LAFAYETTE MPO

CONGESTION MANAGEMENT PROCESS (CMP)

DRAFT

Draft 2014 CMP Introduced to MPO Policy Committee (Information purposes):

February 14, 2014

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Justification for the CMP

CMP Regulatory Requirements

Regions with more than 200,000 people, known as Transportation Management Areas (TMAs), must maintain a congestion management plan (CMP) and use it to inform transportation planning and decision-making. These requirements were introduced by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and were continued under the successor law, the Transportation Equity Act for the 21st Century (TEA-21) and have once again been followed with Moving Ahead for Progress in the 21st Century (MAP-21). Whereas previous laws referred to this set of activities as a congestion management system (CMS) SAFETEA-LU, refers to a "congestion management process", which is intended to be an integral component of metropolitan transportation planning process. The Lafayette MPO Congestion Management Plan has been developed to address this federal requirement for the LAFAYETTE MPO. LAFAYETTE MPO is the designated Metropolitan Planning Organization (MPO) for the Lafayette, Louisiana Urbanized Area (UZA).

The CMP process is required in accordance with the 23rd Code of Federal Regulations, section 450.320, in the Federal Register, under the U.S. Department of Transportation. A CMP provides state Department of Transportation and MPOs with an empirically derived methodology and rational framework for addressing congestion. Federal rules require that a CMP area and network be defined by each MPO. In air quality non-attainment areas, projects that increase capacity for Single Occupancy Vehicles (SOV's) must be derived from a CMP.

CMP's Purpose in the MPO's Transportation Planning Process

Aside from the CMP being a federal requirement for a MPO with a population of over 200,000, CMP's help qualify and/or identify potential projects for inclusion into their regional transportation program. They identify potential improvements based on quantifiable data and they consider congestion in developing transportation improvements: CMP's establish a baseline condition for future comparison of conditions and allow for project prioritization based on potential congestion mitigation. CMP's can provide solutions beyond merely adding road capacity as mitigation development includes other solutions that may be more effective and cost-efficient. CMP's encourage economic competitiveness and increase the reliability of planning for all modes and all journey purposes. Environmental programs that involve air quality and natural hazard mitigation also benefit from the CMP process.

Integration of the CMP into LAFAYETTE MPO's (TMA) Transportation Planning Processes

The CMP is intended to be an integral part of the metropolitan transportation planning process, rather than a stand-alone program or system. SAFETEA-LU outlines the requirements for addressing congestion in Transportation Management Areas (TMAs), mandating the incorporation of CMP within the metropolitan transportation planning process. Integration of the CMP into the planning process will provide decision makers better tools for project prioritization.

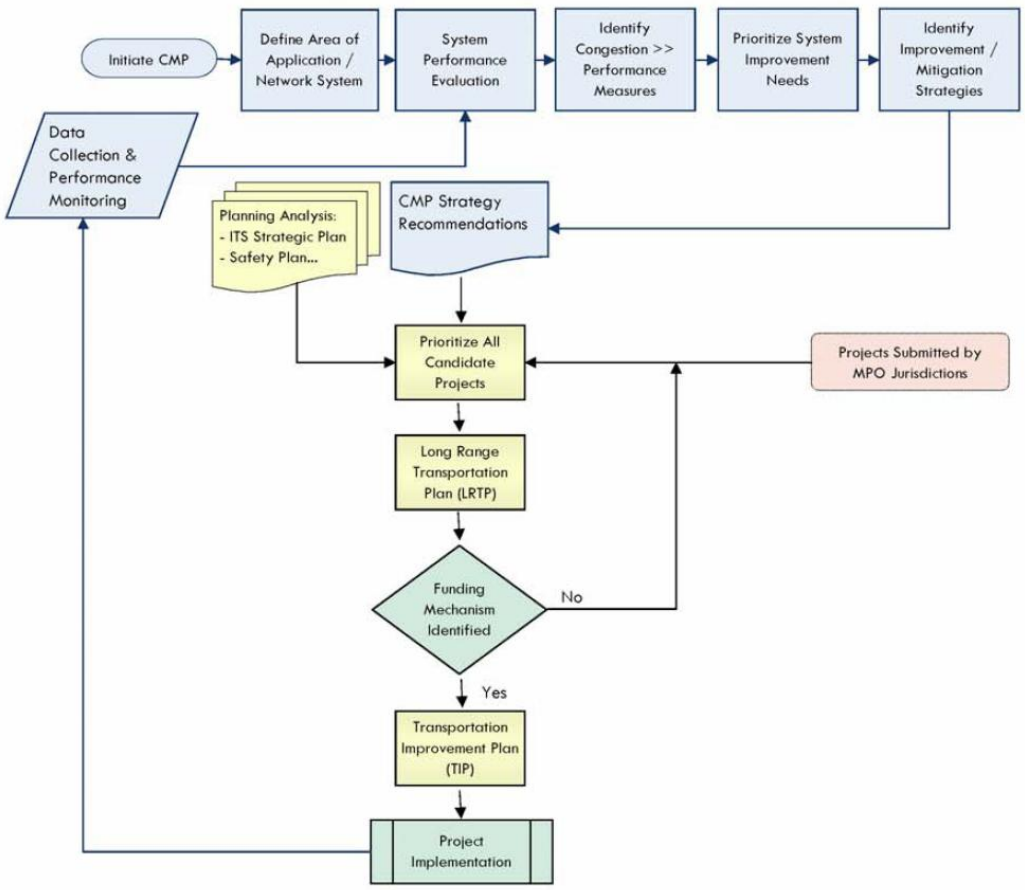
The planning process and its relationship to the CMP components are presented in Figure 1.1 (please refer to the following page). Outlined below, LAFAYETTE MPO's CMP contains six distinct process components.

Primary CMP components:

1) Area of Application and System Definition
2) System performance evaluation
3) Identification of congestion (through performance measures)
4) Methodology to prioritize corridor/section improvement needs
5) Mitigation/Improvement strategy identification
6) On-going data collection and performance monitoring

Figure 1.1, illustrates how the aforementioned CMP process elements are integrated into the overarching MPO transportation planning process. A critical process element, within the overall MPO planning process, occurs during the prioritization of **all** candidate projects is undertaken. It is at this juncture, that CMP improvement strategies are recommended, as well as the recommended improvements from other MPO planning analysis efforts, and the improvement projects/strategies submitted by the MPO's member jurisdictions.

Figure 1.1
CMP Linkage To The MPO Planning Process



CMP Participation

LAFAYETTE MPO's Congestion Management Process will continue to be developed through a cooperative effort with members of all the MPO Committees. The MPO will continue to provide planning and engineering guidance to the MPO's Transportation Policy Committee (TPC), Technical Transportation Committee (TTC) and Citizen's Advisory Committee (CAC) in dealing with issues of the MPO's transportation programs (i.e. CMP). In an effort to integrate the CMP into the planning process the development of the CMP will periodically be discussed during the

TPC, TTC, and CAC meetings. The member agencies and groups represented on these committees include:

- LADOTD – Planning/Programming
- LODOTD – District 03 Traffic Engineer
- Lafayette City/Parish Traffic Engineering
- Lafayette MPO Planning
- Various Transit agencies

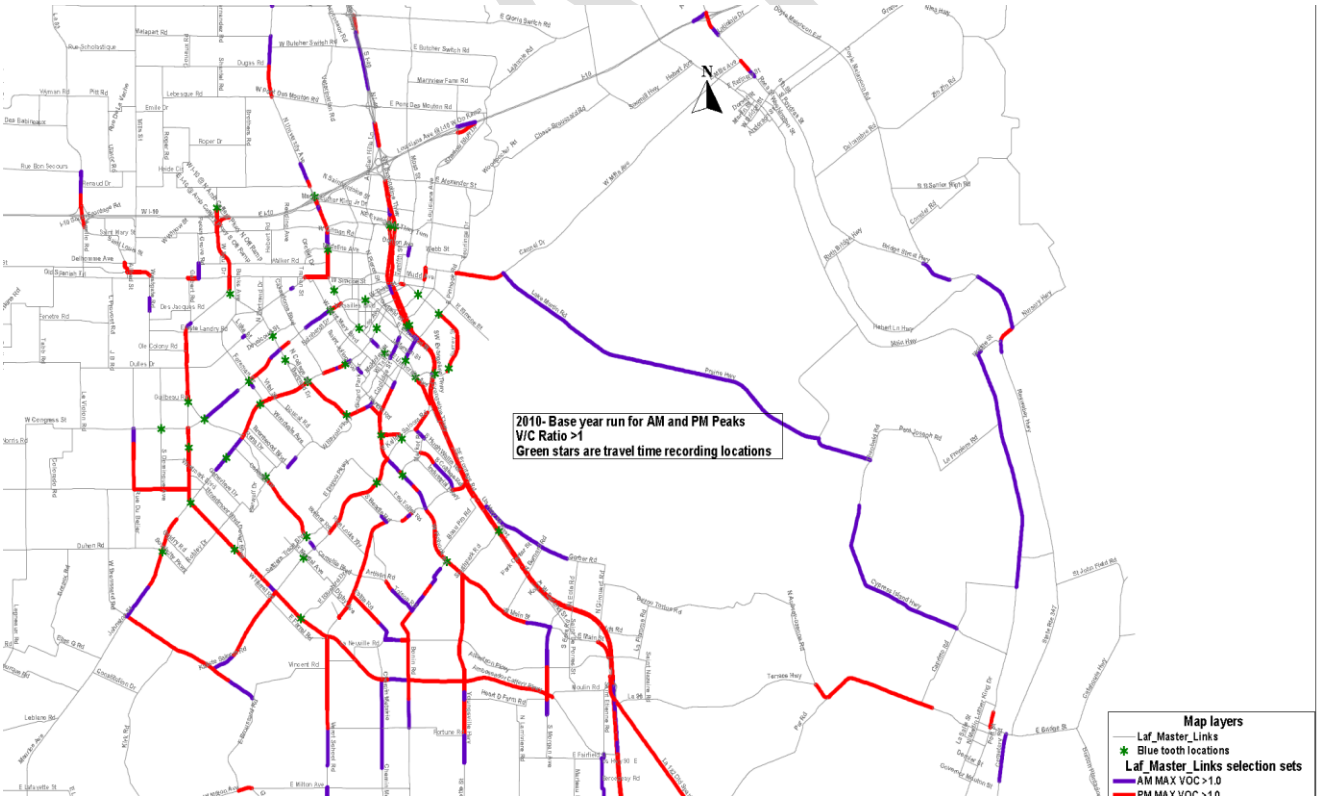
In the future the MPO will fully establish a Technical Advisory Committee to assist in establishing congested corridors and then suggesting mitigation for these same congested areas.

Lafayette Louisiana's CMP Development

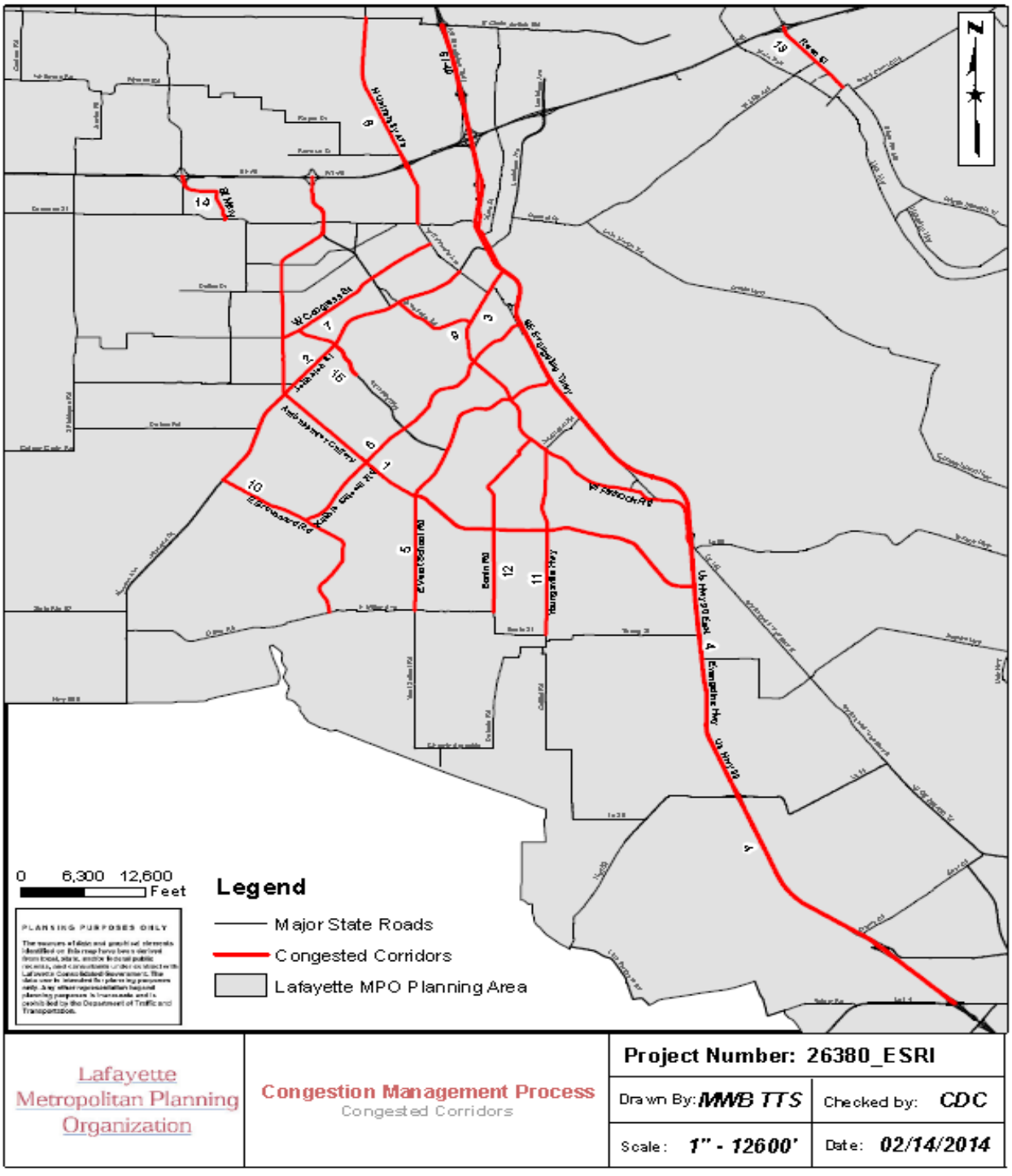
CMP Area of Application (Study Area)/System Network (Corridors)

CMP study area boundaries mirror the ones that were established for the US Census designated twenty-year urban growth area…otherwise known as the 2010 Metropolitan Planning Area (MPA) boundary. Initially, all transportation infrastructures, contained within the study area, are considered through the CMP. Since it is impractical to provide performance analysis for all transportation systems, a prioritization process is undertaken.

LAFAYETTE MPO (Lafayette MPO/TMA) utilized their in-house regional travel demand forecasting model (TRANSCAD) to identify the most congested transportation facilities. A 1.0 v/c ratio is used as the initial performance threshold level. All model links (segments) operating above the threshold (1.0 or greater) are flagged as candidates in the development of the CMP study corridors. Figure 2.1 shows the Volume/Capacity ratio map of 1.0 and greater. Also known as Level of Service D-F.



Combined with ADT count, cross section, and functional class the flagged segments are joined together to form corridors. These corridors are shown in Figure 2.2.



The map's individual CMP study corridor extents are keyed ("Map ID") to Table 2.1 (following page).

Within the CMP study area, fifteen corridors were developed equaling a total one-way length of approximately 95 miles. 11 of the corridors are State highways, while 4 are Parish roads. Using DOTD's proposed functional classification all corridors are either Principal/Major Arterials. Bonin Rd. is a collector. Table 2.1 describes the physical extent of each individual corridor.

Table 2.1: 2014 CMP Study Network

Map ID	Corridor Name	Length (miles)	Extents
1	**Ambassador Caffery Parkway (Partial State/Parish)**	14.8	I-10 to U.S. 90
2	Johnston Street	7.5	University to W. Broussard Rd.
3	Pinhook Rd.	8.6	U.S. 90 (Lafayette) to U.S. 90 (Broussard)
4	Evangeline Thruway	25.63	Gloria Switch to La. 14 (New Iberia)
5	Verot School Rd.	6.5	La. 92 to U.S. 90
6	**Kaliste Saloom Rd.**	4.4	**W. Broussard to U.S. 90**
7	**Congress St.**	**3.5**	**University to Ambassador Caffery**
8	University Ave.	4.7	Gloria Switch to Cameron St.
9	S. College Rd.	1.6	Johnston St. to Pinhook
10	E. Broussard Rd.	4.4	Johnston St. to Vincent
11	Youngsville Hwy.	4.1	Pinhook to La. 92
12	**Bonin Rd.**	**4.1**	**Pinhook to La. 92**
13	Rees St. (Breaux Bridge)	1.8	I-10 to E. Bridge St.
14	Saint Mary St. (Scott)	1.5	I-10 to Cameron St.
15	**Camellia Blvd.**	**1.3**	**Academy Rd. to Congress St.**

*Reconfigured study corridor from 2013 CMS
**New study corridors for 2009

The corridor is but one component of the performance analysis. A more detailed examination takes place at the corridor's section and the intersection levels.

CMP System Evaluation – Performance Measures

The data requirements of a CMP are significant. In order to get the best reflection of what is happening on the corridor in question the following three measures were looked at:

- Average Travel Speed
- Level-Of-Service (LOS)
- Volume/Capacity (V/C) Ratio

These measures are primarily used to evaluate the following physical categories:

1) Travel Speed/Rates (corridor-segment level analysis; calculate a "Speed Deficit" measure)
2) LOS (all levels – primarily intersection operations
3) v/c ratio (segment level analysis) if needed

Additionally, secondary measures will be utilized such as occurrence of incidents and transit performance indices. These performance indicators will provide the basis for CMP evaluation and monitoring activities.

Traffic Flow Data Collection (Travel Time Runs)

The precise collection of travel speed data is critical to accurately determining facility performance levels. For this reason, GPS technology via Bluetooth devices is utilized to collect raw position and temporal data along the CMP corridors (Please refer to Appendix A for a detailed description of this data collection methodology). Raw GPS position files are transformed into useable average travel speed (rate) data and assigned to individual corridor segments for further analysis (i.e. MPH calculations).

The Congestion Management System (CMP) process identifies congestion based upon field collected travel flow data. For analysis purposes, identified CMP corridors were divided by the location parameters of the Bluetooth readers (See Appendix A explanation)

The location and level of the facility congestion is determined through a Speed Deficit calculation.

Speed Deficit is the calculated difference between average off-peak travel speed and average peak period travel speed.

A Speed Deficit calculation produces an easily understood measure of facility congestion. A large discrepancy between **the posted speed limit** and **average peak period travel speed** indicates the presence of congestion. What is considered a "large" difference between off-peak and peak travel speeds? Locally, congestion "significantly" impedes travel when there is a

difference of approximately 15 mph along primary surface streets or as little as a 7-mph reduction on limited access facilities.

Identify Network Congestion

From the traffic flow data collection that was performed during 2014, Table 2.2 summarizes the ten study areas (data available) which exhibited the highest speed deficits.

Table 2.2: 2014 Ten Highest – Speed Deficit Sections (2014 Study)

Rank	Average Peak Travel time (seconds)	Posted Speed limit	Speed deficit	Corridor/From-to
1	14.835	45	30.165	Kaliste Saloom Rd. from S College Ext. to Fue Follet
2	22.185	50	27.815	Ambassador Caffery SB from Bonaire to Johnston
3	17.625	45	27.375	Pinhook from Corporate to La Rue France
4	20.44	45	24.56	Camellia @ Academy to Congress @ Guilbeau
5	26.13	50	23.87	Evangeline Thwy. SB from Willow to Taft
6	16.68	40	23.32	Pinhook from Surrey St. to General Mouton
7	17	40	23	Surrey @ Blue to University @ General Mouton
8	22.11	45	22.89	W Congress from Domingue to Guilbeau
9	27.285	50	22.715	Evangeline Thwy NB from Taft to Willow
10	22.775	45	22.225	Kalsite Saloom from Fue Follet to S College Ext

High speed deficits indicate the presence of vehicular delay and conflict within the flow of traffic. The higher the deficit the more likely congestion is present within the study section.

Ongoing CMP Performance Monitoring

In addition to providing an analysis of existing conditions, the CMP also outlines a suggested program for updating the document once every five years. The recommended program includes guidelines for collecting new data to ensure all future data collection efforts are consistent with existing parameters. The result will be a continuous record of travel conditions on key corridors allowing for time series analysis and the identification of locations with increasing or decreasing congestion levels.

Figures 2.2 and 2.3 show the congested and potentially congested corridors for the AM and PM peak periods, respectively.

Figure 2.2: 2014 AM Peak Period LOS Determinations

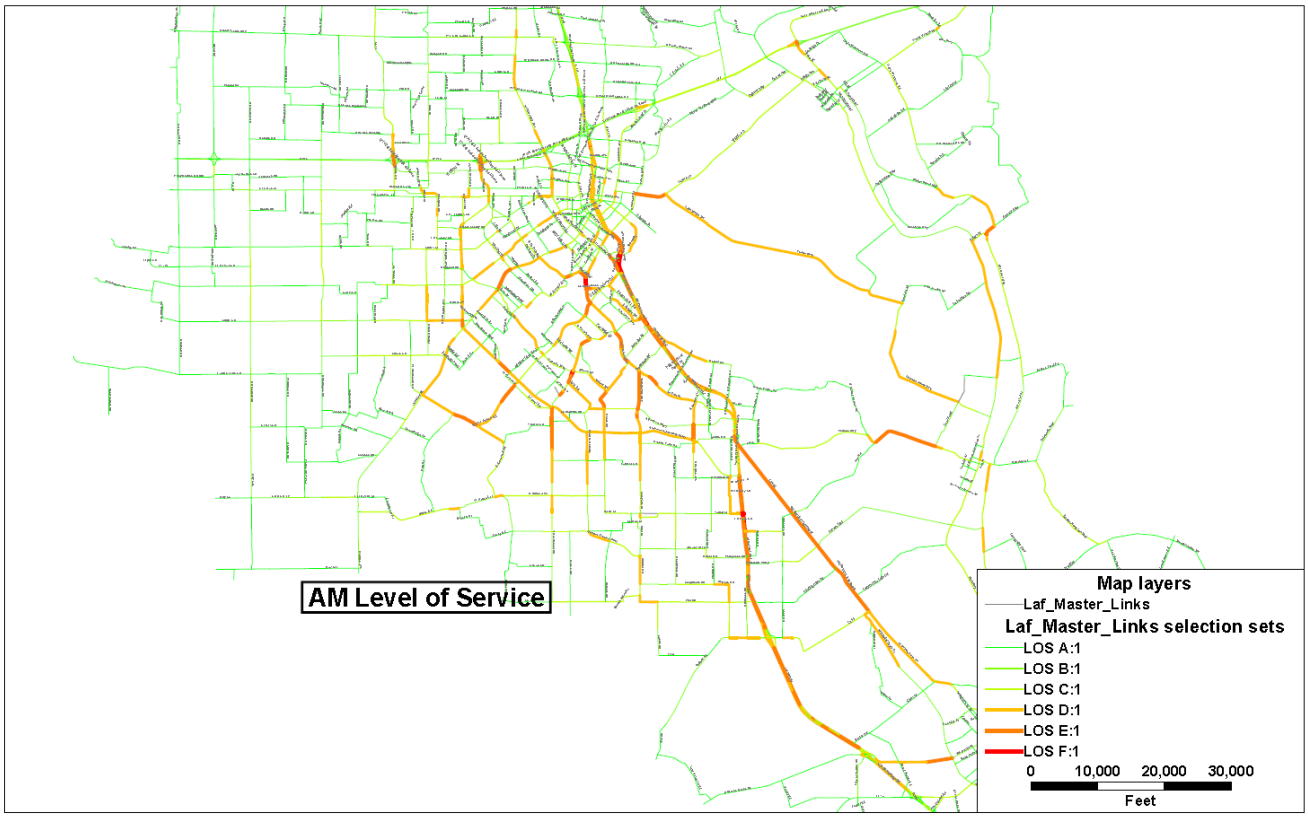
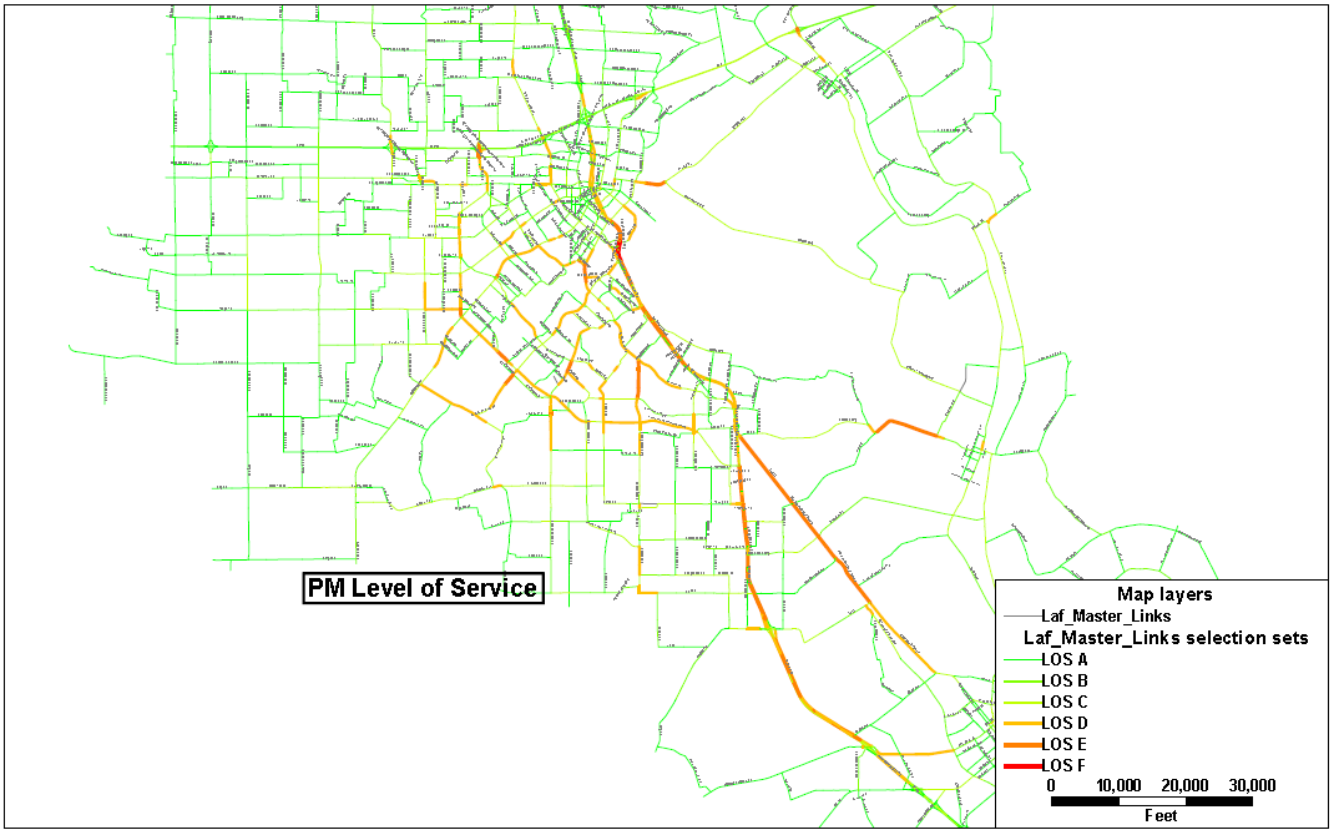


Figure 2.3: 2014 PM Peak Period LOS Determinations



CMP Section Prioritization Methodology

Speed Deficit provides an acceptable measure of congestion, but it does not address a section's **need** for improvement. In order to prioritize congested sections for improvement, current TIP projects (unlisted DOTD projects that may not be on TIP), ADT, transit measures, land use, and safety are considered.

Sections that are slated for improvement, under the TIP, will have a lower priority. High volume sections have added importance within the transportation network. Further, sections that directly impact transit operations are prioritized higher.

Identify Congested Segments → Speed Deficit → **Prioritize Section Needs**

1) Existing TIP Project
2) ADT
3) Transit Impact Measure

Existing TIP Projects

Congested sections that are currently scheduled for improvements, through the TIP, are prioritized lower than sections that are left unimproved. The scope of the improvement will be taken into account during the formulation of recommended alleviation strategies. Further, including programmed Improvement projects in the needs prioritization process strengthens the linkage between the CMP and the MPO's overall transportation processes.

Average Daily Traffic (ADT)

Sections are prioritized by the volume levels they handle on a daily basis. Higher ADT sections are given priority over the less traveled network sections.

By utilizing ADT as a prioritization criterion, the sections with the highest travel demand are recommended for improvement before less traveled sections.

ADT data is obtained through LaDOTD's Data Collection and Analysis Section. It is available via this website. http://www.dotd.la.gov/highways/tatv/

However, some network sections do not contain LaDOTD ADT data. In these cases, locally collected, unadjusted 24-hour volume counts, local permanent count stations or Travel Demand Model projections provide a reasonable estimate of daily traffic.

Local LCG traffic counts can be utilized via this website. http://gis2.lafayettela.gov/Traffic%20Map/

Transit Impact Rating

Congestion significantly degrades transit's ability to provide efficient and economical service to its patrons. Heavily congested sections reduce fuel efficiency, and increase both vehicle emissions and patron delay. The function of a transit Impact Rating is to identify sections that are crucial to transit service. Further, sections which are experiencing high levels of congestion **and** directly impact transit service are prioritized higher than those sections which do not handle transit operations. The rating consists of the calculations denoted below:

(Route Usage Component		(Physical-Network Component)
Number of passengers/route/month / total LTS passengers/month	+	Route mileage on the CMP corridor / total CMP network mileage

Theoretically, the highest impact rating any section can receive is 200% (2.0). A route usage of 100% (1.0) means that all of Lafayette Transit Service monthly passengers ride only one route (not very likely). Route usage compares the significance of one route to another using ridership data. If the entire transit route traverses the CMS network, then the physical-network component calculates to 100% (1.0). Percentages are additive if more than one transit route occupies a section. Sections that do not have transit service traversing over them have a 0% (0.0) impact rating. Locally, nearly all the sections have a Transit Impact Rating of between 0% and 20%. A high section impact rating (15% - 20%) indicates the presence of a significant influence upon transit service. Improvements made to these sections will invariably affect transit operations.

Identify High Priority CMP Sections

Local prioritization of identified congested sections adds another level of complexity to the CMP. By integrating the three ranking criteria (TIP projects, ADT, Transit Impact Rating) into a local prioritization scheme, a well-balanced and equitable approach is achieved.

Table 2.3: Prioritization Recommendations for the Highest Speed Deficit Sections in which data was collected

Priority	Corridor	Dir.	Sections From/To	Justify/Recommendation
1 ▼	Kaliste Saloom	SW	South College ext. to Pinhook	LCG has intersection improvement planned to displace turns (partial reduced phase intersection). This will help facilitate movements at the intersection of Kaliste @ Pinhook
2 ▲	Ambassador Caffery	SB	Bonaire to Johnston St.	Segment runs 50K/day. Transit route. Raise this section's priority.
3 ▼	Pinhook Rd.	NW	Corporate to La. Rue France	LCG has intersection improvement planned to displace turns (partial reduced phase intersection). This will help facilitate movements at the intersection of Kaliste @ Pinhook
4 ▼	Camellia	WNW	Academy to Guilbeau road	Intersection of Camellia/Johnston now a reduced phase intersection. Helps movements through this intersection. Results could show less of a speed deficit in the future.
5 ▼	U.S. 90 (Evangeline Thrwy.)	SB	Willow St. to Taft	Future I-49 Interstate Corridor. Decrease priority.
6	Pinhook	SWB	Surrey to General Mouton	Goes through one major intersection Pinhook @ Evangeline Thrwy. (U.S. 90)
7	University	WB	General Mouton to Blue (Airport)	**This corridor not part of the 15 corridors. This section to be discarded from analysis**
8	W. Congress	EB	Domingue to Guilbeau Rd.	Goes through major intersection of Congress @ Ambassador.
9 ▼	U.S. 90 (Evangeline Thrwy.)	NB	Taft to Willow St.	Future I-49 Interstate Corridor. Decrease priority.
10 ▼	Kaliste Saloom	NE	Feu Follet to Pinhook	Same as #1
11	Ambassador Caffery	NB	Guilbeau Rd. to Bertrand Dr.	**Segment runs 50K; not a transit route**
12	W. Congress	WB	Guilbeau Rd. to Domingue	Same as #8
13 ▼	Camellia	ESE	Academy to Guilbeau road	Intersection of Camellia/Johnston now a reduced phase intersection. Helps movements through this intersection. Results could show less of a speed deficit in the future.
14	S. College	S	Bertrand to Johnston St.	**Posted speed limit is 45. Because of the curvy nature of the road excess speed deficit could be calculated. Discard from data set.**
15	Johnston St.	SW	Main to St. Julien	This section passes through UL Campus
16 ▲	Ambassador	NW	Dover to Johnston	On this section Several intersections lead directly

	Caffery		St.	to the Mall of Acadiana. Not a transit route. Runs 50K/day.
17	Johnston St.	NE	St. Julien to Main	Same as #15
18 ▲	Ambassador Caffery	NB	Johnston St. to Bonaire	Same as #2
19 ▼	Pinhook	SE	Corporate to La Rue France	Same as #3
20	Louisiana	SW	Surrey to Jefferson St.	Segment crosses Evangeline Thrwy. (U.S. 90). Transit route. Runs 15K/day.

▼ * Priority has decreased due to section prioritization evaluation
▲ * Priority has been elevated

The above table was refined to reflect the 5 highest priority locations in terms of needing to be analyzed. If both directions of travel for any one corridor were listed in the top twenty that corridor was selected unless priority was de-elevated.

Priority	Facility	Section: From/To	Recommendation/Justification
1	Ambassador Caffery	Bonaire to Johnston St. (Both directions)	High Volumes, transit route, developed
2	Pinhook	Surrey to General Mouton	Intersection of Pinhook @ Evangeline Thwy. Large delay.
3	W. Congress	Domingue to Guilbeau (Both directions)	Intersection of Congress @ Ambassador. Large delay.
4	Johnston St.	Main St. to St. Julien Ave. (Both directions)	Section goes through 4 signals. 2 of which are heavily congested. UL campus.
5	Ambassador Caffery	Dover to Johnston St.	Runs through the Acadiana mall

Determination of Improvement Needs Or,
How do we best reduce congestion along the identified high priority sections?

Through the CMP, alleviation strategies are formulated which take into account physical deficiencies (i.e. geometrics), travel demand, land-use, and fiscal issues. The intent of the recommended strategies is to supply decision-makers with cost-effective improvements aimed at reducing congestion. Improvements are not only developed to improve performance along a specific high priority section; they must benefit the entire network.

The value based proposed mitigation strategies are categorized within one of the four major levels of mitigation strategies summarized below respectively:

1) Temporal shift of home based work travel behavior (Regional TDM strategies)

- MPO support of large employer (+500) compressed/staggered/flexible work hours

2) Shifting trips from automobiles to other modes

- Public transit capital improvements
- Public transit operational improvements
- Encourage the use of non-motorized modes (MPO Bike/Ped. Committee, sidewalks and bicycle facilities)

3) Enhancing operations on existing roadway facilities (TSM Improvements)

- Traffic operations improvements (intersection widening, signal coordination, Roundabouts, traffic surveillance and control systems)
- Traffic Eng., detection and clearing of incidents, Deployed Alternate Route Plan (ARP)
- Access management (medians, signal and driveway spacing, frontage roads, inter-parcel connections – faster local jurisdiction participation)

3) Increasing Roadway capacity

- Widening of existing roadways
- New roads
- intersection widenings

There are many system management initiatives undertaken by jurisdictions with the common goal of managing congestion and improving the mobility of people and goals in and across the region. However in some cases more roadway capacity is needed to accommodate population growth.

As part of the CMP, each congested corridor is subjected to a screening process that examines the unique characteristics of the roadway and determines the most appropriate level of mitigation treatment and corresponding improvement strategy. When considering improvement strategies along an individual high priority section, staff and local officials will confer over the merits of proposed improvements and subsequently recommend a course of action. Examples of specific improvement strategy negotiations are documented within the following section.

Congestion Mitigation Strategy Recommendations Process

Ambassador Caffery Parkway- Bonaire to Johnston St.

Source(s) of Congestion:

Physical Deficiencies –It is a 5 lane, modern design facility with current Actuated coordinated traffic control equipment at the intersections of Curran, Ridge, Westmark, and Target Loop.

Demand – High volumes on this segment. Runs 50,000 vehicles per day. High through trips to Acadiana Mall.

Land Use Factors – Highly developed retail/business sectors. There is also some residential traffic that feed on Ambassador via Bonaire and Inez drives. Driveway densities in the order of magnitude of 30 driveways/mile. Sams and Super Wal-Mart directly off of Ambassador Caffery.

Recommended Improvement(s):

Parish owned roadway, therefore be strict with Access management policies. If big box comes into develop require a traffic analysis to possibly get them to build additional lane capacity or Acceleration deceleration lanes.

Pinhook Rd.- Surrey to General Mouton Rd.

Source(s) of Congestion:

Physical Deficiencies – The roadway is a 4/5 lane cross section throughout. The only signal that this section runs through is Pinhook @ Evangeline Thrwy. There are no lefts allowed at this intersection for vehicles on Pinhook. Evangeline Thrwy runs approximately 60,000 vpd, while Pinhook runs about 20,000 vpd. Time at this signal will go that movemement.

Demand – Demand will increase on Evangeline Thruway in the future as it is the I-49 future corridor.

Land Use Factors – Some retail through this section

Recommended Improvement(s):

There is room for a right turn at the intersection of Pinhook @ Evangeline Thwy. Turning movement counts will need to be conducted to see whether it is warranted or not.

When I-49 is built as a freeway this intersection will experience less volume on the Evangeline Thrwy. Side, therefore speed deficit time will decrease dramatically.

West Congress – Domingue to Guilbeau Dr.

Source(s) of Congestion:

Physical Deficiencies – The roadway is a 4/5 lane cross section throughout. The only signal that this section runs through is Congress @ Ambassador Caffery. Eastbound on Congress at this intersection there is an extended length left turn lane and a right turn lane. There are two thru lanes. Westbound there are dual left turn lanes and two thru lanes. Ambassador Caffery runs about 50,000 vpd through this intersection while Congress experiences approximately 30,000 vpd.

Demand – This intersection could see an increase in demand on the congress side in the future. Land Development is occurring on Congress west of this intersection and could continue with the extension of West Congress St. Ambassador is built up to capacity with retail/businesses. This roadway won't see much increase in daily volumes

Land Use Factors – Existing commercial attractors are located along this section; on the North and East side of the intersection of Congress @ Ambassador side there is a large grocery store with many more retail/food outlets. This is a large generator that is fed by driveways that dump onto Congress and Ambassador Caffery. There is a school on the Southeast side of the intersection and a Hospital on the Northwest side. This area will produce/attract a great number of trips.

Recommended Improvements(s):

In this case, physical improvements alone will have a minimal impact upon congestion. Over the long run, significant reductions in congestion are achieved if physical improvements are tied to land use policy and demand management approaches. For example, limiting direct access (i.e. curb cuts) onto principal arterial-corridors will stabilize flow interruptions originating from adjacent land uses. Additionally, policy that requires large, high volume development to provide access to adjacent land uses through shared driveways will reduce the demand for direct arterial access points.

Johnston St. – Main to St. Julien

Source(s) of Congestion:

Physical Deficiencies – 4 lane section; runs through UL campus starting at University Ave. going to St. Julien Ave. Corridor runs through 4 signalized intersections. Starting from the North heading South; Jefferson @ Johnston, University @ Johnston, St. Mary @ Johnston, and Lewis @ Johnston St. There are left turn lanes off of Johnston onto the cross streets at all of the above except Jefferson St. Cross street volumes are heavy through the campus area. All of the above mentioned intersections are also on an actuated coordinated signal system. There is also a heavy pedestrian movement at the intersection of St. Mary and Johnston St.

Demand – Since this corridor runs through the campus when school is in and students are utilizing parking Garage's along/adjacent to this corridor congestion will be incurred. On Johnston St. through this area the largest peaks were noticed to be around lunch

Land Use Factors – On the North side of University intersection much of the land use is business. Most of the intersecting roads with Johnston lead to downtown (Jefferson St.). On the South side of University the land use is campus with some mixed fast food restaurants (McDonalds, Taco Bell, Burger King)

Recommended Improvement(s):

Jefferson St. at Johnston St. (Southbound and Northbound) currently has no left turn lane. Turning movement counts should be taken to see about the possibility of this.

Ambassador Caffery – Dover to Johnston St.

Source(s) of Congestion:

Physical Deficiencies – This is a continuous 5 lane section that goes through multiple signalized intersections; Robley, Dillard and Tucker Dr. The spacing between Tucker and Dillard is approximately 450'. Both of these roads lead directly to the mall though and have lots of entering/exiting traffic from the Southwest side. Ambassador runs about 50K through this section as well. This puts it way overcapacity for a 5 lane section (22,000 vpd). Ambassador was also recently extended from Verot School Road to U.S. 90, which could add the likelihood of through trips on this corridor. There is a project scheduled on the TIP for a reduced phase intersection at Johnston @ Ambassador.

Demand – this section provides links to Acadiana Mall for all vehicles. This corridor also provides access to Lowe's, Home Depot as well as having other retail/food establishments fronting. There will continue to be heavy delay/congestion as long as the mall is in business.

Land Use Factors – With the 5th lane Two way left turn lane and driveway densities of approximately 40/mile this road will continue to incur delay due to exiting/entering traffic. Conflict points cause a reduction in capacity.

Recommended Improvement(s):

Strict Access Management policies could help this corridor. Reducing and consolidating driveways coupled with a Boulevard could help to increase the timing and efficiency of thru traffic. Connect Petroleum building to Home Depot and Bed Bath and Beyond.

CMP Improvement Recommendations

Table 2.5 specifies improvements that will alleviate most of the sources of congestion. Please note the improvements listed below are recommendations only. As of this time, they are not "official" transportation improvement projects.

Utilizing the findings of the prioritization process, congestion alleviation strategies are formulated to best mitigate the source(s) of congestion for the least amount of cost. LAFAYETTE MPO's objective is to develop "value" based improvement strategies/projects through the recommendation component of the CMP process.

Table 2.5; 2—1 CMP Highest Priority Sections and Recommended Improvements

Priority	Facility	Section: From/To	Improvements
1	Ambassador Caffery	Bonaire to Johnston St. (Both directions)	Access Management
2	Pinhook	Surrey to General Mouton	Right turn lane at Evangeline Thrwy. I-49 will solve majority of congestion
3	W. Congress	Domingue to Guilbeau (Both directions)	Access Management
4	Johnston St.	Main St. to St. Julien Ave. (Both directions)	Possible Turning lane at Jefferson @ Johnston St.
5	Ambassador Caffery	Dover to Johnston St.	Access Management possible boulevard

Implementing the Congestion Management Process (CMP)

Once the Congestion Management Process (CMP) recommended projects and strategies have been evaluated the output information can be used to propose projects for inclusion in the *Lafayette MPO's 2040 Long Range Transportation Plan* and corresponding TIP. Programming of CMP strategies into the TIP will be coordinated through the MPO staff in cooperation with the implementing agency and will be funded through federal, state, or local funds.

Potential Funding Sources

Responsibility for the implementation of specific congestion management strategies lies with the State of Louisiana and/or local jurisdictions. While the MPO does not receive any special funds for congestion mitigation, funding for CMP recommended improvements will be identified in the Lafayette MPO's 2013-2016 TIP. Other sources of funding available include transportation enhancement funds, which can be used to improve non-motorized transportation facilities, and Federal Transit Administration (FTA) Section 5307 funds, and JARC funds.

Future MPO Actions Regarding CMP Maintenance

Following through on the recommendations of the CMP, will require LAFAYETTE MPO staff to perform periodic traffic flow data collection activities (i.e. travel times), as well as occasional traffic surveillance. Working with Lafayette Transit system (primarily transit provider for the urban area), LADOTD, major employers and our standing LAFAYETTE MPO will be able to rationally develop CMP projects for implementation. During the annual development of the Unified Planning Work Program (UPWP), CMP monitoring and maintenance activities will be included, and any additional special projects needed to carry the CMP objectives forward will be included.

- Update the CMP on the recommended five year cycle
- Follow data collection methodology for updating travel time on study corridors as well as expenditure of funds to monitor more travel time locations. Corridors that need study but do not have any travel time data.
- Create a Technical Advisory committee to look at suggest additional corridors to study. Committee would then recommend mitigation strategies of congestion. Committee would then recommend mitigation strategies of congestion for selected corridors.
- Include CMP monitoring/maintenance activities in the UPWP

APPENDIX A

Travel Time/Delay Study Conditions Utilizing Blue tooth Data Collection Technology

General Conditions:

Starting around 2010 Laptops were put in certain traffic control cabinets. These laptops were simply used to read if a Blue tooth location was at the signal. If a Bluetooth device was then a time stamp was associated with the "hit" on the Bluetooth device. A laptop was put in a traffic cabinet at a downstream signal. This laptop did the same thing. If a "hit" was noticed then a travel time between the two locations was calculated. That is the basis for using this technology.

Fig. 2a-1; Current Bluetooth reading locations; denoted with a star

Completed Travel Time Runs and mining of the data

The sum of records for each of the locations in figure 2a-1 for the years 2010-2014 was gathered. This data was then further refined to the time periods where larger amounts of traffic occur during (peak hours). Both Peaks were looked at AM (7-9 A.M.) and PM (4-6 P.M.). The data was then further refined to only Tuesday-Thursday, as these are the highest volume days of the week. On average every location had approximately 5,000 records. This is a good sample.

Once the Peaks were calculated an average travel time for the peaks was calculated. This average travel time was then subtracted from the posted speed limit. Posted speed limit represents free flow speed. This gave Total speed deficit per location. These locations were then ranked based off of Largest speed deficits. See Appendix B.

Travel times based off of Tuesday-Thursday 1/1/10-1/1/14						
Ranking	Location	AM Travel time (7-9 AM)	PM Travel time (4-6 PM)	Average Peak Travel time	Posted speed	Speed deficit
1	Kalsite Saloom from S College Ext to Fue Follet	17	12.67	14.835	45	30.165
2	Ambassador Caffery SB from Bonaire to Johnston	24.91	19.46	22.185	50	27.815
3	Pinhook from Corporate to La Rue France	19.77	15.48	17.625	45	27.375
4	Camellia @ Academy to Congress @ Guilbeau	23.95	16.93	20.44	45	24.56
5	Evangeline Thwy SB from Willow to Taft	25.75	26.51	26.13	50	23.87
6	Pinhook from Surrey to General Mouton	17.44	15.92	16.68	40	23.32
7	Surrey @ Blue to University @ General Mouton	16.39	17.61	17	40	23
8	W Congress from Domingue to Guilbeau	23.37	20.85	22.11	45	22.89
9	Evangeline Thwy NB from Taft to Willow	27.94	26.63	27.285	50	22.715
10	Kalsite Saloom from Fue Follet to S College Ext	22.66	22.89	22.775	45	22.225
11	Amb Caffery from Guilbeau to Bertrand	29.86	25.84	27.85	50	22.15
12	W Congress from Guilbeau to Domingue	27.17	19.58	23.375	45	21.625
13	Congress @ Guilbeau to Camellia @ Academy	21.9	25.28	23.59	45	21.41
14	College from Bertrand to Johnston	22.29	26.4	24.345	45	20.655
15	Johnston from Main to St Julien	19.59	19.41	19.5	40	20.5
16	Ambassador Caffery NB from Dover to Johnston	29.73	19.28	24.505	45	20.495
17	Johnston from St Julien to Main	20.93	19.16	20.045	40	19.955
18	Ambassador Caffery from Guilbeau to Bonaire	30.57	29.66	30.115	50	19.885
19	Pinhook from La Rue France to Corporate	27.56	23.26	25.41	45	19.59
20	Louisiana @ Surrey to Johnston @ Jefferson	17.15	13.68	15.415	35	19.585
21	Surrey from Blue to Evangeline Thwy	21.69	20.08	20.885	40	19.115
22	Johnston @ Main to Louisiana @ Surrey	15.95	16.1	16.025	35	18.975
23	Ambassador Caffery from Bonaire to Guilbeau	33.5	28.6	31.05	50	18.95
24	Ambassador Caffery NB from Frem Boustany to Dover	31.49	20.87	26.18	45	18.82
25	Amb Caffery from I10 WB Ramp to Bertrand	24.18	28.33	26.255	45	18.745
26	Ambassador Caffery NB from Johnston to Bonaire	35.75	27.02	31.385	50	18.615
27	Pinhook from General Mouton to Surrey	23.23	19.69	21.46	40	18.54
28	Bertrand @ Devalcourt to College-Bertrand-Reinhardt	27.69	25.25	26.47	45	18.53
29	Amb Caffery from Bertrand to Guilbeau	34.63	28.6	31.615	50	18.385
30	Amb Caffery from Bertrand to I10 WB Ramp	31.14	22.82	26.98	45	18.02

Travel times based off of Tuesday-Thursday 1/1/10-1/1/14						
Ranking	Location	AM Travel time (7-9 AM)	PM Travel time (4-6 PM)	Average Peak Travel time	Posted speed	Speed deficit
31	Ambassador Caffery SB from Dover to Frem Boustany	30.69	24.43	27.56	45	17.44
32	Johnston from Duhon to Amb Caffery	32.16	23.97	28.065	45	16.935
33	Evan Thwy from University to Southpark	43.13	34.15	38.64	55	16.36
34	Pinhook from General Mouton to La Rue France	19.27	18.54	18.905	35	16.095
35	S College from Johnston to Bertrand	31.03	27.07	29.05	45	15.95
36	S College from W Bayou to Johnston	33.56	24.64	29.1	45	15.9
37	University from McKinely to General Mouton	18.12	21.65	19.885	35	15.115
38	Johnston from Lana to Amb Caffery	33.55	17.42	25.485	40	14.515
39	University from Madeline to I10 WB Ramp	27.02	24.6	25.81	40	14.19
40	Evan Thwy from Southpark to University	43.81	38.06	40.935	55	14.065
41	Ambassador Caffery SB from Johnston to Dover	36.13	25.87	31	45	14
42	S College from Johnston to W Bayou	29.91	32.2	31.055	45	13.945
43	Bertrand from Devalcourt to Amb Caffery	33.55	28.6	31.075	45	13.925
44	Pinhook from Corporate to Bonin	33.08	29.53	31.305	45	13.695
45	University from St Landry to McKinley	19.46	23.61	21.535	35	13.465
46	University from Madeline to Simcoe	26.15	27.41	26.78	40	13.22
47	University from Gerenal Mouton to McKinley	21.35	22.45	21.9	35	13.1
48	Johnston from Lana to Arnould	34.27	19.75	27.01	40	12.99
49	Johnston from Arnold to Lana	27.04	27.47	27.255	40	12.745
50	Pinhook from Bonin to Corporate	33.37	31.35	32.36	45	12.64
51	Congress from St. Mary to Lafayette	21.48	23.28	22.38	35	12.62
52	University from McKinley to St Landry	24.29	20.75	22.52	35	12.48
53	Johnston from St Julien to College	32.36	23.86	28.11	40	11.89
54	Univeristy from Simcoe to Madeline	31.25	25.1	28.175	40	11.825
55	Johnston from Arnold to College	31.13	25.61	28.37	40	11.63
56	University from I10 WB Ramp to Madeline	26.51	30.26	28.385	40	11.615
57	Bertrand from Amb Caffery to Devalcourt	34.81	33.32	34.065	45	10.935
58	Johnston from College to Arnold	34.06	24.27	29.165	40	10.835
59	Congress from Foreman to St. Mary	30.58	27.83	29.205	40	10.795
60	University from Simcoe to St Landry	23.04	26.72	24.88	35	10.12
61	Congress from St Mary to Foreman	30.75	29.3	30.025	40	9.975
62	Surrey from Evangeline Thwy to Blue	31.72	28.5	30.11	40	9.89
63	Congress from Lafayette to St. Mary	25	26.09	25.545	35	9.455
64	Univeristy from St Landry to Simcoe	27.8	23.96	25.88	35	9.12
65	Pinhook from La Rue Fracne to General Mouton	30.33	25.31	27.82	35	7.18
66	Johnston from College to St Julien	33.46	33.46	33.46	40	6.54
67	Johnston from Amb Caffery to Duhon	40.84	37	38.92	45	6.08
68	University from Evangeline Thwy to G Mouton	28.94	30.54	29.74	35	5.26
69	Congress from Guilbeau to Foreman	33.87	35.62	34.745	40	5.255
70	Congress from Foreman to Guilbeau	37.81	32.96	35.385	40	4.615
71	Camellia from Academy to Settler Trace	35.09	27.98	31.535	35	3.465
72	Johnston from Amb Caffery to Lana	37.09	36.85	36.97	40	3.03
73	Camellia from Settlers Trace to Academy	35.68	29.31	32.495	35	2.505
74	University from G Mouton to Evangeline Thwy	33.36	32.93	33.145	35	1.855

APPENDIX C

CMP RECORD OF PUBLIC COMMENT AND ADOPTION

DESCRIPTION	DATE	RESOLUTION