

## Signalized Intersections

Level of service criteria for signalized intersections is defined in terms of *delay*. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, level of service criteria are stated in terms of the average stopped delay per vehicle for a 15-minute analysis period.

Level of Service	Average Delay (seconds/vehicle)
A	0 - 10
B	> 10 - 20
C	> 20 - 35
D	> 35 - 55
E	> 55 - 80
F	> 80

## Unsignalized Intersections

Level of service criteria for unsignalized intersections is stated in terms of average control delay. Control delay is defined as the total elapsed time from a vehicle joining the queue until its departure from the stopped position at the head of the queue. The criteria for each level of service are cited in the table below.

Level of Service	Average Control Delay (seconds/vehicle)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

## Two-Lane Highway Segments

The 7<sup>th</sup> edition of AASHTO's *Highway Capacity Manual* introduced a new metric to measure level of service of two-lane highway segments: follower density. Follower density is defined as "the number of vehicles in a follower state per mile per lane." A vehicle is considered in a follower state if it has a headway of 2.5 seconds or less.

LOS	Follower Density (followers/mi/ln)	
	Higher-Speed Highways Posted Speed Limit $\geq$ 50 mi/h	Lower-Speed Highways Posted Speed Limit < 50 mi/h
A	$\leq 2.0$	$\leq 2.5$
B	> 2.0 – 4.0	> 2.5 – 5.0
C	> 4.0 – 8.0	> 5.0 – 10.0
D	> 8.0 – 12.0	> 10.0 – 15.0
E	> 12.0	> 15.0
F	Demand exceeds capacity	

HCM Exhibit 15-6 – New LOS Criteria for Two-Lane Highways

## Multilane Highway Segments

According to HCM (7<sup>th</sup> edition), "the service measure for basic freeway and multilane highway segments is density." Density is defined as the number of passenger cars per linear mile of roadway per lane.

Exhibit 12-15: LOS Criteria for Basic Freeway and Multilane Highway Segments

LOS	Density (pc/mi/ln)
A	$\leq 11$
B	>11–18
C	>18–26
D	>26–35
E	>35–45
F	Demand exceeds capacity OR density > 45