The Mississippi Gulf Coast

Metropolitan Planning Organization's

Congestion Management Process (CMP)

2015

Prepared By:
GULF REGIONAL PLANNING COMMISSION

For:

THE MISSISSIPPI GULF COAST

METROPOLITAN PLANNING ORGANIZATION

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TABLE OF CONTENTS

1. PURPOSE AND OVERVIEW

The Congestion Management Process is a part of the Mississippi Gulf Coast MPO's transportation planning process that serves to identify existing congestion in the study area to provide additional information and improved analysis to support development of metropolitan and statewide transportation long range plans, short range planning programs and project development. This program serves as a system wide analysis tool to identify congestion, look at the causes, and propose solutions to localized spot and corridor level congestion problems.

Federal Requirements

The Mississippi Gulf Coast MPO is considered a Transportation Management Area (TMA) for the Gulfport, MS urbanized area. Federal regulations described in 23 CFR 450.320 say that "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.

Recommend Operational and Management Strategies

Although major capital investments are still needed to meet the growing travel demand, large-scale projects such as new roads and major widening are few and far between primarily because of the cost of these major projects. There is a need to look at smarter ways to mitigate congestion issues. The Mississippi Gulf Coast MPO promotes the use of efficient system management and operational measure that emphasize the preservation of the existing transportation system. The CMP and the MPO planning process will help develop lower cost strategies, such as operational and travel demand management strategies that complement capital investment recommendations. Operational strategies have been increasingly used to squeeze more efficiency out of the existing system. These strategies can often be implemented at a fraction of the cost of capacity improvements.

Supplement the 2040 Metropolitan Transportation Plan (MTP)

The MPO Metropolitan Transportation Plan (MTP) is required to include operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods. The CMP expands the focus of the MTP to include needs related to the operation of the transportation system. The CMP will serve as a plan that helps identify and prioritize how transportation investments should be made which will fit into the overall MPO planning process and feed directly into the MTP.

Air Quality Issues

Vehicle idling produces a large proportion of mobile source emissions in any area. Extended idling occurs from vehicles when they are faced with traffic congestion and delay. As a vehicle spends more time in traffic on roadways or waiting at intersections that are beyond their intended capacity, harmful emissions are expelled into the environment. Using the CMP to identify areas of extended delay, the extended idling from this delay will be mitigated by the measures recommended and harmful emissions will be reduced from the improved traffic flow.

Objectives

The MPO's planning process relies heavily on the data collected and information presented in the CMP. The MPO utilizes the CMP in its project selection processes for the Transportation Improvement Program (TIP) and the Metropolitan Transportation Plan (MTP). The CMP also helps the MPO realize some of its goals and objectives. Specifically, the ones that point to the implementation of operational measures to preserve the existing roadways such as:

OBJECTIVE: Maximize transportation system efficiency by promoting alternatives to adding general-purpose traffic lanes

- Adopt a "fix-it-first" mentality that maximizes all operational measures on roadways before adding capacity
- MPO policy or recommendations for capacity addition
- Develop and assign a high priority to projects that improve traffic flow with operational measures
- Consider measures that put more people into fewer vehicles and reduce the need to travel

OBJECTIVE: Reduce roadway congestion

- Identify and develop projects for existing and future traffic congestion
- Develop and assign a high priority to projects that mitigate congestion and/or reduce travel time

2. SYSTEM PERFORMANCE MONITORING

This section describes the process used to identify congestion on the transportation network. Congestion occurs in two ways: recurring and non-recurring congestion. Non-recurring congestion is the temporary disruptions, such as incidents, work zones, weather, and special events. Recurring congestion occurs usually during peak travel periods because the number of vehicles trying to use the roadway exceeds the available capacity or there are problems with the operation of the roadway.

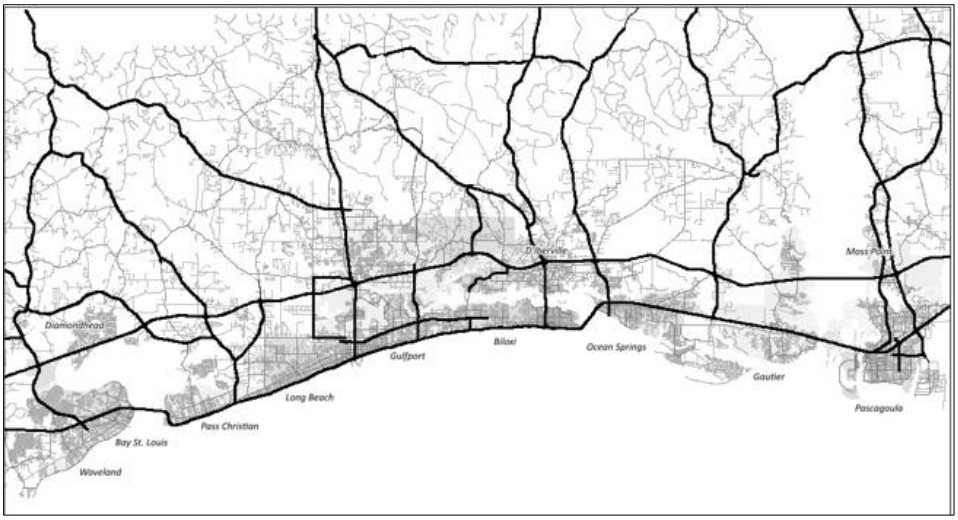
Recurring Congestion

The Transportation Research Board defines traffic congestion as "travel time of delay in excess of that normally incurred under free-flow travel conditions". The CMP process will result in the identification of a Level of Service (LOS) for each roadway segment based on the average travel time data on roadway segments in the planning area, each roadway segment's level of service will be determined to provide decision makers with an understanding of existing traffic flow conditions.

A travel rate index is used to identify areas of concern for recurring congestion. This index measures the amount of extra time it takes during the peak period. The travel rate index is derived from the average speed (mph) in the afternoon peak periods divided by the free flow speed (85th percentile). The index will provide a percentage that indicates the level of service (LOS) that the roadway is operating.

Average peak travel speed / free flow speed = Travel rate index

The MPO's CMP uses InRix travel speed data to measure system performance. The InRix travel speed data provides the 85th percentile speed for each roadway segment that represents free-flow travel speed. The 85th percentile speed is a value that is used by many states and cities for establishing regulatory speed limits. The InRix data also includes hourly average speeds that provide afternoon peak speeds. Unfortunately, the InRix data did not include several important corridors that needed to be studied. Therefore, travel time runs were made on these roadways during peak and off peak periods of the day. Several runs were made for each direction during each time period in order to obtain an average travel speed for those corridors. The corridors included Landon Road, Canal Road, 28th Street, Cowan Road and Cedar Lake Road. The study corridors are shown on the map below.



The free flow speed was then compared to travel speed data representing the peak travel period of the day. The peak travel period data was compiled using travel speed on each roadway segment from the time period of 4:00 to 6:00 PM. The result of this analysis provides a number that indicates the percent slower a vehicle travels on a roadway during the peak travel period of the day than during off peak times. The percentage is then translated to a level of service (LOS) that is intended to capture a variety of qualitative and quantitative aspects of traffic. The Highway Capacity Manual describes Level of Service (LOS) as follows:

LOS A describes primarily free-flow operations at average travel speeds, usually about 90 percent of the free-flow speed for the arterial classification. Vehicles are seldom impeded in their ability to maneuver in the traffic stream. Delay at signalized intersections is minimal.

LOS B represents reasonably unimpeded operations at average travel speeds, usually about 70 percent of the free-flow speed for the arterial classification. The ability to maneuver in the traffic stream is only slightly restricted and delays are not bothersome.

LOS C represents stable operations; however, ability to maneuver and change lanes in mid-block locations may be more restricted than in LOS "B", and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50 percent of the average free-flow speed for the arterial classification.

LOS D borders on a range in which small increases in flow may cause substantial increases in approach delay and hence decreases in arterial speed. LOS "D" may be due to adverse signal progression, inappropriate signal timing, high volumes, or some combination of these. Average travel speeds are about 40 percent of free-flow speed.

LOS E is characterized by significant delays and average travel speeds of one-third the free-flow speed or less. Such operations are caused by some combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.

LOS F characterizes arterial flow at extremely low speeds, from less than one-third to one-quarter of the free-flow speed. Intersection congestion is likely at critical signalized locations, with long delays and extensive queuing.

Determine Causes of Congestion

Once area of traffic congested are identified, the causes of congestion must be identified. Before a decision is made to add base capacity to a roadway we should consider alternative strategies to mitigate congestion.

Roadway Capacity

In many cases the causes of congestion may be as simple as the roadway cannot handle the amount of traffic that it has on it. This can help be determined by identifying a volume/capacity ratio for the roadway in question. If the ratio indicates that the volume is simply too much for the roadway's intended capacity then a case for adding more base capacity may be warranted. If it is determined

that base capacity addition is not warranted or desirable then we must look a little closer to determine if there are alternative actions that can be taken to improve traffic flow on the roadway. Roadway capacity estimates are provided below:

Urban Arterial (hourly capacity)							
Signals per mile	2/undivided w/ left turn lane	2/undivided no left turn lane	4/divided w/ left turn lane	4/undivided w/ left turn lane	4/undivided no left turn lane	6/divided w/ left turn lane	8/divided w/ left turn lane
<.50	2330	1984	4732	4495	3786	7080	8863
.50 - 2.49	1529	1299	3221	3061	2577	4823	5915
2.50 - 4.50	1420	1207	3039	2888	2432	4586	5678
>4.50	1347	1145	2912	2766	2330	4459	5460

Urban Collectors (hourly capacity)					
Signals per mile	2/undivided w/ left turn lane	2/undivided no left turn lane	4/divided w/ left turn lane	4/undivided w/ left turn lane	4/undivided no left turn lane
<.50	1864	1805	4211	3911	3294
.50 - 2.49	1223	1183	2868	2664	2242
2.50 - 4.50	1136	1099	2706	2513	2117
>4.50	1077	1043	2592	2408	2027

Roadway Operations

It may be desirable to go out into the field and observe the movements of the vehicles to get a firsthand look at what may be causing the traffic flow problems. Some potential conflicts are outlined on the "Operational Causes of Congestion" field sheet below. This evaluation may help identify operational problems along the corridor that may be caused by impacts of various conflicts.

OPERATIONAL CAUSES OF CONGESTION (FIELD SHEET)	
Roadway:_____ Limits:_____ Intersection Y/N:_____ Corridor Y/N:_____	AADT:_____
Intersections:	**Comments:**
Signal effective green-time	
Turning movements that exceed 20 percent of the total volume on the street	
Lane drops leading away from intersections	
Delay at intersection	
Deficient turning radius at intersections for trucks	
Deficient turning radius at intersections for all vehicles	
Drivers feel unsafe	
Corridors:	
On-street parking	
Driveway access	
Lane additions leading up to	
Grades between intersections	
Capacity constraints between intersections (such as a narrow bridge)	
Queues at one intersection backing up to and interfering with the operation of an upstream intersection cross-street congestion blocking through traffic	
Insufficient capacity, Not enough travel lanes	
Roadway is too narrow for volume and desired travel speed	
Drivers making poor decisions	
Stop and go conditions	
Too many access points for vehicles to enter traffic stream	
Intersections are too close	
Existing or future development makes necessary a reexamination of the design of a roadway for access	
High truck traffic	
Existing physical structure needs reconstruction	
Drivers feel unsafe on roadway	

Non-recurring Congestion

Non-recurring congestion results from incidents, special events, or other phenomena like adverse weather. Non-recurring events dramatically reduce the available capacity and reliability of the entire transportation system. This is the type of congestion that surprises us. Travelers and shippers are especially sensitive to the unanticipated disruptions to tightly scheduled personal activities and manufacturing distribution procedures. Incident-related delay accounts for a large and growing proportion of travel delay, particularly in regions where travel demand is already stressing an over-burdened system. Successful strategies to combat this type of congestion will provide faster and anticipatory responses to traffic incidents, improved management of work zones, identifying weather and road surface problems and rapidly targeting responses, anticipating and addressing special events, including emergency evacuations, that cause surges in traffic and providing travelers with information on travel conditions as well as alternative routes. Measures include:

- Traffic incident management
- Construction management
- Travel information services
- Roadway weather information
- Freeway management
- Automatic vehicle location
- Traffic signal coordination
- Work zone management
- Electronic payment/toll collection
- Transit priority/integration
- Emergency response and homeland security
- Freight management
- Transportation demand management
- Transit fleet management and dispatching

3. SYSTEM IMPROVEMENT STRATEGIES

Once a determination of the causes of the traffic flow problems is determined, it will be necessary to recommend strategies for the mitigation of the deficiencies. In many cases the causes of congestion may be as simple as the roadway cannot handle the amount of traffic that it has on it. It also may be beneficial to assess other options such as traffic operational improvements, travel demand management options and others such as those listed below.

Minor Intersection Improvements • Signal-retiming • Remove signal • Restrict turns • Restrict trucks • Improve signage • Re-striping • On-way operations	**Intersection Improvements** • Add signal • Geometry improvement • Add turn lanes • Roundabout • Traffic circle • Intersection beacon	**Corridor Reconstruction – Access Management** • Frontage roads • Driveway control • Curb and gutter • Add/improve medians • Reconstruct roadway • Add or widen shoulders • Lane widening/narrowing
Transit System Improvements • Express bus service • Expanded service • Commuter rail • Light rail • Technology improvements • Bike and bus program • Improved transit stops • Bus traffic signal priority • Transit marketing • Transit pull-outs • Shelters	**Bike/Pedestrian Improvements** • Bike lanes • Shared use paths • New paved shoulders • Wider paved shoulders • New sidewalks • Improved sidewalks • Marked/raised crosswalks • Bike/pedestrian signals • Improved signage • Curb extensions • Bike parking • Pedestrian refuge area	**Corridor Reconstruction – Operations/Channelization** • Synchronize signals • Pavement signs • Reversible lanes • Add turn lanes • Minor reconstruction • Ramp metering • Accel, Decel lanes • Extended turn lanes • Movable barrier • Reconfigured pavement marking
Travel Demand Management • HOV lanes • Bus lanes • Park and ride lots • Vanpool program • Carpool program • TDM marketing & signage	**Safety Improvements** • Guard rails • Roadway lighting • Rumble strips • Safety edge • Roadway safety audits • Railroad crossing closure • Raised centerline markers • Shoulder addition or improvements	**Traffic Management** • Traffic surveillance • Computerized signal systems • Motorist information systems • Incident management
Minor Bridge Reconstruction • Bridge maintenance • Bridge replacement		**Corridor Reconstruction – Center Lane** • Center turn lane
Traffic Calming Measures • Chokers • Bulbouts • Speed tables • Speed humps • Chicanes • Neckdowns	**New Construction** • New road • New interchange • Overpass • Underpass	**Add Base Capacity** • Add lanes • Extend roadway • Interchange reconstruction

Minor Intersection Improvements

Solutions to problems which are quick to implement and improve the efficiency of the transportation system can be done by the local public agency or Mississippi Department of Transportation (MDOT) at little or no cost. These improvements may include signal retiming or signal removal to improve traffic flow through an intersection.

Intersection Improvements

Intersection reconfiguration - This project type would include reconstruction of an intersection to improve the geometry of it that may include the addition of turn lanes and signal upgrades.

New signal - The purpose of a traffic signal is to provide the orderly movement of traffic by assigning right-of-way at intersecting streets. Installed under the appropriate conditions, a traffic signal is very effective. Installed under inappropriate conditions, a traffic signal is ineffective, inefficient, and a potential danger to motorists and pedestrians.

Roundabouts – Improvements that require traffic to circulate counterclockwise around a center island. Roundabouts are used on high volume streets mitigate the flow of competing movements. Average 29% reduction in overall accidents *(Source: "Roundabouts: An Informational Guide"*). Average 39% reduction in overall accidents and 76% in injury producing crashes *(Source: State Farm).*

Good for:

- Locations with a history of accidents;
- Locations with high delays;
- Intersections with more than four legs;
- Intersections with high left-turn flows;
- Intersections where queues need to be minimized;
- Intersections with irregular approach geometry;
- Providing inexpensive-to-operate traffic control as an alternative to a traffic signal;
- Handling a high proportion of U-turns;
- Locations with abundant right-of-way;
- Locations where storage capacities for signalized intersections are restricted;
- Intersections that are important from an urban design or visual point of view

Advantages:

- Roundabouts can moderate traffic speeds on an arterial
- They are generally aesthetically pleasing if well landscaped
- They enhanced safety compared to traffic signals
- They can minimize queuing at the approaches to the intersection; and
- They are less expensive to operate than traffic signals.

Disadvantages:

- They may be difficult for large vehicles (such as fire trucks) to circumnavigate
- They must be designed so that the circulating lane does not encroach on the crosswalks
- They may require the elimination of some on-street parking; and
- Landscaping must be maintained, either by the residents or by the municipality.

Corridor Reconstruction – Access Management

Reconstruction of the roadway to implement access management by either adding medians or combining driveway to reduce the number of conflict point on a roadway. This improvement may include widening or adding shoulders or widening lanes.

Corridor Reconstruction – CTL

Reconstruction and new curbing on a roadway that would include the addition of a center turn lane. This project type may also include a 2-lane divided roadway. This improvement would accommodate more traffic than a conventional two-lane route by providing a center turn-lane with landscaped median or refuge islands. The advantages of this configuration are to provide better access to adjacent property by removing turning traffic from the travel lanes when driveway or side street access is high. The landscaped refuge islands will keep travel speeds to 30 to 40 miles per hour per hour and provide pedestrian refuge and additional aesthetic benefits. A three-lane avenue is indicated when driveways and access roadways generate frequent turns.

Corridor Reconstruction – Operations and Channelization

Refreshing an existing street or road by applying a new layout. New pavement markings, new signage, new and extended turn lanes, or auxiliary lanes would improve the way traffic flows by changing the operational characteristics of the roadway.

Transit System Improvements - Improvements to the transit system that make its use more attractive by increasing the efficiency, convenience and safety of the system

Transit signal priority - Transit signal priority is an operational strategy that facilitates the movement of in-service transit vehicles, either buses or streetcars, through traffic-signal controlled intersections. By reducing the time that transit vehicles spend delayed at intersection queues, transit signal priority can reduce transit delay and travel time and improve transit service reliability, thereby increasing transit quality of service.

HOV/transit lane - A lane reserved for buses or vehicles with a driver and one or more passengers. These lanes are also known as carpool lanes, commuter lanes, restricted lanes, diamond lanes, or express lanes. Transit lanes would allow for transit buses to travel through congested areas more efficiently.

Improved transit stop & treatments - Well designed transit routes and stops are essential to a usable system. The stops should be designed to provide safe and convenient access and should be comfortable places for people to wait. Bus stops should be highly visible locations where people can reach them easily on foot. Convenient crossings are also important.

Express transit service - An express service that will transport commuters with minimal travel time and short headways would be very attractive to the many commuters that drive single occupancy vehicles every day. A program such as this will need to be heavily marketed showing convenience and cost saving to the potential user. A logo should be developed for this service.

Bus Rapid Transit (BRT) - A *high-quality bus based transit system that provides fast, comfortable, and cost-effective services mobility. BRT uses dedicated lanes and stations with limited stops and frequent operations.*

Light Rail – An electric railway system characterized by its ability to operate along a rail corridor in streets to board and discharge passengers at various points.

Circulator shuttle - An employment shuttle is a regularly scheduled circulator a transit Hub and other points of major employment in a business district.

Multimodal facilities – Hubs for transit and other alternative transportation mode in strategic locations to allow for comfortable transit bus transfers and distribution into other modes of travel such as bus-to-bike or SOV-to-transit bus.

Improved Bike/Pedestrian Mobility

Pedestrian and bike strategies are used to improve and make provisions to accommodate or encourage bicycling and walking. These improvements ensure that the facilities are in place to effectively and safely access various land use by bike or by foot. Since all transit trips begin with walking to a bus stop, these strategies often increase the quality of life for those that need to use transit. Some people may like to ride a bike to work or walk to a park and will be encouraged to do so if the facilities are adequate. When people use alternative or non-traditional modes such as walking or bicycling vehicle trips are removed from the roadways.

Suitable roads for bicyclists and pedestrians – Roadways that provide adequate and comfortable mobility for pedestrians and bicyclists. Depending on the traffic volume and average speed of cars on the road, this may include sidewalks, bicycle lanes, wide shoulders, etc.

Coast Transit Authority's "Bike and Bus" program - CTA's bike and bus program has taken off and grown since its inception. This program has tremendous potential to add travel options for gulf coast residents.

Add Base Capacity to Roadway, or to Parallel Roadway

Increasing the size of roads by adding additional lanes to increase their capacity. This approach is not always possible due to constraints both physical and fiscal, but it remains an important approach to addressing congestion, alone and in combination with other strategies.

Accept Congestion

Levels of acceptable system performance may vary among local communities. Depending on the context of an area's land use, widening a roadway may cause undesirable conditions.

New Construction

New road - Construction of a new facility.

New interchange - Construction of a new interchange

Travel Demand Management

These strategies provide options that result in more people traveling in fewer vehicles.

Park and ride lot - Park and ride facilities are parking lots with connections to roadways that commuters use to get to work that allow people to leave their vehicles and transfer to a bus system or carpool for the rest of their trip. The vehicle is stored in the car park during the day and retrieved when the owner returns.

Coast Commuter- The Mississippi Gulf Coast Commuter Program is a service of Coast Transit Authority that was launched at Northrop Grumman Shipyard in Pascagoula on November 7, 2006. Coast Commuter promotes and facilitates commute alternatives such as carpooling, vanpooling and transit use. Coast Commuter solutions are available to any commuter interested in sharing the ride to work, and to area employers that are interested in providing commute solutions for their employees.

Intelligent Transportation Systems (ITS)

ITS improves transportation safety and mobility and enhances productivity through the use of advanced information and communications technologies. Intelligent transportation systems (ITS) encompass a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion, improve safety and enhance American productivity. ITS measures include: Commercial vehicle weigh-in-motion, traveler information systems, and traffic control centers.

Landuse Strategies

Land use strategies that seek to achieve concurrence between transportation and land development. These strategies reduce the demand for single occupancy vehicle travel because stricter zoning and design standards provide for development to occur on transit corridors and encourage mixed-use development with proper design that promotes pedestrian, transit, and bicycle accessibility.

Transit Oriented Development - TOD, is a type of community development that includes a mixture of housing, office, retail and/or other amenities integrated into a walkable neighborhood and located within a half-mile of quality public transportation. Successful TODs can result in reduced household driving and thus lowered regional congestion. They also provide more walkable communities, increased transit ridership, and improved access to jobs and economic opportunity.

4. MONITOR TRANSPORTATION SYSTEM AND STRATEGY EFFECTIVENESS

MPO Transportation Planning Process

The CMP and its components will become a larger part of the methods that the MPO uses to evaluate and develop transportation recommendations. The following will describe the how the MPO will use the CMP to support its other planning programs.

- Identify deficiencies on specific roadway segments or at specific intersections along the roadway based on identified performance measures
- Evaluate traffic operational improvement strategies and demand management measures to effectively consider all alternatives before capacity expansion by adding lanes or building new roads
- Identify areas for MPO sponsored corridor studies or project development
- Provide data for mobile emission source models and to evaluate air quality benefits of transportation projects and programs
- Provide data needed to evaluate Transportation Improvement Program (TIP) projects
- Identify projects and criteria to evaluate alternatives to be considered for the 2040 Metropolitan Transportation Plan
- Communicate information about transportation problems and solutions
- Establish and monitor trends with a historical database
- Maintain a historical database of travel time to evaluate the effectiveness of implemented projects and strategies
- Quantify freight efficiency
- Provide data and information for long range plan evaluation criteria

CMP and the TIP

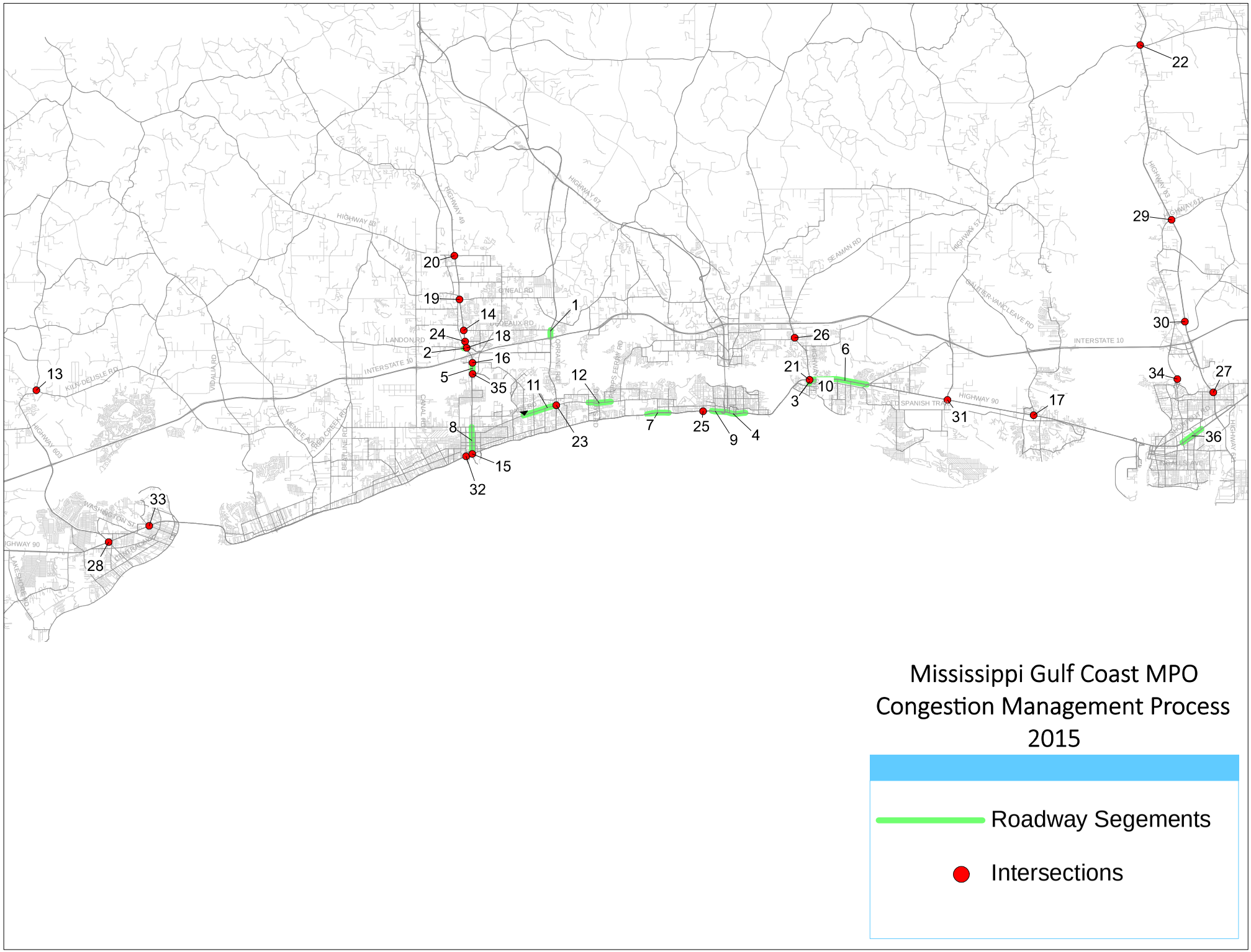
The CMP offers a way to help prioritize projects for allocation of Surface Transportation Program (STP) funds. Projects will be given prioritization points based on the identified level of service for roadway segments in the planning area. The CMP output provides the data for the criteria used for the MPO to address its congestion mitigation goals and objectives. During each TIP update process, the MPO will review the top areas identified to have travel delay issues.

5. IMPLEMENTATION

Many of the projects identified could be funded through the MPO's federal funding source for projects provided through the Surface Transportation Program (STP). These funds are apportioned to each state's urbanized area through the Metropolitan Planning Organization (MPO). STP projects are generally funded using an 80% federal/20% local ratio. These projects can be initiated through GRPC or by the Local Public Agencies (LPAs) on the Mississippi Gulf Coast.

Projects on state highways are generally better suited to be funded and implemented by the Mississippi Department of Transportation (MDOT), however they could be initiated by GRPC or and LPA. The project listing below indicates the most suitable sponsor of a project at each location.

The project listing is separated by intersection and roadway segment with each list in order from areas of highest delay sampled to the lowest. Generally the areas with the highest delay should be prioritized for project development first, however other criteria will be considered before prioritization. Criteria including safety concerns may elevate a project over another one. This level of prioritization is beyond the scope of this CMP and will be accomplished in the 2040 Metropolitan Transportation Plan (MTP).


Mississippi Gulf Coast MPO
Congestion Management Process
2015
Roadway Segements
Intersections
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
INTERSTATE 10
HIGHWAY 90
HIGHWAY 49
HIGHWAY 67
HIGHWAY 57
HIGHWAY 603
HIGHWAY 613
O'NEAL RD
BOEAUX RD
LANDON RD
SEAMAN RD
SALTER-VANCLEAVE RD
KILN-DELISLE RD
VIDALIA RD
CANAL RD
BERTLINE RD
LORRAINE RD
OLD SPANISH TRAIL
WASHINGTON ST
LAKESHORE RD

Roadway Segments

ID	Jurisdiction	Roadway	From	TRI	LOS	Suggested Action(s)	Agency
1	Gulfport	Hwy 605	I-10 to Dedeaux Rd	.4	D-	• Add base capacity to roadway	MDOT
2	Gulfport	Landon Rd	Old Hwy 49 to Hwy 49	.51	D-	• Add base capacity to roadway	LPA
3	Ocean Springs	Washington Ave	Hwy 90 to Beach	.54	D-	• Congestion is acceptable	LPA
4	Biloxi	Hwy 90	Keller Ave to I-110	.57	D+	• Transit system improvements • Corridor reconstruction – operations/channelization • Add base capacity to a parallel roadway, New roadway	MDOT LPA
5	Gulfport	Hwy 49	Creosote Rd to Airport Rd	.58	D+	• Add base capacity to a parallel roadway, New roadway • Intersection improvements	MDOT
Notes: New roadway would be Hwy 601 or another parallel road that would take traffic off of Hwy 49.							
6	Ocean Springs	Hwy 90	Holcomb Blvd to Ocean Springs Rd	.6	D+	• Add base capacity to roadway	MDOT
7	Biloxi	Hwy 90	Rodenberg Ave to Treasure Bay	.62	C-	• Transit system improvements • Add base capacity to a parallel roadway, New roadway	MDOT LPA
Notes: Parallel roadway would be an east-west corridor and high quality transit near the railroad that would take traffic off of Hwy 90							
8	Gulfport	Hwy 49	28th St to Hwy 90	.63	C-	• Add base capacity to a parallel roadway, New roadway • Intersection improvements	MDOT
Notes: New roadway would be Hwy 601 or another parallel road that would take traffic off of Hwy 49.							
9	Biloxi	Hwy 90	Azalea Dr to I-110	.63	C-	• Transit system improvements • Corridor reconstruction – operations/channelization • Add base capacity to a parallel roadway, New roadway	MDOT LPA
Notes: Parallel roadway would be an east-west corridor and high quality transit near the railroad that would take traffic off of Hwy 90							
10	Ocean Springs	Hwy 90	Hwy 609 to Holcomb Blvd	.63	C-	• Add base capacity to roadway	MDOT
11	Gulfport	Pass Rd	Cowan Rd to Washington Ave	.64	C-	• Intersection improvements • Corridor reconstruction – access management • Add base capacity to a parallel roadway, New roadway	LPA
Notes: Access management would be possible medians and driveway control. An east west corridor would take traffic off of Pass Rd.							
12	Biloxi	Pass Rd	Debuys Rd to Stennis Dr	.64	C-	• Intersection improvements • Corridor reconstruction – access management • Add base capacity to a parallel roadway • New roadway	LPA
Notes: Access management would be possible medians and driveway control. An east west corridor would take traffic off of Pass Rd.							
36	Pascagoula	Hwy 90	Hospital Rd to Veterans Blvd	.64	C-	• Corridor reconstruction – access management	MDOT

Intersections

ID	Roadway		Intersection	TRI*	LOS*	Suggested Action(s)	Agency
13	Kiln Delisle Rd	@	Hwy 603	0.5	D-	• Intersection improvements	MDOT
14	Hwy 49	@	Dedeaux Rd	0.51	D-	• Intersection improvements	MDOT
15	Hwy 90	@	Hwy 49	0.51	D-	• Intersection improvements	MDOT
16	Hwy 49	@	Creosote Rd	0.52	D-	• Intersection improvements	MDOT
17	Hwy 90	@	Gauiter-Vancleave Rd	0.53	D-	• Intersection improvements	MDOT
18	Hwy 49	@	Landon Rd	0.55	D-	• Intersection improvements	MDOT
19	Hwy 49	@	O'Neal Rd	0.55	D-	• Intersection improvements	MDOT
20	Hwy 49	@	Hwy 53	0.55	D-	• Intersection improvements	MDOT
21	Hwy 90	@	Hwy 609	0.55	D-	• Intersection improvements	MDOT
22	Hwy 63	@	Hwy 614	0.56	D+	• Intersection improvements	MDOT
23	Pass Rd	@	Cowan Rd	0.57	D+	• Intersection improvements	MDOT
24	Hwy 49	@	Community Rd	0.58	D+	• Intersection improvements	MDOT
25	Hwy 90	@	White Ave	0.58	D+	• Intersection improvements	MDOT
26	Hwy 609	@	Lemoyne Blvd	0.59	D+	• Intersection improvements	MDOT
27	Hwy 63	@	Grierson St	0.6	D+	• Intersection improvements	MDOT
28	Hwy 90	@	Hwy 603	0.61	C-	• Intersection improvements	MDOT
29	Hwy 613	@	Hwy 63	0.62	C-	• Intersection improvements	MDOT
30	Hwy 63	@	Saracennia Rd	0.62	C-	• Intersection improvements	MDOT
31	Hwy 90	@	Hwy 57	0.62	C-	• Intersection improvements	MDOT
32	Hwy 90	@	30th Ave	0.63	C-	• Intersection improvements	MDOT
33	Hwy 90	@	Blue Meadow Rd	0.63	C-	• Intersection improvements	MDOT
34	Main St	@	Dantzler St	0.64	C-	• Intersection improvements	MDOT
35	Hwy 49	@	Airport Rd	0.65	C-	• Intersection improvements	MDOT

**TRI = Travel rate index*
**LOS = Level of service*