

**ACRP Report 40  
Airport Curbside and Terminal Area Roadway Operations**

**Appendix C**

**SUMMARY OF TERMINAL AREA ROADWAY  
TRAFFIC VOLUME SURVEYS**

As part of Airport Cooperative Research Program (ACRP) Project 7-02, the research team conducted traffic surveys at Washington Dulles International Airport and Oakland International Airport for a period of 7 consecutive days in each location using automatic traffic recorders (ATRs), staff observations, and cameras. This appendix presents a summary of the data collected.

**WASHINGTON DULLES INTERNATIONAL AIRPORT**

**Field Survey Schedule**

Sunday, July 22, 2007, through Saturday, July 28, 2007.

**ATR Locations (see Figure C-1)**

- A This location is not shown on Figure C-1. It is adjacent to Daily Garage 2, along the north section of the terminal loop road opposite the Main Terminal building, which is the weaving segment that the research team wanted to monitor. (See camera location 5 described below.)
- B This location—where the total volume of traffic entering the curbside roadways was recorded—is prior to the point where the curbside roadway split to three separate roadways one pick-up, drop-off, and commercial vehicles, respectively and after the entry to the hourly parking area. .
- C Upper level (departures level curbside).
- D Middle level passenger pick-up curbside used by taxicabs and door-to-door vans.
- E Lower level passenger pick-up curbsides used by private vehicles, limousines, and courtesy vehicles.
- F Return-to-terminal traffic volumes.
- G Exiting traffic volumes.

### **Staff Observation Locations**

Staff were positioned at the locations shown on Figure C-1 to gather the following data:

- 1 and 4 Upper level (Level 3) dwell time measurements
- 2 and 5 Middle level dwell time measurements
- 3 and 6 Lower level dwell time measurements
- 7 Vehicle classification survey of all vehicles approaching the curbside at the roadway entry

### **Camera Locations**

Cameras were positioned to record traffic volumes at the following locations, which correspond with the locations of staff positions on Figure C-1:

- 1 West end of upper level curbsides
- 2 West end of lower level curbsides
- 3 East end of middle and lower level curbsides
- 4 East end of lower level curbsides
- 5 Weaving area on north side of terminal loop road
- 6 View of westside of curbside roadways to measure the speed of vehicles
- 7 View of eastside of curbs to measure the speed of vehicles

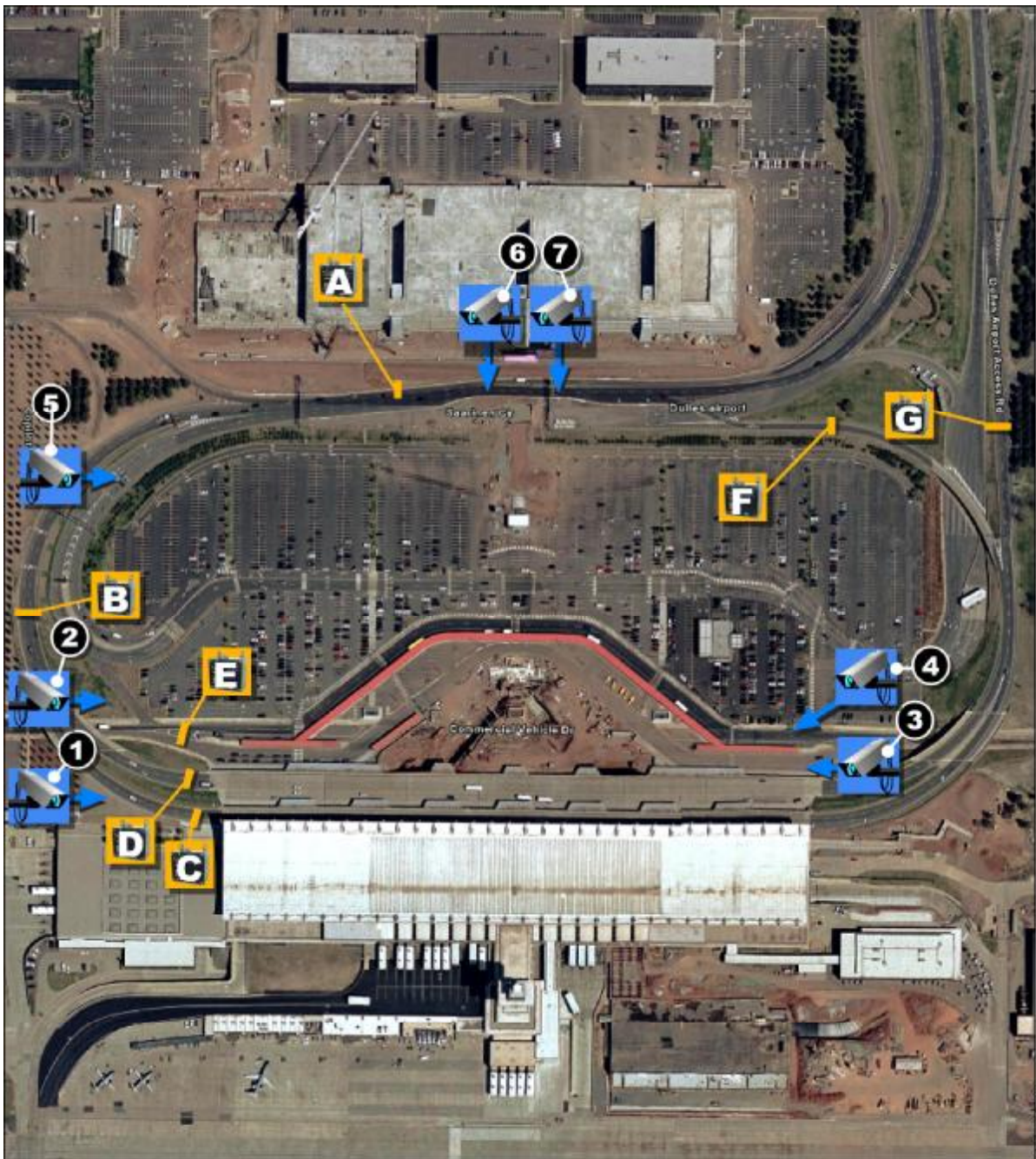
### **Summary of Data**

Figures C-2 and C-3 present the variations in daily and hourly traffic volumes entering and exiting the terminal area. As shown, Sunday was the busiest day of the week, while the busiest hour occurred between 3:00 p.m. and 4:00 p.m. The Sunday peak hour was about 10% busier than the other daily peak hours.

Figures C-4 and C-5 present the variations in daily and hourly private vehicle traffic volumes on the lower-level arrivals and upper-level departures curbside roadways. Again, the highest traffic volumes occurred on Sunday, but a pronounced peak occurred on Friday on the departures curbside. While hourly distributions of traffic on the entering and exiting roadways and arrivals level curbside were consistent from day to day, the departures curbside exhibited a less consistent pattern after 4:00 p.m.

**These variations reflect the East Coast and international peaks associated with airline traffic at Washington Dulles International Airport.**

**Appendix D summarizes the dwell time surveys.**



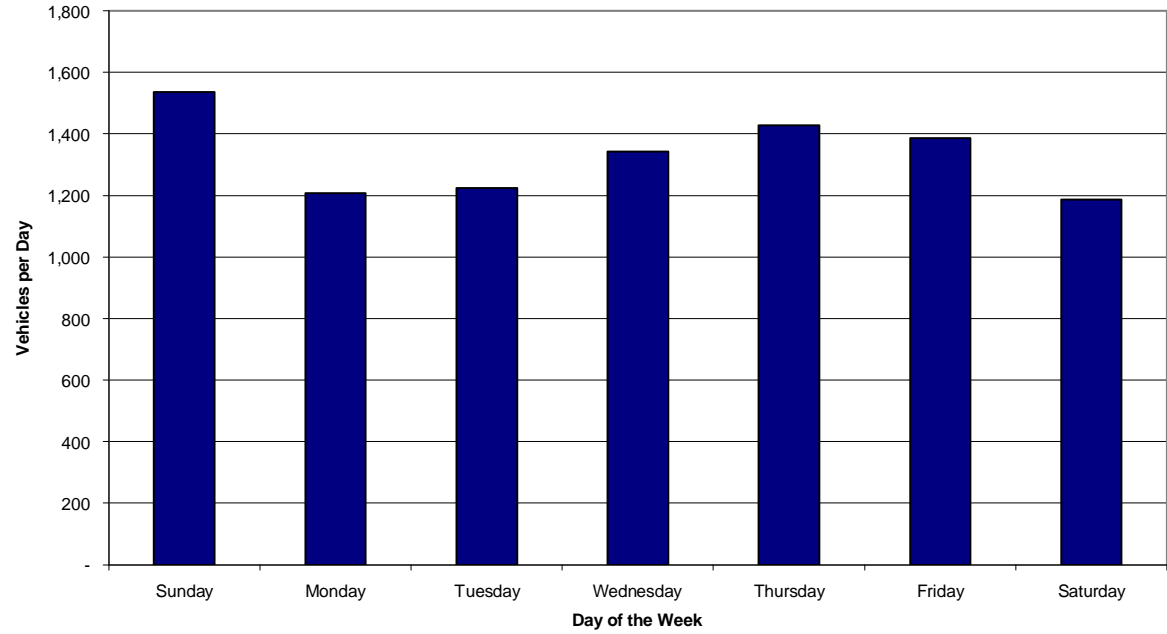
- A** = Automatic Traffic Recorder (ATR) location
- 1-7** = Video camera location
- 1** = Field surveyor location



Figure C.1  
**SURVEY LOCATIONS—**  
**WASHINGTON DULLES INTERNATIONAL AIRPORT**  
 ACRP 7-02—Airport Curbside and Terminal Area  
 Roadway Operations  
 July 2007



Figure C-3  
Daily Traffic Volumes  
Washington-Dulles International Airport  
July 22, 2007 to July 28, 2007  
Airport Exit Roadway  
\*Does not include exits from parking lots



Hourly Traffic Volumes  
Washington-Dulles International Airport  
July 22, 2007 to July 28, 2007  
Airport Exit Roadway  
\*Does not include exits from parking lots

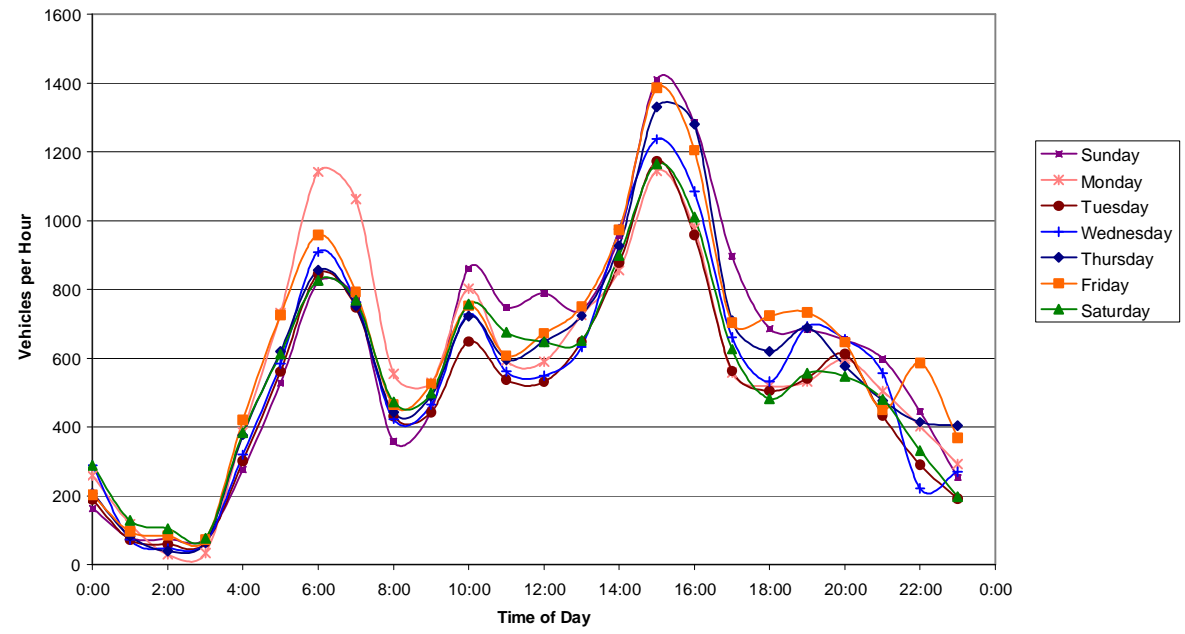
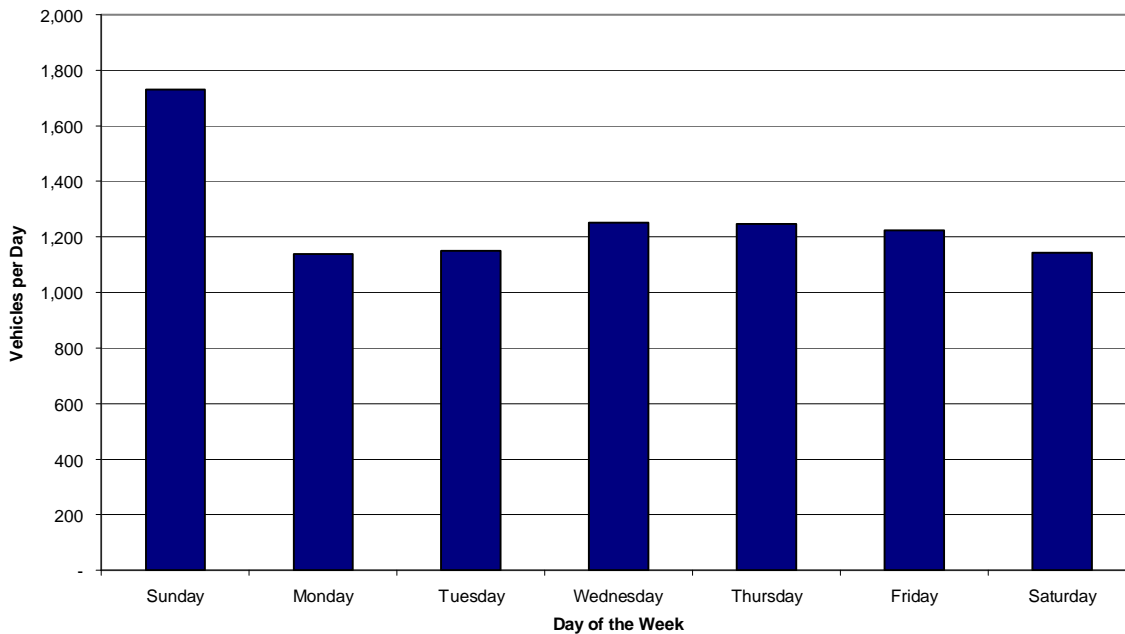


Figure C-4  
**Daily Traffic Volumes**  
 Washington-Dulles International Airport  
 July 22, 2007 to July 28, 2007  
 Lower Level Arrivals Curbside Roadway



**Hourly Traffic Volumes**  
 Washington-Dulles International Airport  
 July 22, 2007 to July 28, 2007  
 Lower Level Arrivals Curbside Roadway

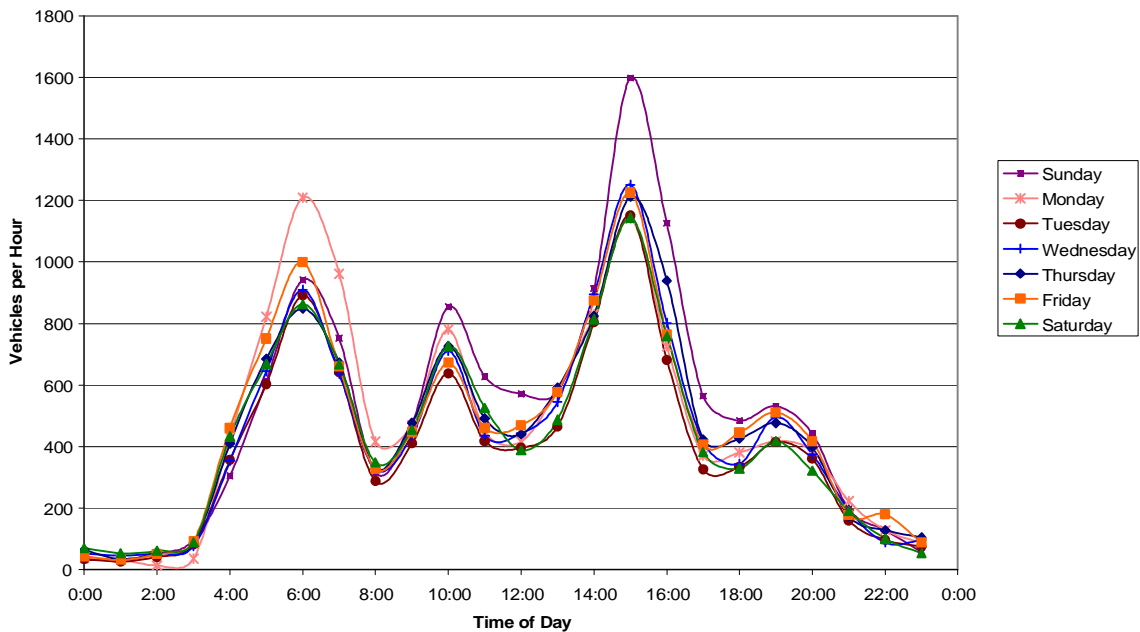
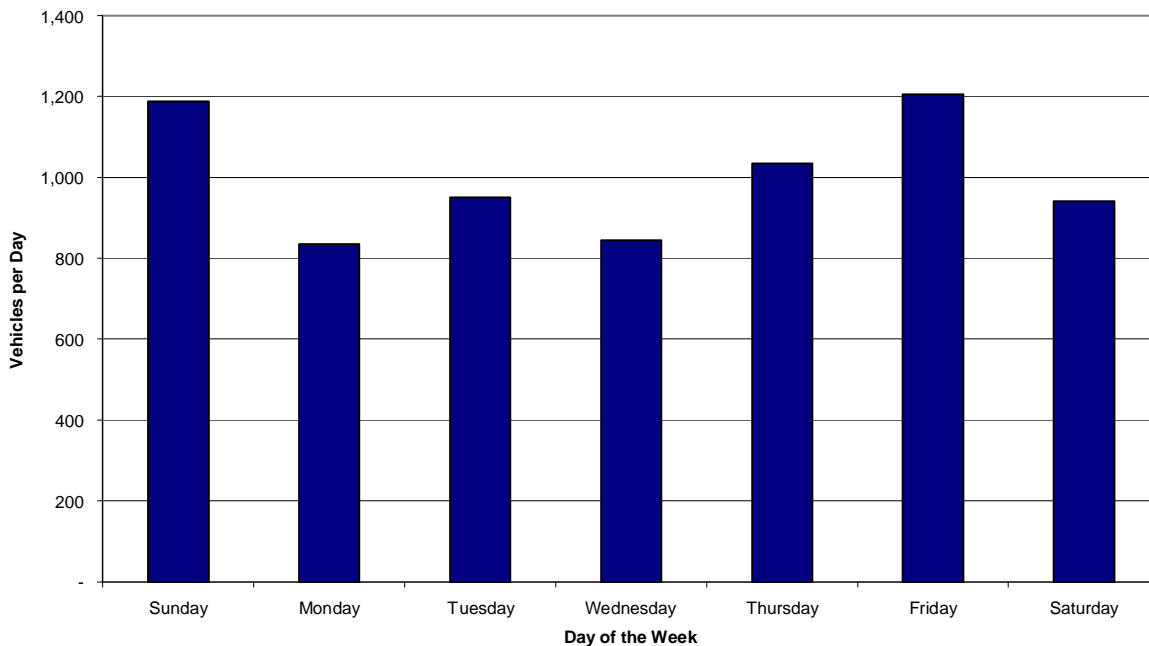
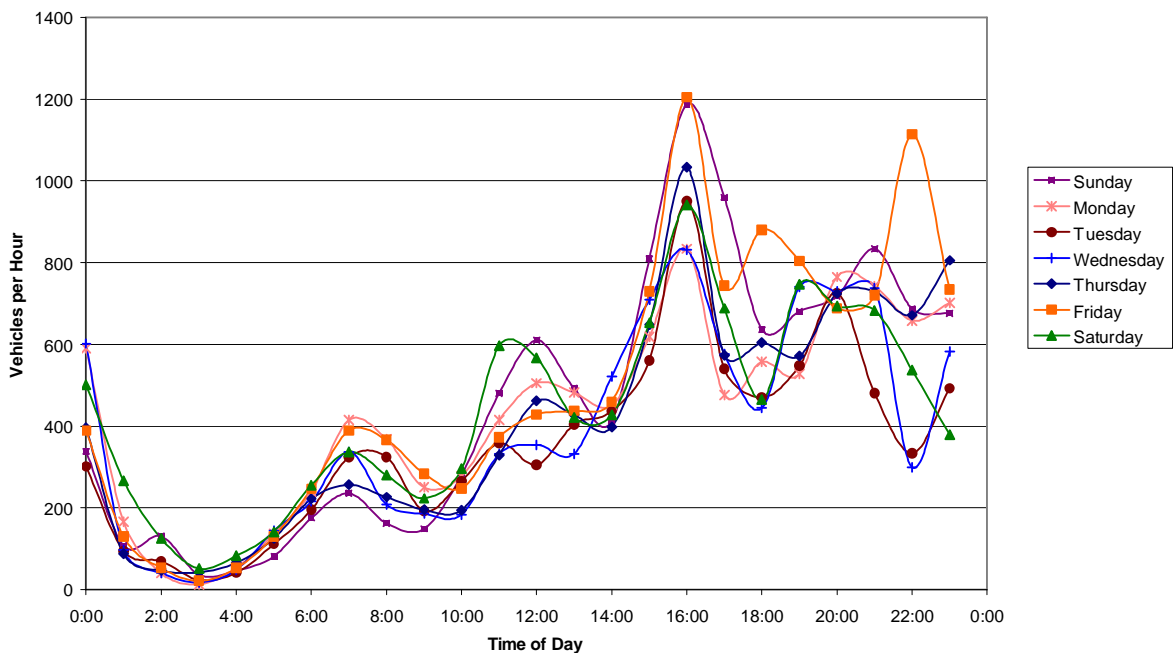


Figure C-5  
 Daily Traffic Volumes  
 Washington-Dulles International Airport  
 July 22, 2007 to July 28, 2007  
 Upper Level Departures Curbside Roadway



Hourly Traffic Volumes  
 Washington-Dulles International Airport  
 July 22, 2007 to July 28, 2007  
 Upper Level Departures Curbside Roadway





## **OAKLAND INTERNATIONAL AIRPORT Field Survey Schedule**

Thursday, August 2, 2007, through Wednesday, August 8, 2007

### **ATR Locations (see Figure C- 6)**

- A Inner curbside lanes in front of Terminal 1 used by private vehicles for dropping off and picking up passengers
- B Middle curbside lanes used by some commercial vehicles
- D Inner curbside lanes in front of Terminal 2 used by private vehicles for dropping off and picking up passengers
- E Outer curbside lanes used by some commercial vehicles
- F Terminal recirculation roadway
- G Terminal exit roadway
- H Terminal exit roadway, including traffic from Neil Armstrong Way

### **Staff Observation Locations**

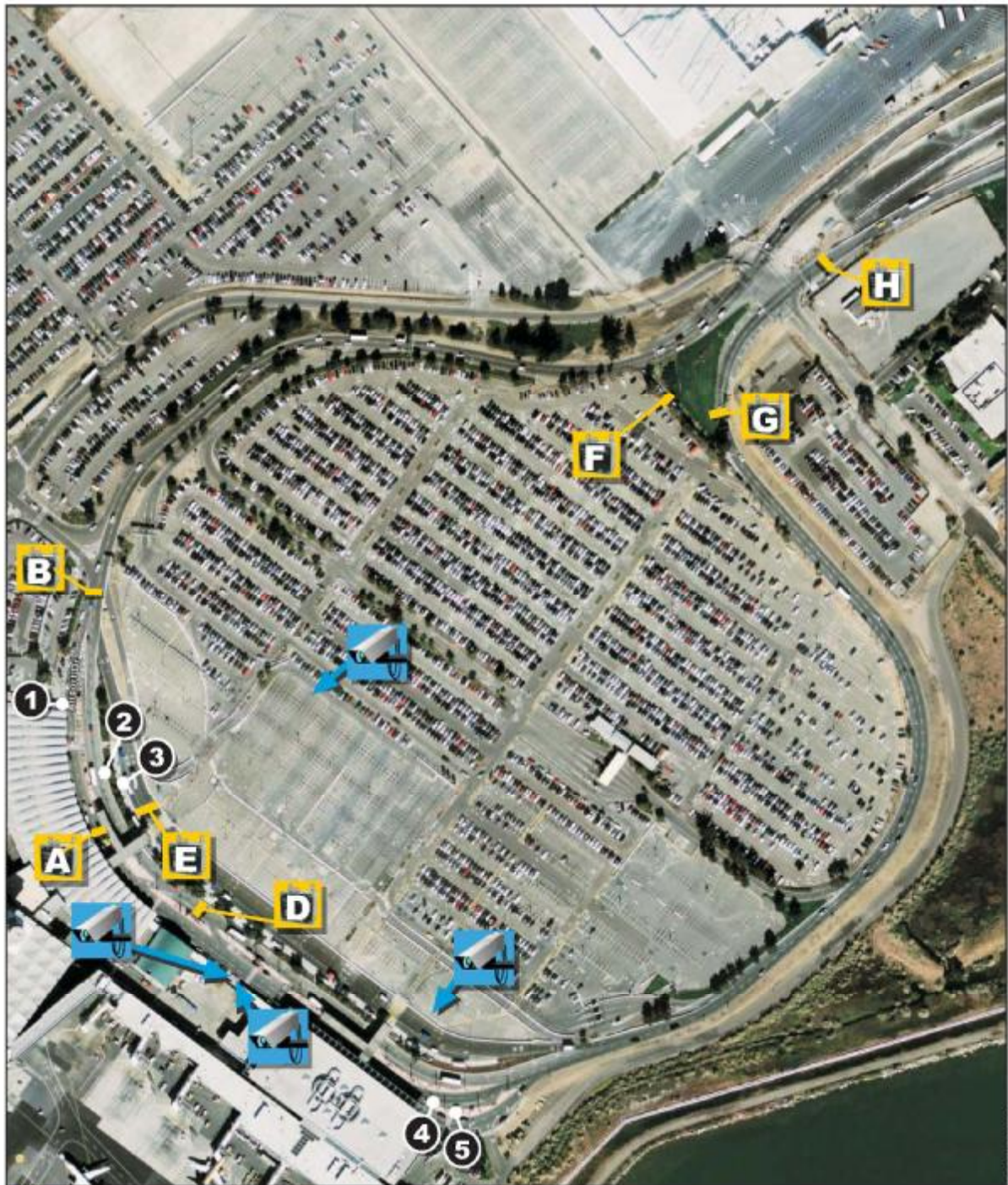
Staff were positioned at or near the locations shown on Figure C-6 to gather the following data:

- 1 Inner curbside dwell time measurements
- 2 Middle curbside dwell time measurements
- 3 Outer commercial vehicle lane dwell time measurements
- 4 and 5 Vehicle classification survey of all vehicles approaching the curbside

### **Camera Locations**

Cameras were positioned to record traffic volumes at the following locations shown on Figure C-6:

- Curbside entrance roadways
- In front of Terminal 1, to record curbside and crosswalk interactions
- In front of Terminal 2, to record curbside and crosswalk interactions
- On the inner curbside at Terminal 2 to record private vehicle operations




- A** = Automatic Traffic Recorder (ATR) location
-  = Video camera location
- 1** = Field surveyor location



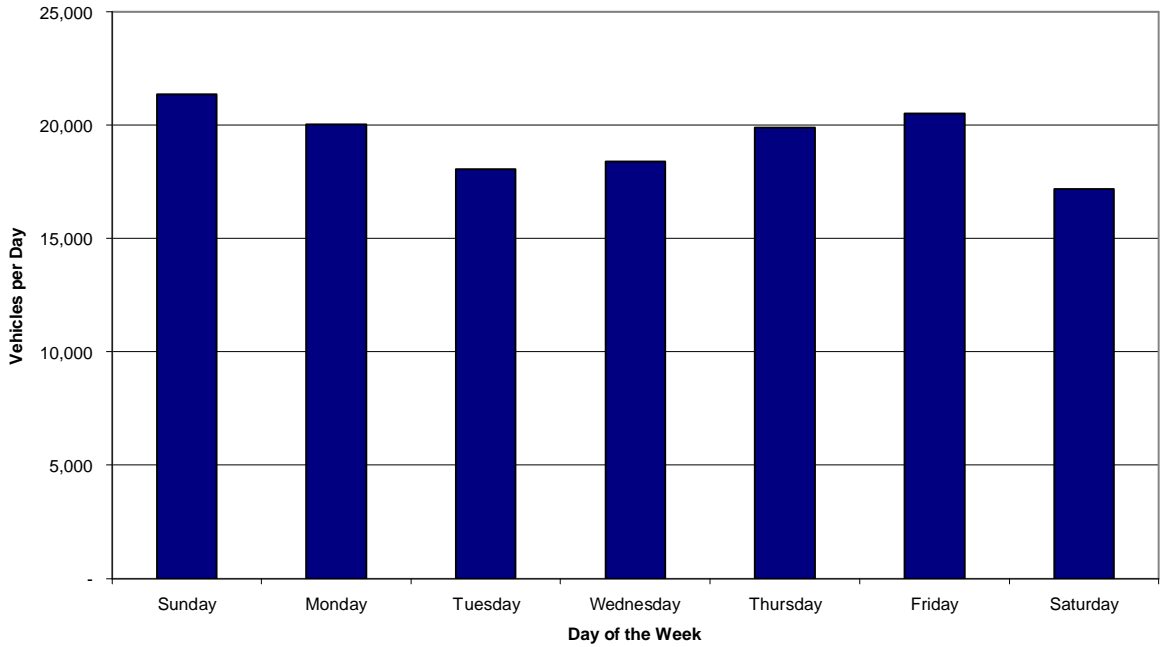
Figure C.6  
 SURVEY LOCATIONS—  
 OAKLAND INTERNATIONAL AIRPORT  
 ACRP 7-02—Airport Curbsides and Terminal Area  
 Roadway Operations  
 July 2007

### **Summary of Data**

Figure C-7 presents the variations in daily and hourly traffic volumes on the roadways exiting the terminal area. As shown, Sunday was the busiest day of the week, but the busiest individual peak hour occurred on Friday evening. Whereas the counts at Washington Dulles International Airport exhibited three to four distinct peaks throughout the day, the counts at Oakland International Airport exhibited a slight peak in the morning followed by a sustained busy period through the remainder of the day.

Figure C-8 presents the variations in daily and hourly traffic volumes on the curbside roadway (which serves both departing and arriving airline passenger vehicular traffic). During the three surveyed days, the highest total volume as well as the highest peak hour volume occurred on Saturday. Similar to the pattern observed for traffic exiting the airport, the curbside traffic exhibited a slight peak in the morning followed by a period of sustained activity through the remainder of the day. However, the curbside traffic also exhibited a second peak in the late morning, followed by a third peak in the late evening.

Figure C-7  
 Daily Traffic Volumes  
 Oakland International Airport  
 August 2, 2007 to August 8, 2007  
 Airport Exit Roadway



Hourly Traffic Volumes  
 Oakland International Airport  
 August 2, 2007 to August 8, 2007  
 Airport Exit Roadway

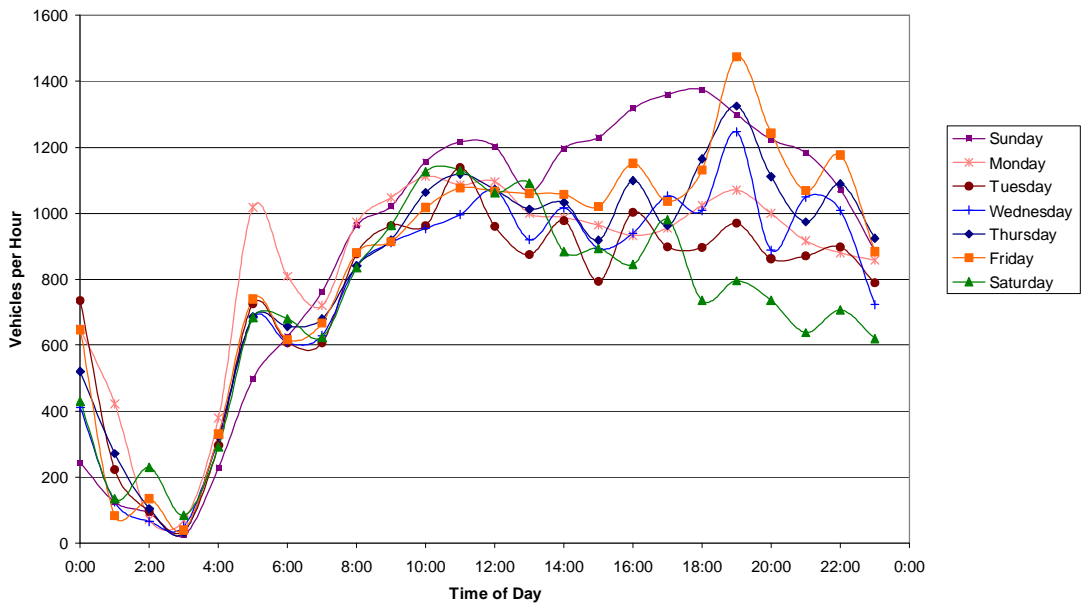
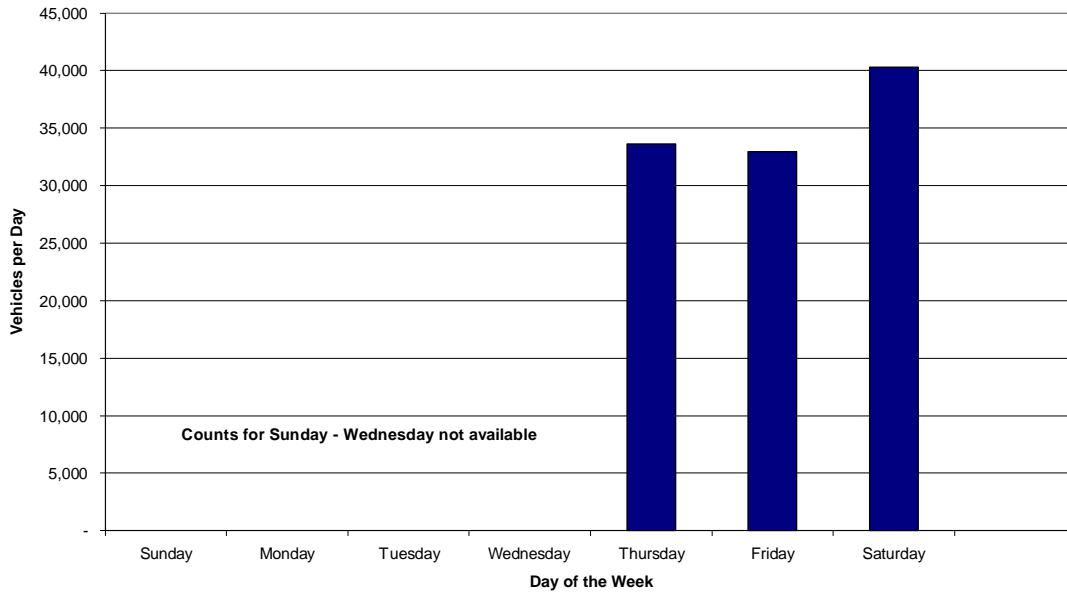


Figure C-8  
 Daily Traffic Volumes  
 Oakland International Airport  
 August 2, 2007 to August 8, 2007  
 Airport Curbside Roadways



Hourly Traffic Volumes  
 Oakland International Airport  
 August 2, 2007 to August 8, 2007  
 Airport Curbside Roadways

