

TRANSPORTATION SYSTEM MANAGEMENT

Transportation system management (TSM) actions are intended to improve the operating efficiency of the existing transportation system (facilities, services, and modes). TSM actions may consist of traffic engineering improvements such as channelization, turn lanes, one-way streets, intersection widening, and traffic control improvements such as traffic signal coordination, and optimization of signal timing.

COORDINATED TRAFFIC SIGNAL SYSTEM

The coordination of signal operation between adjacent intersections offers an opportunity for significant benefits to motorists in the City of Mount Vernon. On open highways, traffic flow is characterized as being random in that it is not normally influenced by upstream interruptions. Its arrival point is generally uniform throughout a selected time interval. In contrast, traffic flow on urban streets is generally less uniform because of interruptions and it tends to flow in pulsed groups of vehicles or platoons. Signal coordination simply attempts to recognize this flow characteristic and coordinate signal operation to accommodate platoons with minimal stops. In addition, safety can be enhanced through progressive movement because of reduced stops and delays and increased driver comfort and satisfaction. In fact, a layperson's view of good signal timing is where progression permits continuous movement with no random stops. Individual motorists understand and are able to observe route continuity, but not optimize system-wide measures of effectiveness.

In Mount Vernon, the following arterials are recommended for complete traffic signal coordination:

- College Way between Laventure Road and Freeway Drive
- Laventure Road between Blackburn Road and College Way
- Riverside Drive between Hoag Road and Fulton Street

In the downtown area, all signalized intersections bounded by I-5, Cameron Way, South 1st Street, and Blackburn Road must have a centralized traffic

control center and should be operated as a network. As these streets are improved, provisions should be made for the future interconnection of these systems. Currently the City has provided conduit and fiber optic cable along College Way, and Riverside Drive. This cable can be used to interconnect traffic lights as well as operate a video camera surveillance system.

INTERSECTION IMPROVEMENTS

As part of the TSM action in Mount Vernon, capacity improvements are recommended using signalized lane additions or channelization as identified by localized intersection capacity studies conducted by the City. Individual signal analyses will need to be performed for each proposed signal to ensure that the appropriate warrants are met. The City will regularly monitor the impact of cumulative development at the intersections of classified arterial streets within the City street network to ensure that they meet concurrency code requirements.

TRAFFIC CALMING FOR NEIGHBORHOOD TRAFFIC CONTROL

Traffic calming generally refers to techniques that can be used to reduce speed or use on neighborhood streets and make the street a friendlier environment for pedestrians and bicyclists. Excessive speeds and / or cut-through traffic compromises neighborhood livability, creating noise and air pollution, causing difficulties for pedestrians and bicyclists, and more importantly jeopardizing the safety of children. When conditions are appropriate, special measures may be taken to control both the volume and speed of traffic in neighborhoods. These are frequently referred to as traffic calming methods. Typical techniques are outlined in Table A below.

TABLE A: Typical Traffic Calming Techniques

Speed/ Volume Reduction	Pedestrian Safety	Reduce Traffic Volume	Local Neighborhood Involvement	Other
Police Enforcement	Pedestrian Refuges/ Slow Points	Vehicle Exclusio n Lanes	Creative Approaches to Slowing Down Speeders	Round- abouts
Traffic Circles	Curb Extensions	Diagonal Diverters	Speed Watch	Stop Signs
Chicanes	Raised Crosswalks	Median Barriers		
Entrance Treatments		Cul-de- sacs		
		Semi- Diverters		
		Choke Points		

The City can be a supporting partner in designing creative and workable ways to restore and preserve safe and peaceful streets. However, in order not to create unnecessary inconvenience to those using a street appropriately, or potential safety hazards, careful evaluation of the method(s) proposed, including a detailed engineering study, must be done before more permanent restrictive actions are taken.

SPEED REDUCTION

Police Enforcement - Residents and businesses alert police officers to speeding problems in their neighborhoods, by contacting the Police Department. These calls usually bring extra patrols to the trouble spot. In the long run, police observations may lead to traffic engineering solutions to slow traffic. When police enforcement alone isn't solving the problem, the police may recommend that the Transportation Department consider traffic calming solutions.

Traffic Circles - Traffic circles are raised islands placed in an intersection. They are landscaped with ground cover and street trees. Traffic circles require drivers to slow to a speed that allows them to comfortably maneuver around them. The primary benefit of traffic circles is that they reduce the number of angle and turning collisions. An additional benefit is that

they slow high-speed traffic. Traffic circles are most effective when constructed in a series on a local service street. However, they can restrict emergency or transit vehicle movement if vehicles are parked illegally near the circle. If well maintained, traffic circles can be very attractive. However, there are also a lot of traffic control signs and pavement markings associated with circles that are not so attractive. Traffic circles are less effective at T-intersections and difficult to design for offset intersections.

Chicanes - A chicane is intended to reduce vehicle speeds with less impact on emergency vehicles. A chicane changes a street's path from straight to serpentine. It may be constructed to give the illusion, from a distance that a street no longer continues.

Entrance Treatments - Entrance treatments create visual and occasionally audible cues that tell drivers they are entering a local residential area or that the surrounding land uses are changing. The intent is a reduction in speed. Entrance treatments consist of physical and textural changes to streets and are located at key entryways into a neighborhood. Entrance treatments have minimal influence on drivers' routine behavior. Overall speeds and total volumes are not influenced, but it is believed that drivers are made more aware of the environment in which they are driving and are more considerate of pedestrians.

PEDESTRIAN SAFETY

Pedestrian Refuges/Slow Points - Pedestrian refuges or slow points are small islands in the middle of the street. They serve to narrow the vehicle travel lanes. They can be installed either at intersections or midblock. Slow points are used to enhance pedestrian crossing points and provide a visual narrowing along the roadway. Depending on their location, they may also result in small to moderate traffic speed reductions.

Curb Extensions - Curb extensions narrow the street by widening the sidewalk or the landscaped parking strip. These devices are employed to make pedestrian crossings easier and to narrow the roadway. Curb extensions effectively improve pedestrian safety by reducing the street crossing distance and

improving sight distance. They may also slightly influence driver behavior by changing the appearance of the street. They can be installed either at intersections or mid-block.

Raised Crosswalks - Raised cross walks are cross walks constructed 3-4 inches above the elevation of the street. They typically have a profile similar to large speed hump. Raised crosswalks are intended to reduce vehicle speeds specifically where pedestrians will be crossing a street. Raised crosswalks are very effective at reducing vehicle speeds, however, they may generate noise from vehicles decelerating and accelerating. Raised cross walks selected for a street must take into consideration whether or not it is used as an emergency response route. Consideration for visually impaired persons dictates not placing the raised crosswalk at the same elevation as the sidewalk. Though the cross walk is raised from the street surface, a pedestrian should also be able to tell when they are entering an area shared with automobiles.

TRAFFIC VOLUME REDUCTION

Diagonal Diverters - Diagonal diverters place a barrier diagonally across an intersection, disconnecting the legs of the intersection. Strategically located diagonal diverters reduce traffic volumes on a street. Diagonal diverters prevent through moves at an intersection.

Semi-Diverters - Semi-diverters are curb extensions or islands that block one lane of the street. They prevent drivers from entering or exiting certain legs of an intersection. Strategically located, semi-diverters can effectively reduce traffic volumes on a street.

Median Barriers - A median barrier is a concrete curb or island that is located on the centerline of a street and continues through the street's intersection with a given cross street. Strategically located median barriers reduce traffic volumes on a street by preventing left turns from the through street and left turns and through movements from the cross street.

Cul-de-Sacs - Cul-de-Sacs close one end of a street. Cul-de-sacs are intended to change traffic patterns. Cul-de-sacs will terminate cut-through and significantly reduce general traffic

volume. However, the diverted traffic may have an undesirable impact on other facilities.

Vehicle Exclusion Lanes - Exclusion lanes are lanes for a particular class of vehicle, excluding all others. The most common examples are the bus-only, bicycle and car pool/diamond lanes. The effectiveness of exclusion lanes varies with the location of their placement. Their effectiveness is greatest when there are clear alternatives that are easier to use than violating the lane restriction.

Choke Points - Choke points are curb extensions placed mid-block to narrow the roadway to approximately the equivalent of one travel lane. Choke points are intended to reduce traffic volumes by making the roadway narrow so that only one car at a time can pass through it.

OTHER

Roundabouts - Modern roundabouts differ from traffic circles and have benefits that traditional signalization cannot provide. Roundabouts are especially useful at reducing the number of angle collisions. These types of collisions are usually the most costly in terms of property damage, injury and death. The modern roundabout can offer effective intersection traffic control at a reduced life-cycle cost.

Stop Signs - The City does not generally install stop signs as a way to slow traffic. The city installs stop signs where there might be a question about who should have the right-of-way to prevent crashes. When stop signs are installed to slow down speeders, drivers may, in fact, increase their speed between signs to compensate for lost time. This creates an even more dangerous situation. Stop signs in inappropriate places could result in more drivers running stop signs and speeding through neighboring streets.

LOCAL NEIGHBORHOOD INVOLVEMENT

Speed Watch - A Speed Watch Program can train residents to use radar in their neighborhoods and would provide free equipment for a week. (This program does not issue speeding tickets.)

CREATIVE APPROACHES TO SLOWING DOWN NEIGHBORHOOD SPEEDERS

Banners- In most cases, speeding results from habit, not from an intentional decision to break the law. Thus, short-term reminders to slow down are effective in getting people to change their driving behavior. Banners alert motorists to check driving speeds.

Plant trees- Street trees offer a beautiful alternative to the wide-open speedway feeling of a treeless neighborhood street.

Leave your car at home- Encouraging your family and friends to ride their bicycle, walk, or

take the bus/light rail, this will reduce the traffic volume and speeding in your neighborhood.

Neighborhood activities- Residents and businesses can be creative and enthusiastic about traffic safety. Community members are encouraged to create their own ways to remind people to observe speed limits. Any action that reminds people to watch their speed will affect potential speeders. Some residents walked their neighborhoods to place door hangers on nearby homes. A block party around the theme, "Slow Down" gets people thinking and talking about their driving habits.