



Chapter 5 – Off Airport Roadways and Traffic

5.1 TRAFFIC IMPACTS TO SURROUNDING OFF AIRPORT ROADWAYS

5.1.1 Existing Traffic Conditions

The following intersections were identified as a result of initial study coordination with the City of Dallas and the Master Plan Advisory Committee and peak-hour turning movement counts were collected at each during August 2000:

- Southbound I-35E Frontage Road and Mockingbird Lane
- Northbound I-35E Frontage Road and Mockingbird Lane
- Cedar Springs Road and Mockingbird Lane
- Eastbound Mockingbird Lane to Northbound Airdrome Drive
- Lemmon Avenue and Mockingbird Lane
- Inwood Road and Mockingbird Lane
- Southbound Dallas North Tollway (DNT) and Mockingbird Lane
- Northbound DNT and Mockingbird Lane
- Lemmon Avenue and Inwood Road
- Lemmon Avenue and Airdrome Drive
- Lemmon Avenue and University Boulevard

Twenty-four hour tube counts were collected in July 2000 at various locations on roadways surrounding the airport. A seven-day, tube count was also conducted from July 27 through August 3, 2000 on the north and east legs of the Cedar Springs Road and Mockingbird Lane intersection. From this count, the peak hour of airport activity was found to occur on Friday afternoon between 3:45 and 4:45 P.M. Daily traffic for the Friday peak day was found to be 38,800 vpd and 49,900 vpd on Cedar Springs Road and Mockingbird Lane, respectively. Turning counts were also collected at the intersections during this peak period. Supplementing the collected traffic data were 1998 traffic turning movement counts at the Lemmon Avenue and Lovers Lane intersection found in the *Preliminary Traffic Study for an Aviation Terminal at Love Field Airport in Dallas, Texas*, conducted by DeShazo, Tang & Associates, Inc. in April 1998.

Intersection levels of service were based on methodologies prescribed by the Highway Capacity Manual (HCM)¹ for signalized and unsignalized intersections. Level of service for signalized intersections is defined in terms of delay per vehicle. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions. Only the portion of total delay attributed to the control facility is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. In contrast, in previous versions of the HCM (1994 and earlier), delay included only stopped delay. Control delay is sometimes referred to as *signal delay*.

Specifically, level of service (LOS) criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-minute analysis period. The criteria are given in Table 5-1. Delay is a

¹ Transportation Research Board, *Highway Capacity Manual*, Special Report 209, Third Edition, Updated December 1997.



Chapter 5 – Off Airport Roadways and Traffic

complex measure and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group in question.

Table 5-2 provides the results of LOS calculations conducted for the existing traffic conditions during the mid-week A.M. and P.M. commuter peak hours as well as during the Friday afternoon airport peak hour. The turning counts were collected for the mid-week A.M. and P.M. commuter peak hour conditions with the exception of Cedar Springs/Mockingbird. The counts at the Cedar Springs/Mockingbird intersection were collected during the Friday afternoon airport peak hour.

**Table 5-1
INTERSECTION LEVEL OF SERVICE CRITERIA**

Level of Service (LOS)	Description	Signalized Intersection Average Delay (seconds)	Unsignalized Intersection Average Delay (seconds)
A	Very low delay. Most vehicles do not stop at the intersection.	≤ 10	≤ 10
B	More vehicles stop than with LOS A, causing higher delays.	> 10 and ≤ 20	> 10 and ≤ 15
C	The number of vehicles stopping becomes significant, though many still pass through the intersection without stopping.	> 20 and ≤ 35	> 15 and ≤ 25
D	The influence of congestion becomes more noticeable. Many vehicles stop and the proportion of vehicles not stopping declines.	> 35 and ≤ 55	> 25 and ≤ 35
E	Results in delay considered to be unacceptable.	> 55 and ≤ 80	> 35 and ≤ 50
F	Considered unacceptable to most drivers, often occurs with over saturation, when arriving traffic exceeds the capacity at the intersection.	> 80	> 50

Source: 1997 Highway Capacity Manual.

