TRANSPORTATION SYSTEM MANAGEMENT

Transportation System Management (TSM) is a package of short term measures to make the most productive and cost-effective use of existing transportation facilities, services and modes.

OBJECTIVES/PURPOSES OF TRAFFIC MANAGEMENT

1) To reduce the number of accidents
2) To ensure the smoothness of traffic movement
3) To improve the movement of goods and humans
4) To balance the modal split
5) To minimize the clash between vehicles and the pedestrian
6) To control and manage the car park

SCOPE OF TRAFFIC MANAGEMENT MEASURES

TRAFFIC MANAGEMENT MEASURES

- Restrictions on turning movements
- One-way streets
- Tidal-flow operations
- Exclusive bus lanes
- Closing side streets

Restrictions on turning movements

- Problem posed by turning traffic
- Prohibited right-turning movement
- Prohibited left-turning movement
One – way streets

Advantages:

- Reduction in the points of conflict
- Increased capacity
- Increased speed
- Facilities the operation of a progressive signal system
- Improvement in parking facilities
- Elimination of dazzle and head-on collision

Tidal-flow operations

Tidal flow operation is a traffic management process whereby the carriageway width is shared between the two directions of travel in near proportion to the flow in each direction.
**Exclusive Bus Lanes**

A bus lane or bus only lane is a lane restricted to buses, often on certain days and times, and generally used to speed up public transport that would be otherwise held up by traffic congestion. Certain other vehicles may also be permitted, such as taxis, high occupancy vehicles, motorcycles, or bicycles.
Measures in high accident zone

TRAVEL DEMAND MANAGEMENT
List of Techniques commonly adopted:

- Car pooling and other ride-sharing programmes
- Peripheral parking schemes
- Chartered buses (Institutional buses) to serve areas of trip origins to common work place
- Staggering of office hours and flexible time to work
- Internal shuttle service in CBD
- Parking restraint
- Road Pricing
- Entry fee
- Priority for buses in traffic
- Restrictions on entry of trucks during day time
# TDM measures

**PULL MEASURES**

- Traffic management.
- Improvement of alternative modes.
- Integrated multi mode transport system.
- New technologies.

**PUSH MEASURES**

- Increasing vehicle occupancy.
- Influencing time and need of travel.
- Creating deterrence by introducing charges.
- Imposing restrictions.
- Land use and urban planning

**Pull measures** aims at attracting the road users to alternative modes, whereas push measures tries to demoralize car users.

**Demand side**

- Reducing the vehicle by modal change and HOV.
- Redistributing the vehicles by changing time and space of travel.

## TDM measures

**PULL MEASURES**

- **Integrated multi mode transport system**
  - Park and Ride facilities;
  - Kiss and Ride facilities.

- **Traffic management**
  - Efficient use via traffic eng. Measures

- **Improvement of alternative modes**
  - Public transportation;
  - Para-transit;
  - Bicycle/walking.

- **New technologies**
  - Intelligent Transportation System.
  - Low emission vehicle.
  - New underground delivery system.
ITS is an emerging transportation system which is comprised of an advanced information and telecommunications network for users, roads and vehicles. ITS is the integrated application of advanced Technologies using electronics, computers, communications, and advanced sensors.

**Program Areas includes different ITS applications:**

- Freeway management
- Incident management
- Transit management
- Arterial management
- Emergency management
- Electronic payment
- Traveler information
- Crash prevention and safety
- Operations and maintenance
- Road weather management
Benefits of ITS

- Safety improvements
- Delay savings
- Throughput
- Customer satisfaction
- Cost savings
- Environmental
- Other.

Advanced Traffic Management System (ATMS)
ATMS integrates various sub-systems such as CCTV, vehicle detection, communications, variable message systems, etc into a coherent single interface that provides real time data on traffic status and predicts data for more efficient planning and operations.

Advanced Traveler Information System (ATIS)
It provides to the users of transportation system, travel related information to assist decision making on route choices, estimate travel times and avoid congestion. This can enabled by providing different information using various technologies such as,

- GPS enabled in-vehicle navigation system
- Dynamic road message signs for real time communication of information on traffic congestions, bottlenecks, accidents and alternate route information during road closure and maintenance.
- Website to provide a colour-coded network map showing congestion levels on highways.
**Advanced Vehicle Control System (AVCS)**

These are the tools and concepts that enhance the driver’s control of vehicle to make travel safer and more efficient. In vehicle Collision warning System alert the driver to a possible imminent collision. In more advanced AVCS applications, the vehicle could automatically break or steer away from a collision, based on input from sensors on the vehicle.
Commercial Vehicle operations (CVO)
It comprises an ensemble of satellite navigation systems, a small computer and a digital radio, which can be used in commercial vehicles such as vans, trucks and taxis. This system affords constant monitoring of truck operations by the central office and provides safety and traceability.

Advanced Public Transportation Systems (APTS)
It includes,

- Real time passenger information system
- Automatic vehicle location system
- Bus arrival notification system
- System providing priority of passage to buses at signalized intersections
**Advanced Rural Transportation System (ARTS)**

It provides information about remote road and other transportation systems. It includes automated roads and weather conditions reporting and directional information. This type of information is valuable to motorists travelling to remote or rural areas. It will be a valuable asset to countries like India where rural areas are widely distributed.

![Traffic Info Radio Sign](image1.png)

Ottawa’s rural ITS deployment includes MDTs, which are used for communication between drivers and dispatchers and for pre-trip inspections.

![Advanced Rural Transportation Systems (ARTS)](image2.png)