**Traffic Flow Parameters**

Traffic flow is a difficult phenomenon to describe without the use of a common set of terms. The following paragraphs will introduce most of the common terms that are used in discussions about traffic flow.

**Speed (v)**

The speed of a vehicle is defined as the distance it travels per unit of time. Most of the time, each vehicle on the roadway will have a speed that is somewhat different from those around it. In quantifying the traffic flow, the average speed of the traffic is the significant variable. The average speed, called the space mean speed, can be found by averaging the individual speeds of all of the vehicles in the study area.  
  
**Volume**

Volume is simply the number of vehicles that pass a given point on the roadway in a specified period of time. By counting the number of vehicles that pass a point on the roadway during a 15-minute period, you can arrive at the 15-minute volume. Volume is commonly converted directly to flow (q), which is a more useful parameter.

**Flow (q)**

Flow is one of the most common traffic parameters. Flow is the rate at which vehicles pass a given point on the roadway, and is normally given in terms of vehicles per hour. The 15-minute volume can be converted to a flow by multiplying the volume by four. If our 15-minute volume were 100 cars, we would report the flow as 400 vehicles per hour. For that 15-minute interval of time, the vehicles were crossing our designated point at a rate of 400 vehicles/hour.

**Peak Hour Factor (PHF)**

The ratio of the hourly flow rate ( q60) divided by the peak 15 minute rate of flow expressed as an hourly flow (q15). PHF= q60/ q15

**Density (k)**

Density refers to the number of vehicles present on a given length of roadway. Normally, density is reported in terms of vehicles per mile or vehicles per kilometer. High densities indicate that individual vehicles are very close together, while low densities imply greater distances between vehicles.

Headway, spacing, gap, and clearance are all various measures for describing the space between vehicles. These parameters are discussed in the paragraphs below and are shown graphically in figure 1.0.

**Headway (h)**

Headway is a measure of the temporal space between two vehicles. Specifically, the headway is the time that elapses between the arrival of the leading vehicle and the following vehicle at the designated test point. You can measure the headway between two vehicles by starting a chronograph when the front bumper of the first vehicle crosses the selected point, and subsequently recording the time that the second vehicle’s front bumper crosses over the designated point. Headway is usually reported in units of seconds.

**Spacing (s)**

Spacing is the physical distance, usually reported in feet or meters, between the front bumper of the leading vehicle and the front bumper of the following vehicle. Spacing complements headway, as it describes the same space in another way. Spacing is the product of speed and headway.

**Gap (g)**

Gap is very similar to headway, except that it is a measure of the time that elapses between the departure of the first vehicle and the arrival of the second at the designated test point. Gap is a measure of the time between the rear bumper of the first vehicle and the front bumper of the second vehicle, where headway focuses on front-to-front times. Gap is usually reported in units of seconds.

**Clearance (c)**

Clearance is similar to spacing, except that the clearance is the distance between the rear bumper of the leading vehicle and the front bumper of the following vehicle. The clearance is equivalent to the spacing minus the length of the leading vehicle. Clearance, like spacing, is usually reported in units of feet or meters.