
Congestion Management Process

Lincoln Metropolitan Planning Organization

Adopted by the MPO Officials Committee 9/24/09

Introduction

The intent of the Congestion Management Process (CMP) - formerly known as a Congestion Management System (CMS) - is to provide a systematic, transparent, and continuous way for transportation planning in metropolitan areas to identify and manage congestion in a multi-modal manner. Through performance measures and identification of local priorities, a CMP intends to better direct funding toward projects and strategies that are most effective for addressing congestion at the local level. The CMP is to be supportive and folded into the overall metropolitan transportation planning process that includes the development and implementation of the Transportation Improvement Program (TIP) and the Long Range Transportation Plan (LRTP).

As a process, the Congestion Management Process is a continuous cycle of transportation planning activities designed to provide decision makers with better information about transportation system performance and the effectiveness of different strategies that improve the effectiveness of the existing and future transportation networks. Over time, the most cost-effective strategies appropriate to Lincoln's specific local conditions and needs are to be identified and implemented. Enhancing the mobility of people and goods is the ultimate intent of the CMP through implementation of efforts that reduce the level of congestion in the transportation system.

Background

While on the whole, Lincoln experiences much less congestion than other major urban areas, Lincoln has experienced increasing congestion within the urbanized area which is only partly attributed to the rise in population. The population of the City of Lincoln increased from 128,521 in 1960 to 251,624 in 2008, averaging 1.4 percent growth per year. The prime reason for the increase in congestion is the increases in population, but it is also attributable to a significant rise in drive-alone trips and increasingly longer trips. Over the past 20 years, the Lincoln urban area has showed a general decrease in auto occupancy accompanied by an increase in registered vehicles of 2.15 percent per year and an increase in vehicle miles traveled by 2.9 percent per year. Along with this, the U.S. Census data shows the average household size has declined while the number of trips from each household and the average travel times per vehicle has gone up. The result is intensifying congestion within the Lincoln urban area.

The Congestion Management Process (CMP) seeks a "management" solution to the growing traffic problem by targeting resources to provide operational management and travel demand reduction strategies. Although major capital investments are often made to meet the growing travel demand, the CMP also investigates lower cost strategies that complement major capital recommendations. The result is a more efficient and effective transportation system, increased mobility, and safer travel.

Lincoln Metropolitan Planning Organization

The City of Lincoln is the federally recognized Metropolitan Planning Organization (MPO) for the Lincoln Metropolitan Area, serving Lincoln and Lancaster County to carry out transportation planning and decision-making for the Lincoln urbanized area and Lancaster County. The MPO provides a forum for cooperative decision-making among responsible state and local officials, public and private transit operators, and the general public. The MPO coordinates the planning activities of all transportation-related agencies and adopts long range plans to guide transportation investment decisions. Plans and programs consider all transportation modes and support community development and social goals.

Transportation Management Area

The 2000 Census identified the Lincoln Urban Area as having a population of 226,582 and accordingly, the Secretary of Transportation designated the Lincoln MPO as a Transportation Management Area (TMA). This classification qualifies the Lincoln MPO for specific shares of federal transportation funds, but along with this it also establishes additional administrative and planning requirements in the transportation planning process. These additional planning activities relate primarily to the development of a Congestion Management Process (CMP), project selection, public involvement and the MPO certification process.

Federal Transportation Legislation

Federal transportation regulation Section 450.316 of 23 CFR Part 450, Statewide Planning, Metropolitan Planning Rule, identifies “the need to relieve congestion and prevent congestion from occurring where it does not yet occur.” Further, Section 450.320 of the rule specifies that in the TMAs, the planning process must include the development of a CMP that provides for effective

management of new and existing transportation facilities through the use of travel demand reduction and operational management strategies and meet the requirements of federal regulation 23 CFR 500 Subpart E.

A CMP is required for all Transportation Management Areas. Section 500.109, Congestion Management System of 23 CFR Part 500, Management and Monitoring Systems defines congestion as “the level at which transportation system performance is no longer acceptable due to traffic interference.” The federal rule states that in all TMAs, the CMP shall be developed, established and implemented as part of the metropolitan planning process in accordance with 23 CFR 450.320. The CMP is the “development of a congestion management process that should result in multimodal system performance measures and strategies that can be reflected in the transportation plan and TIP.” The regulations further stipulate that the “level of service performance deemed acceptable by State and Local transportation officials may vary” depending upon the “type of transportation facility, geographic location (metropolitan area or subarea), and/or time of day.” The regulations also note that “consideration should be given to strategies that manage demand, reduce single occupant vehicle travel, and improve transportation system management and operations.”

Congestion Management Process: The 8 Steps

The Lincoln MPO views congestion management in the context of the overall transportation planning process and as a tool to ensure that existing and new transportation infrastructure is effectively managed and maintained.

An effective Congestion Management Process can improve the operational efficiency of Lincoln’s transportation infrastructure. It provides guidance for effectively allocating human, capital, and financial resources in order to reduce travel-time delays, improve air quality,

and conserve energy. These improvements are important to the region's environment, economy, and quality of life. They directly benefit automobile and transit vehicle users as well as truck and freight operators, pedestrians and bicyclists. The continued development and coordination of this process is an important element of the Lincoln transportation planning process. It is used as a guide to develop project recommendations for the TIP and to provide policies for the congestion management element of the Long-Range Transportation Plan.

A CMP annual report exists to provide the necessary information for the identification of areas with congestion or safety issues, to develop and assess potential mitigation strategies, and to support prioritization decisions on investments in congestion and safety improvements. This report can be developed further over time to address changing aspects of the transportation system.

The Congestion Management Process has been described as an "8 Step" process, as follows:

1. Develop Congestion Management Objectives

Congestion management objectives are derived from the vision and goals articulated in the Lincoln/ Lancaster County Comprehensive Plan and the Long-Range Transportation Plan. The vision and goals are developed early in the planning process and provide guidance to the CMP.

2. Identify Application Area

A congestion management process should be applied to a specific geographic area and network of surface transportation facilities. The area should include the Urban Area boundary plus the area that will become urbanized within twenty years.

3. Define System or Network of Interest

The CMP network should identify the characteristics of the surface transportation network under consideration. The CMP should be multi-modal, so the network should include highway,

transit, pedestrian and bicycle facilities. The CMP could consider particular corridors or activity centers, in addition to encompassing an entire metropolitan area. A CMP may also comprise a combination of regional, corridor, and activity area definitions, with each component serving different, specific purposes.

4. Develop Performance Measures

Adopt key performance measures relevant to the operations objectives and to the congestion problems facing the region. Most regions use a variety of measures to identify congested locations and to track system performance over time. Recognize that performance measures can be applied flexibly. Different levels of congestion, for instance, may be acceptable in different places and at different times.

5. Institute System Performance Monitoring Plan

System performance monitoring should be a coordinated program for data collection to assess the extent of congestion, to contribute in determining the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions. The selected data elements should be relevant, readily available, timely, reliable, consistent, and susceptible to forecasting.

6. Identify and Evaluate Strategies

Using performance measures, analytical tools, and available data enables the identification of congested locations. Congestion may be recurring or nonrecurring; the CMP should be capable of analyzing both types of congestion. Strategies to mitigate the congestion should be developed and analyzed for the best solutions.

7. Implement Selected Strategies and Manage Transportation System

Information developed through the CMP should be applied to establish priorities in the Transportation Improvement Program thereby facilitating the implementation of the congestion management process, either through a formal or informal process.

8. Monitor Strategy Effectiveness

The CMP should periodically evaluate the effectiveness of identified and implemented strategies. It is essential that the analysts utilize the performance measures developed through the CMP to determine the effectiveness of the selected strategies.

1. Develop Congestion Management Objectives

Congestion can be defined quantitatively as a function of actual facility volume to accepted facility capacity (how many of a particular modal choice are utilizing a facility designed to accommodate a certain number of users), or qualitatively, as how well a motorist feels the facility is meeting their needs (taking too long, degree of maintenance satisfaction, etc.). Because planning for and providing safe and efficient mobility for people and goods is one of the most essential functions of transportation, identifying congestion management strategies that allow cost-effective ways to maintain and improve mobility is a high priority.

The Lincoln/ Lancaster County Comprehensive Plan and the Long-Range Transportation Plan have laid out the following objectives in relation to the transportation system:

- ◆ Develop a balanced transportation system that meets the mobility needs of the entire community;
- ◆ Use the existing transportation system to its best advantage;
- ◆ Develop and maintain a sustainable transportation network that minimizes energy consumption and pollution;
- ◆ Increase the use of transit, bicycling and walking through the use of improved facilities and land use designs;
- ◆ Provide safe and efficient railroad travel while minimizing the delays and barriers it causes.

These objectives are used to inform and guide the congestion management process.

2. Identify Application Area

The application area for the CMP is the urbanized area of Lincoln plus the area expected to be urbanized within the next twenty years. Since the majority of the area outside this limit is planned to be rural, congestion is not expected to be an issue except under specific conditions.

3. Define System or Network of Interest

The primary system for the Lincoln-Metropolitan Planning Organization Congestion Management Process will be within the City of Lincoln. The process will focus on the freeways, expressways, arterial streets, transit routes, sidewalks, and trails within the application area, but any facilities within the County that are experiencing congestion, even through anecdotal evidence, should be evaluated. Other modes, such as freight, could also be evaluated if data indicates the presence of congestion.

4. Develop Performance Measures

Performance measures should:

- ◆ Provide a tool to evaluate transportation system performance and identify system deficiencies, based on an accepted standard of operation;
- ◆ Provide the means to identify roadway system congestion at a level that facilitates the development of congestion management strategies;
- ◆ Provide the means to evaluate the use of transit and non-traditional modes of transportation to alleviate roadway congestion and enhance mobility of persons and goods; and

- ◆ Use existing or easily obtainable data and resources to efficiently identify transportation system deficiencies.

The Congestion Management Task Force studied the issue of acceptable street performance characteristics in detail in 1994-1996. The Task Force findings were that the community desires to maintain the Level of Service for streets and major intersections at level of service “C” or above. To the extent possible, this was to be accomplished using an incremental approach in system improvements that would minimize impacts to surrounding neighborhoods.

The Task Force selected average travel speeds for arterial streets as the level of service measurement. It was determined when the average speed along an arterial with a posted 35 MPH speed limit reached 18 MPH, which is the dividing line between Level of Service C and D, studies would be prepared to evaluate operational improvements within the travel corridor. If the speed drops below 16 MPH, then the study recommendations would be implemented.

For signalized intersections, Level of Service C is designed for the opening year of any improvement, with a Level of Service no worse than D for the future design year. Studies and local evaluations have shown that roundabouts typically operate even better than signalized intersections for given traffic volumes, so using roundabouts in place of traffic signals has received increased consideration in recent years.

The Metropolitan Planning Organization has traditionally updated the vehicle occupancy report every two to three years. By determining the number of people riding in each vehicle, the effectiveness of non-capacity type congestion management activities can be measured. The latest studies have shown the average vehicle occupancy has dropped to near record lows of approximately 1.20 people per vehicle. Reversing this trend and increasing occupancy numbers should be a goal of the planning process.

Crash rates are both a cause and effect of con-

gestion. A roadway with high crash rates can experience higher congestion due to the increased number of delays caused by crashes. Conversely, a highly congested corridor can experience a higher crash rate due to high traffic volume. Although congestion is not the only factor contributing to the crash rate of a roadway, it most certainly does have some effect. Therefore, utilizing crash rates in establishing the most highly congested roadways adds one more aspect in the formula, thus making congested roadway selection more accurate. The goal of the City’s Engineering Services staff is to keep the number of crashes occurring on the Lincoln street system at or below the number of crashes experienced in 2000. Since traffic volumes in the urban area tend to increase at a rate of 2 to 3 percent annually, by holding the number of crashes constant, the crash rate (number of crashes per vehicle mile traveled) will drop. The County Engineering Department also reviews crash data on County roadways and may identify locations that need investigation related to congestion.

With 55% of all congestion caused by non-recurring events such as crashes, construction, weather and special events, much effort is placed toward addressing these incidents. Incident management programs, event management, system maintenance, ITS applications, construction planning, safety programs and law enforcement coordination are all used to address non-recurring congestion.

Sidewalks and/or trails should be in place along both sides of all arterial, residential and commercial streets. The availability of pedestrian facilities promotes system management goals, since it enhances and encourages pedestrian movement throughout the City, which in turn helps reduce the numbers of vehicles on the streets. Sidewalks need to be well maintained, with no vertical discontinuities greater than one and a half inches in height. Improved pedestrian crossings, including pedestrian signals, are to be continually considered based on usage and safety factors. The sidewalks, including curb ramps, are to be

fully ADA compatible. Consideration should be given to including on-street bicycle facilities any time a new road is being designed. Further development and maintenance of the trail system should occur on an ongoing basis. Pedestrian user counts on downtown sidewalks, along with counts of users on on-street bicycle facilities and the trail system should be used to identify high use areas.

In the broadest sense of Street System Standards, consideration is given not only to the performance of the transportation system, but also to the performance of the street infrastructure, namely maintenance requirements. Using standard rating criteria, the City has set a goal of having all streets maintained to a pavement rating of 70, the dividing line between good and fair condition. Below 70, street condition deteriorates much more rapidly than for streets above a rating of 70. Work has been done and will continue to upgrade the current street standards.

The City and County have adopted the Rural to Urban Transition Streets (RUTS) standard as a means to more efficiently construct roads in the suburban growth areas around the City so that they can easily be turned into urban arterials in the future. Private street standards have also been reviewed to determine whether they should be brought more in line with public street standards.

Based on the 2007 Transit Development Plan, StarTran tracks the usage of public transportation within the City of Lincoln, including StarTran buses, handivans and brokered transportation services. StarTran has set multiple criteria for the services they provide. Routes should be served every 30 minutes during the peak hours and every 60 minutes during off peak times and on Saturdays. The span of the service is set to be 16 hours on weekdays and 12 hours on Saturdays. In order to determine the directness of the trips they serve, a standard of 25% (transfer trips/revenue trips) is the maximum rate for

transferring. The other major factor used is the availability of routes, which deals with determining where service should be provided and the spacing of bus routes. The following chart indicates the standards StarTran has set in this area. In addition, StarTran strives to serve all major activity centers, such as large employers, health care facilities, educational facilities, shopping

Route Spacing Guide

% of Households without Automobiles	Population Density (Persons per Square Mile)			
	Over 6,400	4,500 to 6,400	2,500 to 4,449	Under 2,500
Over 15.0	¼ Mile	¼ Mile	¾ Mile	½ Mile
10.0 - 15.0	¼ Mile	¾ Mile	½ Mile	1 mile or paratransit
5.0 - 9.9	¾ Mile	½ Mile	1 mile or paratransit	*
Below 5.0	½ Mile	1 mile or paratransit	*	*

centers and social service/government centers, if they are large enough to attract an adequate number of transit trips.

Air quality monitoring provided by the City of Lincoln/Lancaster County Health Department (LLCHD) is compared to Federal air quality standards. It is important for the City of Lincoln to remain in compliance with Federal guidelines. A secondary goal is for the Lincoln area to continue to improve its air quality through improvements in the transportation system.

5. Institute System Performance Monitoring Plan

The City of Lincoln uses a wide variety of methods to monitor and evaluate the performance of its multimodal transportation system. This is an ongoing program, some of which is done by City staff, while other work is performed by consultants. In addition to formal studies done to determine this data, staff also spends considerable time in the field monitoring corridors and intersections to assure that they are operating safely and efficiently.

Additions to the transportation system infrastructure are tracked by the Public Works Department. This is done through additions to the City's GIS records system.

An automobile occupancy study is performed periodically to show the average number of people in each vehicle on the streets of the community. This helps determine whether people are car-pooling or riding buses versus driving alone. Trends in automobile occupancy are helpful in determining if Transportation Demand Management efforts are working, as well as for providing needed data for transportation model updates.

In keeping with the Traffic Operations Section's goal of monitoring arterial street traffic flow over time, a traffic optimization effort was started in 1998. City staff and engineering firms conduct and analyze traffic conditions along arterial streets. Corridors are studied and their signal timings modified to improve the traffic operations along the corridors.

Traffic volume counts are taken to provide data on the number of street users. These daily traffic volume counts are used to document the changes in conditions over the entire arterial street system. These counts are used as data in the transportation modeling activities. Turning movement counts are taken primarily for the purpose of reviewing the need for installation of protected left turn signal arrows or other signal timing changes.

User counts at pedestrian crossings in downtown Lincoln and other high pedestrian activity areas are taken to provide data on the number of pedestrians. Trail user counts and on-street bicycle facility user counts are taken to inform the level of activity and areas of high use. Walkability and bikeability audits in specific neighborhoods are also conducted.

The number of traffic-related crashes occurring city-wide is tracked. The crash data is taken from Police reports and put into the City's crash records system. By studying the causes of crashes and finding ways to mitigate them, non-

recurring congestion resulting from crashes can be reduced. Crashes also generally increase at intersections with poor service levels, so this can be an indicator of areas that need to be investigated.

Transit usage is tracked by StarTran. The inclusion of Automatic Vehicle Location (AVL) system equipment on buses has greatly improved the ability to track information, as well as improving safety and efficiency of the fleet. The number of passengers and passenger miles of travel are some of the data that StarTran tracks to determine the impacts of mass transit in Lincoln. Other data collected includes hours operated, costs for service, and miles traveled. In addition to StarTran buses and handivans, they also track the use of brokered transportation services.

The City of Lincoln/Lancaster County Health Department monitors air quality throughout the City. This provides information for National Ambient Air Quality Standards reporting requirements, as well as giving baseline data to determine what impacts the transportation system is having on the quality of the air that citizens must breathe.

These sources of information and measures are used to assist in the ongoing CMP. Additional measures may be developed in the future.

6. Identify and Evaluate Strategies

An effective and comprehensive congestion management program should focus on three areas: management of transportation system supply, management of transportation demand and management of land use.

The management of transportation system supply is generally defined as facility expansions and operational changes to improve the performance of the existing network and services. This includes the construction of and possible expansion of highways, transit facilities, sidewalks, trails, and on-street bicycle facilities; the provi-

sion of improved traffic signalization schemes; traffic engineering improvements, such as turn lanes, one-way streets, reversible lanes, and turning restrictions; Intelligent Transportation Systems (ITS) mechanisms, such as traffic management centers, incident detection programs, motorist information systems, and incident response management.

The management of transportation demand is generally defined as any actions intended to influence the intensity, timing and spatial distribution of transportation demand for the purpose of reducing VMT, the impact of traffic, and enhancing mobility. This includes a multimodal approach, ridesharing, parking management strategies, and alternative work hours. Additional efforts in transportation demand management are possible to help alleviate levels of congestion.

The management of land use concerns the consideration of the linkage between land use and transportation, in that trip-making patterns, volumes and modal distributions are a result of the existing land use and future land use/development policies. Urban design and land use policies, growth management strategies and access management policies are mechanisms to manage the land use and transportation linkage.

Strategies for Management of Transportation System

- ◆ Access management
- ◆ Geometric improvements (bottlenecks)
- ◆ Additional system capacity
- ◆ Traffic signal timing and optimization
- ◆ Roundabouts
- ◆ One-way streets
- ◆ Reversible lanes
- ◆ Dynamic messaging
- ◆ Incident management systems
- ◆ Special events and work-zone planning
- ◆ On-street parking management
- ◆ Complete streets designs
- ◆ Intelligent Transportation Systems technologies
- ◆ Traffic operational improvements
- ◆ Advanced parking systems
- ◆ Electronic payment systems
- ◆ Freight route planning
- ◆ Widened sidewalks and trails
- ◆ Expanded transit facilities
- ◆ Trail system development
- ◆ Pedestrian system requirements
- ◆ System maintenance programs
- ◆ On-street bicycle facility development
- ◆ Pavement management
- ◆ Street connectivity
- ◆ Sidewalk replacement program

Strategies for Management of Transportation Demand

- ◆ Public education and promotion
- ◆ Public transportation improvements
- ◆ Shuttle services
- ◆ Ridesharing programs
- ◆ Guaranteed ride home
- ◆ Staggered work times
- ◆ Electronic payment systems
- ◆ Multimodal transportation studies
- ◆ Formalize transportation demand management program
- ◆ Incentive programs
- ◆ Telecommuting
- ◆ Bicycle racks and lockers
- ◆ Route planning

Strategies for Management of Land Use

- ◆ Trip Caps
- ◆ Mixed-use & in-fill development
- ◆ Discourage strip development
- ◆ Create transit corridors
- ◆ Encourage walkability
- ◆ Access management
- ◆ Complete streets planning
- ◆ Pedestrian and bicycle design standards

Identifying Appropriate Strategies

Congestion management strategies are not one size fits all. Instead, the congested roadways or intersections must be examined carefully to determine which management strategy will best address particular problems. Screening questions need to be asked to better evaluate the benefits and appropriateness of a particular strategy for solving the congestion and/or safety issues of a particular area. Some screening questions that should be asked when exploring congestion management strategy options are as follows:

- ◆ Does available right-of-way or median width exist for an improvement?
- ◆ If an intersection project is being considered, does the intersection geometry allow the proposed fix while maintaining design standards?
- ◆ Does the modification improve safety?
- ◆ Does the roadway segment present multiple opportunities for improvement?
- ◆ Could the congested roadway benefit from transit service or additional bicycle and pedestrian improvements?

In developing the CMP strategies, it becomes clear that there is not a single solution to congestion. Instead, an effective CMP must incorporate a coordinated approach consisting of several complementary elements. The selected strategies should provide the most cost effective trans-

portation system improvements that enhance mobility and reduce traffic congestion based upon funding requirements and the feasibility of implementing certain strategies in the local political environment.

7. Implement Selected Strategies and Manage Transportation System

Since congestion mitigation strategies cannot be implemented for all congested facilities simultaneously, a systematic method for determining which congested facilities and strategies should be given the highest consideration must be in place. The following steps should be examined to determine project priorities:

- ◆ The facility/goal/program is identified in the Comprehensive Plan.
- ◆ The facility is identified in the CMP Report as experiencing congestion, or there is a special request to the MPO or its subcommittees to evaluate the facility.
- ◆ The facility is evaluated by the jurisdiction for appropriate congestion management strategies to resolve or lessen the congestion or safety issue.
- ◆ The facility and proposed strategy are evaluated against other projects to determine priority for funding implementation. Selection criteria for potential projects may include benefit/ cost analysis, multi-modal solutions, safety improvements, leveraging other funding sources, etc.
- ◆ The results of the prioritization are assembled in an action item for the MPO's review.
- ◆ The proposed projects or efforts are included on the list of projects for inclusion and programming in the appropriate documents (Transit Development Plan, Bicycle and Pedestrian Master Plan, Long Range Transportation Plan, Capital Improvement Program, etc.).

If the proposed effort is a policy directive, or action to be taken by a governmental entity, appropriate documents will be generated and presented to the governing body for action.

Recommendations to the MPO to address issues of congestion in the region will generally come from studies conducted by each entity. Based on these evaluations, the CMP projects will be considered by the MPO for inclusion in the TIP.

Some congestion problems require significant investments or will need to be addressed on a corridor-wide or system basis. Studies or remedial actions will be recommended to the MPO for their consideration and potential inclusion in the TIP or the UPWP. Projects with regional significance may become an initiative of the Statewide Transportation Improvement Program.

The Annual CMP Report and the ongoing Congestion Management Process have important roles in the transportation planning process, but it is important to remember that the role of the CMP Report and process are to support, not supersede ongoing transportation planning processes. The report is designed to provide the framework within which decisions regarding cost- and time-effective investments in the transportation system can be readily made. Some projects which are growth-related, and not necessarily for congestion mitigation, will move forward outside of this process, though their impact on the overall traffic operations should be monitored and noted within the CMP.

Funding sources for projects

Transportation funding is lacking for the entities in the Lincoln MPO. One of the difficulties, especially for the City of Lincoln, is that there are oftentimes strings attached to transportation dollars which limit how the funds can be spent. As a result, funding for congestion mitigation is hard to come by, particularly in light of the need for new streets to allow growth to occur within the community.

Congestion Mitigation/Air Quality (CMAQ) funds

could be identified as the primary source of funding for projects that advance through the CMP. Other funds, such as wheel taxes or State gas tax funds or federal enhancements and safety funds, could also be considered for use on congestion management activities. StarTran receives dedicated funding from the Federal Transit Authority. Since these funds are only used for transit, they are not available for other CMP uses, though the effectiveness of this spending should be tracked in the CMP.

8. Monitor Strategy Effectiveness

This component has two main purposes: to determine if a particular strategy was properly implemented, and to determine the impact of the strategy.

The monitoring of congestion levels in the MPO area is an ongoing process through traffic engineering, corridor studies, and updates to the Long Range Transportation Plan, Transit Development Plan, and Bicycle and Pedestrian Master Plan. It is important to have both before and after data available in order to determine the effectiveness of any strategies implemented.

Because this is a continuous planning and monitoring process, the effectiveness and benefits of the individual congestion mitigation strategies employed in the previous year will not necessarily be immediately apparent. However, the proposals identified and employed will be monitored and tracked for qualitative and quantitative improvements on the target area and system as a whole, not necessarily on a project specific basis. The expansion of bicycle, pedestrian, and transit services and facilities may be considered a success in congestion management by the merits of introducing viable alternatives to the personal automobile.

If the evaluation finds that a section still remains among the highly congested locations even after improvements have been implemented, a reevaluation may be required to identify solu-

tions to the traffic problems that may be more costly and intrusive. It would also indicate that the process for identifying the original improvements should be scrutinized to determine why the recommended congestion relief projects did not work and what adjustments are required to provide more accurate recommendations.

Annual Reports

An annual report on Congestion Management Process related activities should be the major output from the Congestion Management Process. The report should document each step of the process, including the data collected, projects proposed and implemented, and the effectiveness of the improvements. It is expected that each annual Congestion Management Process report will bring about better and more efficient strategies for identifying congestion and targeting cost-effective solutions. Future updates should incorporate additional data sets which would enable staff to assess congestion and the effectiveness of management strategies on a more refined level.

MPO System Management and Operations Subcommittee

The MPO Subcommittee on System Management and Operations meets regularly and is charged with the task of continuing the development of the CMP. Regular reports and updates from this Subcommittee are to be brought to the full Technical Committee.

Continuing Monitoring and Planning

An update to the Comprehensive Plan and the Long Range Transportation Plan is expected to get underway in 2010. The current Long Range Transportation Plan will be out of date in November 2011. TransCAD modeling information will be used to develop future alternatives and scenarios for handling traffic in the future.

The Capital Improvement Program (CIP)/Trans-

portation Improvement Program (TIP) is updated on a yearly basis. The latest CIP identified dozens of street, transit, trails and sidewalk projects to be funded during the course of the six years covered by the document.

The Planning Department conducts an Annual Comprehensive Plan Review. An invitation is made for interested parties to submit items for consideration during this review process. The review takes items forward for the Planning Commission to consider amending the document. Any proposals need to take into account the impacts they will have on congestion throughout the region.