

Traffic Characteristics Data

This subpart describes the traffic characteristics data listed in Exhibit 18-6. These data describe the motorized vehicle traffic stream that travels through the intersection during the study period.

Demand Flow Rate

The demand flow rate for an intersection traffic movement is defined as the count of vehicles arriving at the intersection during the analysis period divided by the analysis period duration. It is expressed as an hourly flow rate but may represent an analysis period shorter than 1 h. Demand flow rate represents the flow rate of vehicles arriving at the intersection. When measured in the field, this flow rate is based on a traffic count taken upstream of the queue associated with the subject intersection. This distinction is important for counts during congested periods because the count of vehicles departing from a congested approach will produce a demand flow rate that is lower than the true rate.

There is one exception to the aforementioned definition of demand flow rate. Specifically, if a planning analysis is being conducted where (a) the projected demand flow rate coincides with a 1-h period and (b) an analysis of the peak 15-min period is desired, then each movement's hourly demand can be divided by the intersection peak hour factor to predict the flow rate during the peak 15-min period. The peak hour factor should be based on local traffic peaking trends. If a local factor is not available, then the default value provided in Section 3 can be used.

In summary, demand flow rate for the analysis period is an input to the methodology. This rate is computed as the count of vehicles arriving during the period divided by the length of the period, expressed as an hourly flow rate, and without the use of a peak hour factor. If a peak hour factor is used, it must be used to compute the hourly flow rate that is input to the methodology.

If intersection operation is being evaluated during multiple sequential analysis periods, then the count of vehicles arriving during each analysis period should be provided for each movement.

The methodology includes a procedure for determining the distribution of flow among the available lanes on an approach with one or more shared lanes. The procedure is based on an assumed desire by drivers to choose the lane that minimizes their service time at the intersection, where the lane volume-to-saturation flow ratio is used to estimate relative differences in this time among lanes. This assumption may not always hold for situations in which drivers choose a lane so that they are prepositioned for a turn at the downstream intersection. In this situation, the analyst needs to provide the flow rate for each lane on the approach and then combine these rates to define explicitly the flow rate for each lane group.

Only right turns that are controlled by the signal should be represented in the right-turn volume input to the automobile methodology.

If a right-turn movement is allowed to turn right on the red indication, the analyst may reduce the right-turn flow rate by the flow rate of right-turn-on-red