

## **CHAPTER III**

### **BASIC THEORIES**

#### **3.1 Parking Statistics**

Before taking any measures for the betterment of conditions, data regarding availability of parking space, extent of its usage and parking demand is essential. It is also required to estimate the parking fares also. Parking surveys are intended to provide all these information. Since the duration of parking varies with different vehicles, several statistics are used to access the parking need. The following parking statistics are normally important.

##### **3.1.1. Parking Accumulation**

It is defined as the number of vehicles parked at a given instant of time. Normally this is expressed by accumulation curve. Accumulation curve is the graph obtained by plotting number of bays occupied with respect to time.

##### **3.1.2. Parking Volume**

Parking volume is the total number of vehicles parked at a given duration of time. This does not account for repetition of

vehicles. The actual volume of vehicles entered in the area is recorded.

### **3.1.3. Parking Load**

Parking load gives the area under the accumulation curve. It can also be obtained by simply multiplying the number of vehicles occupying the parking area at each time interval with the time interval. It is expressed as vehicle hours.

### **3.1.4. Average Parking Duration**

It is the ration of total vehicle hours to the number of vehicles parked.

$$\text{Parking duration} = \frac{\text{parking load}}{\text{parking volume}}$$

### **3.1.5. Parking Turnover**

It is the ratio of number of vehicles parked in a duration to the number of parking bays available. This can be expressed as number of vehicles per bay per time duration.

$$\text{Parking turnover} = \frac{\text{parking volume}}{\text{no. of bays available}}$$

### **3.1.6. Parking Index**

Parking index is also called occupancy or efficiency. It is defined as the ratio of number of bays occupied in a time duration to the total space available. It gives an aggregate measure of how effectively the parking space is utilized. Parking index can be found out as follows

$$\text{Parking index} = \frac{\text{parking load}}{\text{parking capacity}} \times 100$$