

# congestion management process

A PUBLICATION OF THE CORPUS CHRISTI METROPOLITAN PLANNING ORGANIZATION



**In Cooperation with**  
City of Corpus Christi  
City of Portland  
Nueces County  
San Patricio County  
Port of Corpus Christi Authority  
Regional Transportation Authority  
Texas Department of Transportation

Approved by the  
Transportation Policy Committee  
November 6, 1997

Amended and Approved  
May 7, 2009

Development Congestion Management Objectives •

Identify Area of Application •

Define System or Network of Interest •

Development Performance Measures •

Institute System Performance Monitoring Plan •

Identify and Evaluate Strategies •

Implement Selected Strategies and Management Transportation System •

Monitor Strategy Effectiveness •

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## INTRODUCTION

The Corpus Christi Metropolitan Planning Organization's Congestion Management Process (CMP), which grew from the Congestion Management System (CMS), is intended to serve as an organized and transparent way for our planning area to identify and manage congestion, connect performance measures to support funding for projects, and evaluate recommended strategies to ensure we are effectively addressing congestion.

## BACKGROUND

Designated Transportation Management Areas (TMAs), urbanized areas with a population over 200,000, are required to maintain and use a CMP in their transportation planning and decision-making. The 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), further reinforces the need for a CMP by reiterating that the goal of the law is to utilize a process that is an integral component of metropolitan transportation planning.

The final rule on the required components of a CMP state:

- The transportation planning process in a TMA shall address congestion management through a process that provides for safe and effective integrated management and operation of the multimodal transportation system, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing transportation facilities eligible for funding under title 23 U.S.C. and title 49 U.S.C. Chapter 53 through the use of travel demand reduction and operational management strategies.
- The development of a congestion management process should result in multimodal system performance measures and strategies that can be reflected in the metropolitan transportation plan and the Transportation Improvement Program (TIP). The level of system performance deemed acceptable by State and local transportation officials may vary by type of transportation facility, geographic location (metropolitan area or subarea), and/or time of day. In addition, consideration should be given to strategies that manage demand, reduce single occupant vehicle (SOV) travel, and improve transportation system management and operations. Where the addition of general purpose lanes is determined to be an appropriate congestion management strategy, explicit consideration is to be given to the incorporation of appropriate features into the SOV project to facilitate future demand management strategies and operational improvements that will maintain the functional integrity and safety of those lanes.
- The congestion management process shall be developed, established, and implemented as part of the metropolitan transportation planning process that includes coordination with transportation system management and operations activities.

The congestion management process shall include:

- A. Methods to monitor and evaluate the performance of the multimodal transportation system, identify the causes of recurring and non-recurring congestion, identify and

evaluate alternative strategies, provide information supporting the implementation of actions, and evaluate the effectiveness of implemented actions;

- B. Definition of congestion management objectives and appropriate performance measures to assess the extent of congestion and support the evaluation of the effectiveness of congestion reduction and mobility enhancement strategies for the movement of people and freight. Since levels of acceptable system performance may vary among local communities, performance measures should be tailored to the specific needs of the area and established cooperatively by the State(s), affected Metropolitan Organization(MPO)s, and local officials in consultation with the operators of major modes of transportation in the coverage area;
  - C. Establishment of a coordinated program for data collection and system performance monitoring to define the extent and duration of congestion, to contribute in determining the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions. To the extent possible, this data collection program should be coordinated with existing data sources (including archived operational/Intelligent Transportation System [ITS] data) and coordinated with operations managers in the metropolitan area;
  - D. Identification and evaluation of the anticipated performance and expected benefits of appropriate congestion management strategies that will contribute to the more effective use and improved safety of existing and future transportation systems based on the established performance measures. The following categories of strategies, or combinations of strategies, are some examples of what should be appropriately considered for each area:
    - Demand management measures, including growth management and congestion pricing;
    - Traffic operational improvements;
    - Public transportation improvements;
    - ITS technologies as related to the regional ITS architecture; and
    - Where necessary, additional system capacity;
  - E. Identification of an implementation schedule, implementation responsibilities, and possible funding sources for each strategy (or combination of strategies) proposed for implementation; and
  - F. Implementation of a process for periodic assessment of the effectiveness of implemented strategies, in terms of the area's established performance measures. The results of this evaluation shall be provided to decision makers and the public to provide guidance on selection of effective strategies for future implementation.
- State laws, rules, or regulations pertaining to congestion management systems or programs may constitute the congestion management process, if the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) find that the State laws, rules, or regulations are consistent with, and fulfill the intent of, the purposes of 23 U.S.C. 134 and 49 U.S.C. 5303.

While the CMP represents the state-of-the-practice in addressing congestion, we are challenged to establish a suitable and valuable method that will respond for our existing planning conditions. That said, the previous CMS consisted of seven steps. The CMP, currently an eight step process (see below), will be outlined and critical elements of its implementation highlighted for our region.

1. Develop Congestion Management Objectives
2. Identify Area of Application
3. Define System or Network of Interest
4. Develop Performance Measures
5. Institute System Performance Monitoring Plan
6. Identify and Evaluate Strategies
7. Implement Selected Strategies and Manage Transportation System
8. Monitor Strategy Effectiveness

#### DEVELOPMENT CONGESTION MANAGEMENT OBJECTIVES

The following objectives were derived from the vision and goals in the Metropolitan Transportation Plan (MTP) which cover streets/highways, public transportation, bicycle/pedestrian plans, railroads/trucking, port, airport and recreational, travel & tourism:

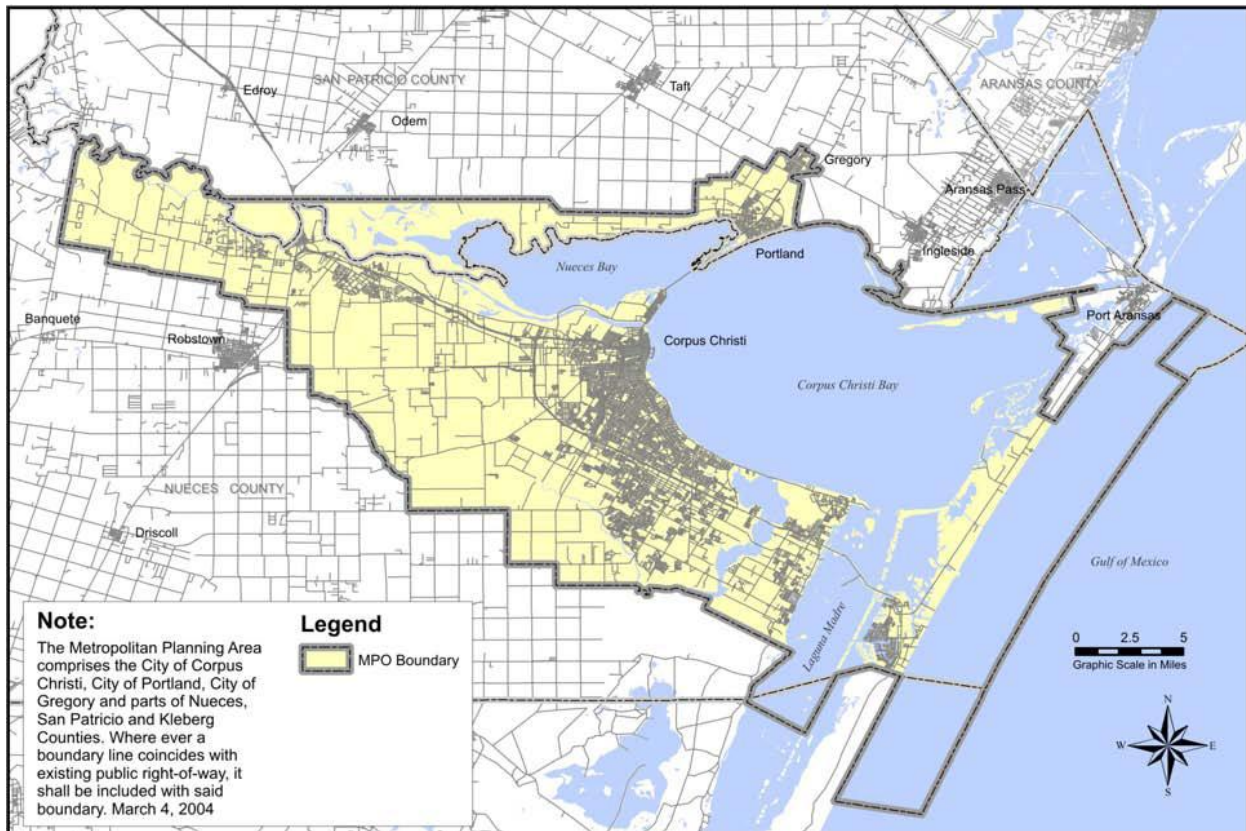
- **SOV Travel:** SOV is the predominant mode of travel within the MPO area, which is a major cause of congestion and deteriorating air quality.  
**Action:** Ridesharing, carpooling, vanpooling, bicycle, transit service, flexible work hour program, compressed work week, parking management, congestion pricing, traffic signal improvement, intersection improvement, growth management, access management, ITS, advanced transportation management system, commercial operation, freeway incident management system.
- **Traffic Signal Synchronization:** Unsynchronized signals contribute to traffic congestion. Drivers experience stops, stop-delays, and longer travel time contributing to increased fuel consumption, congestion, and air pollution.  
**Action:** Traffic signal timing improvements.
- **Access Management:** Closely spaced driveways and their nearness to intersections on arterial streets hamper traffic movement causing congestion and air pollution.  
**Action:** Geometric design, traffic signal improvement, intersection improvement, parking management, growth management (subdivision regulations).
- **Intersections without Right Turn Channelization:** Intersections with heavy right turn traffic movements without right turn channelization contribute to congestion during peak hours.  
**Action:** Geometric design (lane marking), traffic signal improvement, intersection improvement.
- **One Way Pairs:** Absence of one way pairs causes intersection delays, complicates signal timing, and decreases road and pedestrian safety.  
**Action:** Traffic signal improvement, intersection improvement.

- **Continuous Left Turn Lanes:** Consideration should be given to use raised center medians in lieu of continuous turn lanes in areas of heavy traffic concentration, higher travel speeds, and frequent driveway spacing.  
**Action:** Geometric design (raised medians), traffic signal improvement, intersection improvements, parking management, and access management.
- **Land use:** Residential areas are developing farther and farther from commercial, educational, recreational, and health facilities. Commercial activities are concentrating along South Padre Island Drive (SPID) between Weber and Airline in Corpus Christi. This type of development is increasing trip distances and discourages transit and bicycle trips.  
**Action:** Growth management (mixed-use development, planned unit development).
- **School Zones on Major Arterials:** Arterial street system serves major centers of activity of a metropolitan area. These facilities emphasize mobility rather than land accessibility. Low driving speed limits in school zones on major arterials cause traffic delays and congestion.  
**Action:** Geometric design, traffic signal improvements, intersection improvements, parking management, access management (designated cross walks).
- **Speed Limit:** Higher functional streets not posted with appropriate speed limits result in speeding violations and inefficient traffic flow.  
**Action:** Speed limit revision.
- **Traffic Signs:** Improper placement or lack of traffic signs at intersections hamper traffic flow.  
**Action:** Intersection improvement.
- **Bus Bays:** Bus bays play an important part in reducing congestion, whereas absence of bus bays on busy streets adds to congestion.  
**Action:** Geometric design. The Regional Transportation Authority (RTA) conducts ongoing studies to add more bus bays where justified.
- **Transit Service:** Enhanced travel and headway times in the MPO area will mitigate congestion and improve air quality.  
**Action:** Direct transit between activity centers and residential areas; growth management.
- **Walkways:** Some walkways originating in the residential area do not provide a continuous link to schools, businesses, and recreational facilities. Walkways that are not properly maintained and lack Americans with Disabilities Act (ADA) accessibility ramps discourage potential users.  
**Action:** Walkways, traffic signal improvements, intersection improvements, growth management, and access management.
- **Bikeways:** Street and off street bicycle facilities are necessary as an alternative mode of transportation to alleviate congestion and enhance air quality. The City of Corpus Christi has formed a Bicycle Advisory Subcommittee to work on a Master Bicycle Plan for bicycle routes.  
**Action:** Bicycle routes; traffic signal improvements, intersection improvements, growth management, and access management.

- Intermodal Transfer Locations:** The MPO area does not have a designated passenger or freight intermodal facility where all the intercity or intracity traffic could make transfers.
   
**Action:** Intermodal facilities for passengers and freight, transit service improvements, and parking management; intermodal connectors.

**IDENTIFY AREA OF APPLICATION**

The following map illustrates the physical extent of the Corpus Christi MPO area. The boundary encompasses the area which was urbanized, by U.S. Census Bureau definition, in 2000 and the area which is expected to be urbanized in twenty years following 2007.



Corpus Christi MPO Area

The metropolitan planning study area – including parts of the rural areas in Nueces and San Patricio counties – had an estimated population of 380,783 in 2000. The region consists of 1,873 square miles with a population density of 203.30 residents per square mile.

**DEFINE SYSTEM OR NETWORK OF INTREST**

The network characteristics of surface transportation indicate that in spite of our water front presence, land is readily available. As a regional hub (port, airport, university, medical centers, employment), development in our region continues to grow at a moderate rate.

Commuting to work numbers show that our numbers compare to the Texas statewide results:

<b>MODE TO WORK</b>	<b>LOCAL</b>	<b>TEXAS</b>
Drove Alone	76.3 %	77.7 %
Car Pooled	16 %	14.5 %
Public Transit	1.6 %	1.9 %
Walked	2.1 %	1.9 %
Other Means	1.6 %	1.3 %
Worked at Home	2.4 %	2.8 %

The economic character of the community and region continue to have the existing infrastructure developed and revitalized. The Port of Corpus Christi Authority’s plans for the La Quinta Trade Gateway project which will accommodate a modern, multi-modal facility providing seamless transfer of cargo, trailers, and containers between highway, rail, ferry, coastal and deep sea conveyances continues to progress forward. Area Economic Development Corporation partners have worked to secure an operational establishment for China’s largest manufacturer of steel pipe – to be located just outside of Gregory, Texas. Zachary American Infrastructure is in the process of negotiating a public-private partnership with local governmental entities to develop and build Highway 77 up to Interstate standards. As part of the funding available through the American Recovery and Reinvestment Act of 2009, the completion of the Joe Fulton International Trade Corridor – connecting Interstate Highway 37 and the Port of Corpus Christi is being realized.

The City of Corpus Christi’s land use plan shows ongoing growth in the Southside. Land use changes along SPID are challenging to the transportation network. With SPID as the only major highway corridor connecting the mainland to the island, it is operating at a lower level of service causing traffic congestion and delays. The arterial system adjacent to SPID has been identified as congested requiring traffic studies to determine if access management improvements can provide relief.

The Southside Mobility Corridor study is a critical element in the long-range development of the system. This project promises to alleviate existing elevation limitations evident on the only bridge from the island to the mainland. The Corridor will enhance safety issues by providing island residents with an alternative evacuation route from the island to the mainland – especially during hurricane evacuation.

The cities of Portland, Gregory, Ingleside and Robstown are neighboring communities for the Corpus Christi area. The Corpus Christi Naval Air Station and the Corpus Christi Army Depot are the largest employers in the area. Many people commute from neighboring communities to Corpus Christi. Tourist attractions which bring many tourists to this area for short durations include: the USS Lexington Museum, the Texas State Aquarium, Padre Island National Seashore, Whataburger Field – Home of the Corpus Christi Hooks Double-A Baseball, Port Aransas Beaches, and the Botanical Gardens and Nature Center. The cumulative effect of these activities is an additional demand on housing and commerce that in turn generate more travel trips.

Funding for the area is driven by methods established by Texas Department of Transportation (TxDOT) which entails grouping Federal programs under various classifications. Given that the MPO, in collaboration with TxDOT and interested parties, select projects for Category 2 and 7 funds – a projection of funding in this area is of community wide concern.

- Category 2 provides for funding mobility and added capacity projects on major state highway system corridors which serve the mobility needs of a TMA.
- Category 7 provides for funding mobility projects within the TMAs.

Available TIP planning period funding projection:

CATEGORY	2 METROPOLITAN AREA (TMA) CORRIDOR PROJECTS		7 METRO MOBILITY AND REHABILITATION	
	Programmed	Authorized	Programmed	Authorized
FY 2008	\$32,084,000	\$32,084,000	\$1,918,644	\$1,918,644
FY 2009	\$85,360,000	\$85,360,000	\$11,730,707	\$11,730,707
FY 2010	\$56,243,200	\$56,243,200	\$6,524,212	\$6,524,212
FY 2011	\$103,000,000	\$103,000,000	\$4,824,494	\$4,824,494
Total FY 2008-2011	\$276,687,200	\$276,687,200	\$24,998,057	\$24,998,057

**DEVELOPMENT PERFORMANCE MEASURES**

The intent of presenting performance measures is to provide the public, appointed, and elected official with tools that will effectively communication the performance of the transportation network and operations. It is important for our study area to remain observant and aware of our attainment designation for ozone or carbon monoxide as an adverse change in these areas will certainly impact local assessment.

In a TMA designated as a nonattainment area for ozone or carbon monoxide pursuant to the Clean Air Act, Federal funds may not be programmed for any project that will result in a significant increase in the carrying capacity for SOVs ( i.e. , a new general purpose highway on a new location or adding general purpose lanes, with the exception of safety improvements or the elimination of bottlenecks), unless the project is addressed through a congestion management process.

In TMAs designated as nonattainment for ozone or carbon monoxide, the congestion management process shall provide an appropriate analysis of reasonable (including multimodal) travel demand reduction and operational management strategies for the corridor in which a project that will result in a significant increase in capacity for SOVs (as described in the previous paragraph) is proposed to be advanced with Federal funds. If the analysis demonstrates that travel demand reduction and operational management strategies cannot fully satisfy the need for additional capacity in the corridor and additional SOV capacity is warranted, then the congestion management process shall identify all reasonable strategies to manage the SOV facility safely and effectively (or to facilitate its management in the future). Other travel demand reduction and operational management strategies appropriate for the corridor, but not appropriate for incorporation into the SOV facility itself, shall also be identified through the congestion management process. All identified reasonable travel demand reduction and operational management strategies shall be incorporated into the SOV project or committed to by the State and MPO for implementation.

The following travel characteristics and definitions are data collection options considered when assessing core system performance measures to evaluate relevant objectives and congestion issues facing the region.

**Average Travel Speed:** The average travel speed is computed as the distance traveled divided by the average total time to traverse a given highway segment. It is obtained from a travel time study along the route. The total time includes stopped delays in addition to the actual time of motion. Necessary number-of-travel-time-runs depend on the variance in travel time, the acceptable degree of precision, and the level of confidence desired. Therefore, average travel speeds are a poor measure of roadway congestion.

**Average Travel Time:** The average travel time is defined as the total time to traverse a length of a roadway under prevailing traffic conditions. All stopped delays are included in the average travel time. This measure can be used to compare the quality of service of various alternate routes from a point of origin to a point of the destination.

**Traffic Volume Counts:** A basic function of highway planning and management needed as an input to the majority of traffic engineering analyses. Key to making traffic monitoring valuable is the ability of the traffic monitoring program to supply users with the data they need, ease of access to the information, and the quality of the data provided. Even with limited data collection budgets, good communication between data users and data collectors can result in data summaries that meet the needs of data users.

**Total Delay:** Total delay or stopped delay is the time that a vehicle is stopped in traffic or at an intersection. Expressed in seconds per vehicle, stopped delay can be measured as the actual “locked wheel” time, or in terms of time less than a very slow speed, such as 5 mph. The Highway Capacity Manual’s (HCM) delay equation uses turning movement volumes to capacity ratios to determine stopped delays at intersections. Intersection delay is not a good performance measure for the following two reasons:

1. The inability to forecast turning movements of an intersection, and
2. It is not readily adaptable as a corridor or area wide measure.

However, delay studies are useful for determining the locations, causes and lengths of delays. Total delay information can only be used to locate and measure spot areas of congestion.

**Level of Service:** The most common measure currently used to define congestion involves Level-of-Service (LOS) values as defined in the 1985 HCM. Sometimes LOS is a qualitative measure describing operational conditions of a segment or traffic stream. Six different levels are defined (LOS A, B, C, D, E, and F) with LOS A representing the best condition and LOS F representing the worst condition. LOS can be defined and measured differently depending upon the roadway facility it is describing. A definition of congestion involving LOS values is common, with many agencies indicating either LOS E or F as congestion. However, because of the various methods of determining LOS, these values are usually not comparable between roadway classifications.

**Accident Rates:** The number of accidents per million vehicles entering a spot location or the number of accidents per million vehicle-miles over a section of roadway can be used as an indicator of congestion. The nature of accidents, and the way they are recorded, makes it difficult to measure congestion from accident rates alone. At very high traffic volumes when there is a bottleneck of traffic and the inability to change lanes, there may also be a reduction in friction between vehicles and corresponding reduction in accidents. There is also a wide

variance in the reporting of accident data by local law enforcement agencies. Two major problems are that not all accidents are reported and that the exact accident location is not identified. Accident rates are applicable as spot, corridor, and area wide measures. Accident rates alone are not a suitable measure of congestion.

### **INSTITUTE SYSTEM PERFORMANCE MONITORING PLAN**

The MTP directs coordinated data collection and system performance monitoring to assess the extent of congestion, to contribute in determining the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions. Our data collection efforts based on relevant, reliable, and consistent performance measures and analytical methods have provided a number of improvement projects that are in the process of being implemented. An active awareness of the need to coordinate with existing data sources, and operations managers in the metropolitan area is exercised. Partnerships with our local university, community college, and businesses have also proven effective methods for collecting survey and study information.

### **IDENTIFY AND EVALUTE STRATEGIES**

As we move to improve mobility and access, projects that enhance connectivity and create integration in the area are identified as critical. Traffic volume data collected by TxDOT and the City of Corpus Christi assist the MPO with data from approximately 200 locations in the study area. These locations are on those segments that are considered congested either by TxDOT standards or by the perception of the citizens of the metropolitan area.

With more than 80 miles of fiber optic cables in stalled long urban area streets, ITS is a major tool adopted to mitigate congestion. Dynamic sign message systems and condition monitoring cameras at selected locations make real-time appropriate decisions to manage congestion. While traffic signals are interconnected and synchronized, a current project is underway to review and possibly update existing settings.

Additional analytical tools, including contracts for travel time and delay studies, are conducted every three years on selected arterial roadway segments. Historical databases are used to identify trends and traffic flow patterns as part of the MPO's existing plans which allows the MPO the opportunity to identify improvements or deteriorations in the performance of the selected arterials.

When deliberating strategies used and designed to maximize the people-moving capability of the transportation system – by increasing the number of persons in a vehicle, or by influencing the time of, or need to, travel – the following innovative options are considered: Transportation Demand Management (TDM) and Transportation System Management (TSM). To accomplish these types of changes, TDM programs must rely on incentives or disincentives to make these shifts in behavior attractive. The primary purpose of TDM is to reduce the number of vehicles using the road system while providing many mobility options to those who want to travel.

The following are some TDM alternatives to a SOV:

**Carpools and Vanpools:** These options are useful when transit service is not reaching a sparsely populated area or not enough resources exist to increase service in the area.

**Public and Private Transit:** Transit service can help in reducing congestion in urban areas. Transit, bus pools, and shuttles can be utilized when there is a demand and the SOV travel and other TDM strategies are not able to provide service to alleviate congestion.

**Non-motorized travel:** Bicycling and walking are very useful in mixed land use development. These modes reduce congestion and air pollution.

**Parking Management:** Management programs, in which a parking space is provided, controlled, regulated, or restricted, have adopted parking policies to improve environmental quality, transportation mode shifts, or access preservation.

**High Occupancy Vehicle Lanes (HOV):** Designated HOV lanes have a significant role in moving more people per vehicle and thus decreasing vehicle miles of travel.

**Road Pricing:** A price on using a highway or roadway facility forces the users to use another mode of transportation or use an alternative route.

**New Highways:** When necessary, new highways are constructed to relieve congestion by routing traffic from an existing system that is congested and contributing to air pollution.

**Alternative Work Hours Programs:** Compressed Work Weeks, where employees work a 40-hour week in fewer than five days, and Flexible Work Schedules, where work start and end times are during off-peak hours of the day, help relieve congestion.

**Financial Incentives:** Preferential parking for persons sharing carpools and vanpools, subsidies for transit riders, transportation allowances, preferential access and egress to parking lots, periodic prize drawings for carpool and vanpool members, and guaranteed ride home programs help reduce traffic and congestion.

The following are some TSM alternatives:

**Intelligent Transportation System (ITS):** ITS technology has helped relieve congestion where other solutions have failed. ITS includes: computers, communications, and displays.

**Goods Movement Management:** Reduce congestion from city streets in peak hours by regulating pickups and delivery times for freight delivery.

**Freeway Incident Management System:** Prompt removal of a disabled vehicle from travel lanes improves traffic flow.

**Geometric Design:** Appropriate geometric design aids in reducing congestion and improving safety, i.e. replacing continuous left turn lanes with a raised median increases capacity.

**Traffic Signal Improvements:** Studies revealed that change in signals' physical equipment and timing optimization help congestion mitigation. Traffic flow could be improved with equipment updates, timing plan improvements, interconnected signals, traffic signal removal, or traffic signal maintenance as needed.

**Intersection Improvements:** Intersections can be improved with traffic control devices for the safe passage of both pedestrians and vehicles. Devices include: stop signs, yield signs, traffic signs, turning lanes, traffic islands, channelization, and improved design.

Planning Management are strategies related to zoning, land-use, and urban design techniques to avoid congestion by integrating land-use planning, site planning, and landscaping with a transportation system.

**Growth Management:** Defined as “the use of public policy to regulate the location, geographic pattern, quality and rate of growth of development.” Travel demand modeling provides information on traffic generation that could be used to control land development and its impact on the surrounding transportation infrastructure. A tool used for growth management is site plan review and requirements in conjunction with required traffic impact analysis for high density multi-family, commercial, or industrial development.

**Access Management:** Related to controlling space and design of driveways, medians and median openings, intersections, traffic signals, and freeway interchanges. Suitable access control can decrease the number of accidents and congestion. To have a successful access management plan, transportation planners and land use planners must work cooperatively. Access management benefits are fewer accidents, increased capacity, and shorter travel times.

An example of a project resulting from our Access Management study is an on ramp reversal project on SPID that focuses on frontage roads. As part of the ramp-reversal project – that changes the location of on and off ramps for the highway – the intent is to eliminate the backups on the highway itself. Backups frequently occur from people jamming into exit lanes - at Weber, Everhart, Staples, and Airline. Other near term projects postured to address growing areas include a median project on Saratoga (SH357) and a proposal to extend improvements along Saratoga.

## **IMPLEMENT SELECTED STRATEGIES AND MANAGE TRANSPORTATION SYSTEM**

Careful attention is given to the information and methods discussed in our CMP as they are later applied to establish priorities in the TIP and MTP. Working closely with operating agencies that have participated in the CMP is facilitated through a Congestion Management Subcommittee that meets Ad Hoc to review and analyze traffic data, and make recommendations for transportation improvements. The subcommittee consists of area partners including: TxDOT, representatives of Nueces and San Patricio Counties, City of Corpus Christi, City of Portland, RTA, and MPO staff.

## **MONITOR STRATEGY EFFECTIVENESS**

Periodic evaluation of our CMP strategies is a continuous process that validates our course of action in determining the most effective methods to use in supporting our local transportation decision making. Staff – together with our subcommittee partners – examine performance measures used, review how well and to what extent strategies being implemented contribute to the success/failure of projects. The cooperative relationships we have established through this process encourage inclusion by CMP activities within participating entities. Further, we continue to refine our data collection, marginal changes, monitoring, reviewing and upgrading our CMP.