

Traffic Management Measures

The fundamental approach in traffic management measures is to restrain as much as possible existing pattern of streets but to alter the pattern of traffic movement on these, so that the most efficient use is made of the system.

Some of the well-known traffic management measures are

i. Restrictions on turning movements

ii. One-way streets

iii. Tidal-flow operations

iv. Exclusive Bus-lanes

v. Closing side-streets

1.RESTRICTIONS OF TURNING MOVEMENTS

a.The problem posed by turning traffic

At a junction, the turning traffic includes left-turners and right-turners. Left –turning traffic dose not usually obstruct traffic flows through the junctions, but right-turning traffic can cause serious loss of capacity.

At times, right-turning traffic can lock the flow and bring the entire flow to a halt. One way of dealing with heavy right-turning traffic is to incorporate a separate right-turning phase in the signal scheme, or to introduce an early cut-off or late start arrangement. These schemes have their limitations and result in a long signal cycle. Another solution is to ban the turning movement altogether.

b.Prohibited right- turning movement

Prohibition of right-turning movement can be established only if the existing street system is capable of accommodating an alternative routing. Depending upon the existing layout of the street system, three methods are available:

i. Diversion of the right-turning traffic to an alternative intersection further along the road where there is more capacity for dealing with a right-turn. This scheme is known as a T turn.(fig a)

ii. Diversion of the right-turning traffic to the left before the junction. This scheme is known as a G turn.(fig b)

iii. Diversion of the right-turning traffic beyond the junction. This scheme is known as a Q turn.(fig c)



2.ONE-WAY STREETS

One-way streets are those where traffic movement is permitted in only one direction. As a traffic management measure intended to improve traffic flow, increase the capacity and reduce the delays, one-way streets are known to yield beneficial results.

Advantages of one-way streets

i. **A reduction in the points of conflict.** Traffic movements at junctions involve a number of points of conflict. These generate delay, congestion and accident hazards. Any scheme where the points of conflict are reduced in number is thus conducive to better safety and less delay.

ii. **Increased capacity.** The removal of opposing traffic and the reduction of intersection points of conflict results in a marked increase in the capacity of a one-way street.

iii. **Increased speed.** Since the opposing traffic is eliminated, drivers can operate at higher speeds. This is further facilitated by the more efficient operation of the traffic signal system that is possible under one-way street operation.

Disadvantages

i. Although the journey times and delays are reduced, the actual distances to be covered by drivers increase.

ii. Where buses operate on the streets, the stop will have to be relocated and in many instances the passengers will have to be relocated and in many instances the passengers will have to walk extra distances.

iii. The excessive speeds that follow as a result of one-way operation may be a hazard to residential areas. Thus, while the number of accidents may decrease, the severity will increase with one-way operation.

3.TIDAL FLOW OPERATION

One of the familiar characteristics of traffic flow on any street leading to the city center is the imbalance in directional distribution of traffic during peak hours. One of the methods of dealing with this problem is to allot more than half the lane for one direction during peak hours. This system is known as "tidal flow operation" or reverse flow operation.

Methods

The principle of tidal flow operation can be translated into practice in two ways:

(i) The first is to apportion a great number of lanes in a multi-lane street to the in-bound traffic during morning peak and similarly a great number of lanes to the out-bound traffic during the evening peak.

(ii) The second requires the existence of two separate streets parallel to each other and close to each other, so that the wider of the two can be set apart for the heavier traffic both during morning peak and evening peak. In this case, the two streets will operate as one-way streets.

4. CLOSING SIDE-STREETS**Method**

A main street may have a number of side-streets where the traffic may be very light. In such situations, it may be possible to close some of these side-streets without affecting adversely the traffic, and yet reap a number of benefits.

Advantages

i. Since interference from the traffic from side streets is eliminated, the speed increases and journey time reduces.

ii. For the same reason as above, the accident gets reduced.

iii. If the side streets are too many and at close intervals, it is difficult to formulate a scheme for the progressive system of signals.

Disadvantages

- i. Closure of a number of cross-streets may increase the flow to and fro the remaining cross-streets. This may necessitate signal control and other measures at these junctions.
- ii. When a number of side-streets are closed, the immediate effect is an increase in the parking of vehicles on the main street itself.

5.EXCLUSIVE BUS LANES

Exclusive bus lanes running against heavy one-way flow are also very common. One experience suggests that such an arrangement nearly halves the journey time. A good measure of enforcement is needed if serious accidents have to be avoided in this system.

Bus priority measures are a cheap and easy way to provide some aid to bus services. The journey time can be considerably reduced and bus journey time can be made more attractive.



