SAN DIEGO
International Airport

AIRPORT MASTER PLAN
SAN DIEGO INTERNATIONAL AIRPORT

SECTION 3.4

Ground Transportation Facilities

HNTB

SAN DIEGO INTERNATIONAL AIRPORT

MAY 2008

3.4 Ground Transportation Facilities

This section describes the physical layout and utilization of the existing ground transportation facilities at SDIA, including airport access and circulation, roadways, parking, rental car facilities, and ground transportation services (transit, taxi/limo, and shuttles).

Major changes to SDIA ground transportation facilities occurred with the implementation of the Immediate Action Program (IAP) prior to the 2001 Master Plan. The IAP reconfigured the terminal roadways, Transit Plazas, and on-airport parking. As part of the IAP an exit flyover at North Harbor Drive was constructed and airport rental car facilities were relocated from the terminal parking lot to their current location off of Rental Car Road.

The post-2001 Master Plan ground transportation improvements targeted the public parking deficit at SDIA and resulted in the construction of three areas: SAN Park Pacific Highway, SDIA's remote long-term parking facility; a new public parking lot at the site formerly occupied by the Naval Training Center (NTC); and a temporary short-term waiting area for meeter/greeter vehicles to park until making cell phone contact with their party. Additional improvements also occurred with the heightened security conditions since the terrorist attacks of September 11, 2001. These improvements included the provision of a parking lot for the Transportation Safety Agency (TSA) staff. New ground transportation services were introduced, such as the Red Bus providing inter-terminal shuttle transportation, and/or restructured, such as the Airport Flyer public transportation service.

This section is divided into two parts. Section 3.4.1, Physical Inventory, describes the existing supply of physical landside facilities (i.e., off-airport roadways, terminal roadways, and parking) and ground transportation services. Section 3.4.2, Traffic Characteristics, describes the existing demand for these facilities in terms of traffic characteristics, traffic utilization, and Levels of Service (LOS). The discussion of traffic characteristics incorporates information obtained from recent data collection efforts conducted for the Authority by Parsons in April and May 2004. The Parsons traffic inventory is entitled *Update of Traffic Data for San Diego International Airport.* The following traffic counts and field surveys were collected in that update:

- 24-hour traffic counts at airport entrances/exits
- Peak period turning movement counts at airport entrances/exits and off-airport major intersections
- Vehicle occupancy counts at parking entrances, terminal curbsides, and rental car facilities
- Vehicle classification counts at terminal curbsides
- Vehicle dwell time and boarding/alighting surveys at terminal curbsides
- Rental car operator survey
- Bus passenger boarding/alighting survey at terminal stops
- Person counts at terminal doors
- On-airport public parking lot activity
- Employee parking lot activity
- Remote public parking survey

Details of the traffic surveys are described in the following subsections. Information from the Parsons study was supplemented by field checks conducted by HNTB staff, as well as data obtained from the Authority, the City of San Diego, SANDAG, California Department of Transportation (Caltrans) and other agencies.

3.4.1 Physical Inventory

The physical layout and characteristics of ground transportation facilities and services at SDIA are detailed in this subsection. The collected physical inventory data serves as a benchmark for estimating existing supply and capacities accommodated by these facilities. A comparison of the existing supply with the existing traffic demand will enable the analysis of existing capacities and deficiencies in the transportation system.

The physical inventory describes the on- and off-airport roadway systems, terminal curbsides, Transit Plazas, public and employee parking areas, rental car facilities, and various ground transportation services at SDIA as of November 2004.[1] The inventory also describes how traffic circulates between various components of the ground transportation system.

3.4.1.1 Off-Airport Roadway System

SDIA is located in the City of San Diego along North Harbor Drive about two miles northwest of the downtown area. It is bounded to the north by the Marine Corps Recruit Depot (MCRD), to the east by Pacific Highway and Laurel Street, to the south by North Harbor Drive, and to the west by the former Naval Training Center (NTC).

Vehicular landside access to SDIA is provided primarily by North Harbor Drive, which serves as the major east-west roadway south of and adjacent to the Airport. North Harbor Drive provides access to the regional highway system via connections with other local major thoroughfares and has intersections with the internal airport roadway system. The internal airport roadway network provides access to the terminal areas and other airport-related ground transportation facilities, as shown in **Figure 3.4-1**.

Interstate Freeways I-5 and I-8

Regional access to the Airport is provided by Interstate I-5 and I-8 Freeways, both located north of SDIA. I-5 (Golden State Freeway) is an interstate freeway located approximately 1.5 miles northeast of the terminals. I-5 is aligned southeasterly in the vicinity of SDIA but generally traverses a north-south direction throughout its entire length from the Canadian border in Vancouver to the Mexican border in Tijuana. I-5 provides regional access to the north, including the Los Angeles area and beyond, and to the south, including Downtown San Diego. I-8 is an interstate freeway located approximately two miles north of SDIA, and it is aligned west to east from Mission Bay northwest of SDIA traversing east to Arizona.

A number of city streets lead from the freeways to North Harbor Drive, which connects directly to the Airport. **Figure 3.4-2** depicts the existing alignment and geometric configuration of these roadways. Laurel Street, Hawthorn Street, and Grape Street connect I-5 to North Harbor Drive east of the Airport. Pacific Highway and Kettner Boulevard run parallel to I-5 and, together with North Harbor Drive, provide access to Downtown San Diego. Access from the west is provided by Rosecrans Street and Nimitz Boulevard, both of which connect I-8 to North Harbor Drive west of the Airport. Washington Street provides public access to the north part of the Airport.

[1] During and after the preparation of this inventory report, several temporary and permanent ground transportation improvements were in progress.

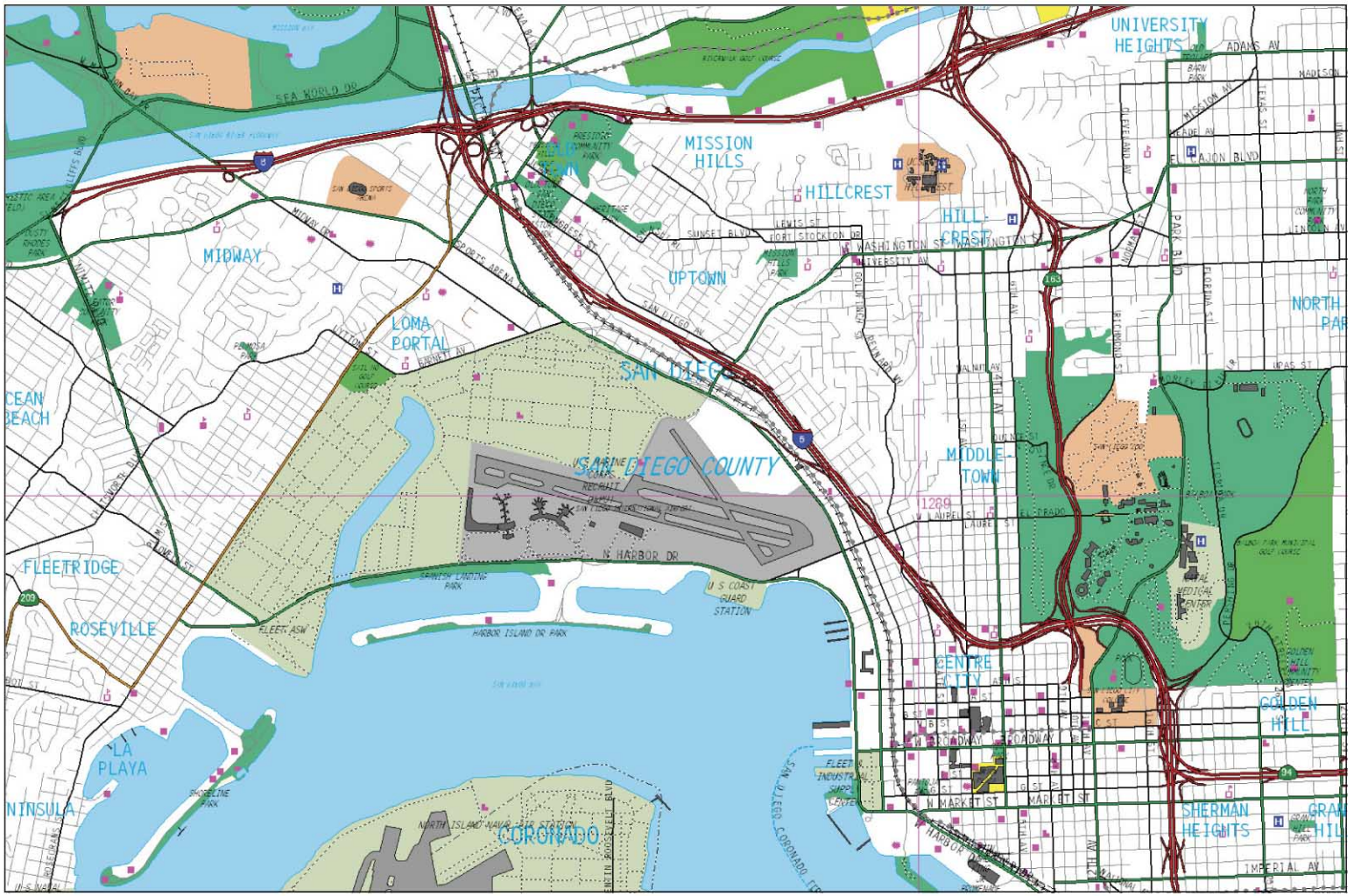


Figure 3.4-1

SDIA Regional Roadway System

Source: 1999 Thomas Bros. Maps
Prepared by: HNTB Corporation, 2006

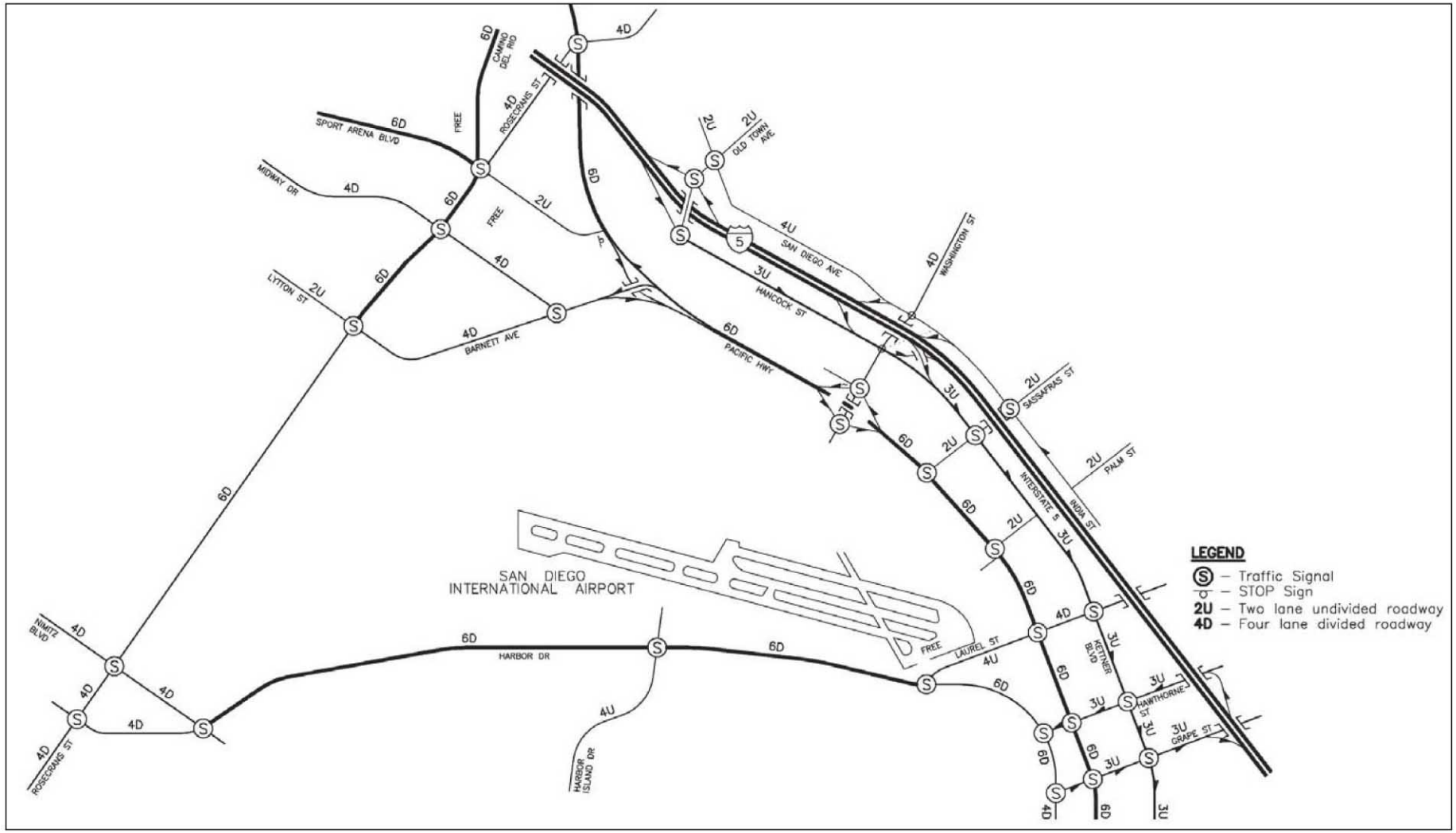


Figure 3.4-2

Off-Airport Roadways

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

North Harbor Drive

North Harbor Drive provides a boundary for SDIA to the south and is the primary route to access the Airport terminals and the parking, rental car, and related facilities. North Harbor Drive is generally a six-lane, east-west roadway classified by the City of San Diego as a Primary Arterial between Nimitz Boulevard and Grape Street and a Major Street beyond these limits. It is a divided[2] roadway with a raised median, and traffic signals are located at a majority of the primary intersections. Bike lanes are provided, and on-street parking is prohibited. The speed limit is posted at 45 miles per hour (MPH).

Harbor Island Drive

Harbor Island Drive connects the Airport to Harbor Island directly south of SDIA, providing access to employee parking lots, rental car facilities, and the ground transportation staging area. The north-south segment of Harbor Island Drive is a four-lane divided roadway, while the east-west segment is a four-lane undivided roadway. Harbor Island Drive is classified as a Collector Street with traffic signals located at North Harbor Drive, at Sheraton Hotel/Access Road, and at the intersection between the east and west segments of Harbor Island Drive. On-street parking is prohibited, and the posted speed limit is 35 MPH.

Laurel Street

Laurel Street serves as the Airport boundary to the southeast and connects North Harbor Drive to I-5 east of SDIA. It is generally a four-lane, east-west, divided roadway classified as a Major Street. The segment between Pacific Highway and North Harbor Drive has three lanes in the direction towards the Airport. Within the project area, traffic signals are located at North Harbor Drive, at Pacific Highway, and at Kettner Boulevard. On-street parking is prohibited, and the posted speed limit is 35 MPH in the vicinity of SDIA.

Hawthorn Street

Hawthorn Street connects North Harbor Drive to I-5 east of SDIA. It is classified as a Major Street from North Harbor Drive to India Street and as a Collector Street from India Street to I-5. It is a three-lane, one-way, westbound roadway from I-5 to North Harbor Drive. Traffic signals are located at North Harbor Drive, at Pacific Highway, at Kettner Boulevard, at India Street, and at Columbia Street. Northbound I-5 on/off ramps are provided at Hawthorn Street. Parking is permitted on the north curb face, and the posted speed limit is 35 MPH.

Grape Street

Grape Street connects North Harbor Drive to I-5 east of SDIA. It is classified as a Major Street from North Harbor Drive to I-5 and as a Collector Street east of I-5. It is a three-lane, one-way, eastbound roadway from North Harbor Drive to 1st Street east of I-5. Beyond 1st Street, it transitions into a two-lane two-way street. Traffic signals are located at North Harbor Drive, Pacific Highway, Kettner Boulevard, India Street, Columbia Street, and State Street. Southbound I-5 on/off-ramps are provided at Grape Street. Parking is permitted on the south curb face, and the posted speed limit is 35 MPH between North Harbor Drive and I-5.

Pacific Highway

Pacific Highway forms the northeast boundary of SDIA and provides access to SAN Park Pacific Highway, SDIA's remote long-term parking lot, as well as other remote, privately operated parking facilities. It also connects to Downtown San Diego. Pacific Highway is a six-lane divided Primary Arterial

[2] A roadway is "divided" if the opposite travel lanes are separated by a raised island or painted two-way turn lane median. An "undivided" roadway does not have a physical separation between opposing travel lanes.

north of Laurel Street and a six-lane undivided Major Arterial south of Laurel Street. It has a generally north-south alignment with a southeast orientation within the project area. Traffic signals are located at Grape Street, at Hawthorn Street, at Juniper Street, at Laurel Street, at Palm Street, at Sassafras Street, at Washington Street northbound and southbound on/off ramps, and at Rosecrans Street. On-street parking is prohibited, and the posted speed limit varies from 45 to 50 MPH north of Laurel Street and from 35 to 40 MPH south of Laurel Street.

Kettner Boulevard / Hancock Street

Kettner Boulevard serves as the southbound frontage road to I-5 between Washington Street and Laurel Street. Kettner Boulevard becomes Hancock Street north of Washington Street. It is generally a three-lane, one-way roadway and is classified as a Major Street within the project area. Traffic signals are located at Old Towne Avenue, at Sassafras Street, at Laurel Street, at Hawthorn Street, and at Grape Street within the project area. On-street metered parking is provided at some locations, and the posted speed limit varies from 35 to 40 MPH.

Washington Street

Washington Street provides vehicular access to the north part of the Airport. It is a four-lane undivided roadway with a northeasterly orientation within the project area. It is classified as a Major Street between Pacific Highway and I-5, and as a Primary Arterial east of I-5. Traffic signals are located at the I-5 northbound and southbound ramps at Pacific Highway, at Hancock Street, and at San Diego Avenue. Parking is prohibited, and the posted speed limit is 35 MPH west of I-5 and 55 MPH east of I-5. The airport access point at Washington Street is controlled by a gate and guard, and there is a second access point for emergency vehicles and air freight operators also controlled by a gate and guard.

Sassafras Street

Sassafras Street provides east-west access across I-5 northeast of SDIA and also provides access to SAN Park Pacific Highway, SDIA's remote long-term parking facility located on Pacific Highway. Sassafras Street is a four-lane, two-way roadway in the project area and is classified as a Local Collector. Traffic signals are located at Pacific Highway, at Hancock Street, and at India Street. On-street parking is generally prohibited, and the posted speed limit is 25 MPH.

Palm Street

Palm Street connects Pacific Highway and Kettner Boulevard. It is a two-lane, two-way roadway northeast of SDIA and is classified as a Local Collector. A traffic signal is located at Pacific Highway. On-street parking is prohibited, and the posted speed limit is 25 MPH.

Rosecrans Street

Rosecrans Street (State Route 209) connects North Harbor Drive to I-5 and I-8 west of SDIA. Classified as a Major Street, Rosecrans Street is a six-lane, divided roadway from Barnett Avenue to I-5, and a four-lane roadway with a center turn lane south of Barnett Avenue. From Point Loma, State Route 209 is named Rosecrans Street and merges into Camino Del Rio West approaching I-5 and I-8. Within the project area, traffic signals are located at North Harbor Drive, at Nimitz Boulevard, at Lytton Street, at Midway Drive, at Sports Arena Boulevard, and at Pacific Highway. Curbside parking is prohibited, and the posted speed limit is 40 MPH.

Nimitz Boulevard

Nimitz Boulevard connects North Harbor Drive to I-8 west of SDIA. It is a four-lane, north-south, divided roadway and is classified as a Major Street. Traffic signals are located at the intersection of Nimitz

Boulevard with North Harbor Drive and Rosecrans Street. On-street parking is prohibited, and the posted speed limit varies from 35 to 40 MPH.

3.4.1.2 On-Airport Roadway System

Figure 3.4-3 depicts the existing layout of roadways and parking lots in the vicinity of the Airport terminals. Access points to the terminal roadways are all located along North Harbor Drive. An access ramp east of Harbor Island Drive provides primary access to Terminal One and adjacent public parking Lot 1. An access ramp, west of Harbor Island Drive provides primary access to Terminal Two and the adjacent public parking Lot 2. Both access ramps are uncontrolled. Access to the Commuter Terminal and adjacent public parking Lot 7 and employee parking Lot 8 is provided via Winship Lane with traffic signals located at North Harbor Drive.

Access to the rental car facilities south of North Harbor Drive is provided by Rental Car Access Road east of Winship Lane. This road connects North Harbor Drive to Harbor Island Drive. Air Lane Road off the Terminal One access ramp serves the air cargo facilities between Terminal One and the Commuter Terminal. Stillwater Road west of the Commuter Terminal provides access to the West Wing employee parking Lot F and air cargo facilities. Winship Lane and Stillwater Road provide access to hangars and maintenance areas. Harbor Island Drive provides access to employee parking Lot 6 and the commercial vehicle staging area.

Each of SDIA's terminals is accessed by an independent loop road system. The loop road systems for Terminals One and Two are interconnected to form a major loop, allowing recirculation between the two terminals. The Commuter Terminal loop road is separate from this major loop.

Airport Ingress

Access to Terminal One from the east (I-5 and Downtown San Diego) is provided by a two-lane ramp from westbound North Harbor Drive. This access ramp leads to Terminal One's curbside and Transit Plaza. A grade-separated, one-lane access ramp from North Harbor Drive leads directly to the Terminal One public parking lot. Traffic from the west (Point Loma) can access Terminal One via a signalized intersection at Harbor Island Drive.

Access to Terminal Two from the east is provided by a separate, one-lane access ramp via westbound North Harbor Drive located west of Harbor Island Drive. This at-grade ramp leads to the Terminal Two curbside, the Transit Plaza, and the public parking lot. Traffic from Harbor Island Drive can access Terminal Two by turning left at the traffic signal on North Harbor Drive and using the Terminal Two access ramp. Terminal Two traffic from Point Loma accesses the Airport via a signalized intersection at North Harbor Drive across from Spanish Landing.

Access to the Commuter Terminal from the east and west is provided by the signalized intersection at Winship Lane. Winship Lane leads to the Commuter Terminal curbside loop and adjacent parking lots.

Airport Egress

There are three alternative egress routes from the main terminal loop road at SDIA. Traffic exiting Terminals One and Two toward I-5 and Downtown San Diego use a grade-separated fly-over from the terminal loop road system, which merges with eastbound North Harbor Drive east of Rental Car Access Road. The two other egress routes are via the signalized intersections at Harbor Island Drive and at Spanish Landing. These routes are primarily used by exiting traffic heading towards Harbor Island Drive and Point Loma. Winship Lane serves as the primary egress point for the Commuter Terminal.

Terminal Roadways

Terminals One and Two are served by two counter-clockwise loops. The loops connect the Airport access points, curbside loading/unloading areas, Transit Plazas, and parking lots. The loops are also interconnected at grade adjacent to the terminals, allowing circulation between Terminals One and Two. Adjacent to Harbor Drive, a grade-separated bridge connects the terminal loops and provides access from Terminal Two to Terminal One. The speed limit on terminal roadways is posted at 25 MPH.

The parking lot entrances are located east of the lots next to the two main access ramps from North Harbor Drive. Four entrance gates are provided each at Lots 1 and 2. The parking lot exits are located west of the lots, and six exit lanes are provided on each lot. The parking aisles are generally oriented perpendicular to the terminal curbside.

Each terminal roadway has four to five lanes in the curbside drop-off area. Two lanes are used for active loading/unloading and two to three lanes are used for through traffic circulation. Each terminal has a Transit Plaza located on the parking lot side of the loop roads. Pedestrian access between the Transit Plazas and the terminals is provided via pedestrian bridges and signalized pedestrian crosswalks. The Commuter Terminal is also served by a short terminal loop roadway system.

Curbside Roadways

SDIA provides 6,828 feet of total curb frontage at the three terminals. **Table 3.4-1** illustrates the existing curb frontage at the Airport.

Terminal One's curbside roadway provides approximately 1,200 feet of curb frontage for passenger loading and unloading with a 20-foot curb lane accommodating double parking and three 12-foot through traffic lanes. Authority traffic staff constantly monitors curbside activity, ensuring vehicles are actively loading or unloading passengers and not unduly waiting. Directly below and west of the Sky Bridge, two bus spaces are reserved for the Red Bus (inter-terminal bus) and the employee shuttle bus. Additionally, two other bus spaces are reserved for Airport Flyer (public transit) buses at the east and west ends of the terminal building.

The Terminal Two curbside provides approximately 1,420 feet of curb frontage. Terminal Two is divided into the East and West terminal buildings. Terminal Two East's curbside roadway provides approximately 430 feet of curb frontage. The curbside roadway has a raised median west of the Sky Bridge, dividing the road into two. There are also directional signs posted on the Sky Bridge for traffic bound for different airlines in their respective lanes. The inner roadway is primarily for Terminal Two East traffic, while the outer roadway is for Terminal Two West traffic and commercial vehicles (shuttles, taxis, and courtesy vehicles). A Red Bus stop and an Airport Flyer bus stop are located near the west end of Terminal Two East.

The curbside roadway in front of Terminal Two West provides approximately 990 feet of curb frontage with a 20-foot curb lane for double parking and three 12-foot through lanes. An at-grade signalized pedestrian crossing is provided in the middle of the terminal building. A Sky Bridge traverses above the roadway near the west end of the terminal building. A Red Bus stop and an Airport Flyer bus stop are located just beyond the Sky Bridge.

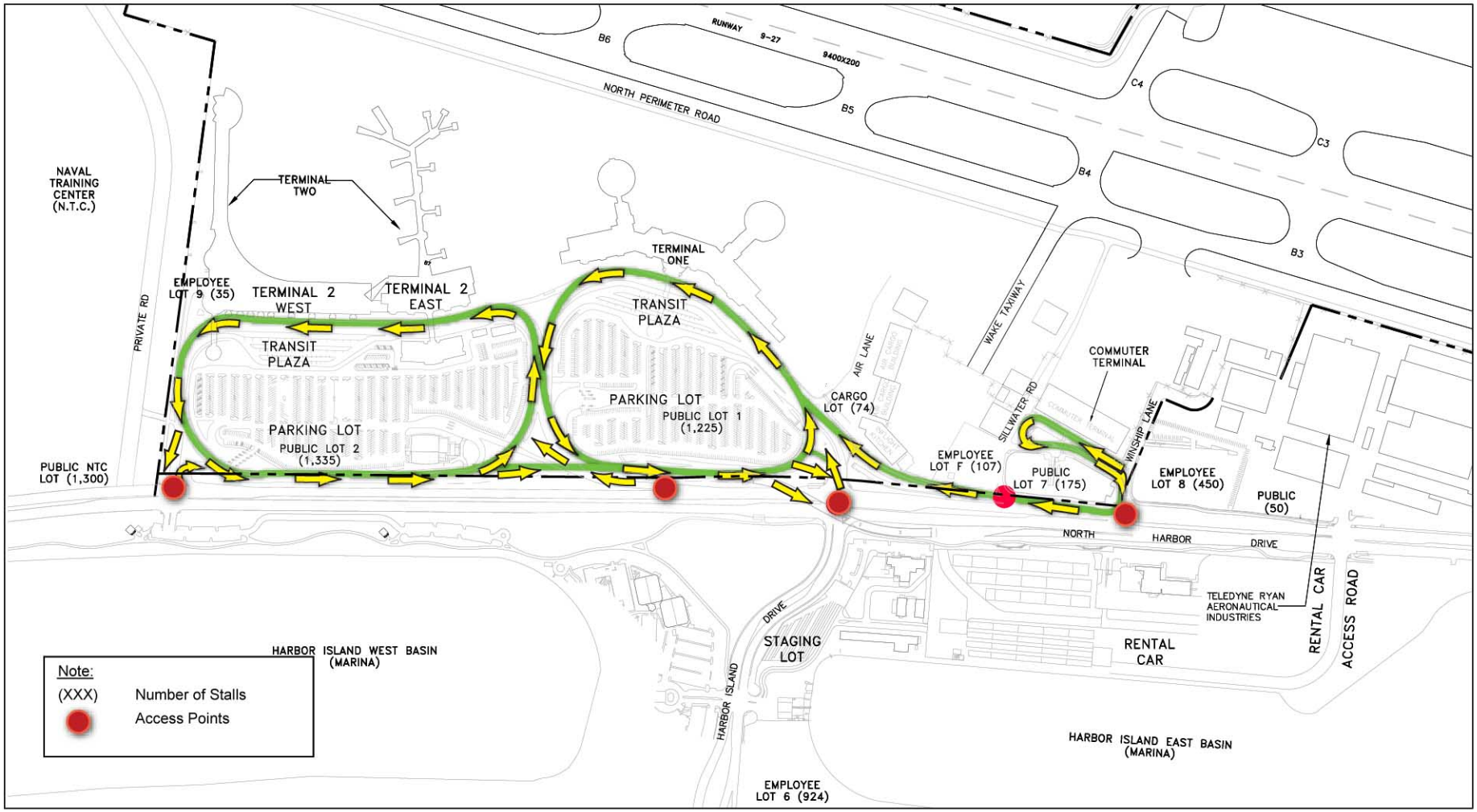


Figure 3.4-3

On-Airport Roadways

Source: SDCRAA and HNTB field check (2004)
Prepared by: HNTB Corporation, 2006

Table 3.4-1

Existing Curb Frontage (in feet)

Terminal	Vehicle Curb	Pedestrian Crossing	Total
Terminal 1			
Terminal Roadway			
Public	1,215	0	1,215
Transit Plaza			
For-Hire Shuttle	650	30	680
Taxi	750	30	780
Courtesy	510	30	540
Subtotal	**3,125**	**90**	**3,215**
Terminal 2			
Terminal Roadway			
Public	1,360	60	1,420
Transit Plaza			
For-Hire Shuttle	375	12	387
Taxi	585	12	597
Courtesy	500	12	512
Subtotal	**2,820**	**96**	**2,916**
Commuter Terminal			
Terminal Roadway			
Public	685	12	697
Subtotal	**685**	**12**	**697**
All Terminals			
Public	3,260	72	3,332
Transit	3,340	126	3,496
For-Hire Shuttle	1,020		
Taxi	1,330		
Courtesy	1,010		
Total	**6,630**	**198**	**6,828**

Source: HNTB estimates, October 2004.

The Commuter Terminal curbside roadway provides approximately 700 feet of curb frontage with both unmarked loading and unloading areas. Additionally, there are two inbound through lanes approximately 40 feet wide and approximately 30 feet of through lanes for outbound traffic. Curbside space is reserved in the middle of the terminal curb for the Red Bus stop. A public transit bus stop is located near the east end of the Commuter Terminal curb as well. The west terminus of the roadway has a loop configuration to allow U-turns for exiting vehicles. Public parking access is located directly in front of the terminal curbside.

Transit Plazas

The Transit Plazas in front of Terminal One and Terminal Two West buildings are divided into three curb roadways separated by 18-foot to 20-foot raised medians that also serve as pedestrian waiting/loading/unloading areas.

Terminal One's Transit Plaza is divided into three roadway segments or aisles. The Sky Bridge traverses the middle of the Transit Plaza above grade. Two pedestrian crosswalks are provided across the Transit

Plaza roadways on each side of the Sky Bridge. The first aisle closest to the terminal loop roadway accommodates for-hire shuttles on the north curb and taxis on the south curb and provides one travel lane in between. The middle aisle accommodates taxis and provides sufficient width for one parking and one through lane. A taxi dispatcher is stationed on the taxi median. The farthest aisle is allocated for courtesy vehicles and provides sufficient width for one parking lane and one through lane. The medians have baggage cart racks and protected waiting areas with benches.

Terminal Two West's Transit Plaza is also divided into three aisles. The at-grade pedestrian crosswalk from Terminal Two West traverses the middle of the Transit Plaza. The aisle allocation for the Terminal Two Transit Plaza is in reverse order to the Terminal One Transit Plaza. The aisle nearest the terminal roadway is allocated for courtesy vehicles. The middle aisle accommodates for-hire shuttles on the north curb and taxis on the south curb. The farthest aisle is reserved for taxis. A taxi dispatcher is stationed on the taxi median. The medians are provided with baggage cart racks and protected waiting areas with benches.

Pedestrian Facilities

The most significant pedestrian facilities at SDIA are the pedestrian bridges called Sky Bridges, which link the terminal buildings to the parking lots and Transit Plazas. Sky Bridges are located in the middle of Terminal One (approximately 300 feet long), in the middle of Terminal Two East (100 feet long), and near the west end of Terminal Two West (150 feet long). The Sky Bridges are approximately 20 feet wide with escalators and elevators at each end.

At-grade pedestrian crosswalks are provided in front of Terminal Two West and the Commuter Terminal. Terminal Two West's pedestrian crosswalk is controlled by a traffic signal. The Terminal Two West crosswalk consists of two 12-foot striped lanes across the terminal roadway and continues as one 12-foot lane across the Transit Plaza. Pedestrian crosswalks also connect the Transit Plaza medians. The Commuter Terminal has two uncontrolled pedestrian crosswalks: one in front of the terminal that connects to the public parking lot, and another one east of the terminal across Winship Lane that connects to additional public parking and employee parking lots.

The medians in the Transit Plazas serve as pedestrian walkways and waiting areas. The medians are approximately 20 feet wide and are equipped with protective roofing, benches, and other pedestrian amenities.

On-Site Traffic Circulation

From the East

Airport-related traffic from the east approaching SDIA on westbound North Harbor Drive is directed either to turn left at the Rental Car Access Road for rental car return or to proceed straight ahead to the terminals. Commuter Terminal traffic is directed to turn right on Winship Lane.

Terminal One inbound traffic is directed beyond Winship Lane to the two-lane access ramp, which immediately splits into two. The right two-lane ramp leads to Terminal One curbside and Transit Plaza, and the left one-lane ramp leads to the Terminal One parking lot. Further downstream, the terminal access ramp connects to Air Lane Road to the right and merges with the one-lane recirculation ramp to the left. Prior to reaching the Terminal One curbside, commercial vehicles (shuttles, taxis, and courtesy vehicles) are signed to the Transit Plaza to the left. The curbside roadway in front of Terminal One provides a wide curbside lane to accommodate double parking and three through lanes.

Beyond Terminal One, outbound traffic is directed either to the right one-lane connector road to Terminal Two or to the left three lanes for airport exit, terminal return, and parking. The latter lanes transition to two lanes south of the Terminal One parking lot and merge with the one-lane parking exit ramp to the left, becoming a three-lane recirculation roadway south of Lot 1. Traffic on this recirculation road is signed for

"Terminal returns / Parking / Harbor Island Drive / Point Loma / Commuter Terminal" on the left lane and for "I-5 / Downtown / Rental car return" on the two right lanes. The left lane transitions into two lanes directing traffic to the left for "Terminal returns / Parking" or to the right for "Airport exits" via Harbor Island Drive. Exiting traffic on Harbor Island Drive can either turn left for the "Commuter Terminal / I-5 / Downtown / Rental car return," proceed straight ahead for Harbor Island Drive, or turn right for Point Loma. The two-lane exit flyover ramp traverses North Harbor Drive above grade and merges with eastbound North Harbor Drive west of the Rental Car Access Road intersection.

Terminal Two inbound traffic on westbound North Harbor Drive is directed to a two-lane access ramp west of Harbor Island Drive, which immediately splits into two ramps. The left lane leads to the parking lot while the right lane leads to the terminal curbside. The latter then merges with a one-lane northbound recirculation road. The road curves westward east of Terminal Two East and merges with the one-lane interconnecting road from Terminal One.

Beyond Terminal Two West, the outbound curbside roadway merges with the one-lane Transit Plaza exit to form a four-lane section. The leftmost lane is signed for "Terminals One and Two Return and Parking." The second lane from the left is signed for "I-5 / Downtown / Rental car return." The second lane from the right is signed for "Harbor Island / Commuter Terminal." The rightmost lane is signed for "Point Loma." The three rightmost lanes connect to the signalized intersection on North Harbor Drive across Spanish Landing. The two leftmost lanes merge with the one-lane parking exit road to form a three-lane recirculation road south of the Terminal Two parking lot.

The recirculation road then transitions to four lanes prior to splitting into three ramps. The left one-lane ramp leads to Terminal Two parking. The middle one-lane ramp leads to Terminal Two return. The right two-lane ramp directs traffic to Terminal One, the airport exit, and rental car return.

From the West

Airport-related traffic from the west on eastbound North Harbor Drive is directed either to turn left at the Spanish Landing intersection for Terminal Two, to turn left at the Harbor Island Drive intersection for Terminal One, to turn left at Winship Lane for the Commuter Terminal, or to turn right on Rental Car Access Road for rental car return.

3.4.1.3 Parking Facilities

As summarized in **Table 3.4-2**, the Authority operates 4,085 terminal area and 1,890 remote public parking spaces. The remote parking is provided in two facilities SAN Park Pacific Highway and SAN Park Harbor Drive. Privately-operated remote facilities provide an estimated additional 5,967 spaces for a total of 11,942 airport parking spaces (both Authority and privately operated). Approximately 1,500 Authority-operated remote parking spaces are planned or under construction, which would bring the total parking supply at the Airport to 13,442 spaces. **Figure 3.4-4** shows the locations of Authority operated parking facilities along North Harbor Drive and adjacent to the terminals.

Table 3.4-2

Public Parking Supply

Facility	Stall Count
Terminal Area Parking	
Terminal 1	1,225
Terminal 2	1,355
Commuter Terminal	175
Commuter Terminal Lot Extension (Lot 8)[1]	30
SAN Park NTC	1,300
Subtotal Terminal	**4,085**
Remote Parking[2]	
Authority-Operated Parking	
SAN Park Pacific Highway	1,600
SAN Park Harbor Drive	290
SAN Park Pacific Highway Expansion[3]	500
SAN Park Harbor Drive (west end of TDY)[3]	1,000
Subtotal Authority-Operated Remote	***3,390***
Privately-Operated Parking	
Budget	330
Park Shuttle & Fly (Liberty Station)	1,200
Aladdin Parking Complex	1,600
Laurel St Travel Garage	493
San Diego Airport Parking	144
Park & Ride (7) Lots[4]	2,200
Subtotal Privately-Operated Remote	***5,967***
Subtotal Remote Parking	**9,357**
Total Public Parking	**13,442**

1 The commuter terminal lot extension (Lot 8) is available for both employee and visitor parking. It is assumed that approximately 30 to 50 stalls are used for visitor parking on a typical day.
2 Includes all lots requiring shuttle bus transport to terminals.
3 Includes facilities currently planned or under construction.
4 Includes new garage with 600 covered parking spaces.

Source: SDCRAA, 2006.

When the study began in 2004 there were an estimated 8,630 Authority and privately operated remote parking spaces (counting the 1,500 planned spaces described above) in addition to the 4,085 terminal area spaces for a total Airport parking supply of 12,685 spaces.

In addition the Authority provides approximately 1,590 employee parking spaces on various terminal area and remote parking lots.

Authority-Operated Public Parking

As shown in **Figure 3.4-4** and **Table 3.4-2**, individual terminal area parking lots are located directly in front of each terminal building. The parking lots for Terminal One and Terminal Two are accessed via separate ramps east of the lots with exits to the west. Each lot provides four entry gates and six exit gates. The Commuter Terminal parking lot access is located in front of the terminal curb with one gate each for entry and exit and additional public parking spaces are available on the lot east of the Commuter Terminal.

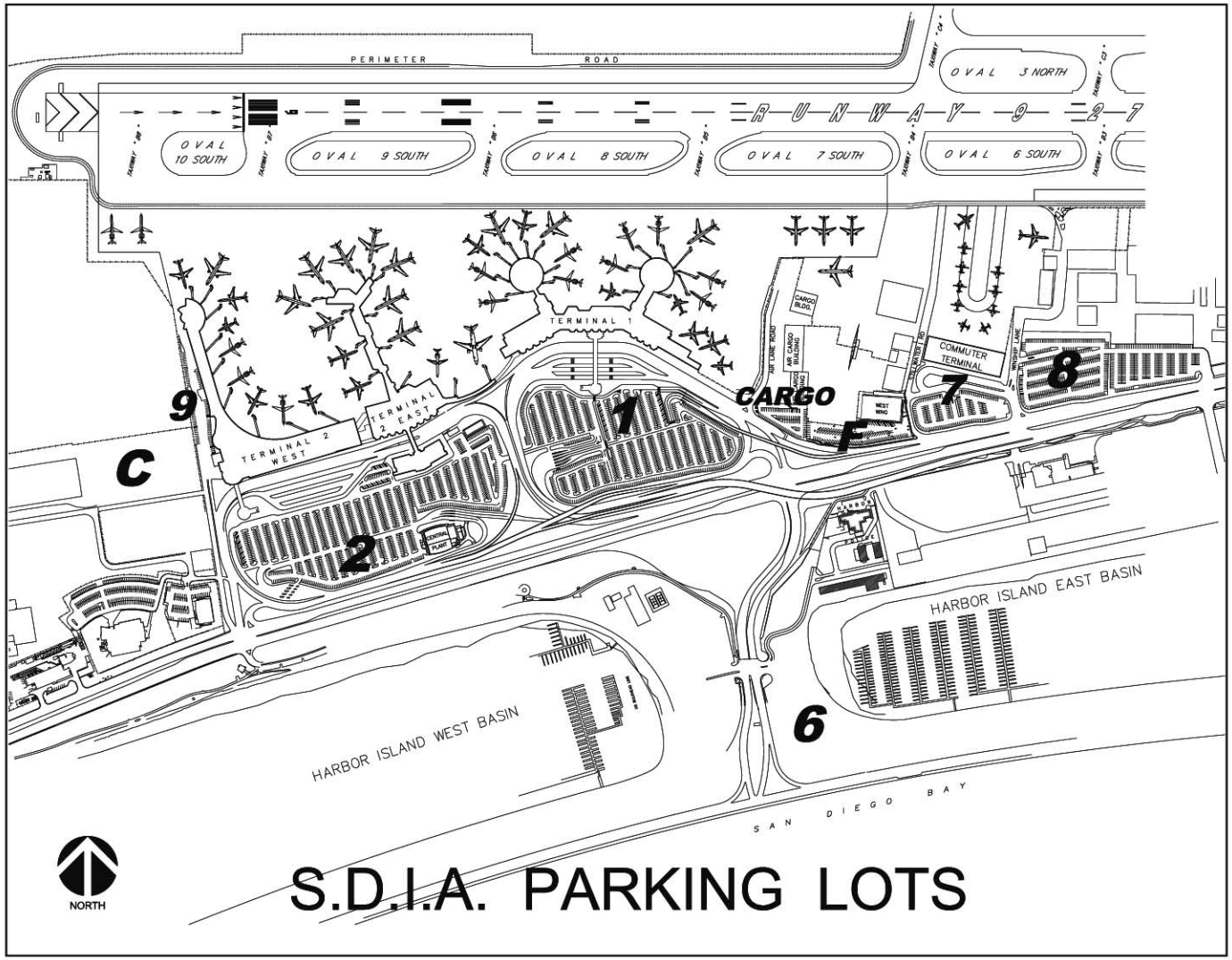


Figure 3.4-4

SDIA Parking Facilities (Public and Employee)

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

A new parking lot, SAN Park NTC, opened in November 2004 west of Terminal Two West on the former NTC property. Access to SAN Park NTC is provided via a roadway connection to the terminal loop west of Terminal Two.

The Authority also operates two remote facilities: SAN Park Pacific Highway and SAN Park Harbor Drive. As shown in **Figure 3.4-5**, SAN Park Pacific Highway is located north side of the airport, along Pacific Highway and has approximately 1,600 parking spaces (1,100 permanent and 500 overflow spaces) and with a plan to add an additional 500 spaces. SAN Park Pacific Highway is accessed via the southwest leg of the intersection of Sassafras Street and Pacific Highway and the entrance/exit plaza has three entry and three exit gates. SAN Park Harbor Drive is located along Harbor Drive at the west end of the Teledyne Ryan property and has approximately 290 public parking spaces with plans to add an additional 1,000 spaces. Daily free shuttle service is provided on a 24-hour basis from both SAN Park Pacific Highway and SAN Park Harbor Drive to all terminals.

A common parking rate structure applies to all terminal area public parking lots, with the exception of SAN Park NTC, and as shown in **Table 3.4-3,** daily parking is $18 the first day and $24 each additional day. The daily parking rate is $12 at SAN Park NTC and SAN Park Harbor Drive is $10 at SAN Park Pacific Highway.

Table 3.4-3

Terminal Area Public Parking Rate Structure

Time	Cost
0 to 1/2 hour	$0.50
1/2 to 1 hour	$1.00
1 to 2 hours	$3.00
2 to 3 hours	$5.00
3 to 4 hours	$7.00
4 to 5 hours	$10.00
5 to 6 hours	$13.00
6 to 7 hours	$16.00
7 to 24 hours	$18.00
Each additional day	$24.00 flat rate

Source: SDIA Website, 2004.

Automated Express Parking pay stations are provided in the Transit Plaza curbs adjacent to the parking lots. These stations reduce the transaction times; hence, the queue lengths are reduced at the parking exit gates, particularly during peak periods.

The Terminal One and Terminal Two parking lot access ramps were included in the 24-hour seven-day traffic counts conducted in April 2004 as part of the *Update of Traffic Data for San Diego International Airport*. The count results are presented Section 3.4.2.1, 24-Hour Airport Access Traffic Counts.

SDIA currently provides a short-term waiting lot that allows meeters/greeters to wait in their vehicles for a maximum of one hour until they make cell phone contact with arriving passengers. This waiting lot reduces traffic recirculation and curbside congestion. The lot is currently located at a temporary site on Air Lane Road, operates 24 hours daily, and is equipped with portable toilets and nighttime lighting.

Terminal area public parking activity is discussed in Section 3.4.2.10, Terminal Area Public Parking Activity.

Privately-Operated Public Parking

Privately operated remote public parking facilities are located in the vicinity of Laurel Street, Pacific Highway, and Kettner Boulevard. These facilities provide approximately 5,967 spaces in both surface lots and garages. These facilities generally provide a two-hour grace period with maximum daily rates of up to 10 dollars. Free shuttle service is also provided by the individual operators to and from the terminals. A new privately-operated facility (Park, Shuttle & Fly) was opened in August 2004 providing approximately 1,200 parking spaces. This facility charges a five-dollar flat rate per day with free shuttle service. Traffic activity at remote parking lots was observed in April and May 2004 as part of the *Update of Traffic Data for San Diego International Airport*. The results of these surveys are discussed in Section 3.4.2.11, Remote Public Parking Activity.

Employee Parking

The Authority provides approximately 1,590 employee parking spaces on various terminal area and remote parking lots, as shown in **Figure 3.4-4**. The employee lots include:

- Lot 6 - Harbor Island Drive - 924 stalls
- West Wing - West Wing Administrative Building - 107 stalls
- Lot 8 - east of the Commuter Terminal - 450 stalls
- Cargo Lot - along Air Lane Road - 74 stalls
- Lot 9 - west end of Terminal Two West - 35 stalls

The Authority operates employee shuttles between the employee lots and the terminal buildings approximately every seven minutes. Shuttle stops are provided adjacent to the Red Bus stops in front of each terminal building.

Traffic activity at employee parking lots was observed in April and May 2004 as part of the *Update of Traffic Data for San Diego International Airport*. The results of these surveys are discussed in Section 3.4.2.12, Employee Parking Lot Counts.

3.4.1.4 Ground Transportation Services

Existing ground transportation services at SDIA are provided by the Red Bus, courtesy vehicles (from off-airport hotels/motels, parking, and rental car facilities), taxis, limousines, for-hire shuttles/buses, rental cars, and public transit buses. **Figure 3.4-6** shows the locations where passengers can access these ground transportation services. The following describes each of these ground transportation services:

Red Bus Airport Service (Terminal to Terminal Connection)

SDIA operates the Red Bus service, providing free connection between terminal buildings. Red Buses run at intervals not exceeding 10 minutes, and this service picks up and drops off passengers at four designated stops on terminal curbside roadways (see **Figure 3.4-6**). The Red Bus service utilizes mini-buses that can accommodate approximately 26 passengers.

Courtesy Vehicles

Off-airport hotels/motels, parking and rental car operators provide courtesy shuttle services at SDIA. Courtesy vehicles pick up and drop off passengers at the Transit Plaza in front of each terminal. At Terminal One, courtesy vehicles operate on the third aisle (farthest from the terminal) in the Transit Plaza. This aisle provides approximately 540 feet of curb frontage that can accommodate about 13 vehicles. At Terminal Two West, the first aisle (nearest to the terminal) of the Transit Plaza is utilized by courtesy vehicles. This aisle provides approximately 530 feet of curb frontage and can accommodate about 15 vehicles.

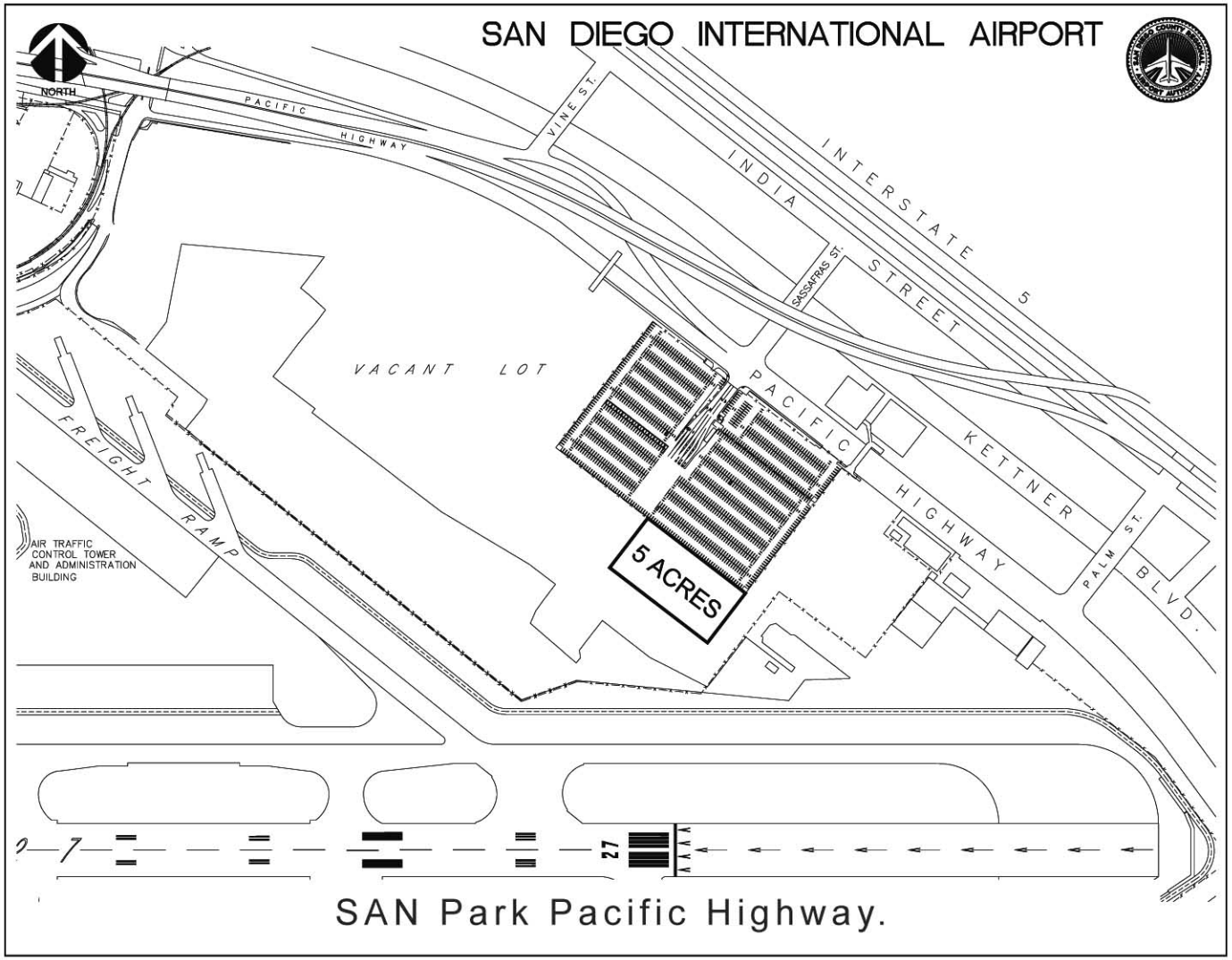


Figure 3.4-5

SAN Park Pacific Highway Parking Facility

Source: SDCRAA (2004)
Prepared by: HNTB Corporation, 2006

Figure 3.4-6

Location of SDIA Ground Transportation Loading/Unloading Areas

Source: SDIA Website (2004)
Prepared by: HNTB Corporation, 2006

Public Transit Bus Service

Public transit bus service at SDIA is provided by the Airport Flyer Route No. 992, connecting the airport terminals to Downtown San Diego. There are five transit bus stops on terminal roadways as shown in **Figure 3.4-7**. This service is operated by the Metropolitan Transit System (MTS), which is the regional transit provider for San Diego County. The transit service operates approximately every 10 minutes, using mini-buses with seating capacity for 26 passengers. The route connects with other MTS bus stops, trolley, Coaster, and Amtrak Stations, as shown in **Figure 3.4-7**.

Public transit bus boarding and alighting surveys were conducted at five transit stops at SDIA in May 2004 as part of the *Update of Traffic Data for San Diego International Airport*. The results of these surveys are discussed in Section 3.4.2.8, Bus Passenger Boarding and Alighting.

Taxi Service

Taxi service at SDIA is provided by a number of operators located at the Transit Plazas in front of the terminal buildings. Taxis are allowed to drop off departing passengers in front of the terminal curbs. Arriving passengers hire taxis from the middle aisle of the Transit Plazas. A Transportation Coordinator at the taxi curb directs passengers to the first available taxi, unless passengers request a particular operator. The Terminal One taxi aisle provides approximately 680 feet of curb space on both sides of the median that can accommodate about 27 taxicabs. The Terminal Two taxi aisle provides approximately 750 feet of curb space on both sides that can accommodate about 30 taxicabs. About five taxicabs can be accommodated on the taxi waiting area in the Commuter Terminal curbside roadway on the west end of the terminal.

Taxis and for-hire shuttles stage off-site on Harbor Island Drive, west of Terminal Two West. The staging area is approximately one acre and can accommodate approximately 150 commercial vehicles.

Taxi dwell times and inbound/outbound activity were observed in April and May 2004 as part of the *Update of Traffic Data for San Diego International Airport*. The Authority also provides commercial vehicle trip data from the Airport's Automated Vehicle Identification (AVI) system including taxicab trips. The results of the surveys and AVI trip data are discussed in Section 3.4.2.13, AVI Commercial Vehicle Trip Counts.

For-Hire Shuttle Service

For-hire shuttle service to the Airport is currently provided by numerous operators. Shuttle service provides door-to-curb service similar to taxis but accommodates multiple parties. At the Terminal One Transit Plaza, for-hire shuttles load/unload at the north curb of the first aisle (closest to the terminal building). At the Terminal Two Transit Plaza, for-hire shuttles drop off and pick up passengers on the north curb of the middle aisle. For-hire shuttles stage at an off-site staging area on Harbor Island Drive, west of Terminal Two West.

Shuttle dwell times and inbound/outbound activity were observed in April and May 2004 as part of the *Update of Traffic Data for San Diego International Airport*. The Authority provided AVI system data also includes for-hire shuttle trips. The results of the surveys and AVI trip data are discussed in Section 3.4.2.13, AVI Commercial Vehicle Trip Counts.

Rental Car Service

The Rental Car Facility is located south of the Airport off of Rental Car Access Road. The property is approximately 27.5 acres. Hertz, Avis, and National rental car agencies currently operate out of this facility. Other rental companies operate from off-airport facilities.

Light Rail Service (San Diego Trolley)

The MTS currently operates trolley services in the San Diego Region. The Old Town Light Rail Transit (LRT) Extension line, approximately 1.5 miles east of the existing Airport terminals, offers service from Downtown San Diego to Old Town. There are two stations on this line near the east end of the Airport: the Palm Avenue Station and the Washington Street Station located at the Mission Brewery Plaza building. The Old Town Line has been extended to Mission Valley and terminates at Qualcomm Stadium. Trolleys run every 10 minutes from the American Plaza station in Downtown San Diego to the Old Town Station. Eventually, the Mission Valley line will connect with the East Line in the La Mesa area. In addition, studies are currently being conducted to implement a northern extension of the Old Town line along I-5 to the University Town Center area.

Metropolitan Transit Development Board (MTDB) has studied potential LRT/Airport connections as far back as the *1977 Guideway Planning Project - Phase I: Evaluation of Candidate Corridor Alignments Study*. In May 1985, for planning purposes, the MTDB Board of Directors adopted two basic alignments, which are known as the Airport/Point Loma Line. The conclusions of this study are illustrated in **Figure 3.4-8**. One alignment is along North Harbor Drive, and the other is a northern access alignment from the Washington Street LRT station. Both alignments continue past the Airport and terminate at Rosecrans Street and Nimitz Boulevard. Since the study was completed and adopted in 1985, there has been little activity on the design and implementation of the project. With the NTC site being vacated by the Navy, MTDB determined a future extension at NTC as not feasible.

Commuter Rail Service (Coaster)

The Coaster commuter rail service is operated by the North County Transit District based in the City of Oceanside. The Coaster provides regional rail service for commuters and travelers between the Cities of Oceanside and San Diego. The Coaster offers eleven weekday-only round trips serving eight stations. The stations are located in Oceanside, Carlsbad (the Village and Poinsettia Stations), Encinitas, Solana Beach, Sorrento Valley, Old Town, and the Santa Fe Depot in Downtown San Diego. The terminus at the Santa Fe Depot provides connections with the Airport Flyer, Amtrak trains, the San Diego Trolley, and city buses. There are two additional round trips on Friday evenings and only four round trips on Saturdays; it does not operate on Sundays. The Coaster line operates along the same right-of-way as the San Diego Trolley and Amtrak. The nearest Coaster stations to the Airport are the Santa Fe Depot and the Old Town Stations.

Rail Service (Amtrak)

Amtrak provides regional, statewide, and interstate passenger rail service. The San Diegan departs the Santa Fe Depot 11 times daily to Los Angeles with connecting service to Santa Barbara. From Los Angeles, trains are available providing intra- and inter-state travel.

3.4.2 Traffic Characteristics

This section describes the traffic characteristics of various ground transportation facilities at SDIA. The information includes: traffic volume of vehicles and persons using the different facilities, temporal variations of traffic flows by hour of the day and by day of the week, roadway and intersection Level of Service (LOS), vehicle classifications, vehicle occupancies, vehicle dwell times, passenger boarding and alighting figures, rental car activity, parking activity, and parking durations. The significance of each element relative to the Airport Master Plan development is discussed below.

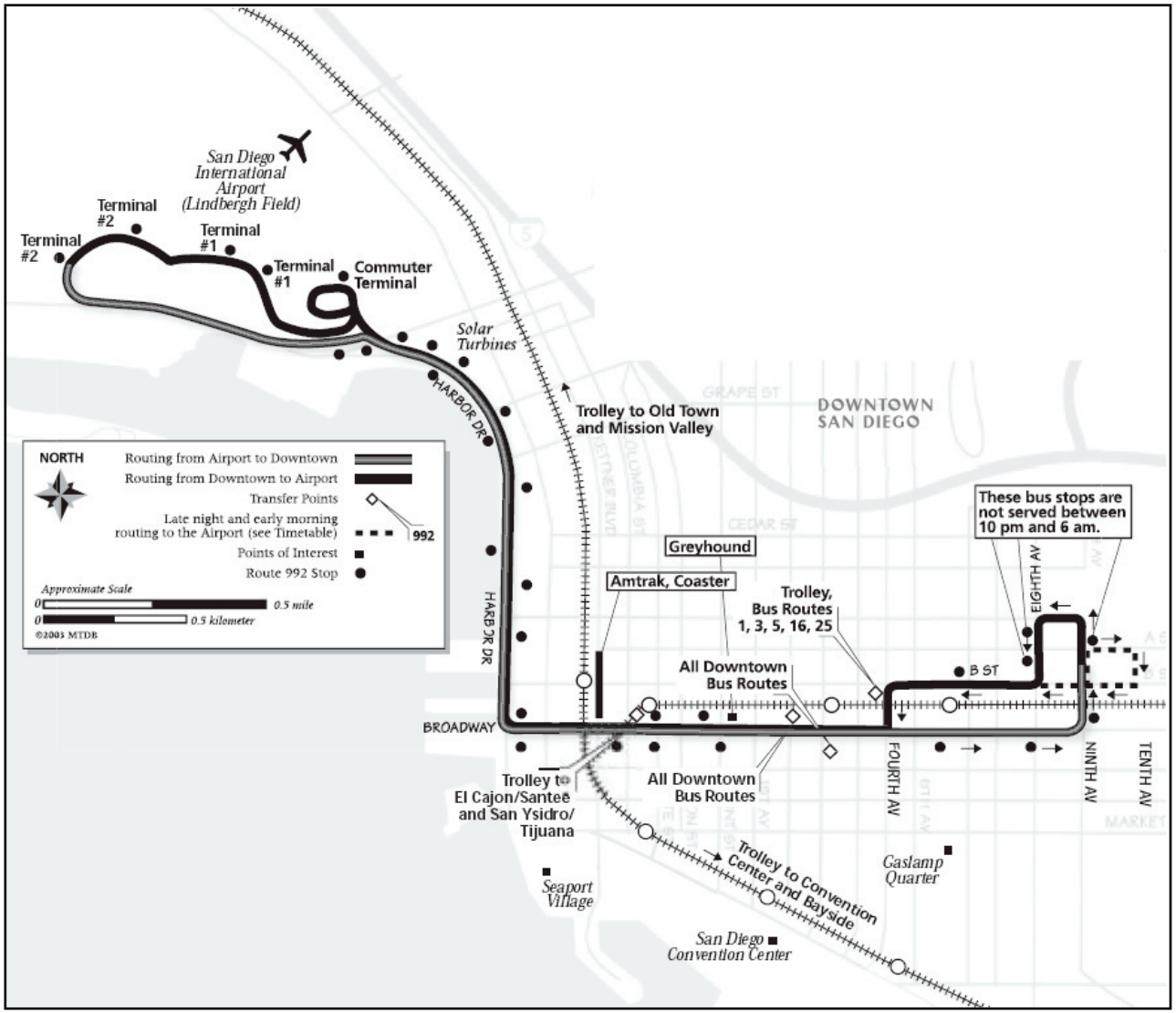


Figure 3.4-7

Airport Flyer Transit Bus Route Map and Stop Locations

Source: MTS Website
Prepared by: HNTB Corporation, 2006

May 2008

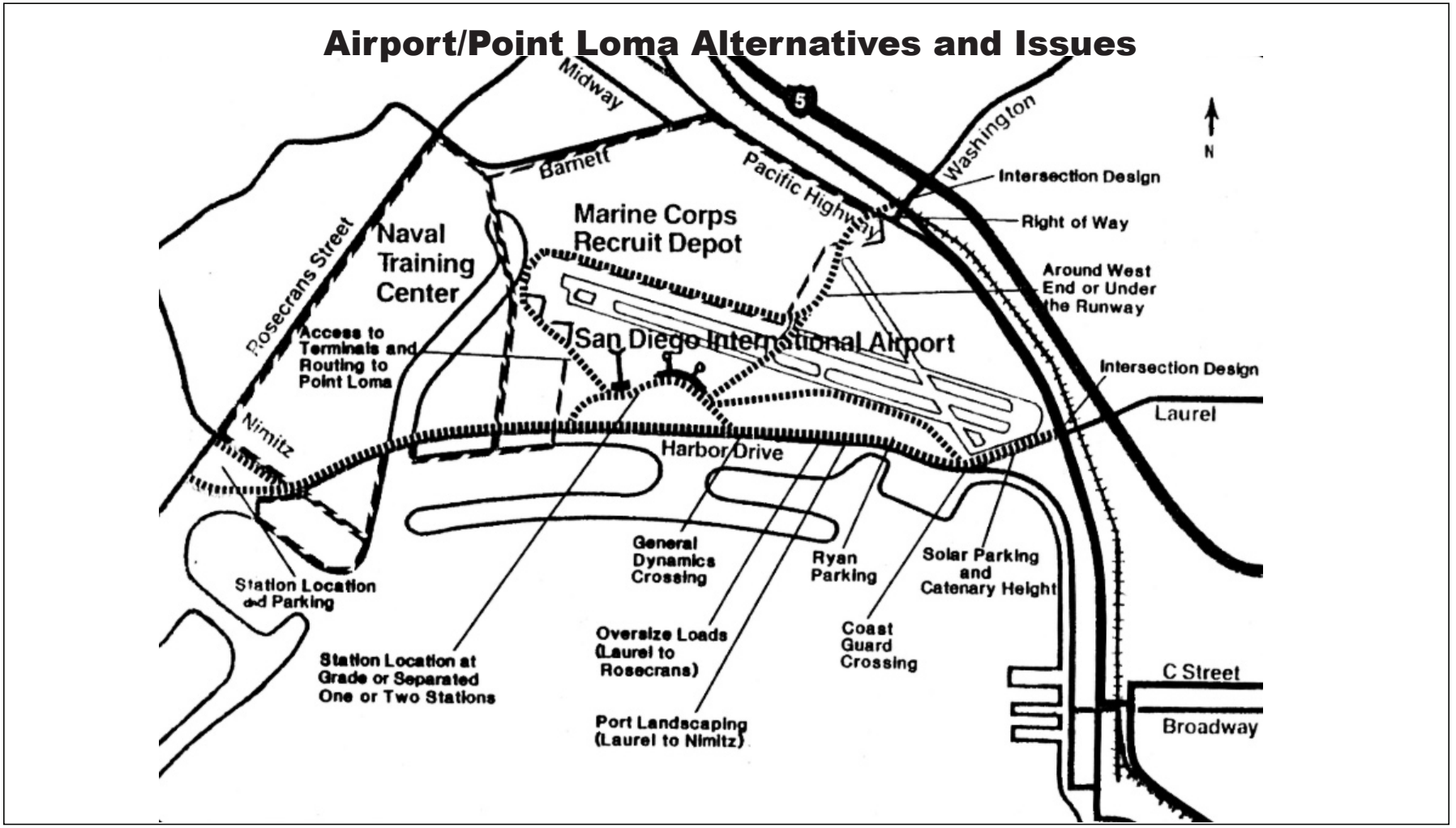


Figure 3.4-8

LRT-Airport Connection - Airport/Point Loma

Source: N/A
Prepared by: HNTB Corporation, 2006

3.4.2.1 24-Hour Airport Access Traffic Counts

Average daily traffic (ADT) counts at on-airport access points provide information regarding the volume, spatial and temporal distributions of traffic generated by the airport. Together with existing roadway capacities, traffic volume information is used to evaluate roadway LOS, indicating efficiencies and deficiencies. It also provides benchmark information for determining airport trip generation rates, which are used to estimate future airport traffic activity levels.

24-hour traffic counts were conducted in April 2004 at all entrances and exits to SDIA as part of the *Update of Traffic Data for San Diego International Airport*. The counts were conducted using automatic traffic recording equipment for a seven-day period beginning on Monday, April 19th, and ending on Sunday, April 25th. The count locations included the terminal and parking access points along North Harbor Drive, Harbor Island Drive, and Pacific Highway, as shown in **Figure 3.4-9**.

Table 3.4-4 summarizes the seven-day ADT at the count stations. As shown, SDIA generates a total of approximately 72,400 vehicle trips per day (VPD) in both directions, including terminal, public, and employee parking, and air cargo traffic. This number does not include traffic associated with the rental car facilities and the taxi/shuttle staging area. Terminal related traffic is approximately 61,500 VPD (85 percent), with Terminals One and Two accounting for approximately 53,900 VPD (75 percent) and the Commuter Terminal accounting for approximately 7,600 VPD (10 percent).

Table 3.4-4

24-Hour Traffic Count Summary - Average Daily Traffic

Station	Location	In	Out	Total
1	West Airport Access	1,156	3,861	5,017
2	Terminal 2 Entrance	9,925	0	9,925
3	Terminal 1 Entrance	10,564	0	10,564
3a	Terminal Parking Entrance	2,171	0	2,171
4	Harbor Island Drive Access	2,679	3,154	5,833
10	Terminal Flyover Exit	0	20,430	20,430
	Subtotal Terminals 1 & 2	**26,495**	**27,445**	**53,940**
5	Commuter Terminal West Entrance	373	0	373
6	Commuter Terminal Main Entrance	3,410	3,767	7,177
	Subtotal Commuter Terminal	**3,783**	**3,767**	**7,550**
	Subtotal All Terminals	**30,278**	**31,212**	**61,490**
8	Freight Ramp Access	403	364	767
9	SAN Park Pacific Highway Access	974	1,184	2,158
11	TSA Lot 8 Entrance	873	1,278	2,151
12	Commuter Terminal Parking Lot	1,565	1,173	2,738
13	Lot 6 Access on Harbor Island Drive	1,594	703	2,297
14	Lot 6 Access at Sheraton Hotel	135	648	783
	Subtotal Parking Lots and Freight	**5,544**	**5,350**	**10,894**
	TOTAL	**35,822**	**36,562**	**72,384**

Source: SDCRAA's Update of Traffic Data for SDIA, PARSONS, July 2004.

Figure 3.4-10 shows the relative traffic distribution at various airport access points. The airport exit flyover on North Harbor Drive accommodates approximately 27 percent of the airport-related traffic.

Inbound traffic associated with Terminals One and Two, including parking, constitutes approximately 32 percent of the airport traffic. The Commuter Terminal access on Winship Lane accounts for 10 percent of the airport traffic.

Daily Traffic Variation

Monday was the peak day for vehicular traffic activity at the Airport in May 2004 with approximately 80,000 VPD, as shown in **Figure 3.4-11**. Thursday and Friday also exhibited significant daily traffic activity with approximately 79,000 VPD. The lowest daily traffic was observed on a Saturday.

Hourly Traffic Variation

As shown in **Figure 3.4-12**, airport traffic activity is heaviest in both inbound and outbound directions at 1:00 PM with a total of approximately 30,400 vehicles per hour (VPH). The midday peak period extends from 11:00 AM to 3:00 PM with hourly traffic volumes ranging from 27,200 to 30,400 VPH. Outside the midday peak period, hourly traffic between 6:00 AM to 10:00 PM varies slightly, ranging from 21,400 to 24,400 VPH.

3.4.2.2 Off-Airport Roadway Traffic and Levels of Service

Off-airport traffic counts provide information on the relative magnitude, spatial and temporal variations of the regional background traffic with which the airport-related traffic interacts on regional roadways and local streets. The LOS assessment of these off-airport roadways and intersections indicates the relative ease or difficulty in accessing the airport.

3.4.2.3 Peak Period Intersection Turning Movement Counts and Levels of Service

Peak period intersection counts enable the assessment of intersection LOS. The LOS indicates the relative ease or difficulty in accessing the airport from the regional roadways and local streets. Intersection counts also provide information on the directional distribution of airport related and regional background traffic.

On-Airport Intersections

Peak period turning movement counts were conducted in April 2004 as part of the *Update of Traffic Data for San Diego International Airport*. These counts were conducted during the morning (5:30 AM to 9:00 AM) and afternoon (4:00 PM to 6:00 PM) peak periods at all intersections providing direct access to SDIA on North Harbor Drive and Pacific Highway. The traffic volumes were collected to evaluate the existing LOS and directional distribution of airport-related traffic.

Figure 3.4-13 presents the existing lane geometry at these intersections. Intersection turning volumes and lane geometry area were used to assess the intersection LOS.

The intersection LOS were analyzed as part of the *Update of Traffic Data for San Diego International Airport*. The study used the industry standard (City of San Diego approved) method of the Highway Capacity Manual (HCM). The HCM provides a analytical method for determining the average delay per vehicle entering the intersection. The delay values in seconds are given a corresponding LOS designation. The LOS for intersections varies from LOS A (free flow and little delay) to LOS F ("stopped" conditions). Industry standards generally set LOS D or better as acceptable for peak hours intersection operations.

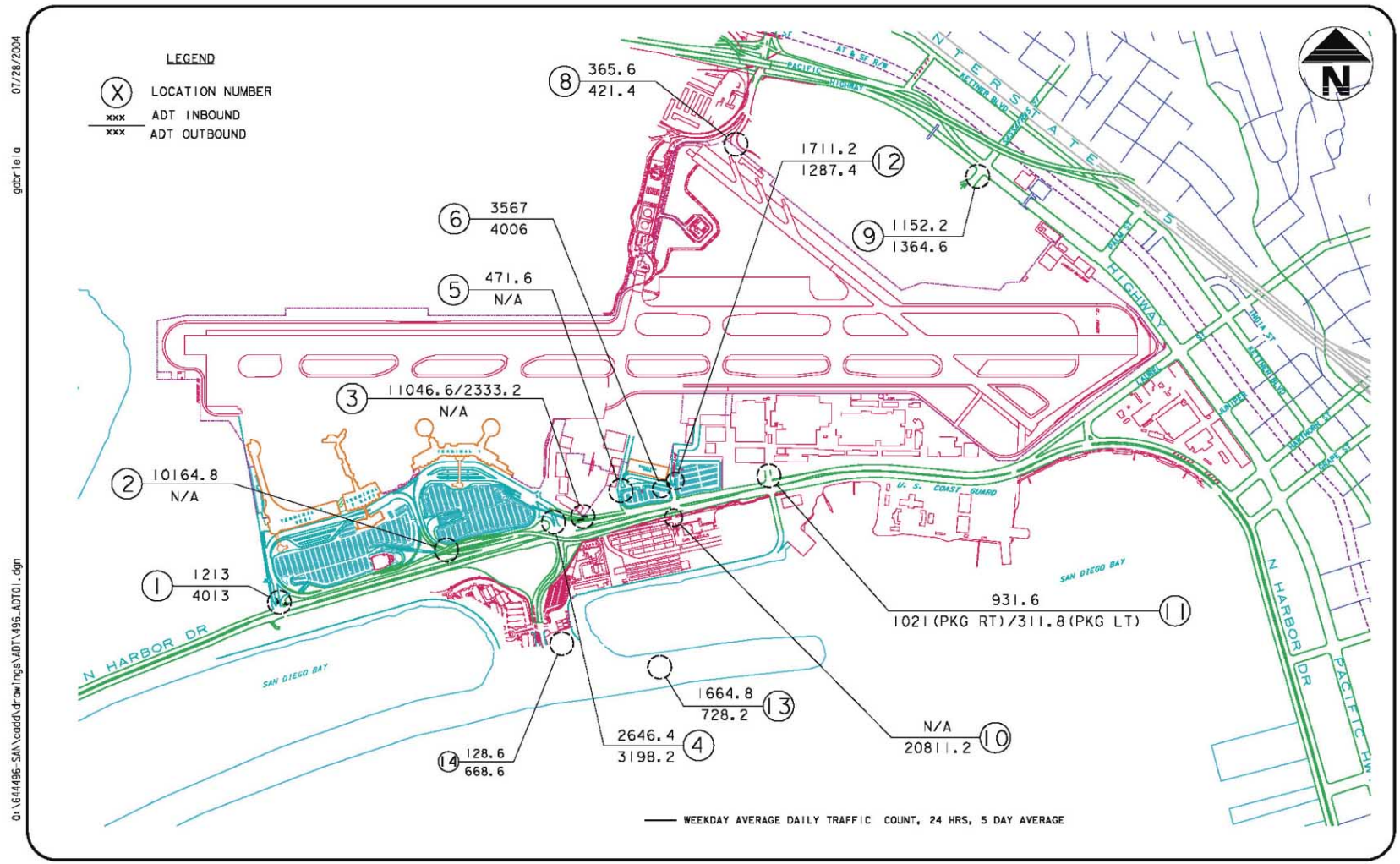
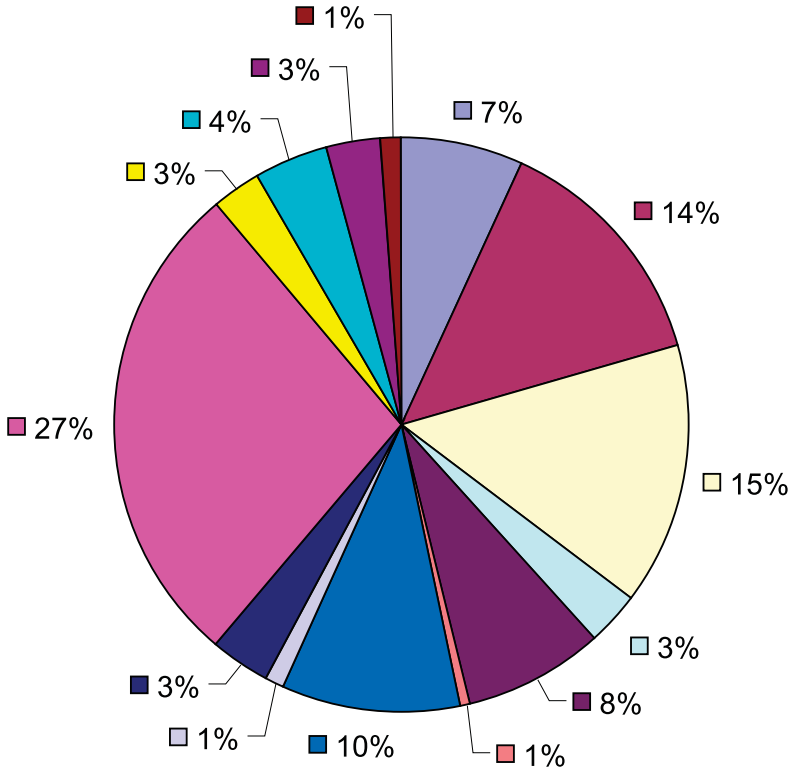


Figure 3.4-9

Average Daily Traffic - 24-Hour Count Stations and Summary

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

SDIA Traffic Distribution by Access Point



- #1 -N HARBOR - WEST AIRPORT (in/out)
- #2 -N HARBOR - TERMINAL 2 (in)
- #3 - N HARBOR - TERMINAL 1 (in)
- #3a - N HARBOR - TERMINAL 1 PKG (in)
- #4 - N HARBOR - H ISLAND (in/out)
- #5 - N HARBOR - COMMUTER (in)
- #6 - N HARBOR - WINSHIP LN (in/out)
- #8 - WASHINGTON ST - FREIGHT (in/out)
- #9 - PAC HWY - PKG (in/out)
- #10 - N HARBOR SB EXIT (out)
- #11 - TSA Pkg (in/out)
- #12 - Winship Ln (in/out)
- #13 - Parking Lot 6 Harbor Island (in/out)
- #14 - Parking Lot 6 Sheraton (in/out)

Note:

#'s represent the count stations.

Figure 3.4-10

SDIA Traffic Distribution by Access Point

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

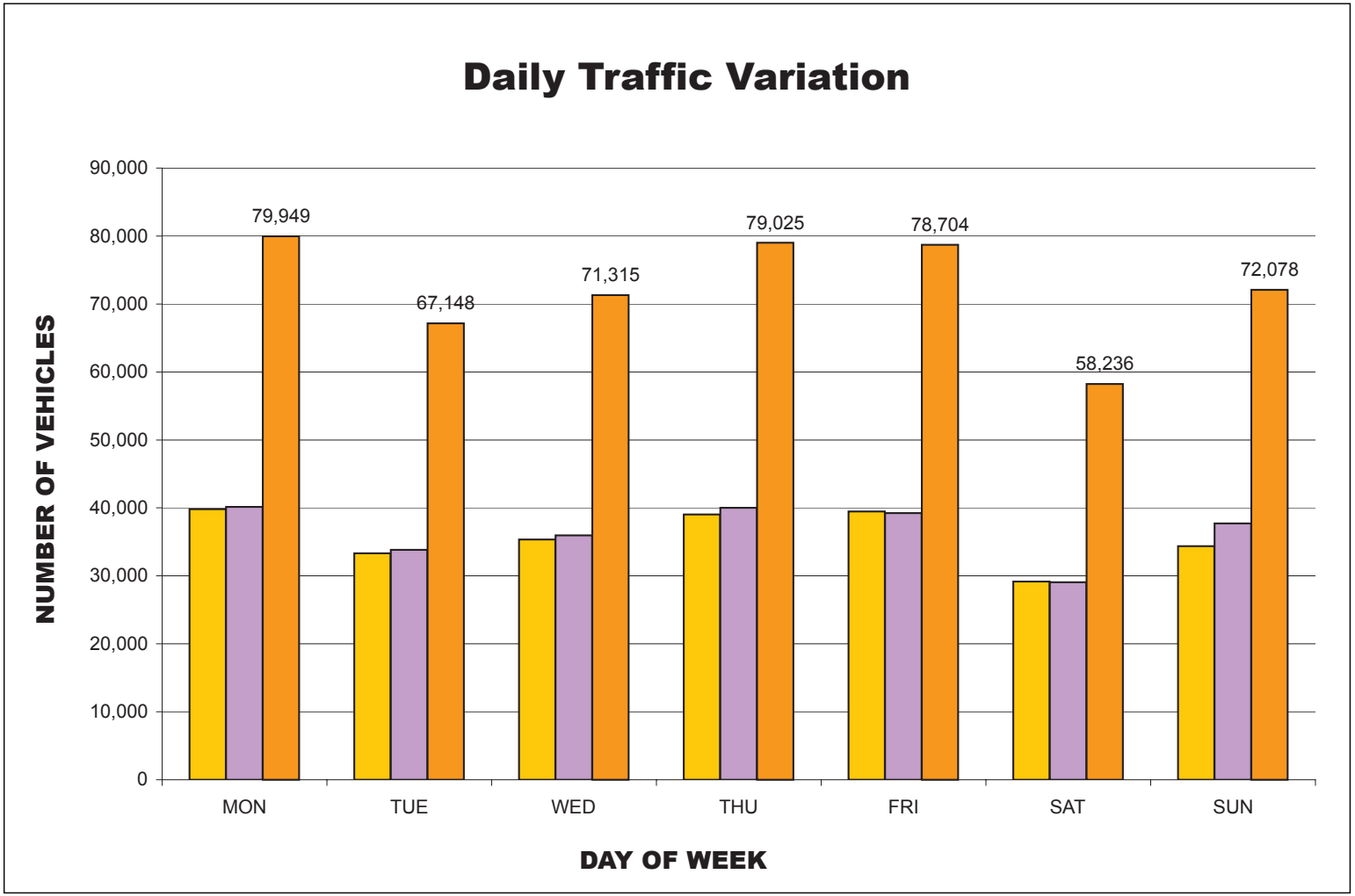


Figure 3.4-11

Daily Traffic Variation

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

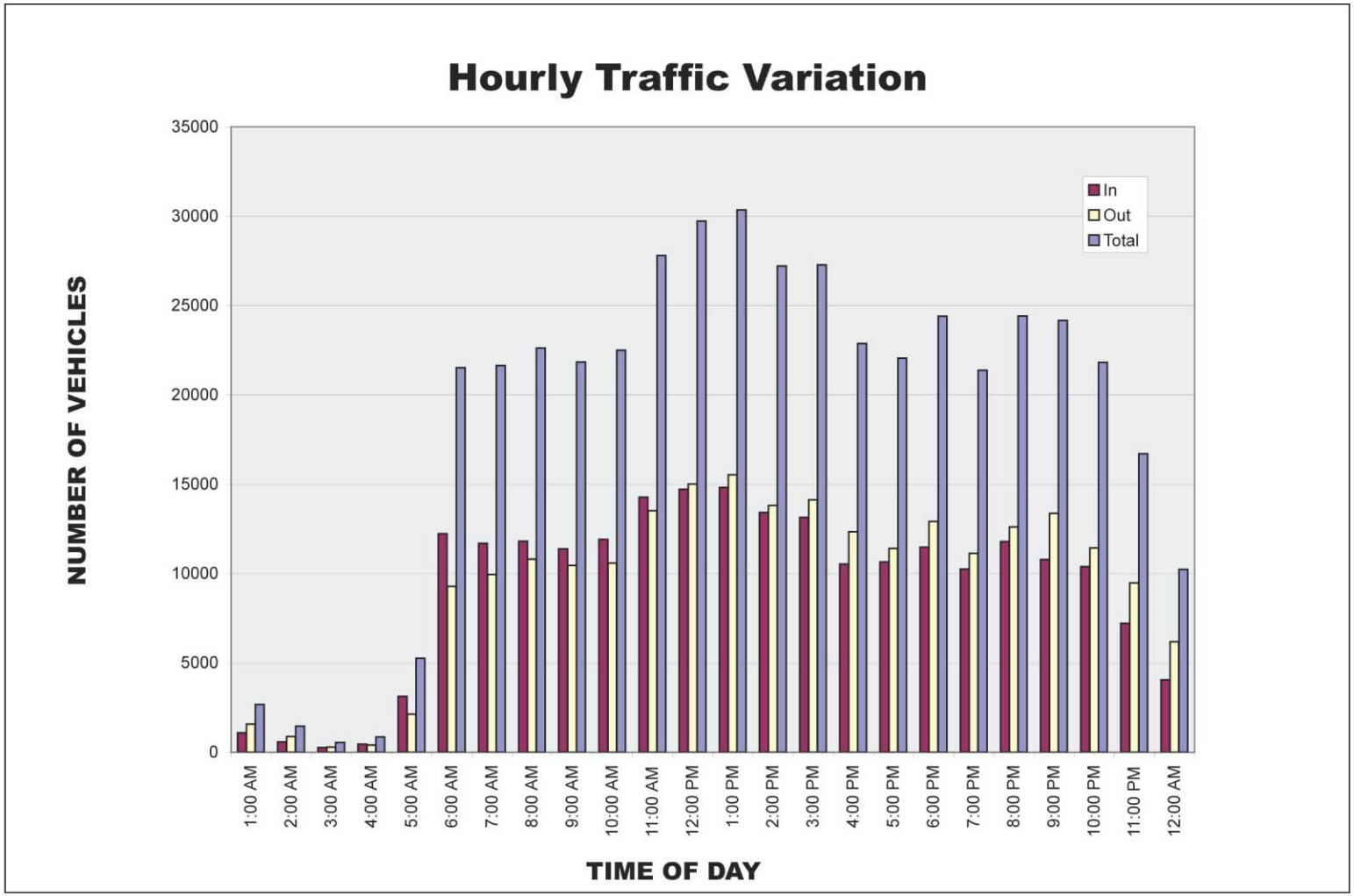


Figure 3.4-12

Hourly Traffic Variation

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

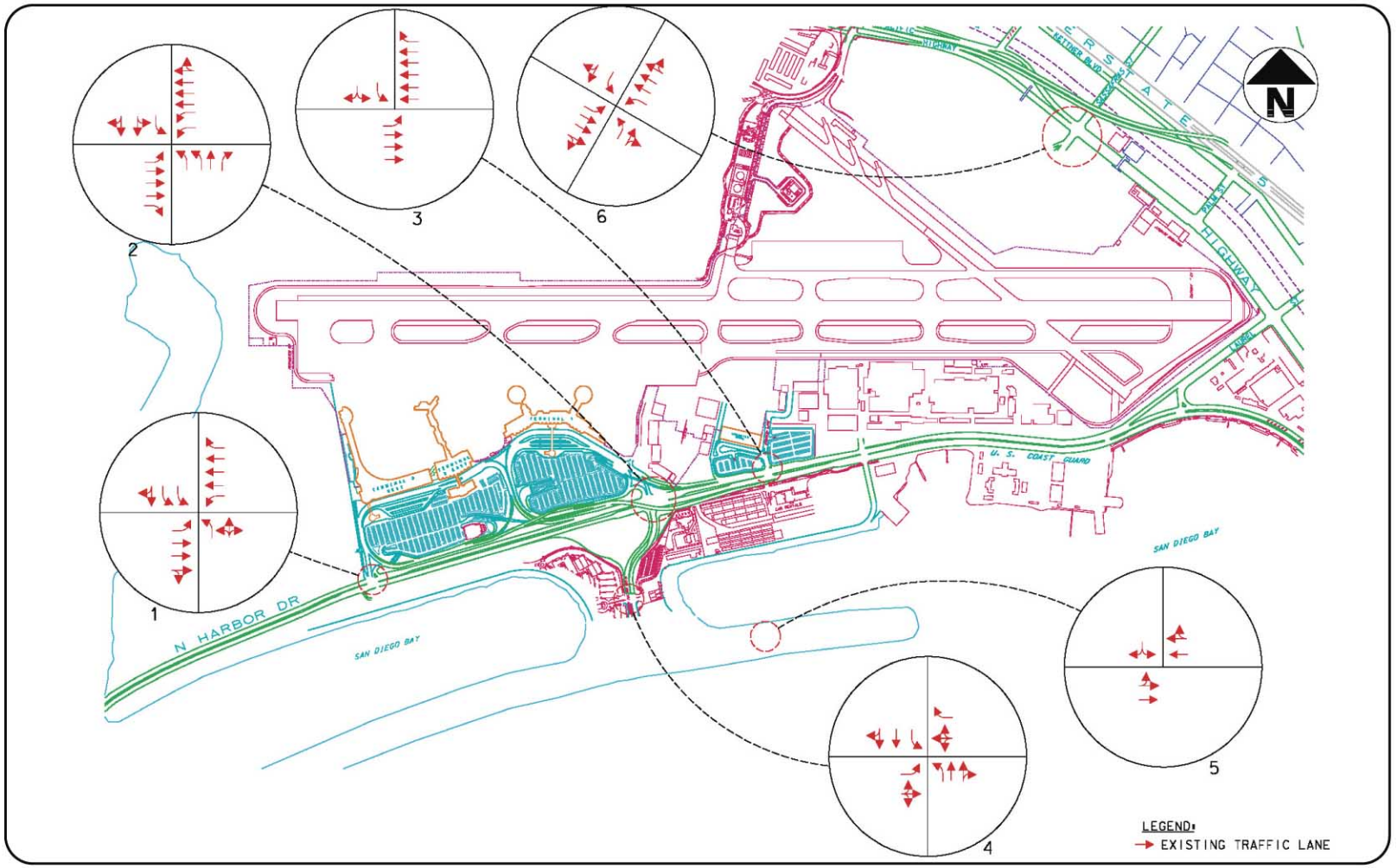


Figure 3.4-13

Existing On-Airport Intersection Lane Geometry

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

Figure 3.4-14 summarizes the existing intersection LOS during the AM and PM peak hours. It is noted these results represent April 2004 conditions. Airport peak activity typically occurs during the summer season. As shown, the intersections providing access to the terminals and ground transportation facilities currently operate at acceptable LOS D and better.

Off-Airport Intersections

Peak period turning movement counts were also conducted at selected off-airport major intersections in April 2004 as part of the *Update of Traffic Data for San Diego International Airport*. These intersections are located along the intersections of Laurel Street, Hawthorn Street, and Grape Street with North Harbor Drive, Pacific Highway, and Kettner Boulevard. In addition to the AM and PM peak periods, the counts were also conducted during the noontime peak period (11:00 AM to 1:00 PM). **Figure 3.4-15** depicts the existing lane configurations at these intersections. Based on the turning volumes and intersection lane geometry, **Figure 3.4-16** presents the existing intersection LOS. As shown, all intersections currently operate at acceptable LOS D or better during peak hours.

3.4.2.4 Peak Period Vehicle Occupancy Counts

Vehicle occupancy is the number of passengers in a vehicle. When compared to the passenger capacity of the vehicle, vehicle occupancy serves as an indicator for the relative passenger congestion inside the vehicle. Vehicle occupancy information is also useful in translating future air passenger forecasts into vehicular traffic activity requiring accommodation by various ground transportation facilities.

Peak period vehicle occupancy counts were conducted in April 2004 as part of the *Update of Traffic Data for San Diego International Airport.* The counts were conducted for vehicles entering the public parking lots, terminal curbs, and rental car facilities. The counts differentiated between private vehicles and commercial vehicles (shuttles, transit, etc.). Counts were conducted during the morning (5:30 AM to 9:00 AM), midday (11:30 AM to 1:30 PM), and afternoon (4:00 PM to 6:00 PM) peak periods. The number of occupants in vehicles was monitored at the following seven locations during the dates indicated:

- Terminal One Curbside (April 22, 2004)
- Terminal One Parking (April 22, 2004)
- Terminal Two Curbside (April 27, 2004)
- Terminal Two Parking (April 27, 2004)
- Commuter Terminal Curbside (April 22, 2004)
- Rental Car Return at North Harbor Drive (April 21, 2004)
- Rental Car Return at Harbor Island Drive (April 21, 2004)

Average weekday occupancy was about 1.6 passengers per private vehicle and 2.8 passengers per commercial vehicle, as shown in **Table 3.4-5**. Average occupancy was highest during the AM peak period for private vehicles with about 1.7 passengers per vehicle. The highest occupancy for commercial vehicles was observed during the PM peak period at 3.0 passengers per vehicle.

Table 3.4-5

Vehicle Occupancy

Location	Total Passenger Vehicles	Total Vehicle[1] Passengers	Average Passenger Per Vehicle	Total Commercial Vehicles	Total Passengers	Average Passenger Per Vehicle
Morning (6:30 AM to 9:00 AM)						
Rental Car Return/N. Harbor Drive (Loc 1)	735	963	1.31	166	559	3.37
Rental Car Return/N. Harbor Island Drive (Loc 2)	33	44	1.33	11	41	3.73
Commuter Terminal	211	387	1.83	329	720	2.19
Terminal 1 Curbside	1,363	2,584	1.90	1,201	3,154	2.63
Terminal 1 Parking	569	719	1.26	6	24	4.00
Terminal 2 Curbside	1,136	2,416	2.13	958	2,612	2.73
Terminal 2 Parking	409	570	1.39	17	61	3.59
Total Morning	**4,456**	**7,683**	**1.72**	**2,688**	**7,171**	**2.67**
Midday (11:30 AM to 1:30 PM)						
Rental Car Return/N. Harbor Drive (Loc 1)	522	751	1.44	128	274	2.14
Rental Car Return/N. Harbor Island Drive (Loc 2)	31	45	1.45	11	43	3.91
Commuter Terminal	114	178	1.56	247	505	2.04
Terminal 1 Curbside	1,481	2,296	1.55	898	2,513	2.80
Terminal 1 Parking	371	497	1.34	11	43	3.91
Terminal 2 Curbside	610	984	1.61	696	2,147	3.08
Terminal 2 Parking	228	300	1.32	42	163	3.88
Total Midday	**3,357**	**5,051**	**1.50**	**2,033**	**5,688**	**2.80**
Afternoon (4:00 PM to 6:00 PM)						
Rental Car Return/N. Harbor Drive (Loc 1)	347	468	1.35	115	297	2.58
Rental Car Return/N. Harbor Island Drive (Loc 2)	18	26	1.44	3	12	4.00
Commuter Terminal	152	243	1.60	262	622	2.37
Terminal 1 Curbside	1,305	2,110	1.62	676	2,087	3.09
Terminal 1 Parking	312	439	1.41	14	53	3.79
Terminal 2 Curbside	486	696	1.43	476	1,556	3.27
Terminal 2 Parking	195	266	1.36	16	64	4.00
Total Afternoon	**2,815**	**4,248**	**1.51**	**1,562**	**4,691**	**3.00**
All Peak Periods						
Rental Car Return/N. Harbor Drive (Loc 1)	1,604	2,182	1.36	409	1,130	2.76
Rental Car Return/N. Harbor Island Drive (Loc 2)	82	115	1.40	25	96	3.84
Commuter Terminal	477	808	1.69	838	1,847	2.20
Terminal 1 Curbside	4,169	6,990	1.68	2,775	7,754	2.79
Terminal 1 Parking	1,252	1,655	1.32	31	120	3.87
Terminal 2 Curbside	2,232	4,096	1.84	2,130	6,315	2.96
Terminal 2 Parking	832	1,136	1.37	75	288	3.84
Total All Peak Periods	**10,628**	**16,982**	**1.60**	**6,283**	**17,550**	**2.79**

[1] May include air passengers and meeters/greeters.

Source: SDCRAA's Update of Traffic Data for SDIA, PARSONS, July 2004.

Average weekend occupancies for all peak periods were approximately the same as the weekday occupancies for private and commercial vehicles (1.6 and 2.8). However, peak period occupancies were slightly higher: 1.9 passengers per private vehicle and 3.3 passengers per commercial vehicle.

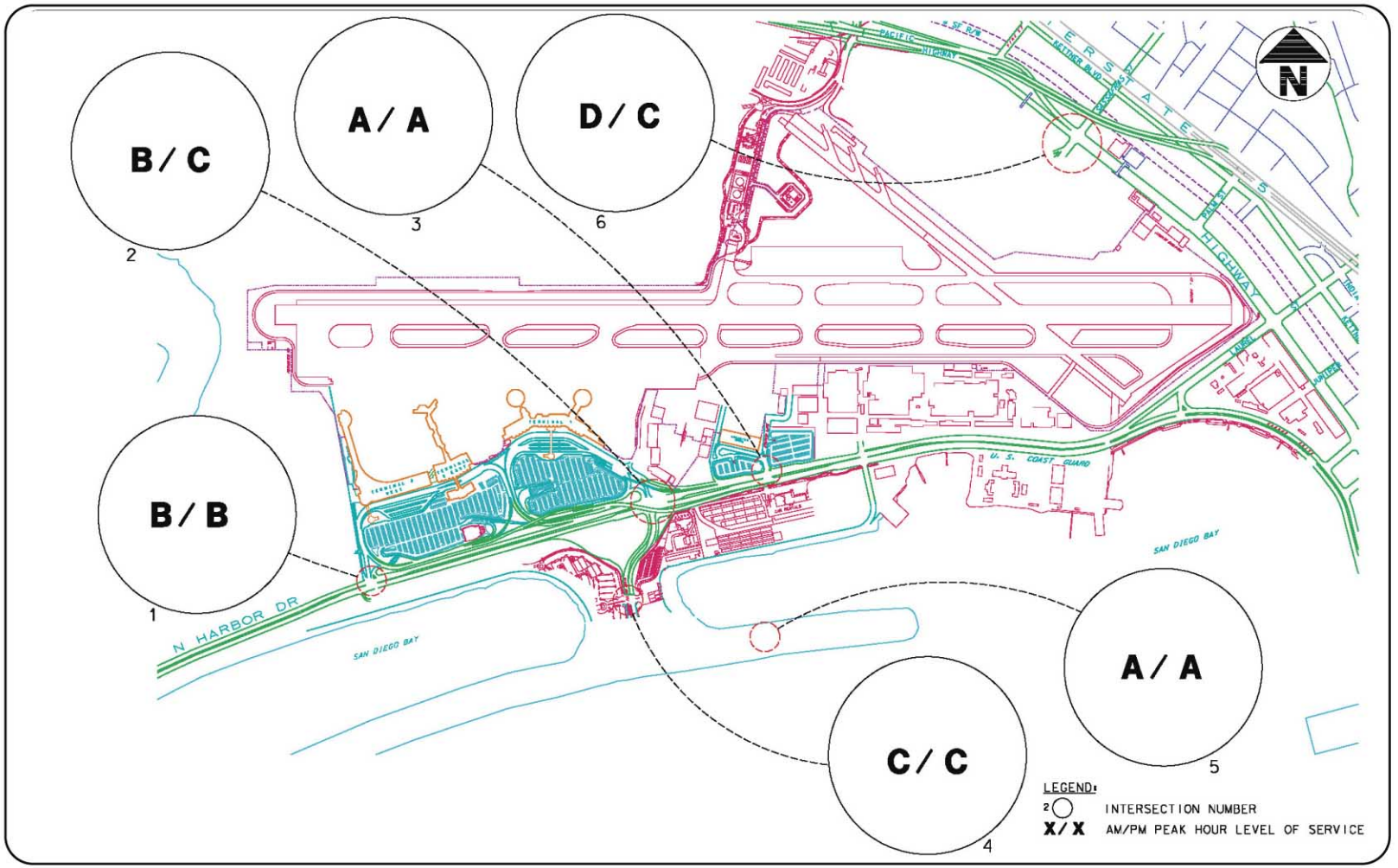


Figure 3.4-14

Existing On-Airport Intersection Levels of Service

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

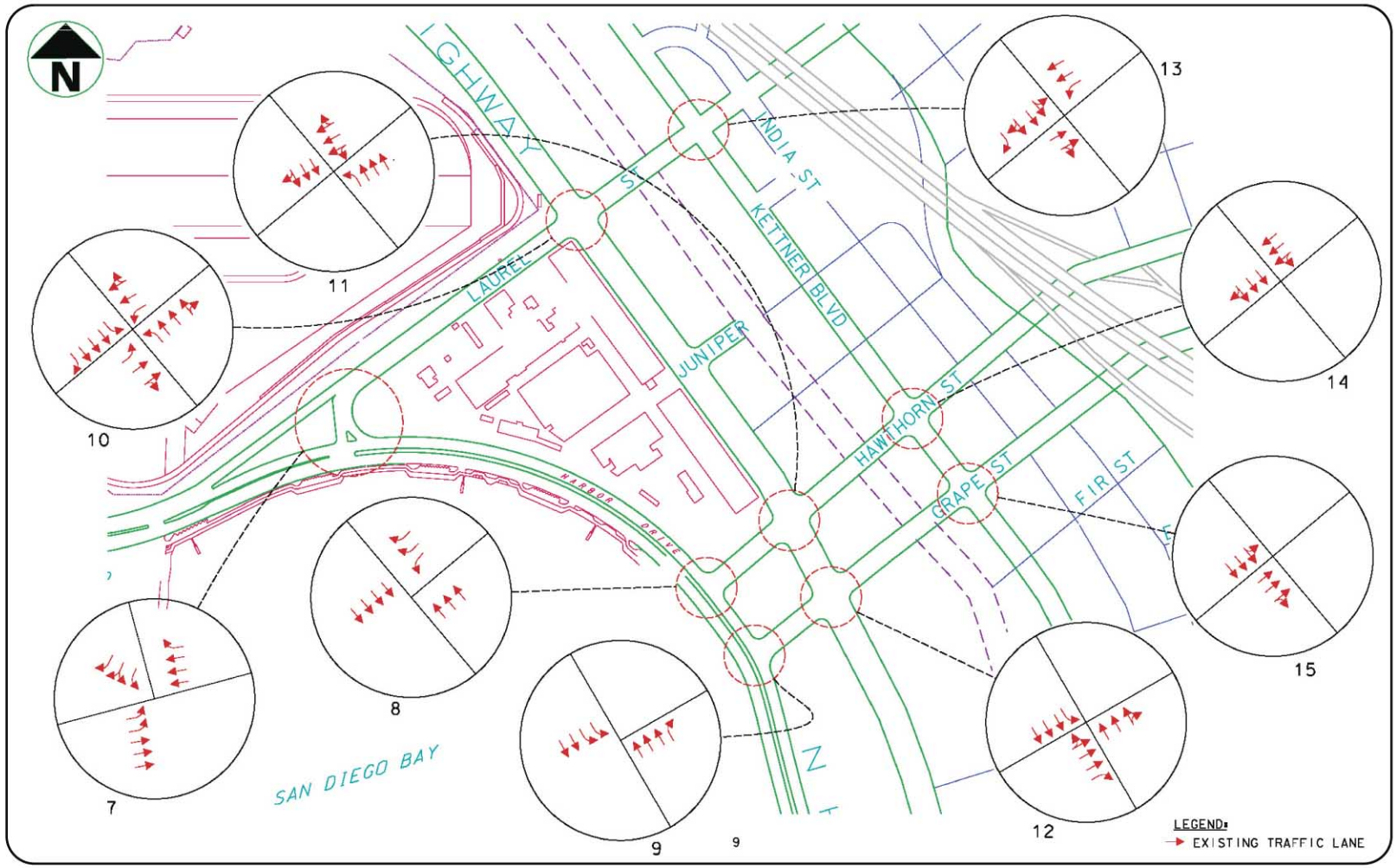


Figure 3.4-15

Existing Off-Airport Intersection Lane Geometry

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

May 2008

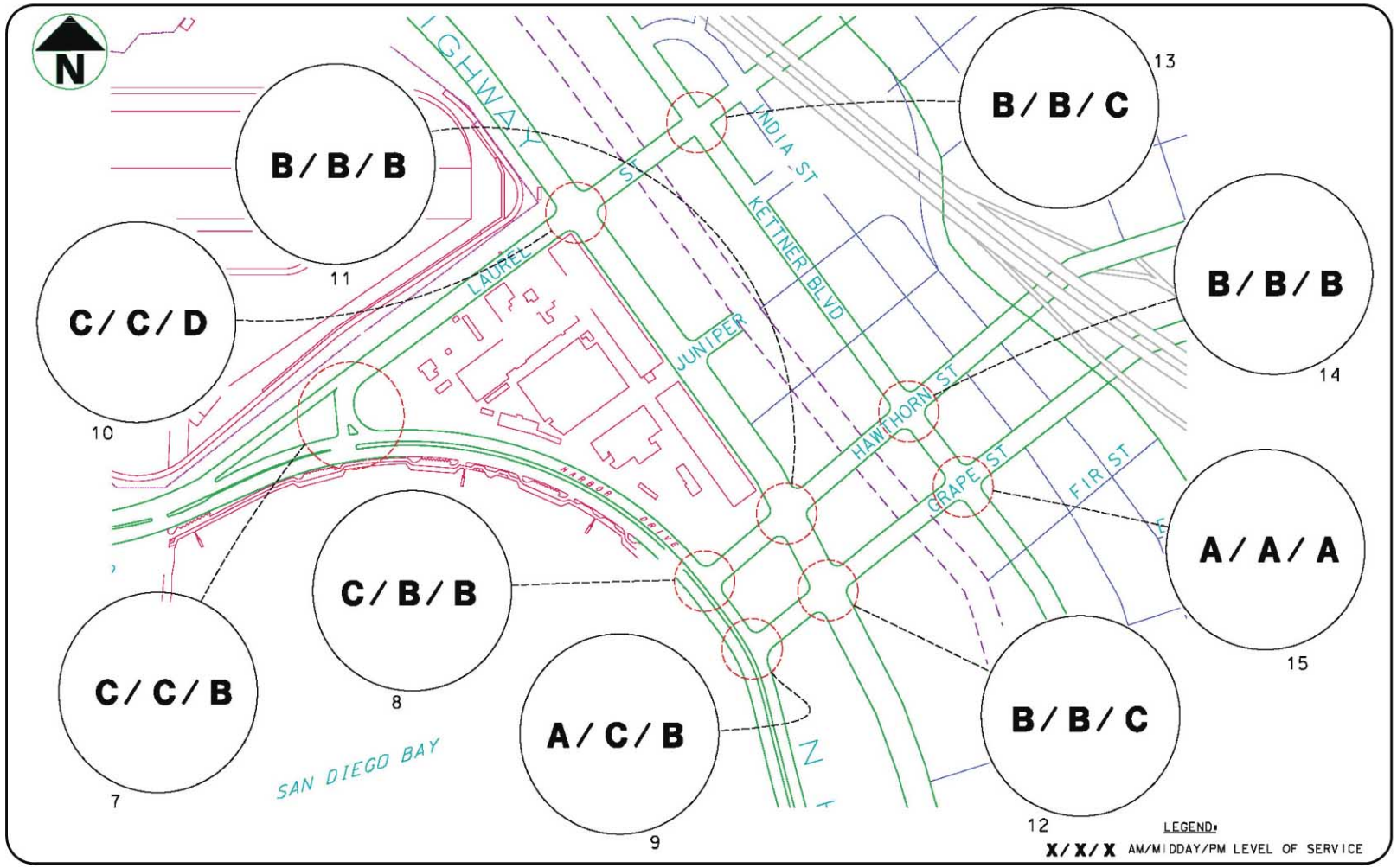


Figure 3.4-16

Existing Off-Airport Intersection Levels of Service

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

3.4.2.5 Peak Period Vehicle Classification Counts

Vehicle classification counts determine the relative composition of airport traffic in terms of vehicle types or modes of transportation. Total airport vehicular traffic is typically estimated using vehicle trip generation rates established for the airport. Information on vehicle classification establishes the make-up of total airport traffic by mode.

Vehicle classification counts were conducted in April 2004 as part of the *Update of Traffic Data for San Diego International Airport*. The counts were conducted during the morning (5:30 AM to 9:00 AM), midday (11:30 AM to 1:30 PM), and afternoon (4:00 PM to 6:00 PM) peak periods on a weekday.

The counts were conducted at the following five locations on terminal curbside roadways and parking lot entrances on the dates indicated as follows:

- Terminal One Curbside – Thursday, April 22, 2004
- Terminal One Parking Lot – Thursday, April 22, 2004
- Terminal Two Curbside – Tuesday, April 27, 2004
- Terminal Two Parking Lot – Tuesday, April 27, 2004
- Commuter Terminal – Thursday, April 22, 2004

Vehicles were classified by the following modes:

- Private vehicle
- Taxi
- Rental shuttle
- Remote shuttle (parking)
- Courtesy shuttle (hotel/motel)
- Red Bus (terminal shuttle)
- Limo and Cloud 9
- Commercial (delivery) vehicle
- Public bus
- Others (RVs, all-purpose vehicles, light trucks, etc.)

The private vehicle is the dominant mode, comprising about 70 percent of all vehicles observed, as shown in **Table 3.4-6**. All other types of vehicles comprised less than 10 percent each of the total traffic classified during the count. On terminal roadways, private vehicles accounted for approximately 65 percent of all curbside traffic. Curbside private vehicle share was highest during the PM peak period at the Terminal One roadway, reaching approximately 85 percent of the observed traffic. The Commuter Terminal has a relatively larger share of rental car shuttles compared to the other terminals, ranging from approximately 20 to 30 percent during the peak periods. **Figure 3.4-17** provides a graphical representation of the composition of vehicle traffic types at each terminal curbside.

Table 3.4-6

Vehicle Classification

Location	Courtesy Shuttle	Red Bus	Taxi	Private Vehicle	Rental Shuttle	Off-Air Shuttle	Limo & Cloud 9	Public Bus	Others	Commercial Vehicles	TOTAL
Morning (6:30 AM to 9:00 AM)											
Commuter Terminal	4%	9%	11%	41%	21%	7%	2%	4%	3%	0%	100%
Terminal 1 Curbside	4%	4%	16%	58%	7%	6%	3%	1%	1%	1%	100%
Terminal 2 Curbside	2%	6%	9%	65%	12%	2%	2%	1%	1%	0%	100%
Terminal 1 Parking Lot	0%	0%	0%	99%	0%	0%	1%	0%	0%	0%	100%
Terminal 2 Parking Lot	0%	0%	0%	96%	0%	0%	0%	0%	4%	0%	100%
Midday (11:30 AM to 1:30 PM)											
Commuter Terminal	3%	6%	9%	34%	31%	8%	3%	4%	1%	0%	100%
Terminal 1 Curbside	1%	2%	8%	79%	9%	1%	0%	1%	0%	0%	100%
Terminal 2 Curbside	3%	6%	8%	62%	3%	7%	5%	1%	0%	3%	100%
Terminal 1 Parking Lot	0%	0%	0%	97%	0%	0%	3%	0%	0%	0%	100%
Terminal 2 Parking Lot	0%	0%	0%	84%	0%	8%	5%	0%	3%	0%	100%
Afternoon (4:00 PM to 6:00 PM)											
Commuter Terminal	2%	8%	9%	35%	33%	4%	5%	3%	1%	0%	100%
Terminal 1 Curbside	1%	3%	4%	84%	8%	0%	0%	1%	0%	0%	100%
Terminal 2 Curbside	1%	8%	5%	78%	1%	2%	2%	2%	0%	0%	100%
Terminal 1 Parking Lot	0%	0%	0%	96%	0%	0%	2%	0%	2%	0%	100%
Terminal 2 Parking Lot	0%	0%	0%	93%	0%	1%	3%	0%	2%	0%	100%
Weighted Average – All Locations/Periods	**2%**	**4%**	**8%**	**72%**	**8%**	**3%**	**2%**	**1%**	**1%**	**0%**	**100%**
Weighted Average – All Curbsides/Periods	**2%**	**5%**	**9%**	**66%**	**10%**	**3%**	**2%**	**1%**	**0%**	**0%**	**100%**

Note: Due to rounding, totals may not add up exactly.

Source SDCRAA's Update of Traffic Data for SDIA, PARSONS, July 2004.

3.4.2.6 Vehicle Dwell Times

Vehicle dwell time refers to the duration of time a vehicle is parked on the curb to load or unload passengers and baggage. Vehicle dwell times have a direct impact on curbside space requirements. As vehicles stay longer at the curb, fewer vehicles can use the curb to load/unload passengers, thereby increasing the demand for additional curb spaces. Vehicle dwell times enable the estimation of curbside capacity and LOS.

Vehicle dwell time surveys were conducted in May 2004 at terminal curbs as part of the *Update of Traffic Data for San Diego International Airport*. The surveys determined the length of time vehicles stopped at the curb to load or unload passengers and baggage (dwell time), the number of passengers loaded or unloaded, and the types of vehicles used. Vehicles from different curb lanes were selected at random and observed. The survey was conducted at three terminal curbside locations during the morning (5:30 AM to 9:00 AM), midday (11:30 AM to 1:30 PM), and afternoon (4:00 PM to 6:00 PM) peak periods.

The survey schedule was as follows:

- Terminal One – Thursday, May 20, 2004
- Terminal Two – Tuesday, May 25, 2004
- Commuter Terminal – Wednesday, May 26, 2004

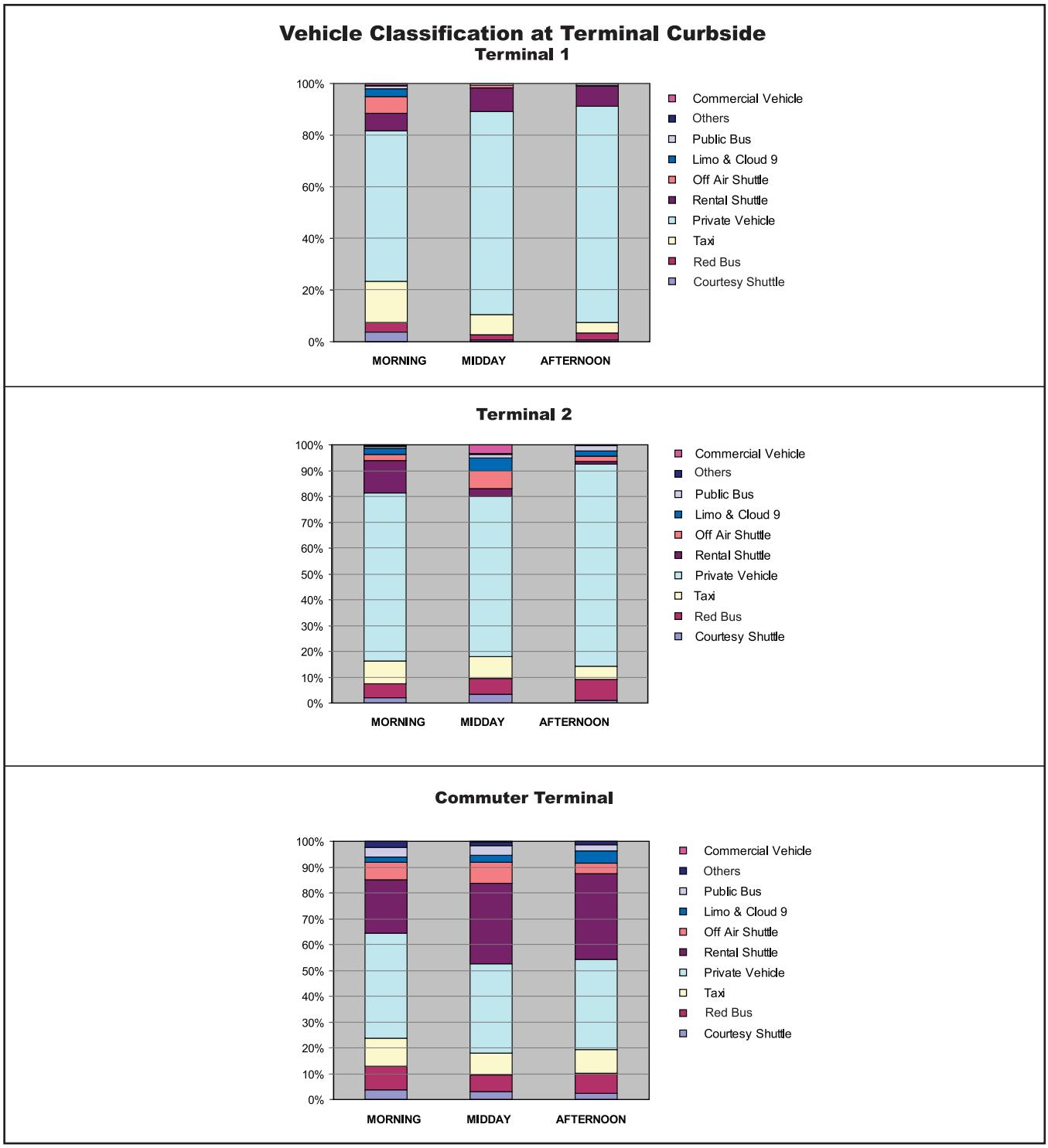


Figure 3.4-17

Vehicle Classification at Terminal Curbside

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

Three vehicle types were distinguished during the survey:

- Personal (Private) Vehicles
- Shuttles (including for-hire, rental car, remote parking, and courtesy buses)
- Taxis

The following was observed: arrival times in minutes and seconds, departure times in minutes and seconds, and the net gain or loss of passengers in each vehicle. Dwell time was measured from the time each vehicle's door(s) opened to the time the door(s) closed.

After approximately 4,500 vehicles were observed at all locations and peak periods, it was determined that private vehicles accounted for about 80 percent of the observations, and shuttles and taxis each comprised about 10 percent, as shown in **Table 3.4-7**.

Average dwell times for all locations and peak periods were approximately 1.7 minutes for private vehicles, 1.0 minute for shuttles, and 1.3 minutes for taxis. Average dwell times were generally longer for loading than for unloading. Dwell times were longest for private vehicles and shuttles during the midday peak period, while average taxi dwell time was longest during the AM peak period.

Table 3.4-7

Vehicle Dwell Times (in minutes)

Location	Loading	Unloading	Wait But No Load	All
Commuter Terminal				
Morning				
Personal Vehicle	2.24	3.24	1.71	2.31
Shuttle	0.84	0.64	N/A	0.81
Taxi	1.37	2.41	N/A	1.45
Midday				
Personal Vehicle	1.89	1.96	1.81	1.90
Shuttle	1.02	0.26	N/A	0.93
Taxi	1.67	0.00	N/A	1.67
Afternoon				
Personal Vehicle	2.20	2.10	1.79	2.14
Shuttle	1.08	0.41	N/A	1.01
Taxi	1.65	0.00	N/A	1.65
Terminal One				
Morning				
Personal Vehicle	0.88	1.38	1.58	1.35
Shuttle	0.71	0.95	N/A	0.94
Taxi	0.75	1.20	N/A	1.20
Midday				
Personal Vehicle	1.73	1.73	1.95	1.75
Shuttle	1.41	0.87	N/A	0.96
Taxi	1.46	0.97	N/A	1.02
Afternoon				
Personal Vehicle	1.23	1.11	1.73	1.22
Shuttle	0.63	0.63	N/A	0.63
Taxi	7.52	0.96	N/A	1.06
Terminal Two				
Morning				
Personal Vehicle	3.38	1.98	1.97	2.00
Shuttle	0.83	1.00	N/A	0.99
Taxi	1.13	1.52	N/A	1.52

Table 3.4-7

Vehicle Dwell Times (in minutes)

Location	Loading	Unloading	Wait But No Load	All
Midday				
Personal Vehicle	2.17	1.64	2.53	1.99
Shuttle	3.06	0.95	N/A	1.24
Taxi	2.70	1.21	N/A	1.42
Afternoon				
Personal Vehicle	1.82	1.26	2.87	1.89
Shuttle	1.46	1.83	N/A	1.73
Taxi	0.50	0.75	N/A	0.71
All Terminals (Weighted Average)				
Morning				
Personal Vehicle	1.90	1.70	1.74	1.72
Shuttle	0.83	0.97	N/A	0.95
Taxi	1.33	1.38	N/A	1.38
Midday				
Personal Vehicle	1.92	1.70	2.25	1.87
Shuttle	1.44	0.88	N/A	1.05
Taxi	1.81	1.04	N/A	1.19
Afternoon				
Personal Vehicle	1.67	1.26	2.16	1.56
Shuttle	1.11	0.98	N/A	1.02
Taxi	1.74	0.93	N/A	1.05
All Terminals and Peak Periods (Weighted Average)				
Personal Vehicle	1.80	1.59	2.14	1.71
Shuttle	1.15	0.95	N/A	0.99
Taxi	1.60	1.22	N/A	1.27

Source: SDCRAA's Update of Traffic Data for SDIA, PARSONS, July 2004.

3.4.2.7 Rental Car Operator Survey

Rental car and shuttle traffic typically constitute a significant portion of airport-related traffic. Prior to the IAP improvements at SDIA, rental car companies used to operate from the terminal parking lots and adjacent facilities, resulting in significant rental car traffic on terminal roadways. Currently, all rental car operators are located off-airport with the major operators located off Rental Car Access Road, providing free shuttle service to the terminals. This resulted in a significant decrease in rental car traffic but an increase in shuttle traffic on terminal roadways.

The rental car information provides an estimate of the relative proportion of air passengers using rental cars. Information on car rental and return activities enables an assessment of ready/return and storage space requirements for master-planning purposes.

The rental car operator survey was conducted in May 2004 as part of the *Update of Traffic Data for San Diego International Airport.* Surveys were distributed to on-airport rental car operators. Operators were asked to record the car inventory at the beginning of a weekday as well as the number of vehicles rented, returned, and transferred to/from the site for maintenance on an hourly basis. Only four rental car operators responded: Hertz, Avis, National, and Payless. These operators represent approximately 60 percent of the car rental market share at SDIA.

Table 3.4-8 summarizes the seven-day average daily transactions and traffic activity. The four operators generated approximately 3,900 VPD including car rentals, returns, and approximately 180 VPD transfers between ready/return areas and service/maintenance/storage areas.

Table 3.4-8

Existing Rental Car Transactions

	7-Day Average				Total Including Transfers
	In		Out		
Time	Retuned	Transfers	Rented	Transfers	
5:00	138	0	1	0	140
6:00	141	0	4	0	145
7:00	110	11	15	31	167
8:00	89	17	74	6	185
9:00	126	16	131	6	279
10:00	157	7	142	10	317
11:00	152	2	223	8	384
12:00	155	12	207	23	398
13:00	146	5	177	3	331
14:00	138	2	146	3	289
15:00	117	2	117	3	239
16:00	113	16	81	0	211
17:00	91	0	89	0	180
18:00	75	0	104	0	179
19:00	57	0	111	0	168
20:00	57	0	124	0	181
21:00	32	1	92	0	125
Total	**1,894**	**92**	**1,840**	**92**	**3,919**

Source: HNTB estimates based on data from the SDCRAA's Update of Traffic Data for SDIA, PARSONS, July 2004, representing four rental car operators.

Figure 3.4-18 illustrates the daily pattern of rental car activity at the four sites. Friday is the peak day of rental car activity with approximately 4,600 VPD including rentals, returns, and transfers, followed by Sunday and Thursday. Tuesday and Saturday are the slowest days of the week for rental car activity, averaging approximately 3,200 VPD.

Figure 3.4-19 depicts the hourly pattern of rental car transactions. Total rental car traffic peaked during 11:00 AM to 1:00 PM in both directions with approximately 400 VPH. Peak car rental activity occurs at 11:00 AM with approximately 220 VPH rented out. A secondary peak for car rentals was observed at 8:00 PM. Peak car return activity occurs from 10:00 AM to 2:00 PM with approximately 150 VPH returned.

3.4.2.8 Bus Passenger Boarding and Alighting

As part of the *Update of Traffic Data for San Diego International Airport*, bus passenger boarding and alighting surveys were conducted in May 2004 at five terminal bus stops: two each at Terminals One and Two and one at the Commuter Terminal. The surveys observed service and ridership characteristics of the public bus transit at SDIA. A surveyor noted the bus number, scheduled and actual arrival times, departure times, and the number of boarding and alighting passengers for each bus in the survey form. Passengers were segregated into airport/airline employees and airport/visitor patrons. Observations were made from 5:30 AM to 6:00 PM on Wednesday, May 12, 2004.

A total of 72 buses were observed at all stops during the survey period, as shown in **Table 3.4-9**. Buses arrived at the stops approximately every 10 minutes. These buses unloaded 374 riders and loaded 354 riders during the survey period averaging out to five loading and five unloading passengers per bus. Two-thirds of the bus riders were estimated to be air passengers, and the remainder was airport employees. Approximately 60 percent of the bus passengers were associated with Terminal One, 30 percent with Terminal Two, and the remaining 10 percent with the Commuter Terminal, as shown in **Figure 3.4-20**. The highest boarding and alighting activity was observed at Stop 3 of Terminal One with a total of 260 passengers loading and unloading during the survey period.

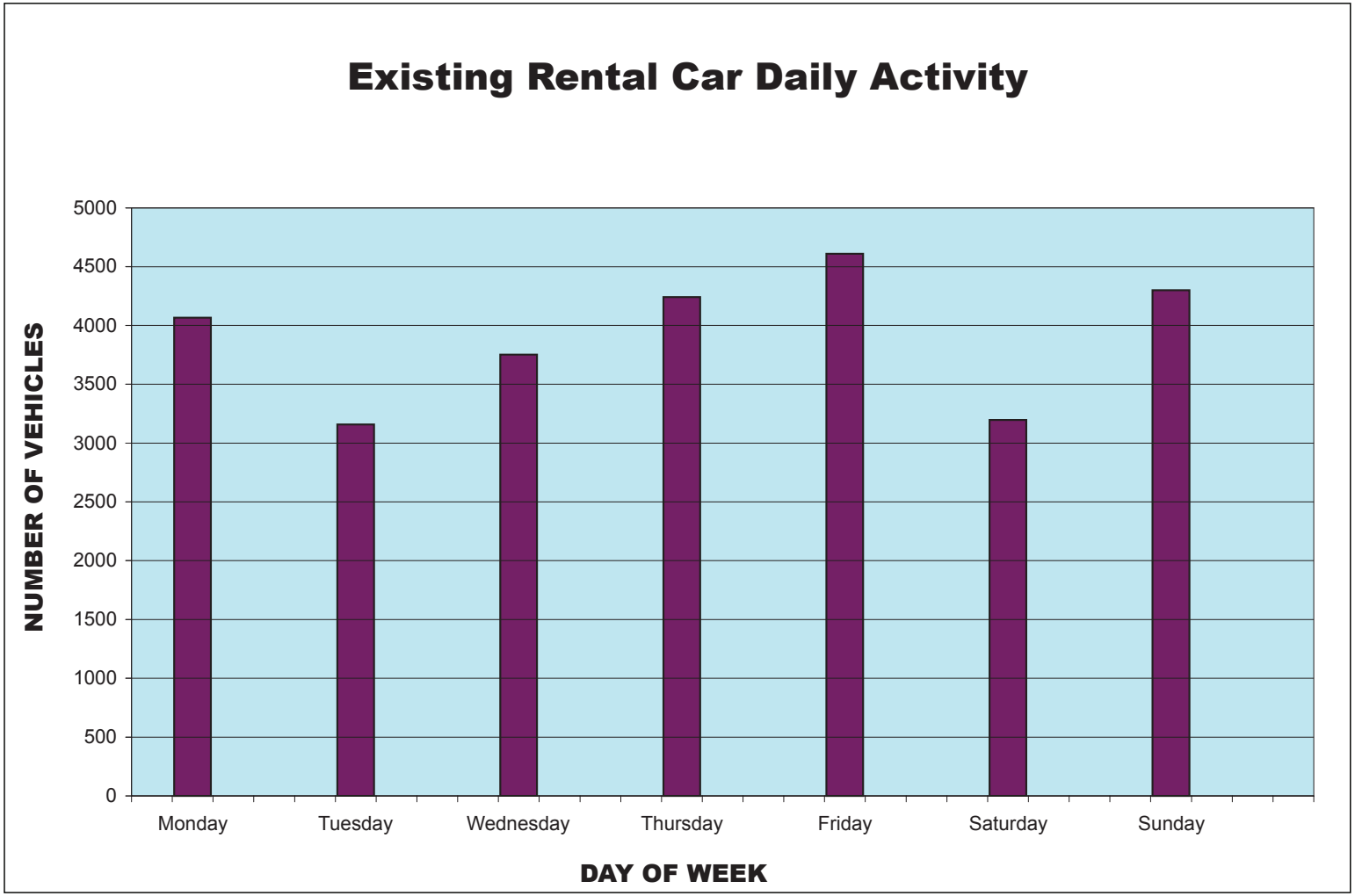
Table 3.4-9

Transit Boarding and Alighting Survey Results

				Boarding Passengers			Alighting Passengers			Boarding & Alighting Passengers		
Terminal	Stop Number	Time Period	Number of Buses in Time Period	Airport Airline Employees	Airport Visitors / Patrons	Total	Airport Airline Employees	Airport Visitors / Patrons	Total	Airport Airline Employees	Airport Visitors / Patrons	Total
Commuter Terminal												
	1	AM[1]	35	8	5	13	6	4	10	14	9	23
	1	PM[2]	37	12	19	31	7	12	19	19	31	50
		TOTAL	**72**	**20**	**24**	**44**	**13**	**16**	**29**	**33**	**40**	**73**
Terminal 1												
	2	AM[1]	35	5	5	10	21	14	35	26	19	45
	2	PM[2]	37	6	22	28	26	60	86	32	82	114
		Subtotal	**72**	**11**	**27**	**38**	**47**	**74**	**121**	**58**	**101**	**159**
	3	AM[1]	35	9	57	66	34	20	54	43	77	120
	3	PM[2]	37	39	54	93	27	20	47	66	74	140
		Subtotal	**72**	**48**	**111**	**159**	**61**	**40**	**101**	**109**	**151**	**260**
		TOTAL	**--**	**59**	**138**	**197**	**108**	**114**	**222**	**167**	**252**	**419**
Terminal 2												
	4	AM[1]	35	2	8	10	17	29	46	19	37	56
	4	PM[2]	37	22	15	37	10	11	21	32	26	58
		Subtotal	**72**	**24**	**23**	**47**	**27**	**40**	**67**	**51**	**63**	**114**
	5	AM[1]	35	7	13	20	5	22	27	12	35	47
	5	PM[2]	37	2	44	46	4	25	29	6	69	75
		Subtotal	**72**	**9**	**57**	**66**	**9**	**47**	**56**	**18**	**104**	**122**
		TOTAL	**--**	**33**	**80**	**113**	**36**	**87**	**123**	**69**	**167**	**236**
All Terminals												
	All Stops	AM[1]	35	31	88	119	83	89	172	114	177	291
	All Stops	PM[2]	37	81	154	235	74	128	202	155	282	437
		TOTAL	**72**	**112**	**242**	**354**	**157**	**217**	**374**	**269**	**459**	**728**
		Percent	**--**	**15%**	**33%**	**49%**	**22%**	**30%**	**51%**	**37%**	**63%**	**100%**

[1] AM Time Period from 5:30 AM to Noon
[2] PM Time Period from Noon to 6:00 PM

Source: SDCRAA's Update of Traffic Data for SDIA, Parsons, July 2004.



Note:
Totals include rentals, returns and transfers

Figure 3.4-18

Existing Rental Car Daily Activity

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

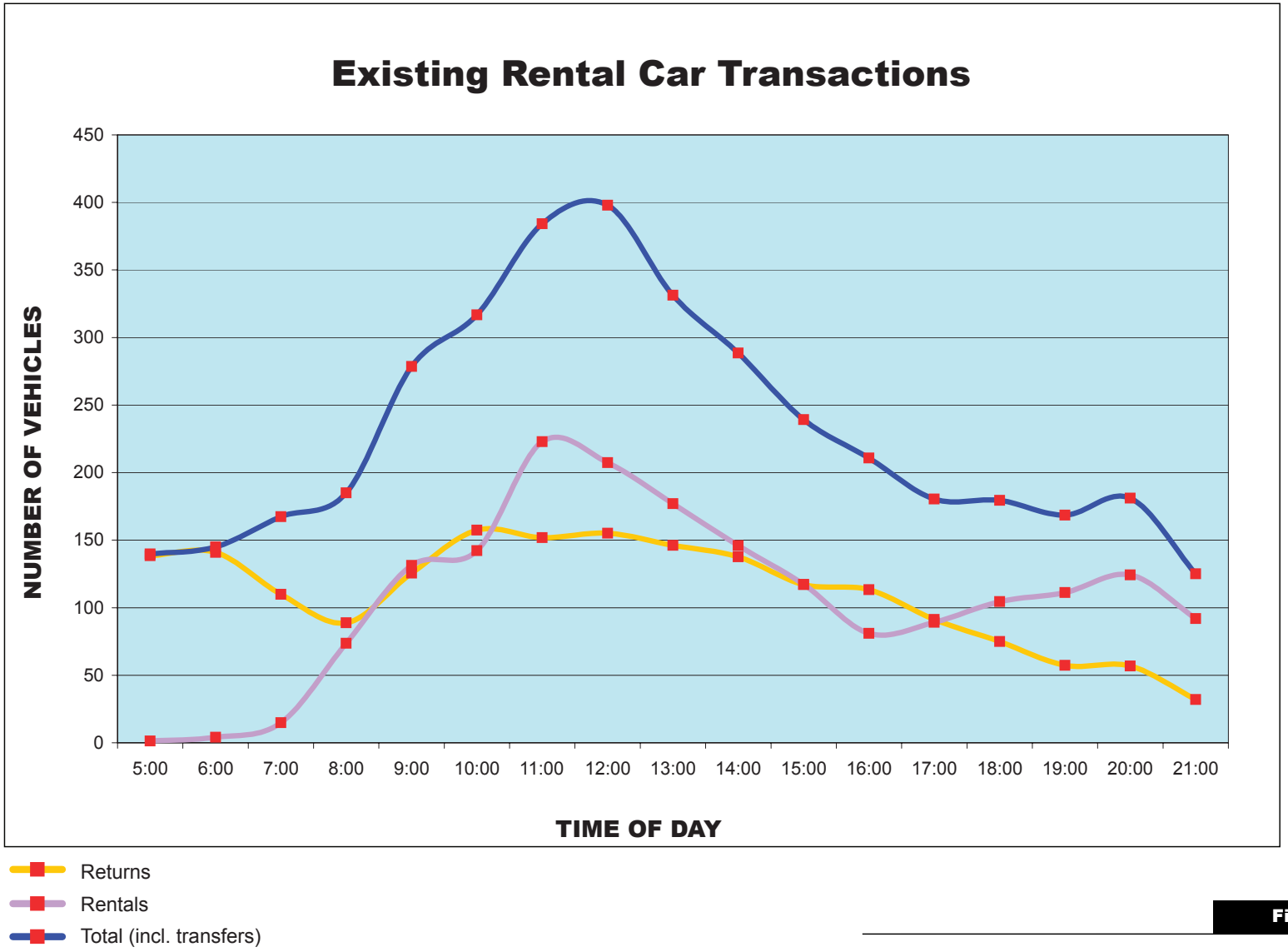


Figure 3.4-19

Existing Rental Car Transactions

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

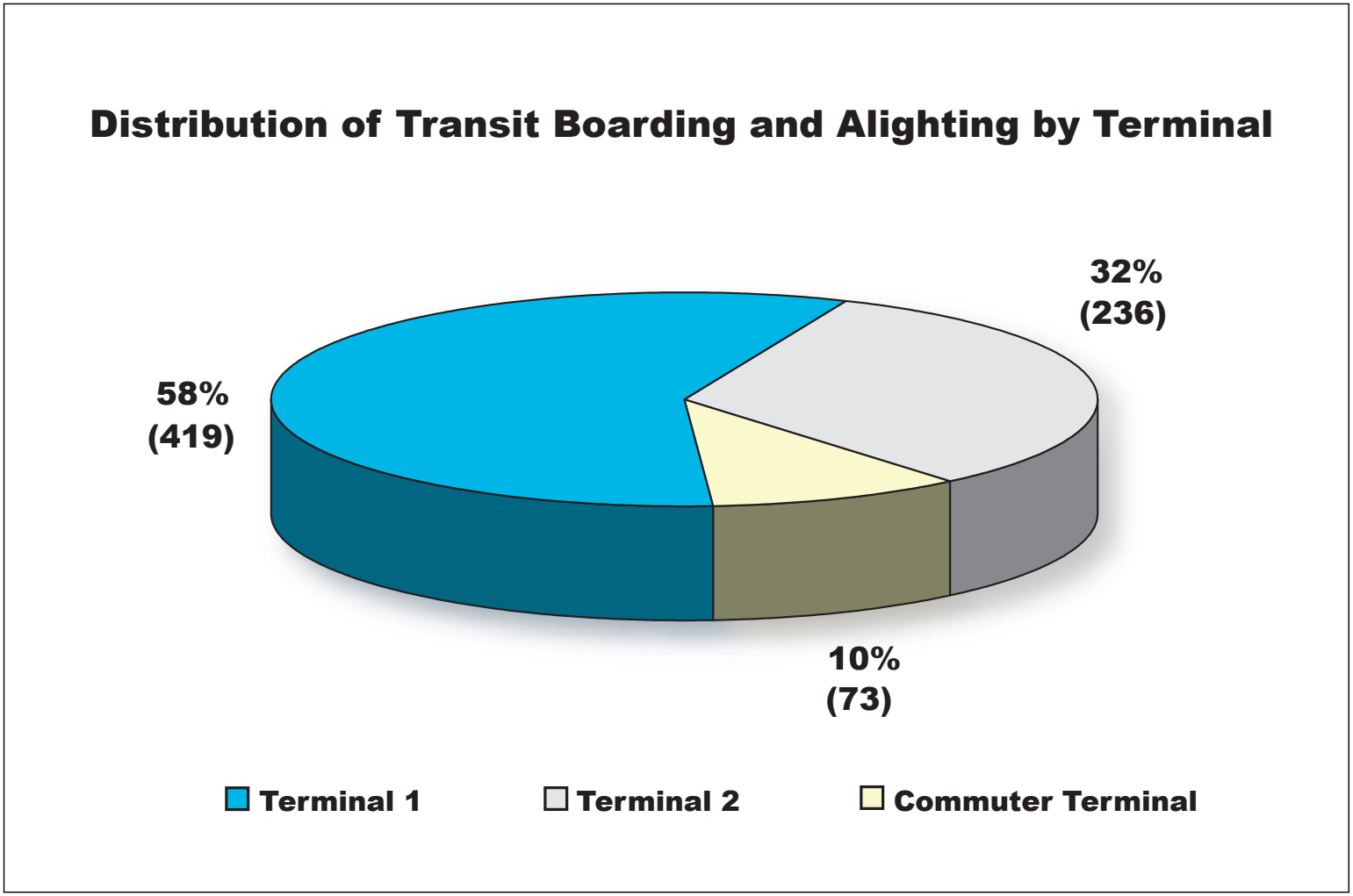


Figure 3.4-20

Distribution of Transit Boarding and Alighting by Terminal

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

3.4.2.9 Person Counts

A count of persons entering and exiting the terminal doors provides a benchmark for the number of person trips generated by each of the terminals, as well as the relative directional (inbound or outbound), spatial (by terminal door), and temporal (hourly) distribution of pedestrian activity. The passenger distribution by terminal door has a direct impact on the curbside distribution of vehicle loading/unloading activity. Indirectly, this information assists in the estimation of the number and proportion of pedestrians (which can be translated to vehicles) using the curbs, parking facilities, or Transit Plazas. The counts on pedestrian bridges are used to estimate pedestrian LOS.

A count of persons entering and exiting the terminal doors, including pedestrian bridges or Sky Bridges, was conducted in May 2004 as part of the *Update of Traffic Data for San Diego International Airport*. The counts included 19 doors in Terminal One and one pedestrian bridge, 19 doors in Terminal Two including two pedestrian bridges, and four doors in the Commuter Terminal. The counts were conducted on Wednesday, May 26, 2004 for the Commuter Terminal and on Thursday, May 27, 2004 for Terminals One and Two. Continuous counts were made from 5:30 AM to 6:00 PM.

Table 3.4-10 summarizes the count results by hour and terminal. A total of approximately 75,800 persons were observed entering and exiting the three terminal buildings during the survey period. Terminal One accounted for approximately 50 percent of the total counts with Terminal Two accounting for 45 percent and the remaining 5 percent observed at the Commuter Terminal, as shown in **Figure 3.4-21**.

Table 3.4-10

Person Counts at SDIA Terminals

	Terminal 1			Terminal 2			Commuter Terminal			All Terminals		
Time	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
5:30 AM	390	88	478	773	185	958	71	16	87	1,234	289	1,523
6:00 AM	1,523	530	2,053	1,977	711	2,688	174	73	247	3,674	1,314	4,988
7:00 AM	1,391	491	1,882	1,799	739	2,538	156	101	257	3,346	1,331	4,677
8:00 AM	1,165	957	2,122	1,522	852	2,374	134	147	281	2,821	1,956	4,777
9:00 AM	1,453	820	2,273	1,432	452	1,884	187	115	302	3,072	1,387	4,459
10:00 AM	1,725	1,813	3,538	2,453	1,217	3,670	158	116	274	4,336	3,146	7,482
11:00 AM	2,024	1,800	3,824	2,479	2,282	4,761	93	128	221	4,596	4,210	8,806
12:00 PM	2,384	2,340	4,724	2,164	1,606	3,770	209	193	402	4,757	4,139	8,896
1:00 PM	1,753	1,603	3,356	1,825	1,422	3,247	157	159	316	3,735	3,184	6,919
2:00 PM	1,753	1,603	3,356	1,825	1,422	3,247	221	194	415	3,799	3,219	7,018
3:00 PM	1,664	1,596	3,260	885	916	1,801	188	214	402	2,737	2,726	5,463
4:00 PM	1,484	984	2,468	957	796	1,753	137	222	359	2,578	2,002	4,580
5:00 PM	1,452	2,353	3,805	1,074	1,024	2,098	143	166	309	2,669	3,543	6,212
Total	**20,161**	**16,978**	**37,139**	**21,165**	**13,624**	**34,798**	**2,028**	**1,844**	**3,872**	**43,354**	**32,446**	**75,800**
Percent	**47%**	**52%**	**49%**	**49%**	**42%**	**46%**	**5%**	**6%**	**5%**	**100%**	**100%**	**100%**
In/Out %	**54%**	**46%**	**100%**	**61%**	**39%**	**100%**	**52%**	**48%**	**100%**	**57%**	**43%**	**100%**

Source: SDCRAA's Update of Traffic Data for SDIA, PARSONS, July 2004.

Maximum peak hour pedestrian flow of approximately 8,900 persons per hour (PPH) was observed at noon (noon to 1:00 PM). Pedestrian flow was also heavy prior to noon (11:00 AM to noon) but at slightly lower volume than maximum flow. Directional flow was predominantly inbound with approximately 57 percent going into the terminal buildings during the survey period.

Figure 3.4-22 illustrates the distribution of pedestrian movements per terminal door. As shown, approximately 15,000 pedestrians crossed the Terminal One Sky Bridge in both directions during the survey period: 60 percent exiting and 40 percent entering. The east and west Sky Bridges on Terminal Two accommodated approximately 2,500 and 4,000 pedestrians, respectively, with the east Sky Bridge carrying predominantly inbound pedestrians and the west Sky Bridge carrying predominantly outbound pedestrians.

Excluding the Sky Bridges, daily inbound people movement in Terminal One was concentrated at Doors 4, 5, and 6 east of the Sky Bridge and Doors 16, 17, and 18 west of the Sky Bridge. Inbound pedestrian flow in Terminal Two was highest at Door 19, followed by Door 4 near the east end of the terminal. At the Commuter Terminal, inbound flow was heaviest at the easternmost Door 1, while outbound flow was heaviest at the westernmost Door 4.

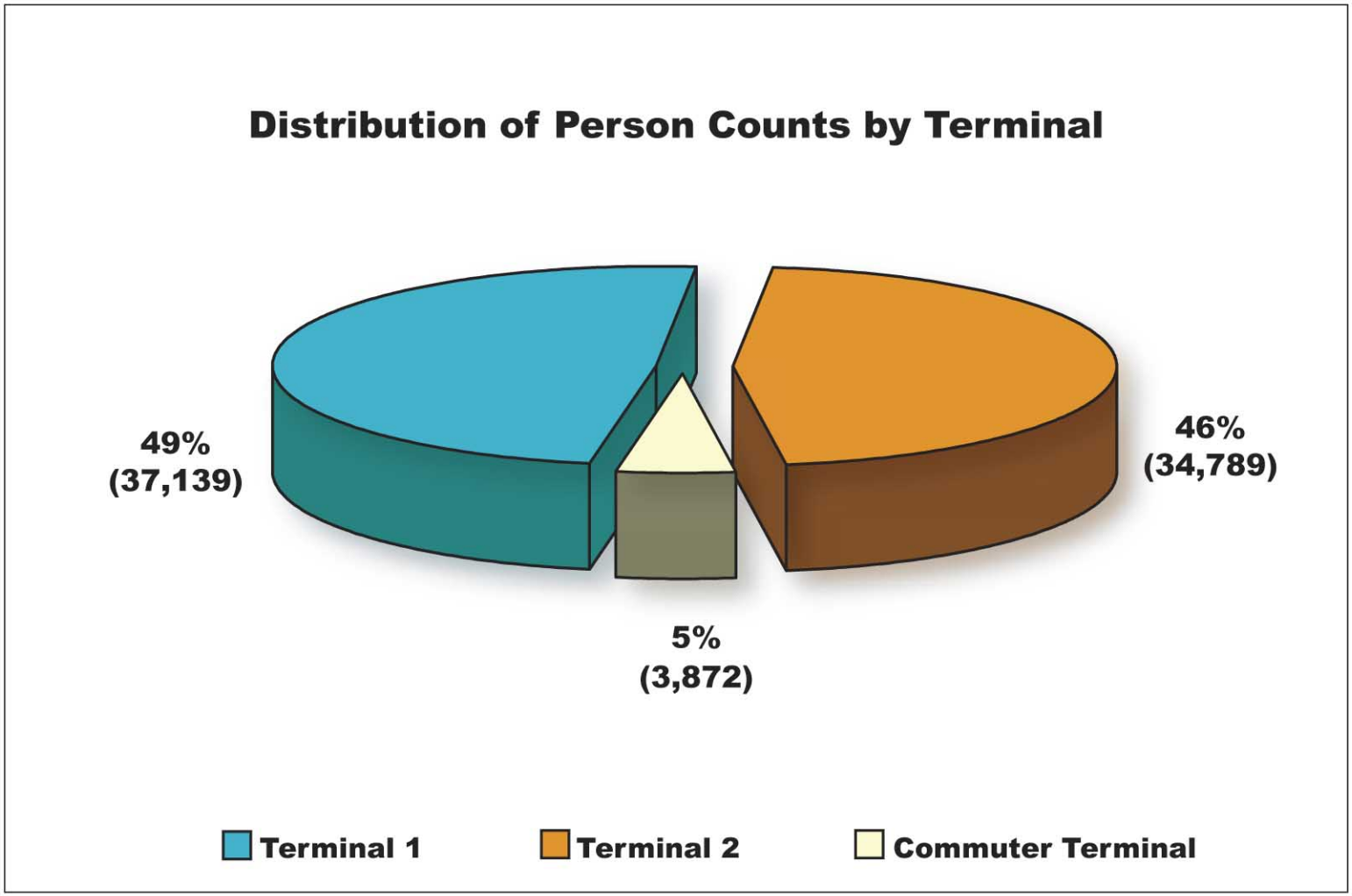
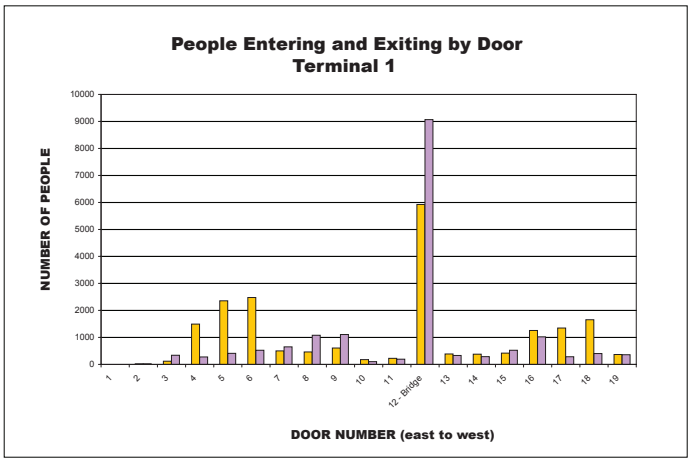
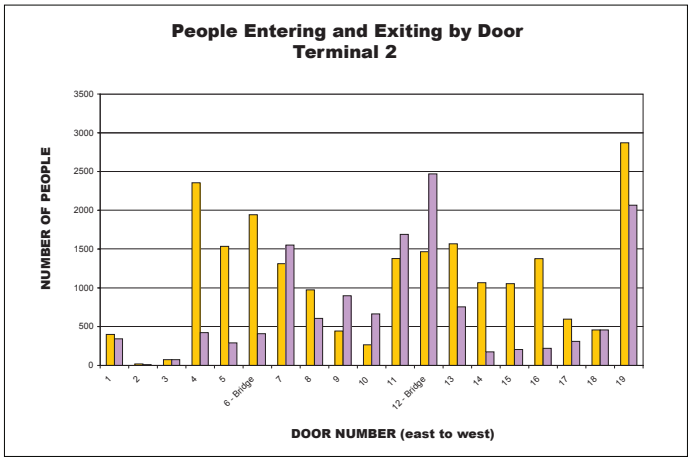


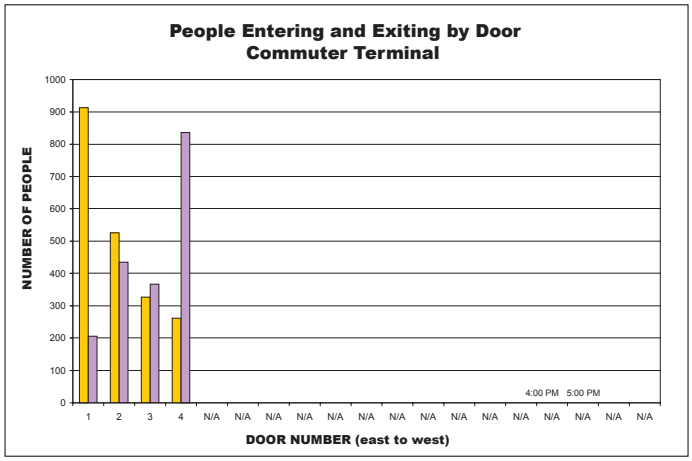
Figure 3.4-21

Distribution of Person Counts by Terminal

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006







People Entering

People Exiting

Figure 3.4-22

Distribution of Person Counts by Terminal Door

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

Figure 3.4-23 shows the hourly distribution of pedestrian movement by terminal. As shown, Terminal One had a peak inbound and outbound pedestrian flow of approximately 2,400 PPH in each direction at noon. Peak outbound flow was observed at 5:00 PM. A secondary inbound peak occurred in the morning at approximately 6:00 AM.

In Terminal Two, inbound pedestrian flow peaked between 10:00 AM and noon with approximately 2,500 PPH. A secondary inbound peak was observed around 6:00 AM with approximately 2,000 PPH. Outbound flow peaked at 11:00 AM with approximately 2,300 PPH.

The pedestrian flows at the Commuter Terminal revealed several peaks during the day. Inbound peaks were observed at 6:00 AM, 9:00 AM, noon, and 2:00 PM, with flows averaging approximately 200 PPH. Peak outbound flow occurs at 4:00 PM with approximately 230 PPH and relatively heavy flows during 2:00 PM to 5:00 PM. Secondary outbound peaks were also observed at 8:00 AM and noon.

3.4.2.10 Terminal Area Public Parking Activity

Traffic counts at the entrances and exits of public parking lots provide benchmark information for the number of air passengers using both private vehicles and parking facilities. Coupled with the inventory of occupied parking spaces prior to the counts, this information is used to estimate the relative parking occupancy or the proportion of parking spaces occupied at any given time. This information, together with parking duration information, aids in estimating existing parking utilization and future parking requirements.

Parking data was obtained from Lindbergh Parking Inc. for the on-site airport public parking lots in May 2004 as part of the *Update of Traffic Data for San Diego International Airport*. This data was collected via the parking cashiers and electronic counters. The data includes hourly inventory, hourly entering/exiting traffic data, and parking duration data for Parking Lots 1 and 2. Lindbergh Parking provided data for Lots 1 and 2 combined; separate information for each lot was not provided.

Daily Parking Activity

Figure 3.4-24 shows the daily parking in/out activity for Lots 1 and 2 combined. Monday, Thursday and Friday exhibited high parking activity with approximately 7,000 vehicles per day observed in each direction. Inbound activity was slightly higher on Monday and Tuesday, while outbound activity was slightly higher from Thursday to Sunday.

Hourly Parking Activity

Figure 3.4-25 shows the hourly distribution of parking activity for the combined Lots 1 and 2. Peak parking activity occurred at 8:00 PM with approximately 1,000 VPH entering and exiting the parking lots. Parking lot activity was also heaviest at 7:00 PM and 9:00 PM. A secondary noontime peak period occurred from 11:00 AM to 2:00 PM with hourly volumes of approximately 800 VPH.

Hourly Parking Accumulation

Based on information provided by the Authority, the average nighttime parking inventory at SDIA is approximately 1,400 occupied spaces in Lots 1 and 2. Using the hourly parking activity data presented above, hourly parking accumulation and occupancy were estimated. Parking occupancy was based on the estimated combined capacity of Lots 1 and 2 of approximately 2,580 spaces. **Figure 3.4-26** illustrates the hourly parking occupancy of the combined lots. As shown, parking occupancy exceeded 80 percent throughout most of the day from 9:00 AM to 5:00 PM. Peak occupancy of approximately 85 percent occurred during the noontime peak. These high percentages (80 to 85) are indicative of the high demand for on-airport parking at SDIA. As discussed previously in Section 3.4.1.3, Parking Facilities, SDIA opened a new 1,300-space public parking lot west of Terminal Two in November 2004. This helps to alleviate the heavy accumulation and occupancy observed on Lots 1 and 2.

Parking Duration

Figure 3.4-27 shows the distribution of Lots 1 and 2 parkers by duration of half-hour intervals. Approximately 85 percent of the parkers stayed for a short period of 2 hours or less. The average duration was estimated by the HNTB Project Team to be approximately 1.24 hours for short-term parking and 1.76 days for long-term parking.[3]

3.4.2.11 Remote Public Parking Activity

The Authority sent out survey forms to remote parking operators in April 2004 as part of the *Update of Traffic Data for San Diego International Airport*. The information requested on these forms consisted of inventory at the beginning of a weekday, the number of vehicles entering, and the number of vehicles exiting by each hour from 5:00 AM to midnight. One week of data was requested. Data from two remote public parking facilities were collected: SAN Park Pacific Highway and San Diego Airport Parking (SDAP). The combined spaces provided by these facilities account for approximately 30 percent of the total remote parking supply at SDIA.

SAN Park Pacific Highway is SDIA's remote long-term parking facility located on Pacific Highway (refer to Section 3.4.1.3, Parking Facilities). This lot provides approximately 1,600 stalls, representing approximately 26 percent of the total remote parking supply. Data was collected for a one-week period at this facility beginning Thursday, June 3 through Wednesday, June 9, 2004.

SDAP is a privately operated public parking facility located on Kurtz Street. It provides approximately 270 stalls, representing about 5 percent of the total remote parking operation. The data provided by this facility was collected for a one-week period from Monday, April 26 through to Sunday, May 2, 2004.

Figure 3.4-28 shows the daily parking activity for the two remote parking facilities. The peak day of total parking activity occurred on Friday with a combined traffic volume of approximately 1,000 VPD. Sunday and Thursday showed relatively heavy traffic activity as well. Saturday was the slowest day of the week for these facilities.

Figure 3.4-29 presents the inbound and outbound activity at the surveyed parking lots. For SAN Park Pacific Highway, weekdays have predominantly inbound traffic flow, while Sundays have significant outbound flow. The same general pattern was observed for the SDAP facility.

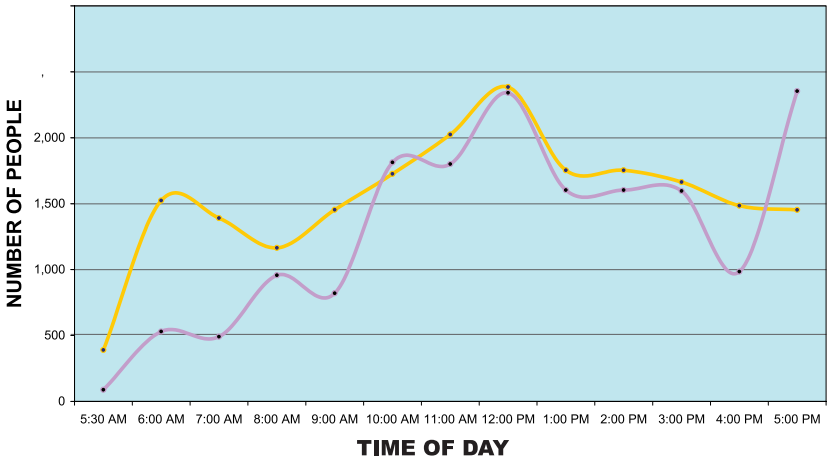
The hourly remote parking activity for the average weekday is shown in **Figure 3.4-30**. On a typical weekday from early morning until 1:00 PM, traffic is predominantly inbound to SAN Park Pacific Highway with the highest inbound flow of approximately 85 VPH observed at 5:00 AM. After 1:00 PM, traffic flow is predominantly outbound with a peak outbound flow of approximately 40 VPH occurring at 8:00 PM.

The hourly remote parking activity for the average weekend is shown in **Figure 3.4-31**. On weekends, the major flow is inbound during the period from early morning until noon with a relatively low peak hour volume of approximately 30 VPH at 7:00 AM. From noon onwards, the major flow direction is outbound with two noticeable peak hours at 1:00 PM and 9:00 PM.

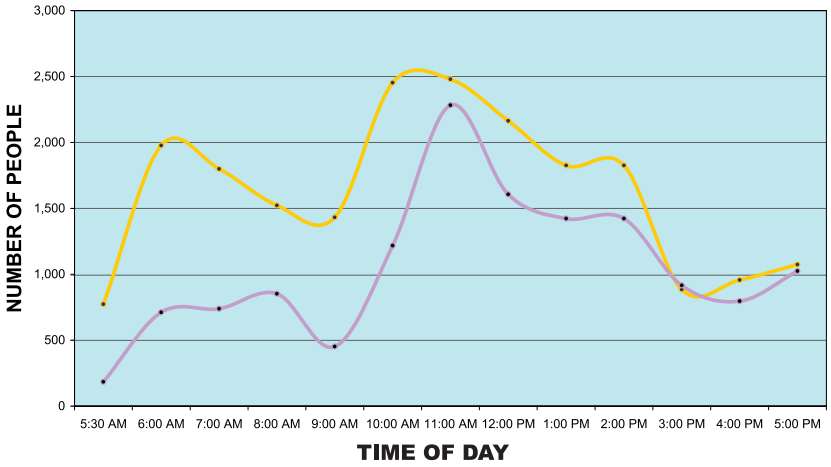
Based on information provided by the Authority, the average parking duration at SAN Park Pacific Highway is approximately 2.5 days.

[3] In this analysis, parking of four hours or less is considered as short-term while parking of more than four hours is considered as long-term.

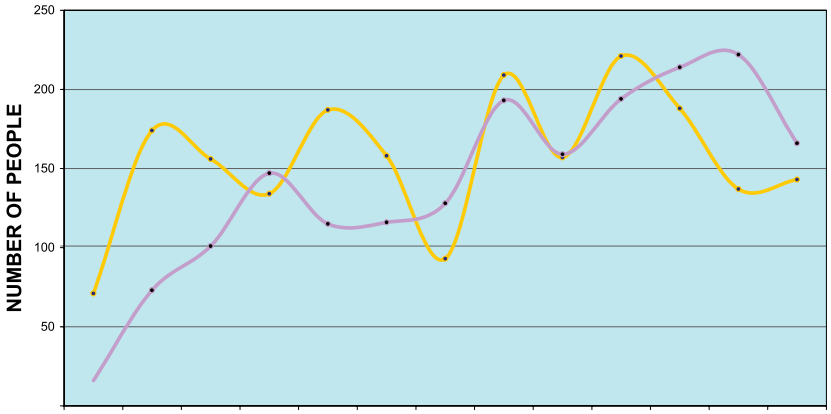
TERMINAL 1



TERMINAL 2



COMMUTER TERMINAL



People Entering
People Exiting

Figure 3.4-23

Hourly Distribution of Person Counts by Terminal

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

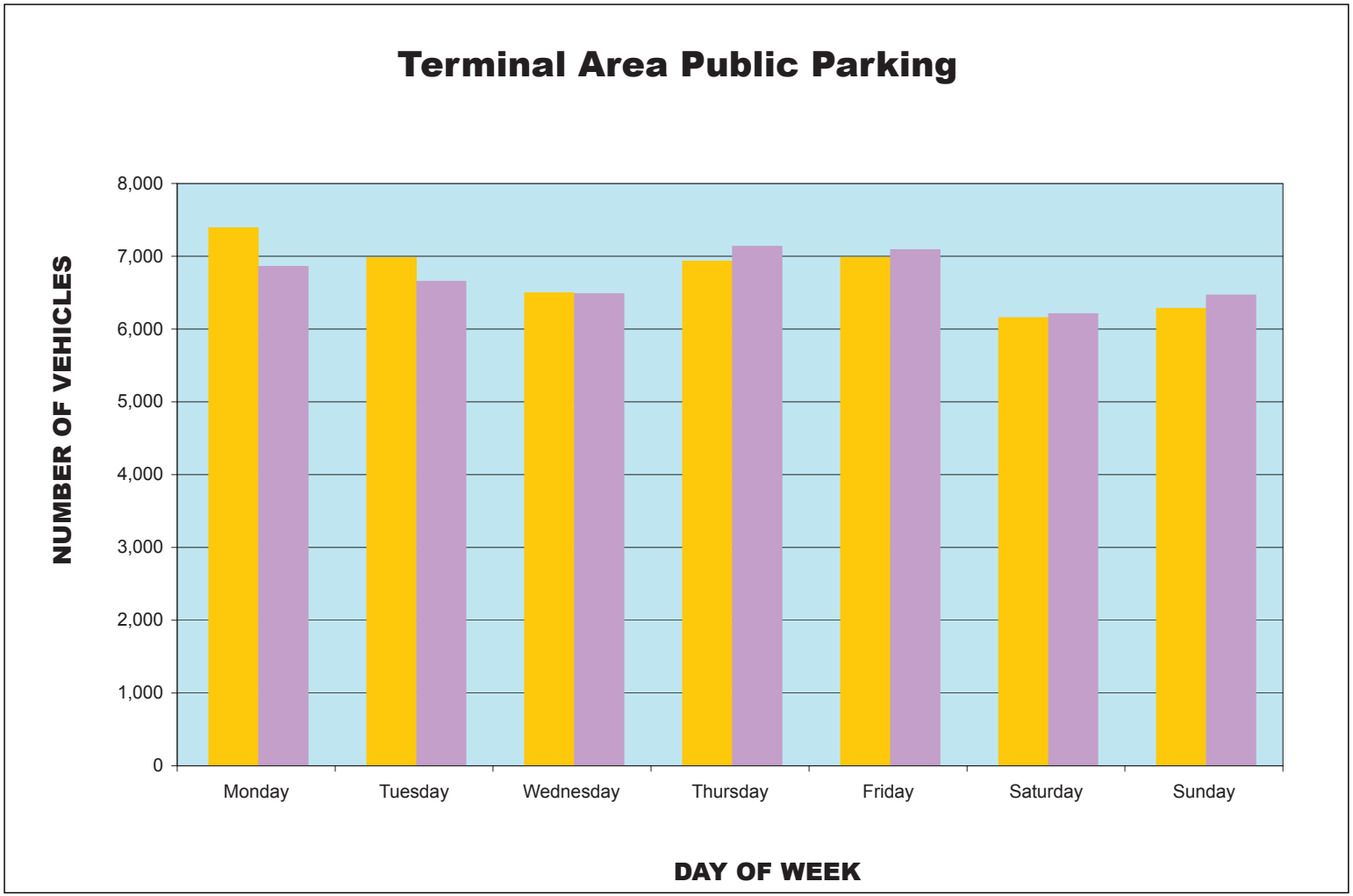


Figure 3.4-24

Existing Terminal Area Public Parking - Daily Activity

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

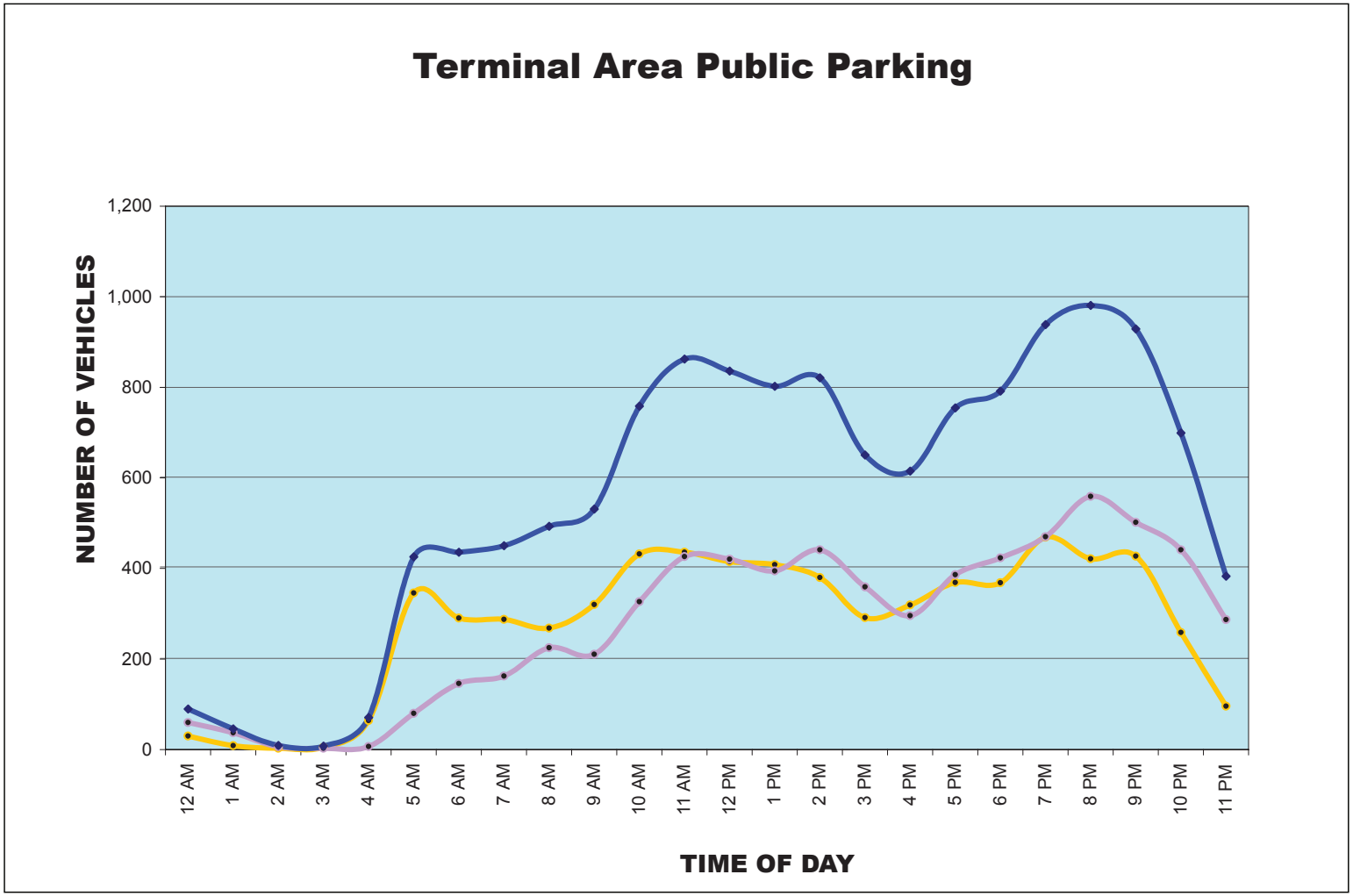


Figure 3.4-25

Existing Terminal Area Public Parking - Hourly Activity

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

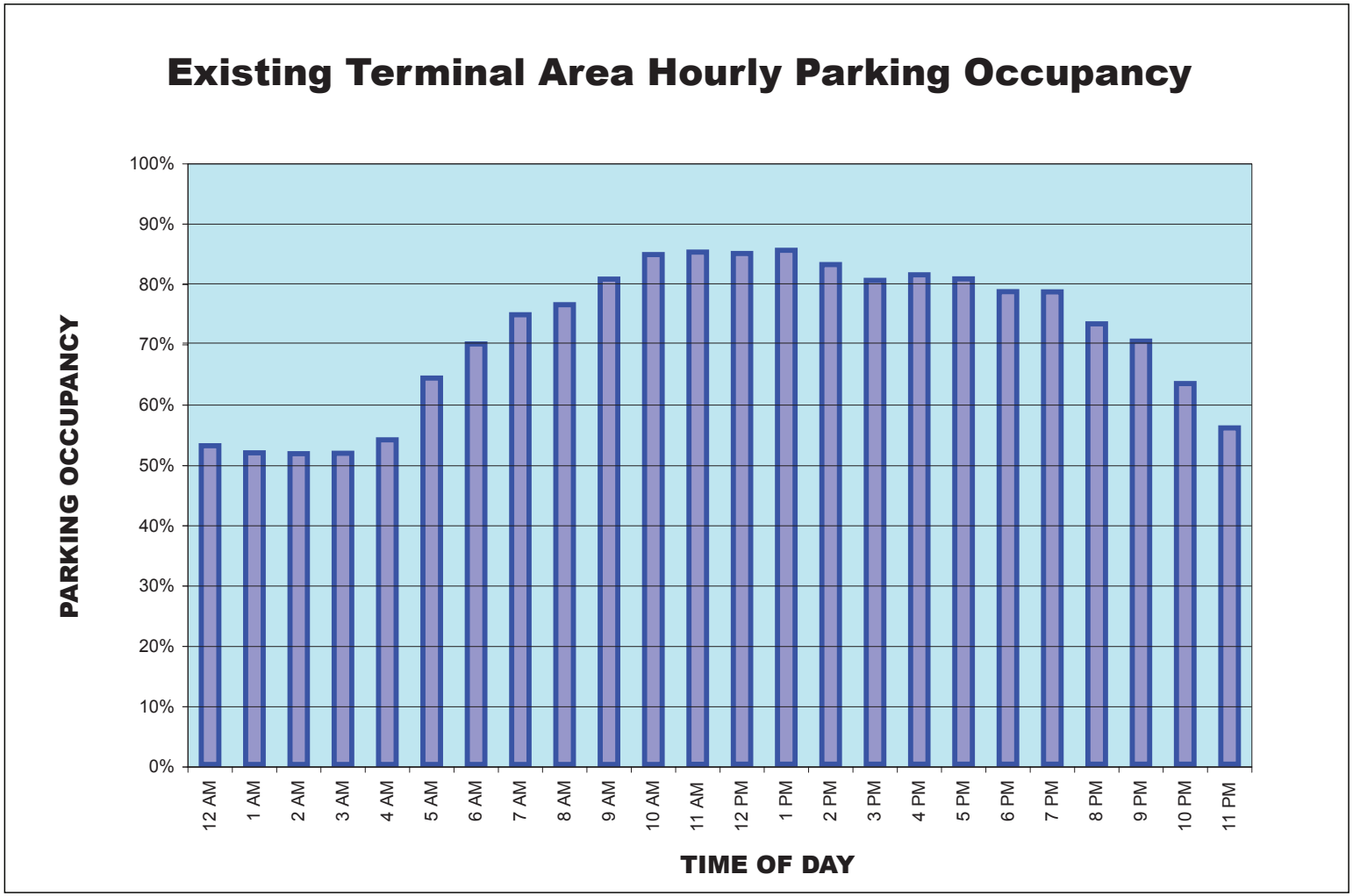


Figure 3.4-26

Existing Terminal Area Hourly Parking Occupancy

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

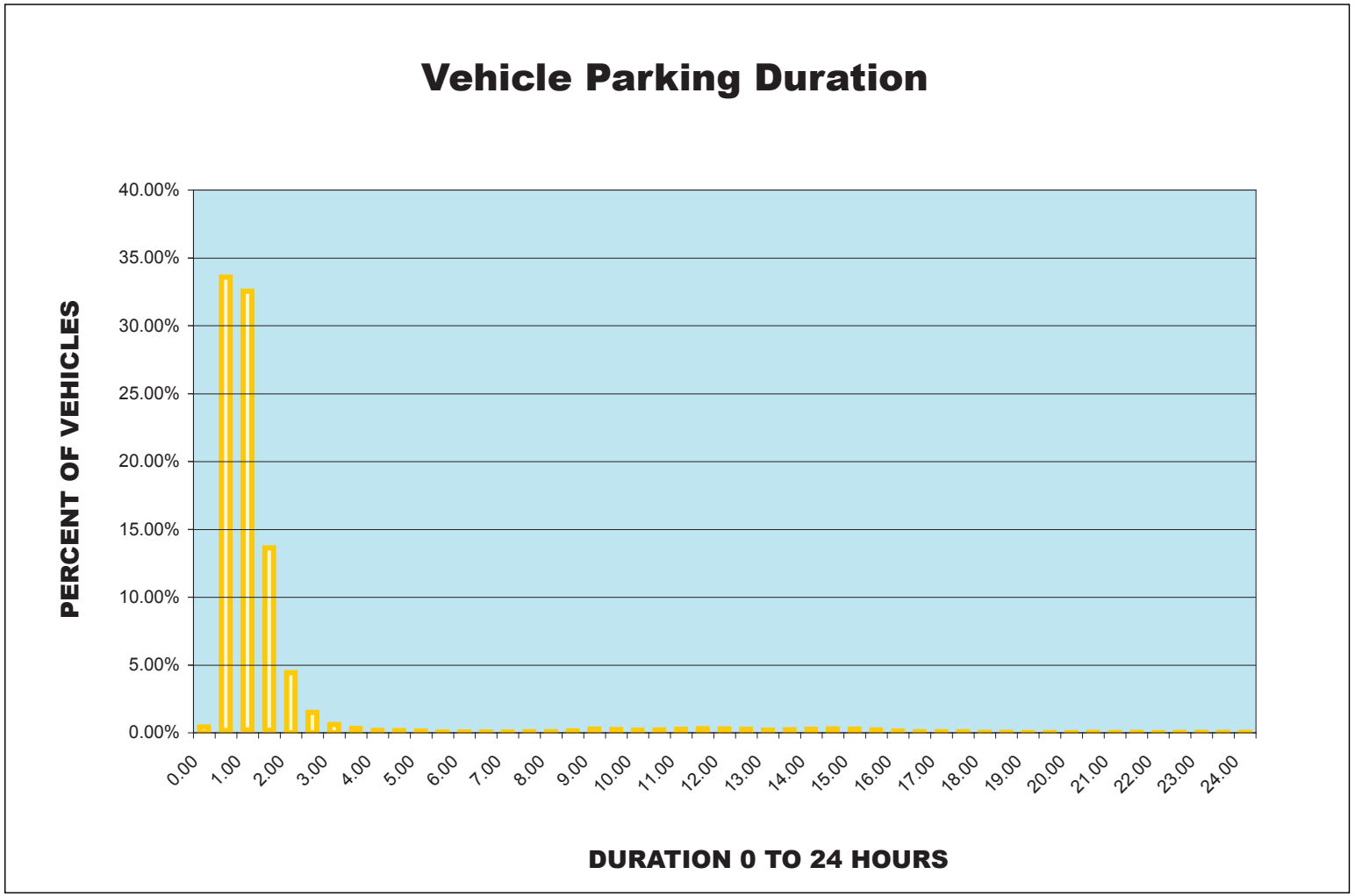


Figure 3.4-27

Existing Terminal Area Public Parking Duration

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

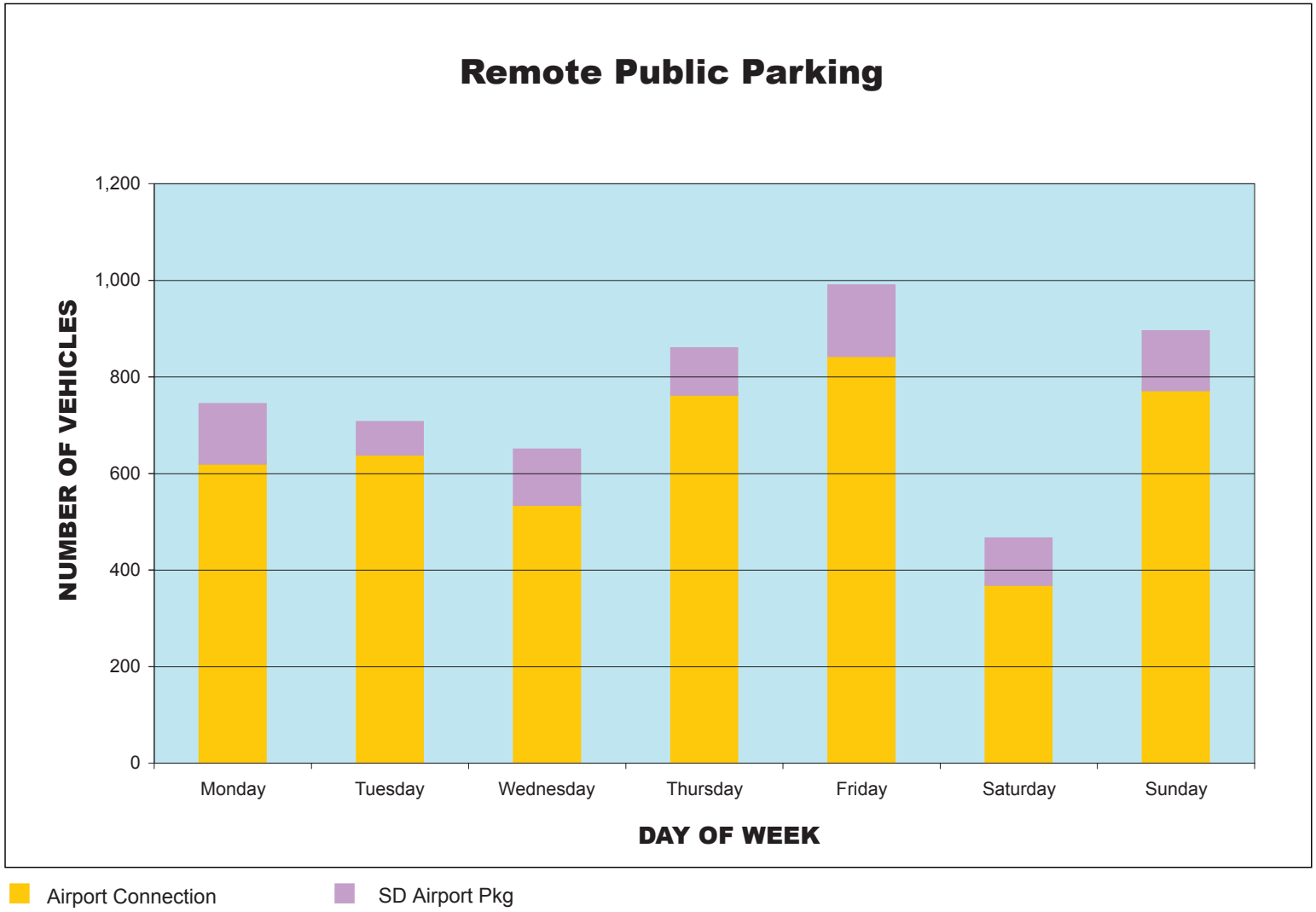


Figure 3.4-28

Existing Remote Public Parking - Daily Activity

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

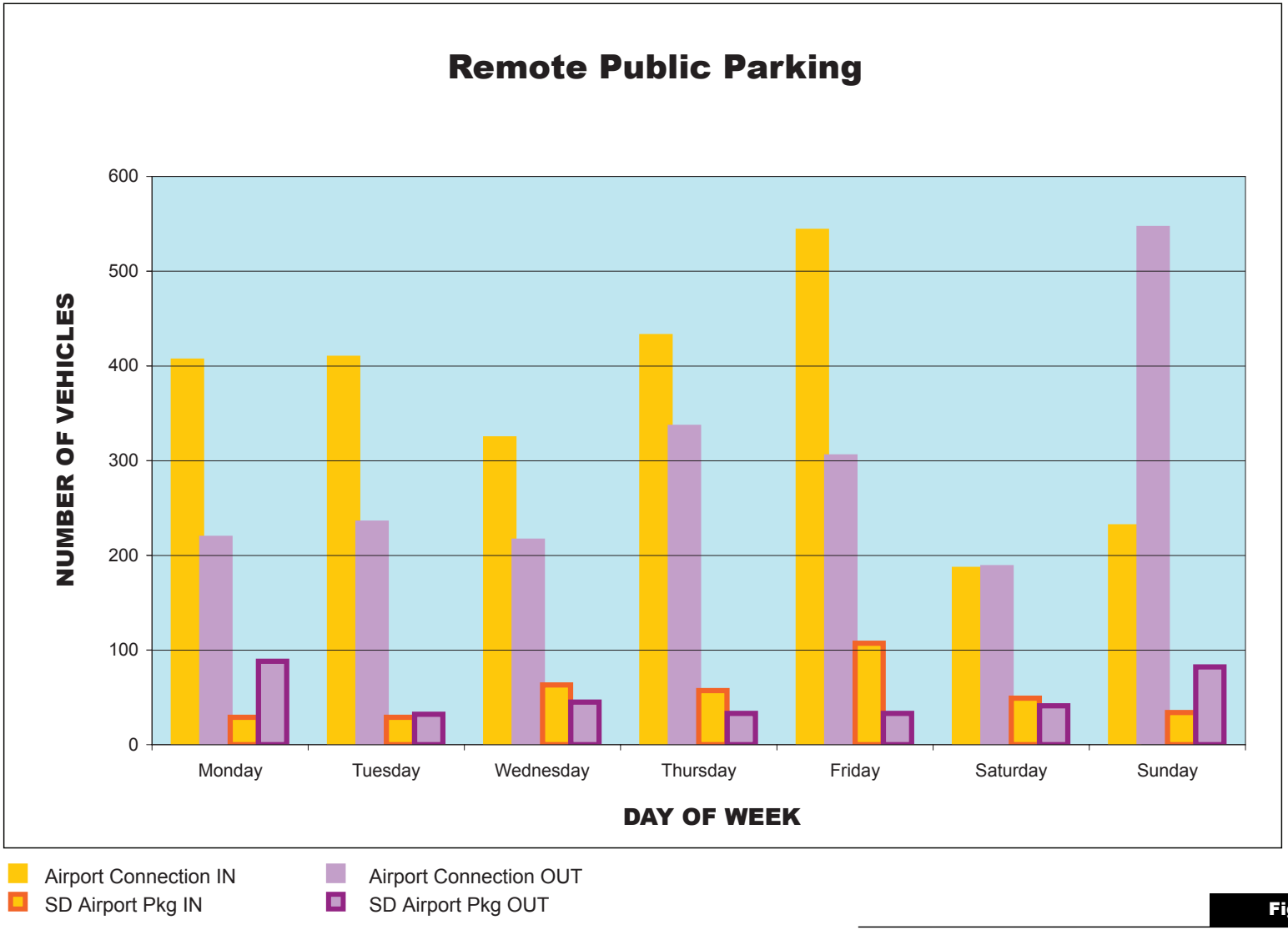


Figure 3.4-29

Existing Remote Public Parking Activity - In/Out

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

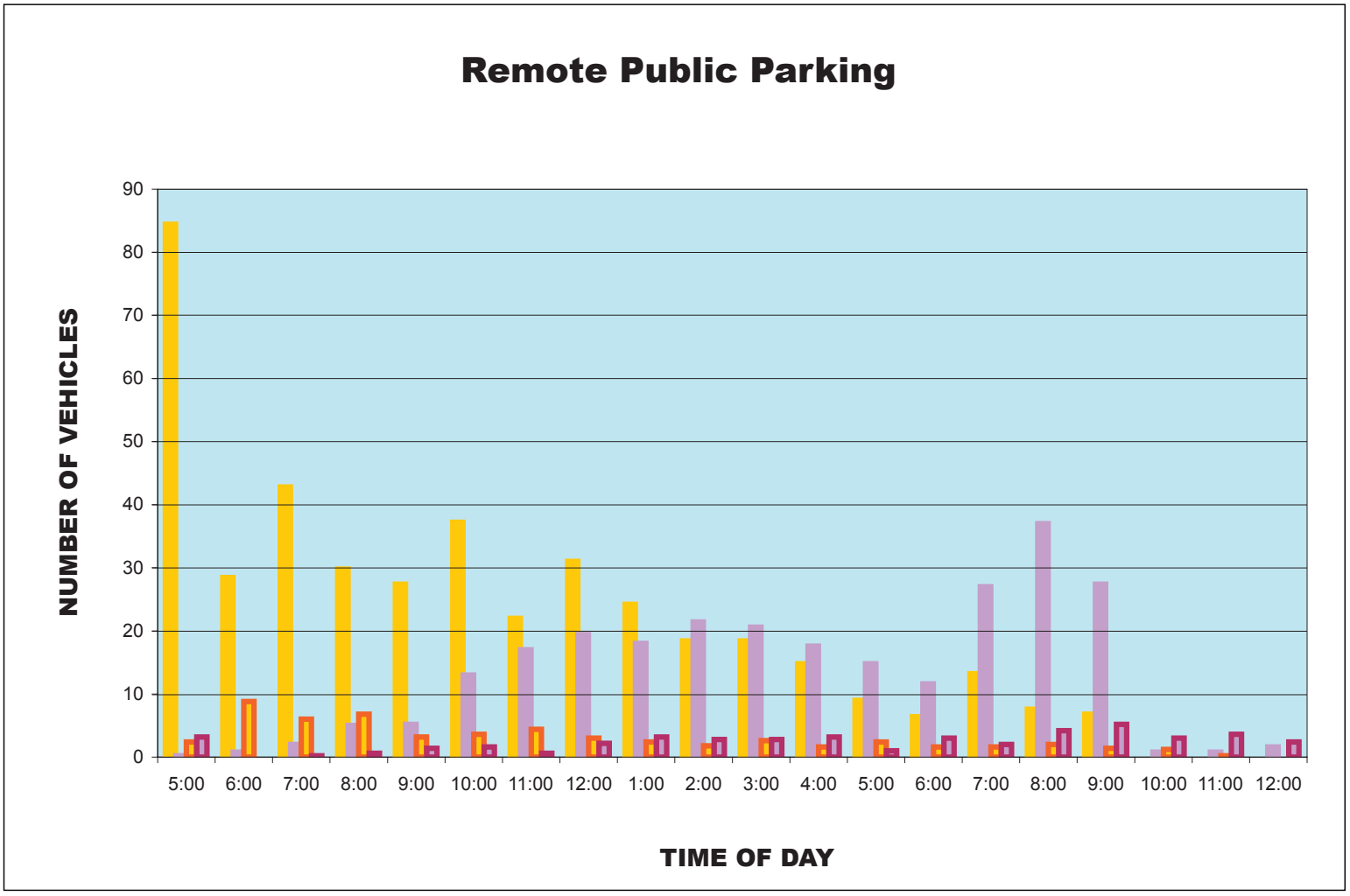


Figure 3.4-30

Existing Remote Public Parking - Weekday Hourly Activity

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

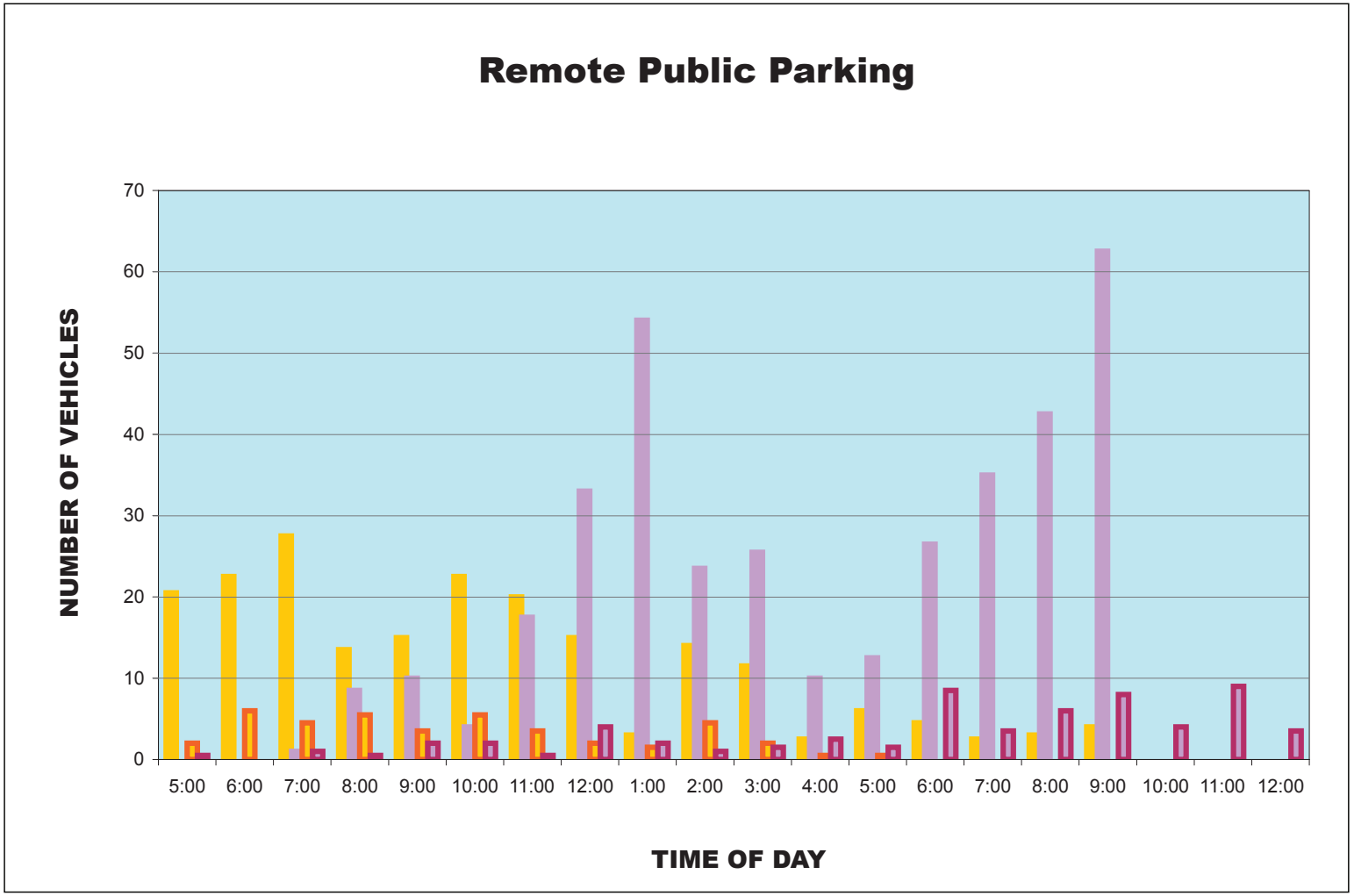


Figure 3.4-31

Existing Remote Public Parking - Weekend Hourly Activity

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

3.4.2.12 Employee Parking Lot Count

Employee parking lot counts were collected and used to record the number of vehicles parked and the number of vehicles entering and exiting each lot by the hour. The counts provide information to estimate inbound/outbound traffic activity as well as parking occupancy. This information is indicative of existing parking surpluses or deficiencies and provides a benchmark for estimating future employee parking requirements at SDIA.

Vehicle counts were conducted at selected airport employee parking lots in May 2004 as part of the *Update of Traffic Data for San Diego International Airport*. The counts were conducted on Tuesday, May 11, 2004 from 5:30 AM to 6:00 PM, which was three days prior to the conversion of the surveyed TSA Lot to a temporary short-term waiting lot. The counts included Lot 8, the TSA Lot, Lot F, and Lot 6.

The employee lots surveyed comprised a total of approximately 1,700 spaces, representing approximately 95 percent of the total airport employee parking supply at the time of the survey. Maximum parking occupancy in the combined lots reached about 65 percent at noon, as shown in **Table 3.4-11**. **Figure 3.4-32** also illustrates the parking occupancy at the four surveyed employee lots.

Individually, high parking occupancies were observed on the TSA Lot and on Lot F with occupancies at or approaching capacity. Maximum parking occupancy on Lots 6 and 8 ranged from 65 percent to 70 percent. Lot 8 was observed to have a high overnight occupancy of approximately 65 percent.

As shown in **Table 3.4-12**, all surveyed lots generated approximately 4,400 employee vehicle trips during the survey period with even daily inbound and outbound flows. Hourly activity observed during noon recorded approximately 870 vehicle trips, representing 20 percent of the survey total. The highest number of employee traffic entering and departing the parking lot occurred at noon.

Table 3.4-11

On-Site Employee Parking Survey Results

		Lot 8		Lot TSA		Lot F		Lot 6		All Lots	
		Inventory	Percent Occupied	Inventory	Percent Occupied	Inventory	Percent Occupied	Inventory	Percent Occupied	Inventory	Percent Occupied
Beginning Inventory		**287**	**64%**	**9**	**4%**	**13**	**12%**	**430**	**47%**	**739**	**43%**
5:30 AM	6:00 AM	287	64%	26	10%	16	15%	482	52%	811	47%
6:00 AM	7:00 AM	290	64%	30	12%	37	35%	510	55%	867	50%
7:00 AM	8:00 AM	277	62%	60	24%	67	63%	522	56%	926	53%
8:00 AM	9:00 AM	265	59%	103	41%	97	91%	564	61%	1,029	59%
9:00 AM	10:00 AM	270	60%	101	40%	100	93%	603	65%	1,074	62%
10:00 AM	11:00 AM	264	59%	113	45%	104	97%	600	65%	1,081	62%
11:00 AM	12:00 PM	260	58%	122	49%	92	86%	641	69%	1,115	64%
12:00 PM	1:00 PM	187	42%	267	107%	84	79%	580	63%	1,118	65%
1:00 PM	2:00 PM	192	43%	155	62%	95	89%	514	56%	956	55%
2:00 PM	3:00 PM	203	45%	126	50%	90	84%	437	47%	856	49%
3:00 PM	4:00 PM	218	48%	100	40%	82	77%	413	45%	813	47%
4:00 PM	5:00 PM	243	54%	69	28%	58	54%	426	46%	796	46%
5:00 PM	6:00 PM	271	60%	3	1%	30	28%	436	47%	740	43%
Ending Inventory		**271**	**60%**	**3**	**1%**	**30**	**28%**	**436**	**47%**	**740**	**43%**
Lot Capacity		**450**		**250**		**107**		**924**		**1,731**	

Note: The survey was conducted three days before the TSA Lot was converted to a temporary short-term waiting lot.

Source: SDCRAA's Update of Traffic Data for SDIA (PARSONS, July 2004).

Figure 3.4-32

Existing Employee Parking - Hourly Inventory

Source: SDCRAA's Update of Traffic Data for San Diego International Airport (PARSONS, July 2004)
Prepared by: HNTB Corporation, 2006

Table 3.4-12

Employee Parking Lots Vehicle Trips

Traffic Counts		Lot 8		Lot TSA		Lot F		Lot 6		All Lots		
From	To	In	Out	In	Out	In	Out	In	Out	In	Out	Total
5:30 AM	6:00 AM	18	18	36	19	4	1	86	34	144	72	216
6:00 AM	7:00 AM	41	38	40	36	26	5	67	39	174	118	292
7:00 AM	8:00 AM	23	36	57	27	36	6	55	43	171	112	283
8:00 AM	9:00 AM	23	35	60	17	36	6	73	31	192	89	281
9:00 AM	10:00 AM	11	6	8	10	8	5	74	35	101	56	157
10:00 AM	11:00 AM	10	16	15	3	12	8	50	53	87	80	167
11:00 AM	12:00 PM	17	21	36	27	6	18	100	59	1589	125	184
12:00 PM	1:00 PM	55	128	225	80	12	20	144	205	436	433	869
1:00 PM	2:00 PM	58	53	61	173	24	13	112	178	255	417	672
2:00 PM	3:00 PM	43	32	34	63	7	12	40	117	124	224	248
3:00 PM	4:00 PM	40	25	26	52	3	11	39	63	108	151	259
4:00 PM	5:00 PM	55	30	473	74	6	30	49	36	153	170	323
5:00 PM	6:00 PM	41	48	7	73	3	31	51	41	102	193	295
Total Vehicle Trips		**435**	**486**	**648**	**654**	**183**	**166**	**940**	**934**	**2,206**	**2,240**	**4,446**

Note: The survey was conducted three days before the TSA Lot was converted to a temporary short term waiting lot.

Source: SDCRAA's Update of Traffic Data for SDIA, PARSONS, July 2004.

3.4.2.13 AVI Commercial Vehicle Trip Counts

Summary trip data from SDIA's AVI system was provided by the Authority, covering a period of one year, as shown in **Table 3.4-13**. The AVI data includes courtesy vehicles (rental car, remote parking, and hotel/motel), taxicabs, and for-hire shuttles. As shown, these vehicles generated approximately 6,700 VPD to the terminals. Rental car shuttles accounted for approximately 46 percent of the observed trips, followed by taxicabs (27 percent) and remote parking shuttles (14 percent). Terminals One and Two each accounted for approximately 40 percent of the AVI trips.

Table 3.4-13

SDIA Automated Vehicle Identification Count Data

Commercial Vehicle	Commuter Terminal	Terminal 1	Terminal 2	Annual Total	Average Daily Trips	Percent
Courtesy Vehicle						
Rental Car	269,412	433,445	409,508	1,112,365	3,048	46%
Remote Parking	49,454,	156,320	145,178	350,952	962	14%
Hotel Courtesy	14,032	65,756	72,440	152,228	417	6%
Taxicab	63,254	319,964	268,564	651,782	1,786	27%
For-Hire Shuttle	18,526	75,088	79,406	173,020	474	7%
Annual Total	**414,678**	**1,050,573**	**975,096**	**2,440,347**	**6,686**	**100%**
Average Daily Trips	**1,136**	**2,878**	**2,671**	**6,686**		
Percent	**17%**	**43%**	**40%**	**100%**		

Source: SDCRAA, 2004.