RAC.

Pedestrian access between terminals, including the West Satellite Concourse, would be provided by the APM. The APM would be designed to adequately accommodate the ridership estimates at an acceptable level of service and therefore result in a less than significant impact.

Consistency with Adopted Plans

Alternative D was reviewed for consistency with the following transportation plans:

- ♦ Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP).
- ♦ Los Angeles County Congestion Management Program.
- ♦ City of Los Angeles General Plan, Transportation Element.
- ♦ Coastal Transportation Corridor Specific Plan, administered by the City of Los Angeles.
- ♦ Transportation Improvement and Mitigation Program for South Central Los Angeles Community Plan Area.
- ♦ City of El Segundo General Plan.
- ♦ City of Hawthorne Circulation Element.

Few policies in these transportation plans apply to the surface transportation element of the LAX Master Plan. Of those policies that do, no surface transportation component of Alternative D conflicts with these policies.

4.3.1.6.2 Construction Impacts

4.3.1.6.2.1 No Action/No Project Alternative

The No Action/No Project Alternative includes the LAX Northside and Continental City developments--both substantial generators of construction traffic. Because these projects are both major development projects, it is anticipated that they would potentially generate substantial numbers of truck trips for material delivery, removal of spoil material, and other construction functions. Further, a large construction work force would be required, which would also generate substantial traffic. However, these projects would have little impact on the airport proper, and should not impact the CTA.

4.3.1.6.2.2 Alternatives A, B, and C

The peak hour construction traffic demands for Alternative C are comparable to Alternatives A and B, even though Alternatives A and B would ultimately require the construction of more on-airport facilities (e.g., runways). This is because the long-term construction phasing plans will spread out the construction activity over a long enough period that activity during the peak hour will be similar for all three of these alternatives, even though the total construction activity may be greater for Alternatives A and B. Therefore, this impact analysis focuses on Alternative C.

For Alternative C, two construction phases are anticipated, as identified in Chapter 3, *Alternatives,* Phase I includes the following projects:

- ♦ Extension and Modifications of Runways 24L and 24R.
- ♦ Primary Components of the West Terminal Area.
- ♦ South Cargo Facilities.
- ♦ Sepulveda Boulevard/Westchester Parkway Interchange and tunnel area.
- ♦ Lincoln Boulevard and Westchester Parkway Interchange.

Phase II of Alternative C would focus completion on the West Terminal Area (WTA), and also include:

- ♦ APM and Commercial Tunnel between the WTA and CTA.
- ♦ South Airfield Improvements.

- LAX Expressway.
- Parking Facilities.
- Manchester Square Cargo Facilities.
- Green Line Extension.

Phase I

During the peak construction activity in Phase I, the peak hour of airport activity is expected to be on an August weekday from 11:00 a.m. to 12:00 noon, when there are expected to be approximately 35 on-airport construction trips. Of the 35 trips, 25 are expected to be on-site in the CTA area, while the remaining 10 trips would be off-site trips in the CTA area. These trips would be associated with the TBIT expansion project and the CTA Access Road Improvement project.

The only significant impact to on-airport surface transportation resulting from the construction program would occur from the construction of the Sepulveda Boulevard Tunnel project, which would require northbound Sepulveda Boulevard traffic to detour to eastbound Century Boulevard. This detour would add a significant amount of traffic to the upper and lower level airport entrance ramps from Century Boulevard, resulting in LOS F operations. The actual construction traffic would have minimal effect.

The existing airport peak-hour capacity deficiencies would still exist during Phase I. Short duration lane closures would inevitably cause even more LOS deficiencies in the CTA. Likewise, curb operations would be degraded due to the addition of construction traffic. The implementation of Master Plan Commitments ST-1 through ST-6 should help to minimize the impacts of construction on the area road network; however, construction would cause a significant and temporarily unavoidable impact in Phase I.

Phase II

During the peak construction activity in Phase II, there are expected to be approximately 75 on-airport construction trips during the airport peak hour. Of the 75 trips, 10 are expected to be on-site in the CTA vicinity, 10 are expected to be off-site trips vicinity in the CTA vicinity, 25 would be on-site trips in the WTA vicinity, while the remaining 30 trips would be off-site trips in the WTA. The trips in the CTA vicinity would be associated with APM projects, while the trips in the WTA vicinity would be related to APM and commercial vehicle tunnel projects, as well as the southwest public parking structure.

On-airport ground construction impacts are projected to be minimal during Phase II. The only LOS F on-airport transportation segment is expected to be on the northbound Sepulveda Boulevard off-ramp. The capacity problems of this segment would not be caused by the addition of construction traffic. Rather, short duration lane closures would inevitably cause LOS deficiencies. Likewise, curb operations would be degraded due to the addition of construction traffic in the CTA. The implementation of Master Plan Commitments ST-1 through ST-6 should help to minimize the impacts of construction on the area road network; however, construction would cause a significant and temporarily unavoidable impact in Phase II.

4.3.1.6.2.3 Alternative D - Enhanced Safety and Security Plan

For Alternative D, three construction phases are anticipated, as identified in Chapter 3, *Alternatives*. Phase I includes those projects that would be completed or still underway in 2008, namely:

- Reconstruction of Runway 7R/25L.
- Center Taxiway project in the south airfield.
- ITC parking facilities.
- CTA Landside.
- APM (under construction).
- Consolidated Rental Car (RAC) Facility (under construction).
- GTC (under construction).
- Off-site Utilities and Roadway Improvements.
- Baggage Tunnel (under construction).

Phase II of Alternative D would involve construction of the West Satellite Concourse area, including:

- West Satellite Concourse and related passenger and baggage handling facilities.
- Support infrastructure projects such as Aircraft Rescue and Firefighting, Compressed Natural Gas (CNG) and cargo facilities.

Phase III of Alternative D would include:

- Reconfigure existing fuel farm.
- Modifications to existing TBIT, CTA, and Runway 6R/24L in the north airfield.

In 2008, the year of peak construction traffic, Alternative D proposes no changes to the CTA curbfront. By that time, all parking would be relocated from the CTA to the ITC, which would have the same number of parking spaces as the CTA. The ITC would also provide a connection to all MTA buses and the Green Line station on the southeast corner of Aviation Boulevard and Imperial Highway.

The CTA curb would continue to operate as it does today; however, the demand on the curb would have different characteristics than today. First, closure of the CTA parking operations would relocate all short-term parking to the ITC, causing a shift in parking-related traffic. Second, shuttle buses would transport passengers and visitors between the CTA and ITC, introducing a new mode of transportation (and source of demand) that does not currently exist. Third, some motorists, who might have otherwise parked if close-in CTA parking were available, would simply recirculate around the CTA curb system while waiting for arriving passengers. As a result, some components of the curb demand would increase; however, this added demand would likely be offset by the reduction in CTA traffic due to the parking closure.

Table F4.3.1-16, CTA Levels of Service, Alternative D, Peak Construction Year (2008), provides a comparison of impacts of Alternative D during the peak construction year to the CTA conditions that existed during the 1996 environmental baseline condition. Also shown are those CTA segments that meet the criteria for significant impacts. As shown, almost all curb segments would deteriorate with Alternative D in 2008, compared to the environmental baseline. Only Terminals 1 and 3 on the arrivals (lower) level would improve their operating conditions. Similar to the 1996 condition, the terminals that would experience the worst operating conditions would be those at the beginning and end of the CTA horseshoe, including Terminals 1, 7 and 8. Further, all of the segments on the departures (upper) level and six of the nine arrivals level segments would deteriorate sufficiently to meet the criteria for significance. This is a significant impact.

Table F4.3.1-16

CTA Levels of Service, Alternative D, Peak Construction Year (2008)

	1996 Baseline		2008 Alternative D					
Location	**V/C[1]**	**LOS[2]**	**Volume**	**Capacity**	**V/C[1]**	**LOS[2]**	**Difference From Env. Base**	**Significant Impact?**
Upper								
Terminal 1	1.18	F	3,589	2,460	1.46	F	0.28	Yes
Terminal 2	0.92	E	2,811	2,460	1.14	F	0.22	Yes
Terminal 3	0.71	C	2,213	2,460	0.9	D	0.19	Yes
TBIT	0.71	C	2,213	2,460	0.9	D	0.19	Yes
Terminal 4	0.66	B	2,213	2,490	0.89	D	0.23	Yes
Terminal 5	0.93	E	2,811	2,490	1.14	F	0.2	Yes
Terminal 6	0.93	E	2,811	2,490	1.14	F	0.2	Yes
Terminal 7	1.16	F	3,589	2,190	1.64	F	0.48	Yes
Terminal 8	1.16	F	3,589	2,190	1.64	F	0.48	Yes
Lower								
Terminal 1	1.26	F	3,799	3,690	1.03	F	-0.23	No
Terminal 2	0.91	E	3,336	3,075	1.08	F	0.17	Yes
Terminal 3	0.83	D	2,338	3,075	0.76	C	-0.07	No
TBIT	0.83	D	2,338	2,460	0.95	E	0.12	Yes
Terminal 4	0.7	B	2,338	3,125	0.75	C	0.05	No
Terminal 5	0.92	E	3,217	3,125	1.03	F	0.11	Yes
Terminal 6	0.92	E	3,216	3,125	1.03	F	0.11	Yes
Terminal 7	1.14	F	3,680	2,600	1.42	F	0.28	Yes
Terminal 8	1.14	F	3,680	2,600	1.42	F	0.28	Yes

1 V/C = Volume to Capacity Ratio.
2 LOS = Level of Service. Range: A (good) - F (breakdown).

Source: Leigh Fisher Associates, 1998 (1996 Baseline Data) and JKH Mobility Services, Inc., 2002.

The on-airport surface transportation analysis revealed other potential issues and impacts in the CTA that are not reflected in **Table F4.3.1-16**. The airport peak hour (11:00 a.m. to 12:00 noon) ridership demand estimated for 2008 would necessitate an estimated 153 bus trips to transport passengers between the ITC and the CTA. With the buses traversing both the arrivals and departures levels, an average round trip is estimated to exceed one hour. Even with an extremely large fleet of over 150 buses, the existing curbfronts in the arrival levels would not be able to maintain an acceptable level of service during the airport peak hour. Inasmuch as the need for, and impacts from, this sizeable fleet of buses are attributable to construction phasing and activities associated with Alternative D, it is considered to be a significant impact (i.e., generates sufficient construction-related traffic to disrupt normal background traffic operations).

As in the No Action/No Project Alternative, the recirculation roadway from the upper level to the lower level would also experience high volumes, primarily due to a large number of courtesy vehicles, and thus operate at LOS F. Specifically, during the airport peak hour, there would be approximately:

- 25 on-airport long-term parking courtesy vehicles for Lots B and C;
- 105 off-airport long-term park courtesy vehicles;
- 394 rental car courtesy vehicles; and
- 140 hotel/motel courtesy vehicles.

These commercial vehicle volumes are consistent with those of the other build alternatives.

- Finally, the ITC is expected to accommodate approximately 2,918 entering vehicles and 2,615 exiting vehicles during the peak hour, including construction and air passenger vehicles. Master Plan Commitment ST-7, Adequate GTC, ITC, and APM Design (Alternative D), would ensure that this volume of traffic is adequately accommodated.

4.3.1.7 Cumulative Impacts

The methodology used in the on-airport surface transportation analysis is cumulative by its definition. It accounts for all future project traffic generators and their corresponding traffic growth in all applicable alternatives. Therefore, the impacts discussed in subsection 4.3.1.6, *Environmental Consequences*, represent cumulative conditions.

4.3.1.8 Mitigation Measures

For Alternatives A, B, and C, although there are several Master Plan commitments (i.e., ST-2 through ST-6) that serve to reduce on-airport construction-related traffic impacts, it is likely that there would be occasions, such as during short-term lane closures, when no other measures (i.e., feasible mitigation measures) are available to mitigate significant on-airport traffic impacts. Additionally, for Alternative C, the impact on the inbound upper level ramp to the CTA from south Sepulveda Boulevard is one for which there are no feasible mitigation measures.

Similar to Alternatives A, B, and C, there are Master Plan commitments that serve to reduce on-airport construction-related traffic impacts associated with Alternative D (i.e., ST-2 and ST-8). Additionally, the following mitigation measures are proposed to address construction-related on-airport traffic impacts that are specific to Alternative D:

- **MM-ST-1. Require CTA Construction Vehicles to Use Designated Lanes (Alternative D).**

  Whenever feasible, construction vehicles shall be restricted to designated roadways or lanes of traffic on CTA roadways adjacent to the existing close-in parking, thus limiting the mix of construction vehicles and airport traffic.

- **MM-ST-2. Modify CTA Signage (Alternative D).**

  During construction, additional signage will be installed, as required, to separate construction traffic from non-construction traffic to the extent feasible.

- **MM-ST-3. Develop Designated Shuttle Stops for Labor Buses and ITC-CTA Buses (Alternative D).**

  Develop shuttle stops for labor buses (i.e., buses carrying construction workers) and the ITC-CTA shuttle buses at the CTA arrivals level. All ITC-CTA shuttle buses will be routed to these lower level (arrivals) curb areas. These buses will not circulate through the upper level (departures) curbfront.

Even with implementation of these mitigation measures, however, several CTA curbfronts would continue to operate at LOS F, as shown in **Table F4.3.1-17**, CTA Levels of Service, Alternative D, Peak Construction Year (2008) - With Mitigation.

Table F4.3.1-17

CTA Levels of Service, Alternative D, Peak Construction Year (2008) - With Mitigation

Location	Volume	Capacity	V/C[1]	LOS[2]
Upper				
Terminal 1	3,410	2,475	1.38	F
Terminal 2	2,633	2,475	1.06	F
Terminal 3	2,035	2,475	0.82	D
TBIT	2,035	2,475	0.82	D
Terminal 4	2,035	2,550	0.80	C
Terminal 5	2,633	2,550	1.03	F
Terminal 6	2,633	2,550	1.03	F
Terminal 7	3,410	2,235	1.53	F
Terminal 8	3,410	2,235	1.53	F
Lower				
Terminal 1	3,620	4,050	0.89	D
Terminal 2	3,159	3,375	0.94	E
Terminal 3	2,287	3,375	0.68	B
TBIT	2,287	2,700	0.85	D
Terminal 4	2,287	3,750	0.61	B
Terminal 5	3,159	3,750	0.84	D
Terminal 6	3,159	3,750	0.84	D
Terminal 7	3,620	3,125	1.16	F
Terminal 8	3,620	3,125	1.16	F

[1] V/C = Volume to Capacity Ratio.
[2] LOS = Level of Service. Range: A (good) - F (breakdown).

Source: JKH Mobility Services, 2002.

It is also likely that there will be occasions, such as during short-term lane closures, where other aspects of construction would disrupt normal traffic operations and there are no other measures (i.e., feasible mitigation measures) available to mitigate significant on-airport traffic impacts.

Other Considerations

As discussed above, no significant impacts have been identified relative to long-term operation of the on-airport surface transportation system. Nevertheless, a number of refinements to the proposed design and operation of the system have been identified to reduce potential congestion at particular segments of the system and enhance the overall flow of future on-airport traffic. Those refinements are described in detail within Technical Report S-2a, *Supplemental On-Airport Surface Transportation Technical Report*. In conjunction with the refinement for the on-airport system, consideration was given to two key recommended off-airport surface transportation system mitigation measures. They are described in Section 4.3.2, *Off-Airport Surface Transportation* (subsection 4.3.2.8) and include:

- **MM-ST-12. Provide New Ramps Connecting I-105 to LAX Between Aviation Boulevard and La Cienega Boulevard (Alternative D).**
- **MM-ST-13. Create a New Interchange at I-405 and Lennox Boulevard (Alternative D).**

The recommended provision of new ramps to connect I-405 to LAX was accounted for in the on-airport surface transportation analysis as the refined design of the ITC and related roadway circulation system. The recommended new interchange at I-405 and Lennox Boulevard was accounted for in the modeling of the refined on-airport system relative to any changes in airport-related vehicle trips associated with that interchange. As such the on-airport analysis of future traffic conditions with implementation of recommend mitigation measures includes and accounts for the subject off-airport surface transportation mitigation measures.

4.3.1.9 Level of Significance After Mitigation

4.3.1.9.1 Alternatives A, B, and C

Temporary construction traffic impacts would, at times, be significant and unavoidable. Additionally, for Alternative C, there would be a significant and unavoidable impact on the inbound upper level ramp to the CTA from south Sepulveda Boulevard.

4.3.1.9.2 Alternative D - Enhanced Safety and Security Plan

On-airport long-term operation impacts would be less than significant both with and without the off-airport surface transportation system mitigation measures noted above in Subsection 4.3.1.8, *Mitigation Measures*. Temporary construction traffic impacts would, at times, be significant and unavoidable.