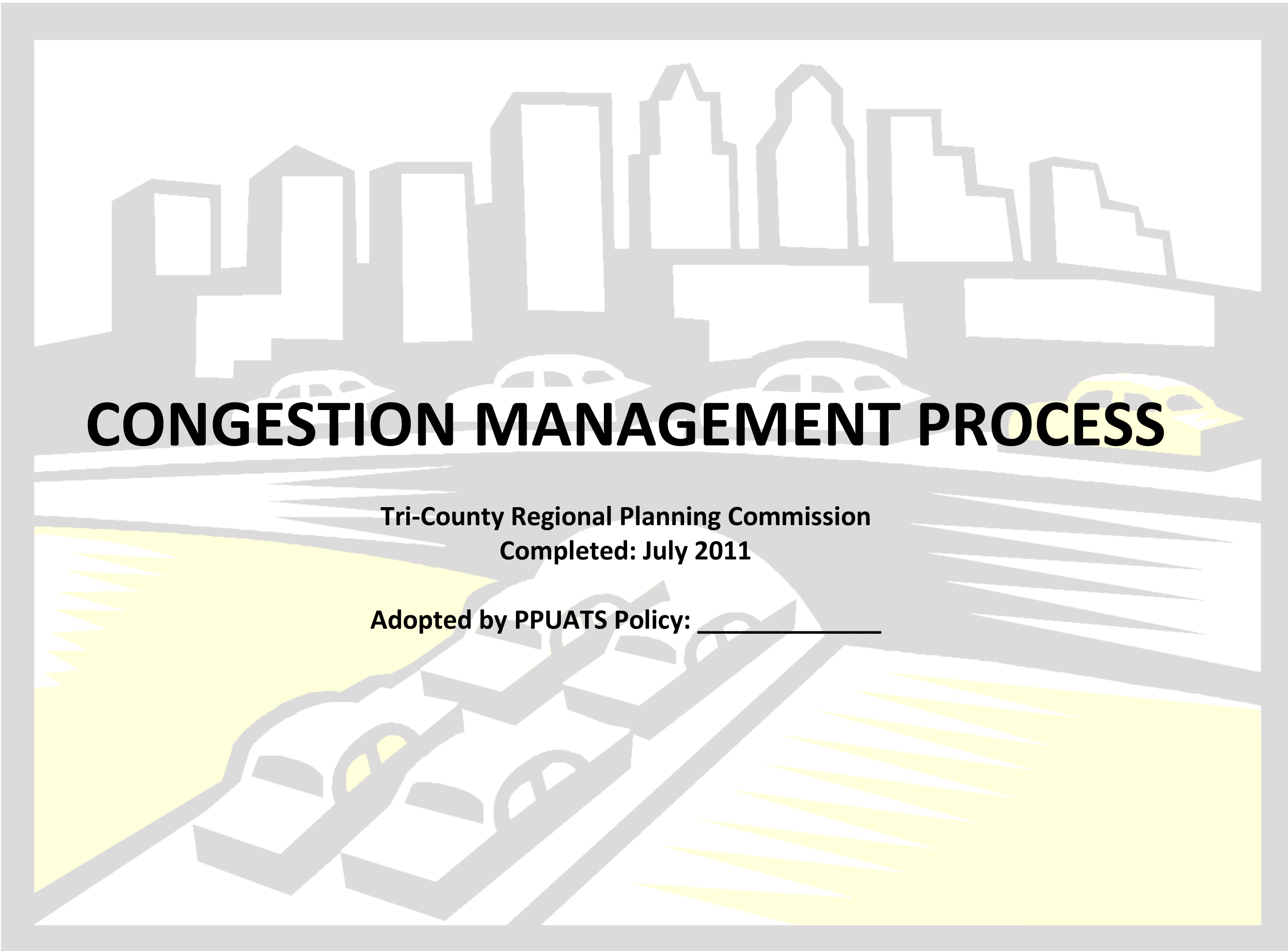


CONGESTION MANAGEMENT PROCESS

Tri-County Regional Planning Commission
Completed: July 2011

Adopted by PPUATS Policy: _____________

INTRODUCTION
The Tri County Regional Planning Commission'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. The CMP is intended to be part of the overall planning process for the Tri County Region.

BACKGROUND
Designated Transportation Management Areas (TMAs), are defined by urbanized areas with a population over 200,000, and 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 the goal of the law, 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 Planning 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 method in how we will address congestion in the region and respond to our existing planning conditions. 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

Tri County Regional Planning Commission (TCRPC) formed a Congestion Management subcommittee, derived from the Peoria-Pekin Urbanized Area Transportation Study Technical Committee, to guide the development of this document and the process. This subcommittee consists of staff from local municipalities and engineering firms, as well as Illinois Department of Transportation (IDOT) and Federal Highway Administration (FHWA) representatives.

<u>Subcommittee Members</u>

Joe Alexander-CityLink	Tom Caldwell- IDOT/OPP	<u>Tri County Staff</u>
Kurt Bialobreski- Hanson	Tom Kelso- IDOT/OPP	Maggie Martino
Steve Jaeger- TransPort	Randy Laninga- IDOT D4	Lindsay Wallace
Mike Guerra- City of Pekin	Maureen Addis- IDOT D4	Nick Hayward
Nick Stoffer- City of Peoria	Ken Park- IDOT D4	Jim Webb
Susan Stitt- IDOT	Betsy Tracy- FHWA	Ryan Granata
		Eric Miller

1. DEVELOP CONGESTION MANAGEMENT OBJECTIVES

The following objectives were derived by the subcommittee and TCRPC staff from the vision and goals in the 2010-2035 Long Range Transportation Plan(LRTP) which cover streets/highways, public transportation, bicycle/pedestrian plans, railroads/trucking, port, airport and recreational, travel & tourism as well as with cooperation of the Congestion Management subcommittee:

GENERAL

- **SOV Travel:** SOV is the predominant mode of travel within the MPO area, which is a major cause of congestion and deteriorating air quality.
  SMART OBJECTIVE- *Reduce Vehicle Miles Traveled (VMT) by 5-10% over the next 25 years at a rate of 0.2-0.4% each year.*
  Action: Ridesharing/carpooling, add bike lanes, repair and improve sidewalks, transit service, flexible work hour program, compressed work week, parking management, intersection improvement, growth management, access management, ITS, freeway incident management system.

GEOMETRIC

- **Access Management:** Closely spaced driveways and their nearness to intersections on arterial streets hamper traffic movement causing congestion and air pollution.
  SMART OBJECTIVE- *Over the next 25 years limit the number of access points on major collectors to no more than 8 (eight) per mile, 4-6 on minor arterials, and 2-3 on major arterials for new construction projects.*
  Action: Geometric design, traffic signal improvement, intersection improvement, roundabouts parking management, growth management (subdivision regulations).

- **Intersection Improvement:** Intersections with heavy turn traffic movements without right turn channelization or left turn lanes contribute to congestion during peak hours; one way to improve intersections is to convert them to roundabouts where it is feasible.
  SMART OBJECTIVE- *Over the next 5 years improve intersections so that the delayed time is Level of Service C or better at all signalized intersections.*
  Action: Geometric design (lane marking), traffic signal improvement, intersection improvement—2way stops as opposed to 4 way stops where appropriate and feasible, roundabouts, adding left turn lanes

- **Traffic Signs:** Improper placement or lack of traffic signs at intersections hamper traffic flow.
  SMART OBJECTIVE- *Over the next 5 years evaluate the regional highway system to ensure that 90% of all traffic signs in the region are compliant with the latest Manual on Uniform Traffic Control Devices.*
  Action: Intersection improvement, upgrade signage

ITS

- **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.

SMART OBJECTIVE- *Over the next 5 years strive to have vehicle delay not exceed 2 cycles at any federal-aid highway. Some ways to ensure that this happens is to develop and use synchronization plans, or install adaptive control systems on the signals in select corridors.*
Action: Traffic signal timing improvements, continue supporting grants for Signal Coordination and Timing (SCAT) studies

- **Traffic Flow:** Disruption of traffic flow by crashes, special events, and construction is a major cause of congestion.
  SMART OBJECTIVE- *By Summer 2011, IDOT will have a website that includes accurate travel information for the public to access. Also, encourage the State of Illinois to implement 511, a traveler information system for real time congestion delay information, as we are one of only 10 states that do not have this traffic informational system.*
  Action: ITS, Public Service Announcements

ALTERNATIVE MODES OF TRANSPORTATION

- **Bus Bays:** Bus bays play an important part in reducing congestion, whereas absence of bus bays on busy streets adds to congestion.
  SMART OBJECTIVE- *Over the next 5 years install bus bays on all new or reconstructed major collectors or above where feasible and appropriate to reduce congestion.*
  Action: Geometric design. The Greater Peoria Mass Transit District (GPMTD) should conduct ongoing studies to add more bus bays where justified, and the cities & developers should include them in their development/construction projects, when justified and feasible.

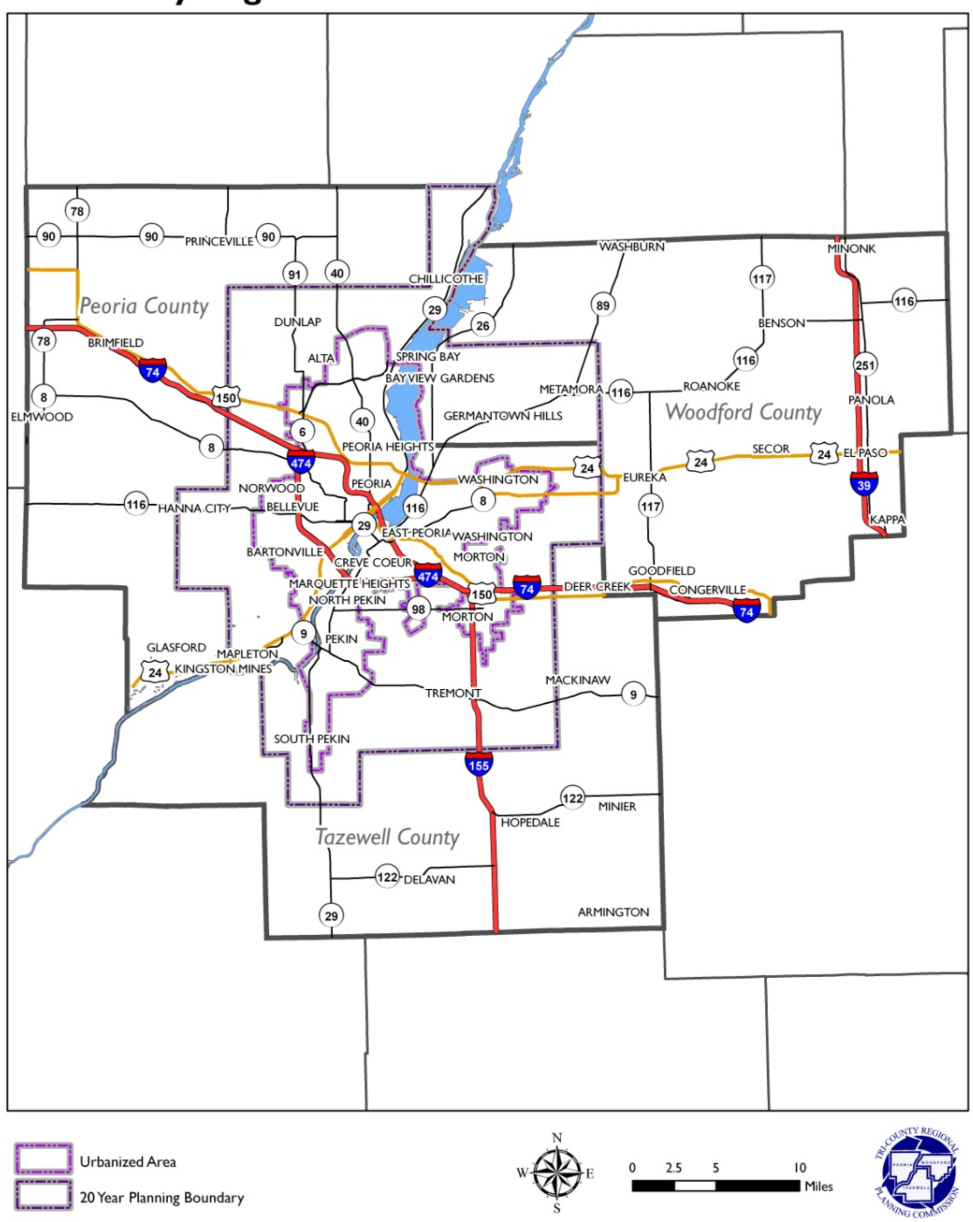
- **Transit Service:** Enhanced travel and headway times in the MPO area will mitigate congestion and improve air quality.
  SMART OBJECTIVE- *Over the next 3-5 years the Greater Peoria Mass Transit District (GPMTD)and TCRPC staff will work to implement at least 50% of the findings in the Comprehensive Operations Analysis completed in May of 2009. This will improve functionality of existing routes and expand services where necessary, as well as provide additional benches, shelters, signage, etc.*
  Action: Direct transit between activity centers and residential areas; growth management.

- **Walkways & Bikeways:** 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. Street and off street bicycle facilities are necessary as an alternative mode of transportation to alleviate congestion and enhance air quality. Currently there is a significant amount of local congestion around schools as the school day begins and ends. The Safe Routes to School Program helps to alleviate this by increasing the number of children walking & biking to school. And the Illinois Transportation Enhancement Program (ITEP) includes many other non-roadway projects that improve safety and accessibility to the transportation system.
  SMART OBJECTIVE- *TCRPC will encourage and help the local municipalities; schools, etc. develop programs/projects and apply for SRTS and ITEP funds. The goal is to see at least five projects from the tri county region applying for these funds per each funding round.*
  Action: Walkways, Bicycle routes, traffic signal improvements, intersection improvements-roundabouts, growth management, and access management.

2. IDENTIFY AREA OF APPLICATION

The following map illustrates the physical extent of the Tri County area. Included in this map are the urbanized area boundary and the MPO Planning Boundary. We have decided that our 'Area of Application' for the CMP would be the MPO Planning Boundary, the area within the dark purple line in the map below. We will also include areas outside of that boundary if and when they are applicable.

Tri-County Region



Peoria-Pekin Urbanized Area Transportation Study

The Tri-County Regional Planning Commission (TCRPC) has been designated the Metropolitan Planning Organization (MPO) for the Peoria/Pekin Metropolitan Planning Area by the Governor of the State of Illinois.

TCRPC has delegated its duties to the Peoria/Pekin Urbanized Area Transportation Study (PPUATS). In turn, PPUATS serves as an advisory board to TCRPC on all transportation matters. Representation on PPUATS is drawn from elected officials and staff of local municipalities and counties, along with the General Wayne A. Downing Peoria International Airport, the Greater Peoria Mass Transit District, the Heart of Illinois Regional Port District, the Illinois Department of Transportation, and the Federal Highway Administration.

Two committees make up PPUATS; a Policy Committee and a Technical Committee. Elected officials representing their respective communities serve on the PPUATS Policy Committee. The Policy Committee role is to determine transportation policy within the framework of the urban transportation planning process. The Policy Committee is mandated to vote on the Technical Committee recommendations. The PPUATS Technical Committee is made up of individuals appointed by their respective PPUATS jurisdiction. Most of the individuals are public works and/or engineering staff. Throughout the year the Technical Committee reviews and recommends planning policies and measures to the Policy Committee. The Congestion Management Process subcommittee is a subcommittee of the Technical Committee and will assist the MPO staff in the implementation of CMP objectives.

Planning Area

The full jurisdictional area of PPUATS is the Metropolitan Planning Area (MA). To understand what land and jurisdictions are included in the MA, two additional designated areas must be explained: the "Urbanized Area" and the "Adjusted Urbanized Area".

The Urbanized Area (UA) is defined by the US Census Bureau in accordance with strict population density criteria. Generally speaking, urbanized areas must have a minimum of 50,000 persons living in contiguous dense settlement patterns. In general, the core of an UA must be comprised of census block groups or blocks that have a population of at least 1,000 persons per square mile. Other blocks with a minimum of 500 persons per square mile can be added if they are within a defined proximity to the core area. For all of our most recent planning documents, population data from the 2000 US Census was used. PPUATS must adjust the UA for planning purposes and to further forecast a Metropolitan Planning Area.

For transportation planning purposes, the Adjusted Urbanized Area includes all of the UA, plus other small areas necessary to round-off the jagged or sometimes irregular boundaries of the UA. In addition, the Adjusted Urbanized Area includes lands that are highly likely to be developed within the next five years, and other abutting or nearby developed lands. The Adjusted Urbanized Area is used primarily to determine which roadways are eligible for federal "urban" and "rural" funding assistance (but does not affect the total amount of federal assistance available). The most recent Adjusted Urbanized Area for PPUATS was adopted by the Tri-County Regional Planning Commission in May 2003.

The Metropolitan Planning Area (MA) is similarly determined by PPUATS. The MA is the area that is expected to be urbanized in the next 20-25 Years. It can be as large as the entire metropolitan statistical area or consolidated metropolitan statistical area, as defined by the Census Bureau. Any use of federal funds for transportation purposes within the MA must be identified in the LRTP.

The following jurisdictions are in the Metropolitan Planning Area

Peoria County	**Tazewell County**	**Woodford County**
Bartonville	East Peoria	Bayview Gardens
Bellevue	Creve Coeur	Germantown Hills
Chillicothe	Marquette Heights	Metamora
Dunlap	Morton	Spring Bay
Hanna City	North Pekin	
Mapleton	Pekin	
Norwood	South Pekin	
Peoria	Washington	
Peoria Heights		
West Peoria		

3. DEFINE SYSTEM OR NETWORK OF INTEREST

The CMP should be multi-modal. The networks that will be analyzed with this congestion management process are the roadways classified as a collector or higher. Observing the roadways will allow the evaluation of bus congestion in addition to auto and truck congestion because they all share the same roadway. TCRPC will also look at sidewalks, bike lanes, and multi use paths in the region. Transportation industries, such as movement of freight/logistics, will also be evaluated if data indicates the presence of congestion.

The table below shows vehicle miles traveled per capita in the region and the different modes used to commute to/from work

Portion of Regional Trips: Automobile, Transit, Walking, and Bicycling

Year	Vehicle miles traveled	Vehicle miles traveled per capita	Years	Automobile		Transit		Walking		Bicycling	
				trips	% of total	trips	% of total	trips	% of total	trips	% of total
1990	4,486	13.2	**1990**	141,207	93.63	1,922	1.27	4,523	3	235	0.15
2000	5,308	21.8	**2000**	152,552	95.84	1,962	1.23	3,575	2.25	256	0.16
2009	5,494	22.8	**2010**	164,119	95.53	1,676	0.98	3,546	2.06	366	0.21
			Total	457,878	95.45	5,560	1.16	11,644	2.43	857	0.18

www.census.gov

4. DEVELOP PERFORMANCE MEASURES

The intent of presenting performance measures is to provide the public, appointed, and elected official with tools that will effectively communicate 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.

Objective		Performance Measure	Follow-up Tasks
SOV Travel	Reduce VMT by 5-10% over the next 25 years at rate of 0.2-0.4% each year	• Measure VMT • Measure extent of congestion, compare differences at specific times of day on collectors and above • Average Travel Speed • Measure ridership on transit	• Revisit each of these annually

		• # of individuals using ciCarpool Program based on data generated by the program (website)	
Access Management	Over the next 25 years limit the number of access points on all newly constructed roadways that are major collectors to as few as deemed necessary	• Traffic Studies completed when necessary as development occurs • Traffic counts	• Consider during new project development.
Intersection Improvement	Over the next 5 years improve intersections so that the delayed time is Level of Service C or better at all signalized intersections at collectors and above.	• Use Synchro software to give a # rating for each intersection • Measure average travel time	• Have IDOT/municipalities do routine checks, bi-annually or annually
Traffic Signs	Over the next 5 years evaluate the regional highway system to ensure that 90% of all traffic signs in the region are compliant with the latest MUTCD	• Citizen Input via website • Completed Sign Inventories for each municipality	• Revisit annually.
Traffic Signal Synchronization	Over the next 5 years strive that vehicle delay does not exceed 2 cycles at any federal-aid highway.	• Measure travel time with GPS devices • Total Delay • Citizen Input via website • Corridor Scat Studies	• Revisit annually.
Traffic Flow	By Summer 2011 IDOT will have a website that includes accurate travel information for the public to access.	• Citizen Input via website • Count # of hits on website once the site is up and running	• Revisit annually.
Bus Bays	Over the next 5 years install bus bays/pull-outs on new or reconstructed roadways where feasible and appropriate to reduce congestion and if it meets	• # of bus bays (currently existing and the number installed)	• Work with CityLink/local municipalities and revisit annually.

	the desired effect of the proposed roadway.		
Transit Service	Over the next 3-5 years the GPMTD will work to implement feedback/results from 50% of the findings in the Comprehensive Operations Analysis	• # of bus or transit routes added or changed • Decrease in headway time	• Revisit annually.
Walkways & Bikeways	TCRPC will encourage and help the local municipalities, schools, etc develop programs/projects and apply for Safe Routes to School funds. The goal is to see at least five projects from the tri county region applying for these funds per each funding round.	• Citizen Input via website • # of local SRTS/ITEP project applications per funding cycle	• Revisit annually.

Glossary

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.

Crash Rates: The number of crashes 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 crashes, and the way they are recorded, makes it difficult to measure congestion from crash 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 crashes. There is also a wide variance in the reporting of accident data by local law enforcement agencies. Two major problems are that not all crashes are reported and that the exact accident location is not identified. Crash rates are applicable as spot, corridor, and area wide measures. Crash rates alone are not a suitable measure of congestion.

Citizen Complaint (Public Input): Develop a tool to receive various types of data from the public via a website or mobile device. This allows for real-time information to be used in the analysis of congestion and how we can implement the correct steps to manage it.

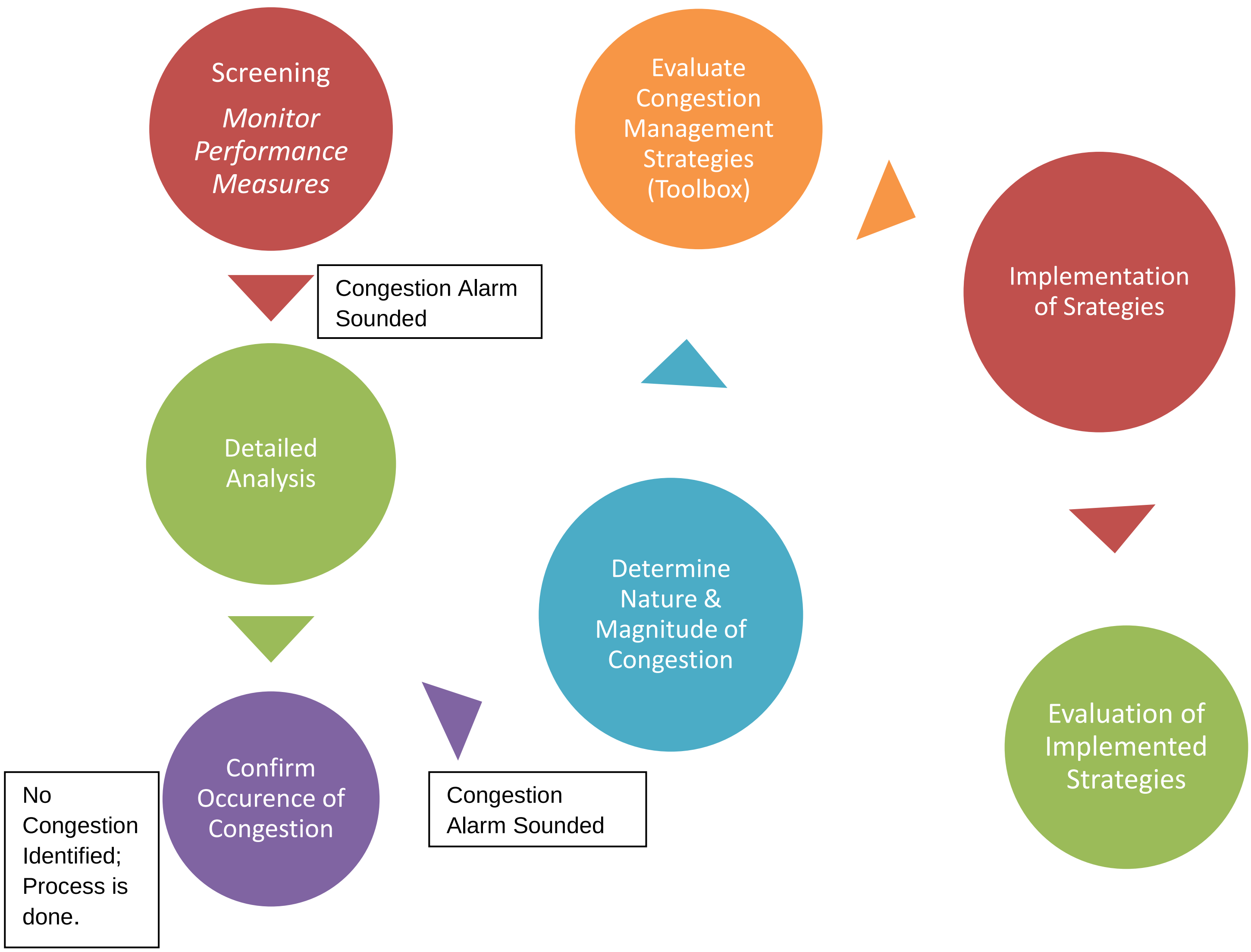
5. **INSTITUTE SYSTEM PERFORMANCE MONITORING PLAN**

TCRPC shall perform the following activities; coordinated data collection and system performance monitoring to assess the extent of congestion, determine the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions. The data collection efforts based on relevant, reliable, and consistent performance measures and analytical methods have already guided the region to implement a number of projects that meet the goals throughout the region. 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.

5.1 Overview of Process

The figure below shows a monitoring process for the Tri County MPO.

No Congestion Alarm Sounded; Process is done.



5.2 System Monitoring- Tier 1 and 2 Screening

The CMP performance measures will be monitored at least once a year, in a two-tiered process.

Tier one is a screening process to determine whether the threshold for each performance measure has been exceeded at a particular location or within an area. This identifies locations which at least exhibit the characteristics of traffic congestion.

If a threshold has not been exceeded, no further analysis is needed for that location until the next year's monitoring cycle. However, if a threshold is exceeded, a "congestion alarm" is set off. This triggers Tier 2 of the analysis.

Tier 2 is a more detailed study of the location to determine the extent, nature, and cause of the congestion, and to identify the appropriate tools to use to manage the congestion.

5.2.1 Tier 1- General Screening

Methodologies for conducting screening for each performance measure are described below.

Average Route Speed (travel time)

The MPO will conduct time travel surveys on selected routes annually to compare peak hour period travel time with free flow travel time. Travel times will be collected on all freeways and arterials within the urbanized area if possible, or as many of those routes as possible within the available budget. Any of the municipalities in the MPO region that plan to conduct separate travel time studies will be asked to provide that information to the MPO staff for analysis as well.

Routes with peak period travel times that are less than or equal to 30% of free flow speed will be identified as congested.

Future Average Route Speed

The MPO will maintain the regional travel demand model regularly to ensure that it contains the latest significant changes in the transportation network, as well as land use changes. The municipalities will provide information to the MPO about significant land use changes on at least an annual basis.

The traffic assignments generated by the model will be used to predict future average route speeds for the regional transportation network. These results will be reviewed annually to identify locations that are projected to experience congestion in the future. Routes that are projected to have peak period travel times that are less than or equal to 30% of free flow speed will be identified as congested.

Vehicle Miles Traveled (VMT) per Licensed Driver

The ADT counts conducted by IDOT will be used to calculate VMT on all major collectors and above with the MPO region. At each location analyzed, the ratio of VMT to the total number of licensed drivers in the MPO region will be determined. These ratios will be used to identify annual increases or decreases in VMT along the routes analyzed. A “Congestion alarm” will be triggered if the increase in VMT for a specific year is greater than the increase in VMT for the previous year.

Transit Delay

At least once a year, CityLink will conduct time studies to identify the average route speeds for routes in service. This also ensures that the CityLink system is working to the highest efficiency possible. Free flow speeds for each route will be compared to peak period travel times results. Routes with peak period travel times less than or equal to 30% of free flow speed will be identified as congested.

CityLink will also notify the MPO if it decides to modify the schedule of any routes due to slower bus travel in congested conditions, even if the congestion has not reached the threshold.

Citizen Complaints

Complaints about traffic congestion will be monitored on a continual basis by the MPO planning staff. If the staff received three or more citizen complaints in the same year about congestion at a location outside the urbanized area, a “congestion alarm” will be triggered.

5.2.2 Tier 2- Detailed Analysis (Validation)

Each time an established threshold for a specific performance measures is exceeded and a "congestion alarm" is triggered at the Tier I screening level, additional study of the location will be undertaken.

The additional study will be conducted by the responsible agency (village, city, county, or IDOT) with the technical assistance from the MPO staff. The purpose of the study is to:

- Validate that a congestion problem Is actually occurring
- Define the magnitude and causes of the congestion
- Identify the appropriate strategies to manage the congestion and establish a schedule for implementing those strategies.

Phase 1. Validate Congested Location

For most locations, a simple review of the traffic counts, travel times, or other performance measures (as well as local knowledge) can be used to quickly confirm that congestion is occurring at locations identified through the Tier I screening process. For example, several roadways such as War Memorial Drive, Knoxville Ave, and University St, as well as Main St and Camp St. in East Peoria are some of the busier roadways in the region and may experience congestion at one point or another. Thus, the traffic counts and travel time runs conducted on these roadways will almost certainly trigger a "congestion alarm."

However, some locations, the Tier I screening process will not be adequate to validate actual congestion. For instance, a particular count station could exhibit an unusually high ADT for a specific year. The Tier I screening process may not clearly indicate whether the high ADT is an anomaly, or the traffic volumes actually increased substantially over previous years. As another example, a very low travel speed could be measured one year on a previously uncongested route. This low travel speed may actually be due to a new congestion problem, or it could be due to an unusual condition that occurred on the day the data was obtained. For these types of situations, additional data collection and analysis are required to validate actual congestion. These additional analyses should indicate whether or not congestion is taking place at the location identified by the CMP screening process.

Phase 2. Define Magnitude & Causes of Congestion

Once congestion has been confirmed at a specific location, the next step is to define its magnitude and causes. Without accurate determination of these factors, the right tools may not be selected to manage the problem.

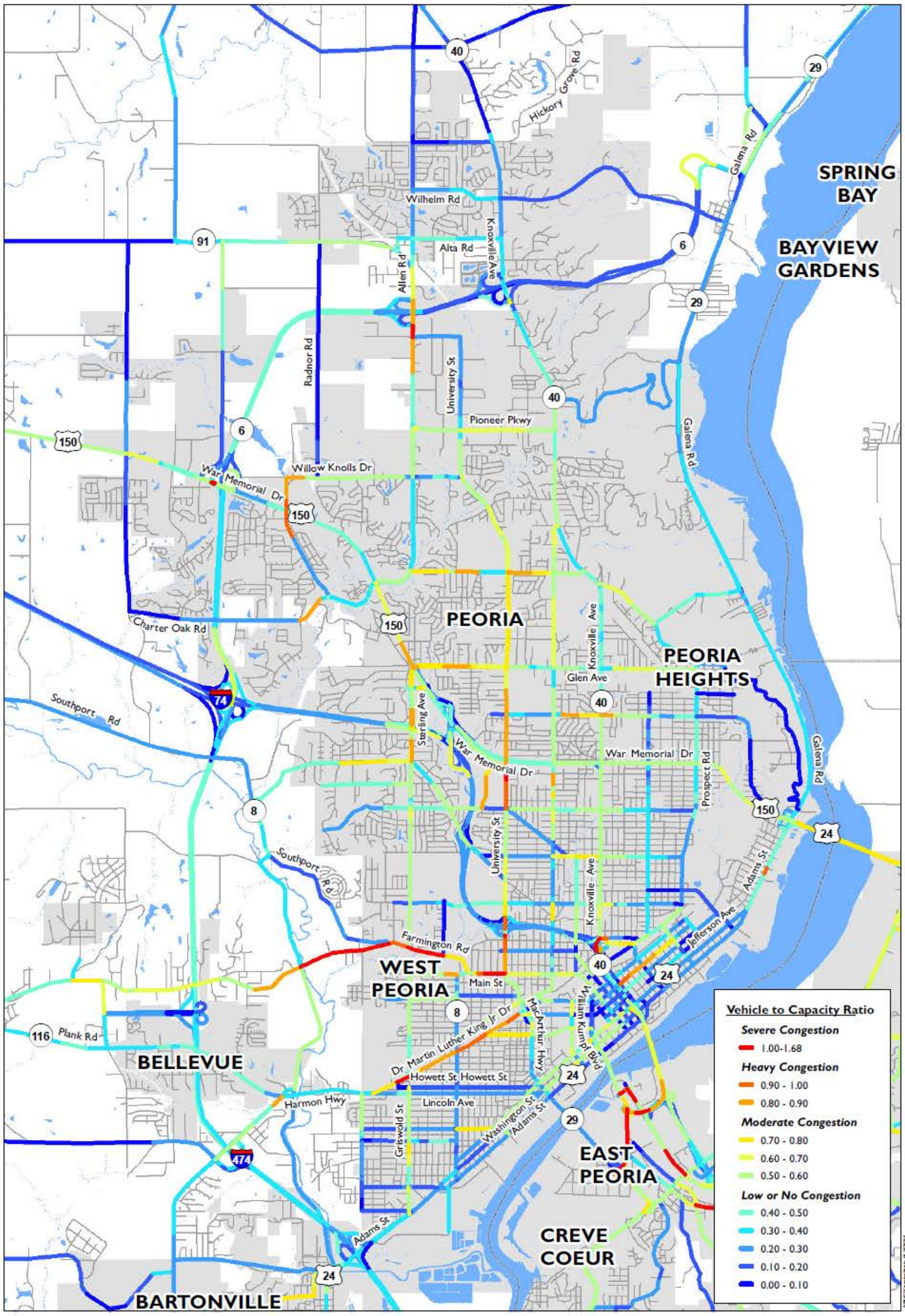
Various levels of analysis may be required. It could be as simple as conducting a field visit to identify a traffic signal timing problem, or it could require a major land use and transportation study for a corridor. The additional study may include site visits, traffic s counts, collection and analysis of accident data, level of service calculations, travel time surveys, transit delay analysis, or vehicle occupancy counts. Alternatively, a much more detailed study such as a major land use study or a corridor study may be required.

For many situations, this analysis can be conducted by the responsible unit of government, with technical assistance by the MPO staff. For certain problems, a consultant may need to be hired to conduct the required analysis.

Phase 3. Evaluate Congestion Management Strategies

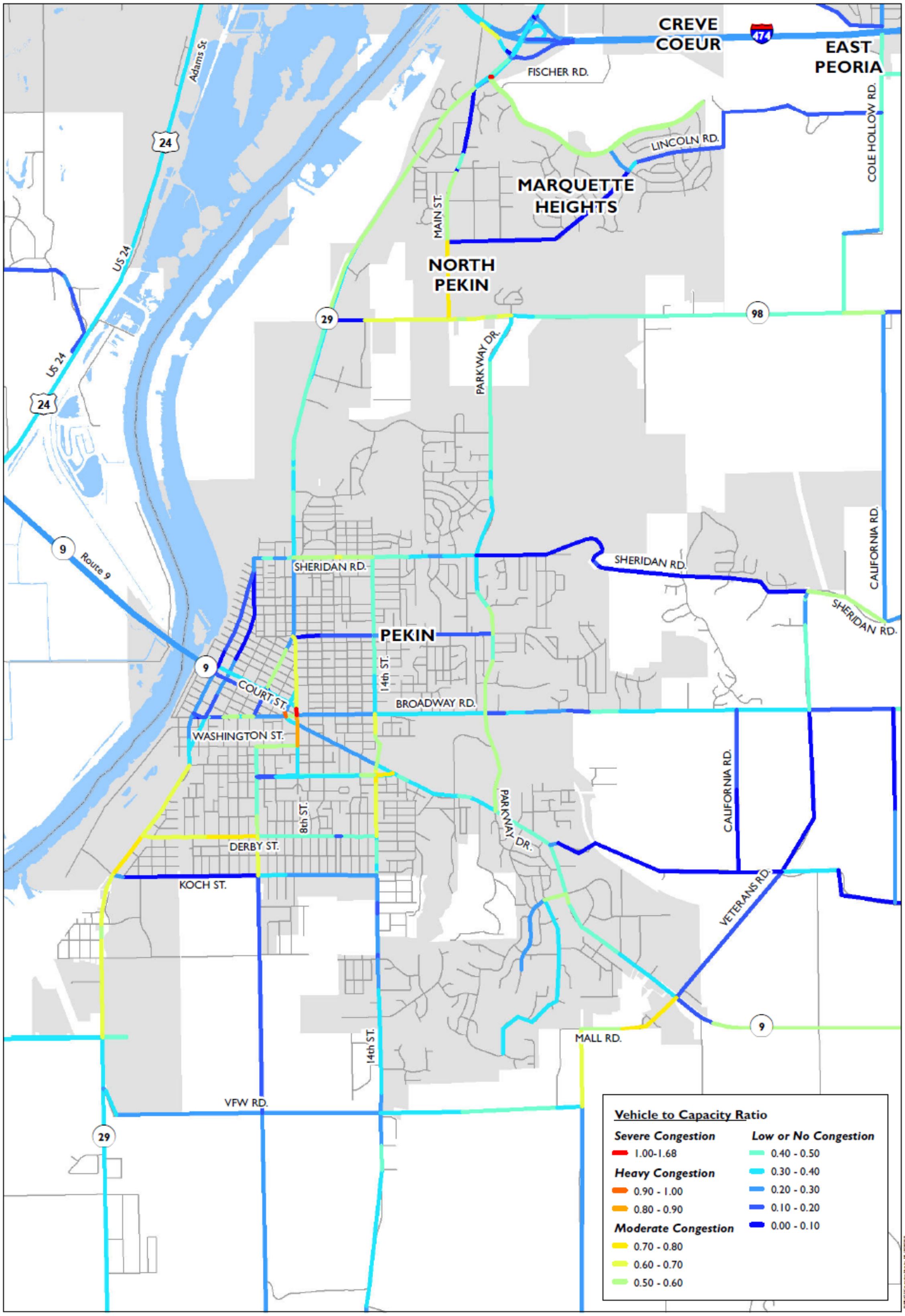
After determining the level of congestion occurring at a location and its causes, the next step is to evaluate strategies from the congestion management “toolbox” to address that location. See ‘Step 6’ for further information.

Congestion Maps – Forecasts produced by the region's Travel Demand Model.

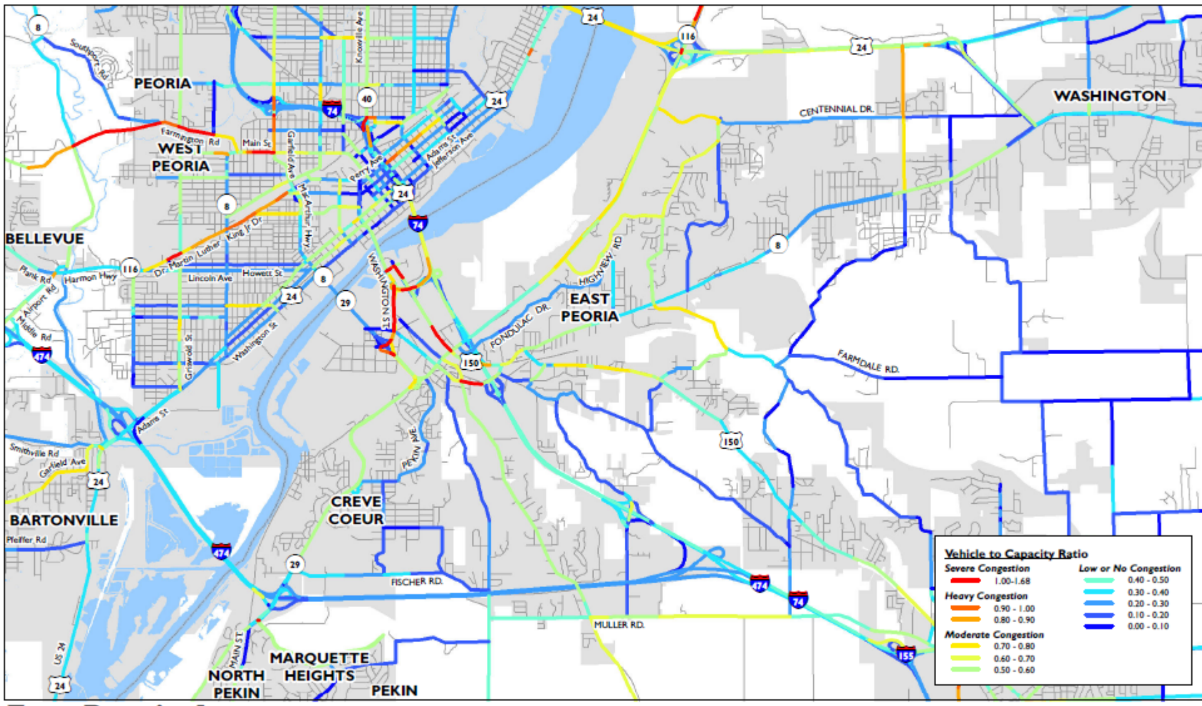


Peoria Area Congestion-2010

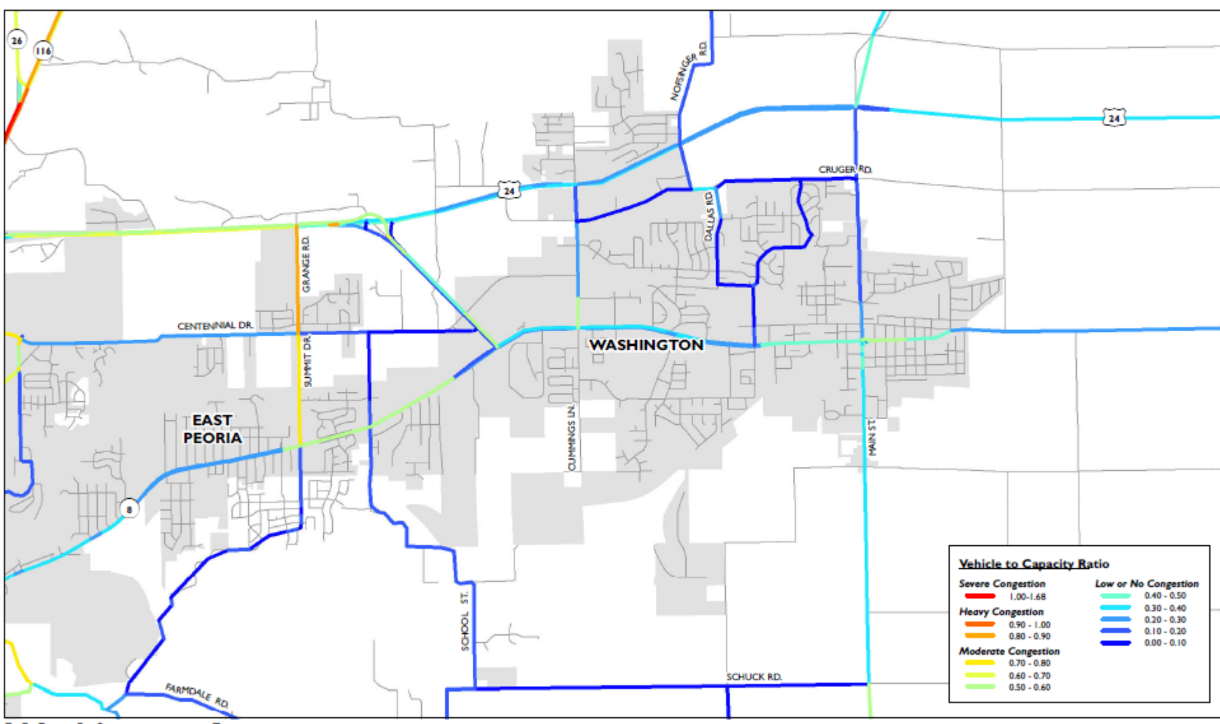
0 0.5 1 2 Miles



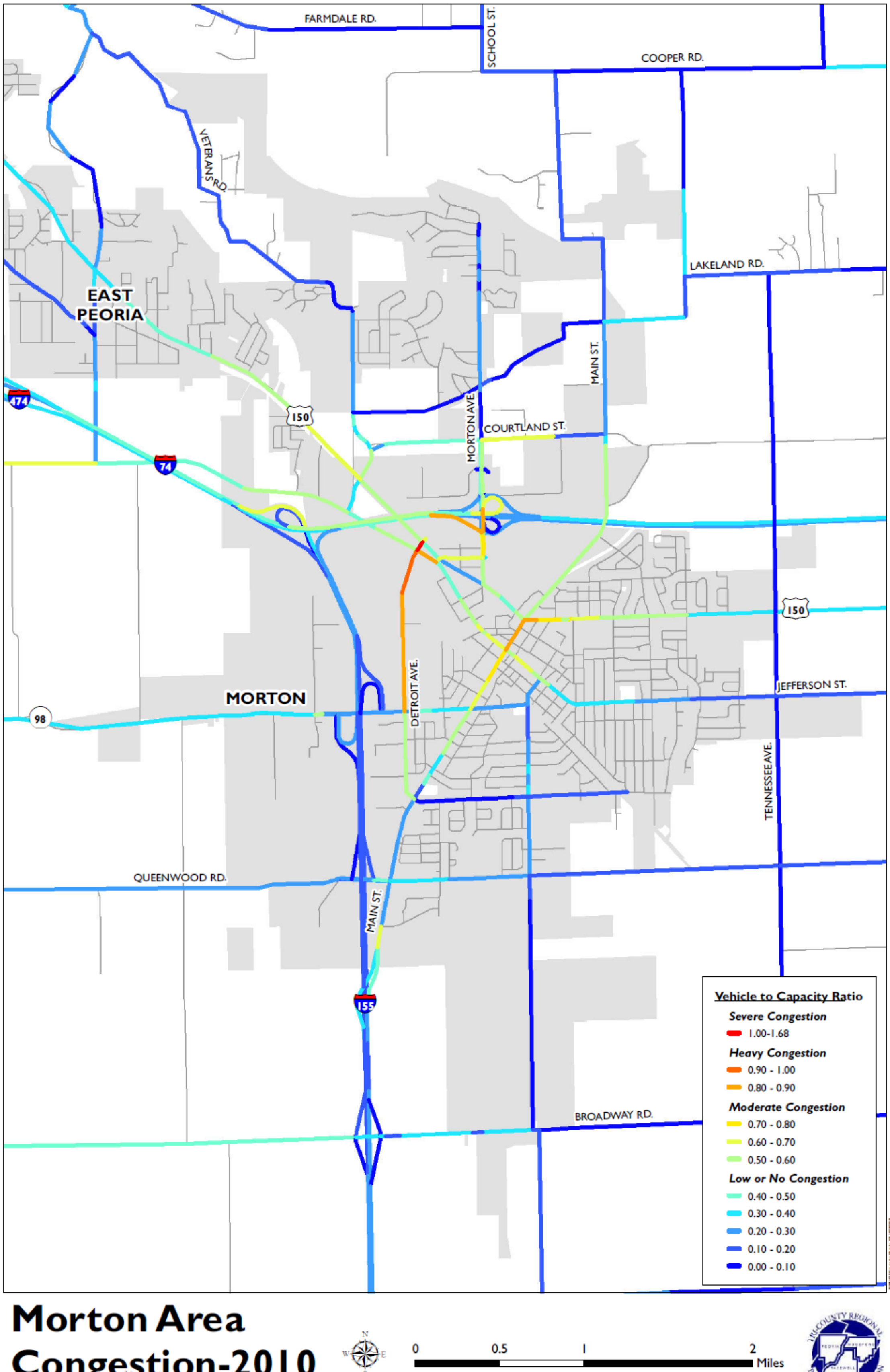
Pekin Area Congestion-2010

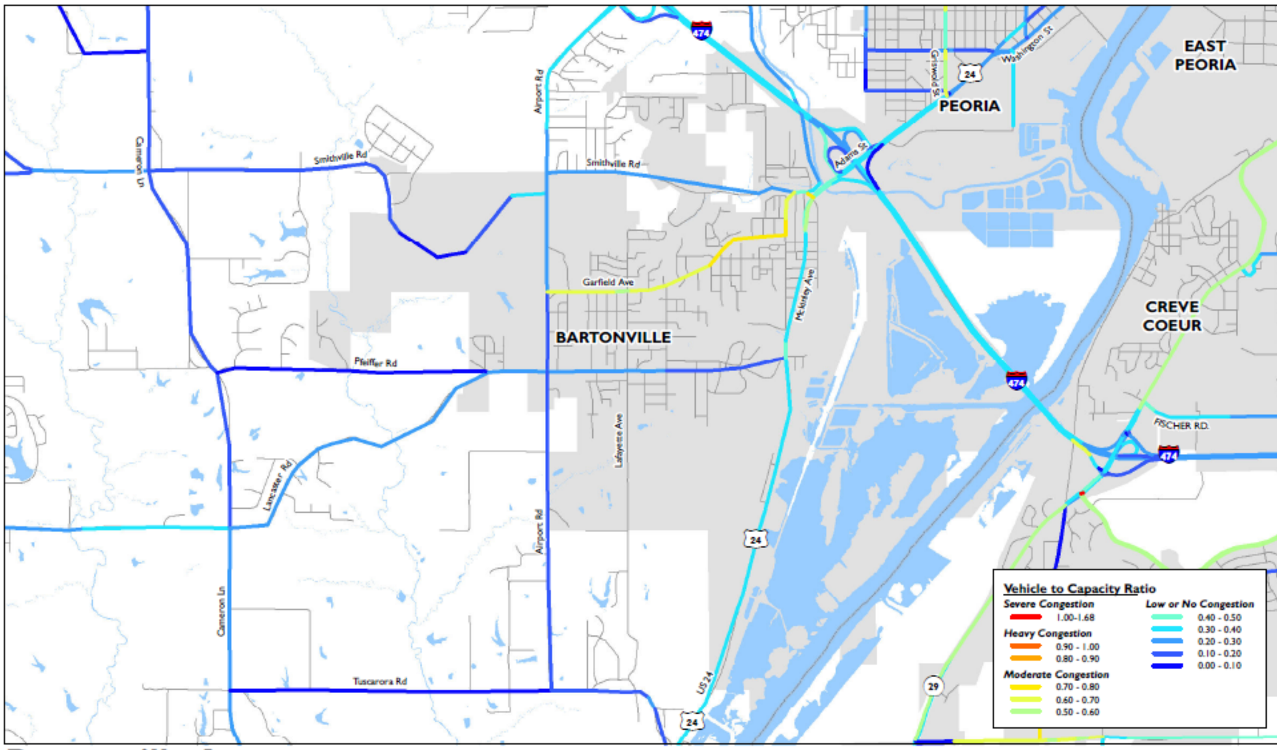


East Peoria Area Congestion-2010



Washington Area Congestion-2010


FARMDALE RD.
SCHOOL ST.
COOPER RD.
VETERANS RD.
LAKELAND RD.
EAST
PEORIA
MAIN ST.
MORTON AVE.
COURTLAND ST.
474
150
74
JEFFERSON ST.
DETROIT AVE.
MORTON
98
TENNESSEE AVE.
QUEENWOOD RD.
MAIN ST.
155
BROADWAY RD.
Vehicle to Capacity Ratio
Severe Congestion
1.00-1.68
Heavy Congestion
0.90 - 1.00
0.80 - 0.90
Moderate Congestion
0.70 - 0.80
0.60 - 0.70
0.50 - 0.60
Low or No Congestion
0.40 - 0.50
0.30 - 0.40
0.20 - 0.30
0.10 - 0.20
0.00 - 0.10
Morton Area
Congestion-2010
0
0.5
1
2
Miles



Bartonville Area Congestion-2010

6. 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 IDOT and the local municipalities assist the MPO with data from areas of the region that are considered congested either by IDOT standards or by the perception of the citizens of the metropolitan area.

With more than 40 miles of fiber optic cables installed along urban area streets and nearly 40 more miles that are planned to be installed in year 2011. There are also over 50 miles of fiber optic cable in the planning and design stage and will be installed in the next 2-4 years. Intelligent Transportation System (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 on occasion at 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 are some 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. The TCRPC officially launched their internet based ridesharing program, ci Carpool, in January 2011.

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 other strategies are not working.

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

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. There are also telecommunication options.

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 infrastructure/system 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 lane 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 they support the SCAT studies.
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.
Roundabouts: Roundabouts are a technique to improve problematic intersections. They are known to be safer for pedestrians, and if a crash were to occur with another automobile it would be much less severe, as the angles are less dangerous. Roundabouts are also better for the environment, as there is less idling and more of a constant movement. This results in much less emissions and more efficient gasoline usage. Roundabouts do not require as much electricity as a signalized intersection does, usually there are just some simple street lights and signs at these locations.

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.

7. 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 LRTP. Working closely with operating agencies that have participated in the CMP is facilitated through the Congestion Management Subcommittee that will meet as needed to review and analyze traffic data, and make recommendations for transportation improvements.

8. 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 extend 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.