

Laredo Urban Transportation Study



Metropolitan Planning Organization Policy Committee

Notice of Public Meeting

City of Laredo City Hall
City Council Chambers
1110 Houston Street
Laredo, Texas
April 20, 2015
12:00 noon

MEETING AGENDA

- I. CHAIRPERSON TO CALL MEETING TO ORDER
- II. CHAIRPERSON TO CALL ROLL
- III. COMMITTEE AND DIRECTOR'S REPORTS (No action required)
- IV. ITEMS REQUIRING POLICY COMMITTEE ACTION
 1. Approval of the minutes for the meeting held on March 16, 2015.
 2. Receive public testimony and approve Resolution No. MPO 2015-03 adopting the proposed revision of the 2015-2018 Transportation Improvement Plan (TIP).
 3. Receive public testimony and approve Resolution No. MPO 2015-04 adopting the proposed revision of the 2015-2040 Metropolitan Transportation Plan (MTP).
 4. Receive public testimony, accept the Congestion and Delay Study and initiate a 20-day public review and comment period for the selected Congestion Management Process (CMP) network and performance measures.
 5. Discussion with possible action on allocating monies for signal timing improvements.
- V. TECHNICAL COMMITTEE REPORT (S) (No action required)
 1. Presentation by Killam Development LTD on Vallecillo Road.
 2. Discussion and status report on the Regional Mobility Authority (RMA).
 3. Discussion and status report on the Toll Feasibility Study for the main lanes over Interstate Highway 35 project.
 4. Report on the meeting held by Webb County, the RMA, and TxDOT on the Reuthinger property.

5. Presentation by TxDOT on funding alternatives available to fund the Hachar Parkway project.

VI. ADJOURNMENT

THIS NOTICE WAS POSTED AT THE MUNICIPAL GOVERNMENT OFFICES, 1110 HOUSTON STREET, LAREDO, TEXAS, AT A PLACE CONVENIENT AND READILY ACCESSIBLE TO THE PUBLIC AT ALL TIMES. SAID NOTICE WAS POSTED BY APRIL 17TH, 2015, BY 12:00 P.M.

Persons with disabilities who plan to attend this meeting and who may need auxiliary aid or services are requested to contact Ms. Vanessa Guerra, City Planning at (956) 794-1604 at least two working days prior to the meeting so that appropriate arrangements can be made. The accessible entrance and accessible parking spaces are located at City Hall and can be accessed through the Victoria Ave. entrance.

The Laredo Metropolitan Planning Organization Policy Committee is comprised of the following members:

CITY OF LAREDO REPRESENTATIVES:

Honorable Pete Saenz, Mayor and LUTS Chairperson
Honorable Roque Vela, Jr., City Councilmember, District V
Honorable Charlie San Miguel, City Councilmember, District VI

LAREDO MASS TRANSIT BOARD REPRESENTATIVE:

Honorable Roberto Balli, City Councilmember, District VIII

COUNTY OF WEBB REPRESENTATIVES:

Honorable Tano E. Tijerina, Webb County Judge
Honorable John Galo, Webb County Commissioner, Pct. 3
Honorable Jaime Canales, Webb County Commissioner, Pct. 4

STATE REPRESENTATIVES:

Ms. Melisa Montemayor, District Administrator
Mr. Albert Ramirez, P.E., Transportation Planning and Development Director

** EX-OFFICIO **

Honorable Judith Zaffirini, State Senator, District 21
Honorable Richard Raymond, State Representative, District 42
Honorable Tracy O. King, State Representative, District 80



Nathan R. Bratton
MPO Director



Gustavo Guevara, Jr.
City Secretary

Laredo Urban Transportation Study

Metropolitan Planning Organization Policy Committee
City of Laredo Council Chambers
1110 Houston St. -Laredo, Texas



MINUTES OF THE MARCH 16, 2015 MEETING

I. CHAIRPERSON TO CALL MEETING TO ORDER

Mayor Pete Saenz called the meeting to order at 12:05 p.m.

II. CHAIRPERSON TO CALL ROLL

Nathan R. Bratton, MPO Director called roll and verified that a quorum did exist.

Regular members present:

Honorable Pete Saenz, Mayor and LUTS Chairperson
Honorable Roberto Balli, City Councilmember, District IV
Honorable Tano E. Tijerina, Webb County Judge
Honorable John Galo, Webb County Commissioner, Pct. 3
Melisa Montemayor, TxDOT
Alberto Ramirez, TxDOT

Regular members not present:

Honorable Jaime Canales, Webb County Commissioner, Pct. 4
Honorable Roque Vela, Jr., City Councilmember, District V
Honorable Charlie San Miguel, City Councilmember District VI

Ex-Officio Members Not Present:

Honorable Richard Raymond, State Representative, District 42
Honorable Judith Zaffirini, State Senator, District 21
Honorable Tracy O. King, State Representative, District 80

Staff (Of Participating LUTS Agencies) Present:

City: Nathan R. Bratton, City Planning/LUTS Staff
Vanessa Guerra, City Planning/LUTS Staff
Angie Quijano, City Planning/LUTS Staff
Eduardo Bernal, Transit, El Metro
Claudia San Miguel, Transit, El Metro

State: Ana Duncan, TxDOT
Sara Garza, TxDOT
Raymond Sanchez, TxDOT, TPP
Carlos Rodriguez, TxDOT

Others: Steve Taylor, CoPLAN, LLC
Eric Davila, Dannenbaum Engineering
Louie Jones, Dannenbaum Engineering
Anthony Garza, Dannenbaum Engineering
Maruca Jones, Dannenbaum Engineering
Lalo Uribe, Webb County
Ruben Soto, Regional Mobility Authority (RMA)
Jose Luis Neira
Rolando Ortiz, Killam Development
Jose L. Cabellos, Totem, LLC

III. COMMITTEE AND DIRECTOR'S REPORTS (No action required)

Mr. Bratton stated a copy of an Attorney General opinion was submitted to the Policy Board. The opinion stated "*Absent a constitutional amendment, it is likely a court would conclude that a county may not form and operate a county energy transportation reinvestment zone, a tax increment reinvestment zone, or a transportation reinvestment zone, to the extent that doing so utilizes a captured increment of ad valorem taxes to fund a county-created tax increment reinvestment zone.*"

Cm. Galo stated the County was always aware it could not participate in the TRIZ.

Mr. Bratton stated the City would be the only entity within Webb County able to implement a TRIZ. He also stated the issue of funding the RMA is now a City and County issue.

Cm. Galo made a motion to move up item #V-2

Second: Judge Tijerina
For: 6
Against: 0
Abstained: 0

Motion carried unanimously

2. Discussion and status of the Regional Mobility Authority (RMA).

Ruben Soto, Chairman, City of Laredo and Webb County RMA, stated a constitutional amendment would be an option that may be pursued to allow the County to participate in the formation of a TRIZ. He also recommended that the County could also allocate funds to the RMA on an annual basis for the construction of projects.

Cm. Galo asked Ms. Montemayor of TxDOT, if the RMA could participate in a TRIZ.

Ms. Montemayor stated implementing a TRIZ in under the jurisdiction of the City of Laredo. The City would have the option to funnel funds into any projects that the RMA is sponsoring.

Cm. Galo asked about the feasibility of tolling over Interstate 35.

Ms. Montemayor stated the RMA can propose tolling for any RMA sponsored project.

Mayor Saenz requested an update at the next meeting from TxDOT on the possible completion date of the Toll Feasibility Study of the main lanes over Interstate 35 project.

Cm. Galo also requested a map of the Hachar Parkway overlaid on an aerial as well as the status of Reuthinger property to be presented at the next meeting.

IV. ITEMS REQUIRING POLICY COMMITTEE ACTION

1. Approval of the minutes for the meeting held on February 17, 2015

Cm. Galo made a motion to **approve** the minutes for the meeting of February 17, 2015.

Second: Judge Tijerina
For: 6
Against: 0
Abstained: 0

Motion carried unanimously

2. Receive public testimony and initiate a 10-day public review and comment period for the proposed amendment(s) of the 2015-2018 Transportation Improvement Plan (TIP).

Cm. Galo made a motion to **open** the public hearing.

Second: Judge Tijerina
For: 6
Against: 0
Abstained: 0

Motion carried unanimously

There was no input from the public.

Cm. Galo made a motion to **initiate** a 10-day public review and comment period for the proposed amendment of the 2015-2018 TIP.

Second: Judge Tijerina

For: 6
Against: 0
Abstained: 0

Motion carried unanimously

3. Receive public testimony and initiate a 10-day public review and comment period for the proposed amendment(s) of the 2015-2040 Metropolitan Transportation Plan (MTP).

Cm. Galo made a motion to open the public hearing.

Second: Judge Tijerina
For: 6
Against: 0
Abstained: 0

Motion carried unanimously

There was no input from the public.

Cm. Galo made a motion to initiate a 10-day public review and comment period.

Second: Judge Tijerina
For: 6
Against: 0
Abstained: 0

Motion carried unanimously

4. Discussion with possible action on the Hachar Project, Mines Road Project, and Transportation Reinvestment Zone (TRIZ) establishment.

Louie Jones of Dannenbaum Engineering stated the firm is working on completing the Environmental Study on the Hachar Project which would then be reviewed by TxDOT in advance of applying for a CIB loan.

V. TECHNICAL COMMITTEE REPORT(S) (No action required)

1. Presentation by Steve Taylor of CoPLAN LLC, on the 2015 Congestion and Delay Study.

Mr. Bratton informed the Policy Board that the Texas Transportation Institute (TTI) is working on a study of the Mines Road Area.

Steve Taylor of CoPLAN LLC gave a brief presentation on the 2015 Congestion and Delay Study. He stated that in general the local transportation system provides sufficient capacity for

current demand. He stated the first step toward congestion management would be to implement effective signal timings system wide.

Cm. Galo asked if there are any funds for on or off system road ways signals.

Ms. Montemayor stated the funds are allocated for Loop 20 and Interstate 69 but the Board could allocate CBI funds for other purposes.

Cm. Galo recommended allocating CBI funds for signal timing improvements.

Ms. Montemayor stated if that were to be done, approval from Federal Highway Administration (FHWA) would need to authorize the allocation of CBI funds for signal improvements.

VI. ADJOURNMENT

Cm. Galo made a motion to adjourn the meeting at 1:40 p.m.

Second: Judge Tijerina
For: 6
Against: 0
Abstained: 0

Motion carried unanimously

Prepared by: 
Angie Quijano
MPO Staff

Reviewed by: _____
Vanessa Guerra,
MPO Coordinator

Reviewed by: _____
Nathan R. Bratton,
MPO Director

Melisa Montemayor,
District Administrator

Pete Saenz,
Mayor and LUTS Chairperson

**LAREDO URBAN TRANSPORTATION STUDY
ACTION ITEM**

DATE: 4-20-15	SUBJECT: RESOLUTION Receive public testimony and approve Resolution No. MPO 2015-03 adopting the proposed amendment of the 2015-2018 Transportation Improvement Program (TIP). TIP 15-18/REV 01
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INITIATED BY: TxDOT/MPO	STAFF SOURCE: Nathan Bratton, MPO Director
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PREVIOUS ACTION: The MPO Policy Committee approved resolution MPO No. 2014-02 on April 24, 2014, adopting the 2015-2018 Transportation Improvement Program. A ten day public review and comment period was initiated by the Policy Committee on March, 16th, 2015.

BACKGROUND: Moving Ahead for Progress in the 21st Century (MAP21) requires that Metropolitan Planning Organizations (MPOs) in cooperation with the State and affected transit operators develop Transportation Improvement Programs (TIP) for their planning areas. In Laredo, the TIP document identifies project and their associated funding for project to be constructed within the next four years. The local TIP then becomes part of the State Transportation Improvement Program (STIP). The document is required to be fully financially constrained and will include a project, or an identified phase of a project, only if full funding can reasonably be anticipated to be available within the time period that is projected for completion of the project.

MOBILITY REVISIONS:

1	Purpose of Revision	Add project			
	CSJ #	0086-14-062			
	Project Description	New Nonfreeway frontage road			
	Location	Loop 20 at KCS Bridge			
	Limits	From: 1.09 S of Spur 400 to Spur 400			
	Funding	17,613,584 Total	10,378,000 CAT 4	5,352,000 CAT 2 (MPO)	1,883,584 CAT 1
	Letting	August of 2015			
2	Purpose of Revision	Add project			
	CSJ #	0086-14-066			
	Project Description	Construction of interchange facility over International Blvd.			
	Location	Loop 20 at International			
	Limits	From 0.45 miles East of International Blvd. to 0.25 miles west of McPherson Road.			
	Funding	22,777,543 Total	21,290,000 Cat 11	758,000 CAT 2M(MPO)	729,543 CAT 1
	Letting	December of 2015			
3	Purpose of Revision	Revise limits and funding amounts			
	CSJ #	0086-14-061			
	Project Description	Widen existing bridge			
	Location	SL 20			
	Existing limits	From: Spur 400 to SH 359	New Limits	From: SH 359 to Spur 400	
	Existing fuding	8,905,357 CAT 7	New Funding	7,500,000 Cat 7	3,155,472 CAT 11
				<u>10,655,472 TOTAL</u>	
	Letting	August of 2015			

Staff Comments Continue...

COMMITTEE RECOMMENDATION: Approval.	STAFF RECOMMENDATION: Approval.
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**LAREDO URBAN TRANSPORTATION STUDY
ACTION ITEM**

Staff Comments Continued:

No comments were received during the comment period; however the Federal Highway Administration (FHWA)/Federal Transit Administration (FTA) issued general statewide comments resulting from the initial adoption of the 2015-2018 TIP. FHWA also issued a recommendation regarding the Laredo TIP during the Mock Certification process. All those comments and the MPOs corresponding actions are identified below:

	Comment	MPO Action Taken
1	TXDOT staff will require MPOs to update documents with current grouped projects definitions approved in May 2014	The grouped projects definitions table was updated.
2	Projects that meet the approved grouped project list definitions, but are listed individually in the STIP, will be treated as an individual project. Grouped projects must be distinguished as grouped projects and identified for informational purposes only to qualify as a grouped project.	Although there are no grouped projects currently in the TIP, in future Grouped projects will be identified as being "for informational purposes only."
3	Laredo TMA needs to update its FY 15-18 TIP to include the eight planning areas of Moving Ahead for Progress in the 21st Century (MAP 21)	The eight planning factors identified by MAP 21 were incorporated.

Transit Revisions: No proposed revisions at this time.

RESOLUTION NO. MPO 2015-03

BY THE LAREDO URBAN TRANSPORTATION STUDY
METROPOLITAN PLANNING ORGANIZATION POLICY COMMITTEE

REVISING THE 2015-2018 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

WHEREAS, the Laredo Urban Transportation Study (LUTS), the designated Metropolitan Planning Organization (MPO) for the Laredo Urban Area, has reviewed the proposed revision(s) of the 2015-2018 Transportation Improvement Program (TIP); and,

WHEREAS, the Laredo Urban Transportation Study finds that the proposed revision(s) 2015-2018 of the Transportation Improvement Program (TIP) meets the high priority improvements necessary for the LUTS area;

NOW THEREFORE BE IT RESOLVED, that the Laredo Urban Transportation Study, as the designated Metropolitan Planning Organization for the Laredo Urban Area, adopted the proposed revisions of the 2015-2018 Transportation Improvement Program (TIP), which are attached hereto and made a part hereof for all purpose:

We certify that the above resolution was adopted on April 20th, 2015 at a public meeting of the Policy Committee of the Laredo Urban Transportation Study.

Honorable Pete Saenz
Mayor of Laredo and Chairperson of the
MPO Policy Committee

Nathan Bratton
MPO Director

Melisa Montemayor
Laredo District Administrator

LAREDO
METROPOLITAN PLANNING ORGANIZATION

FY 2015-2018

TRANSPORTATION IMPROVEMENT
PROGRAM
(TIP)

Public Meeting Date(s): March 17, 2014, April 21, 2014, March 16, 2015, April 20, 2014

Approved by Policy Committee: April 21, 2014

Amended on: April 20, 2015

INTRODUCTION

In 1962, the Federal Aid Highway Act stated, that after July 1, 1965, the Secretary of Commerce shall not approve any program for highway projects in any urban area of more than fifty thousand population unless he finds that such projects are based on a continuing, comprehensive transportation planning process carried on cooperatively by the states and local communities. This directive, resulted in the creation of the Laredo Urban Transportation Study (LUTS), to provide for a continuing, comprehensive transportation planning process for the Laredo Urbanized area as mandated by the Act.

In 1973, the Federal Aid Highway Act, created the Metropolitan Planning Organization MPO to be the recipient of special planning funds ("PL" funds) and responsible for section 112 transportation planning.

In 1979, the Governor of Texas designated the LUTS Steering Committee as the MPO for the Laredo Urbanized Area. A contract between the then State Department of Highways and Public Transportation (SDHPT), the LUTS Steering Committee, and City of Laredo identified the cooperative responsibilities of the State, the MPO and the City. These responsibilities must now conform to 23 U. S. C. 134 (ISTEA), as well as to requirements established by the Transportation Equity Act for the 21st Century (TEA-21), the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005, and Moving Ahead for Progress in the 21st Century Act (MAP 21).

The Laredo urbanized area, as determined by the 2010 Census, has surpassed 200,000 in population , and designated a Transportation Management Area effective July 18th, 2012. It has not been designated as a non-attainment area for purposes of compliance with the Clean Air Act. The MPO, in cooperation with the Texas Department of Transportation (TxDOT) and the local transit operator, has proposed simplified planning procedures authorized by 23 C. F. R. Part 450 Subpart C.

The Transportation Improvement Program (TIP) is designed and developed to conform to the requirements of 23 C. F. R. 450.316(a) as well as the eight factors of identified in MAP 21.

Planning Factors

The eight planning factors are as follows:

- 1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.**
- 2. Increase the safety of the transportation system for motorized and non-motorized users.**
- 3. Increase the security of the transportation system for motorized and non-motorized users.**
- 4. Increase the accessibility and mobility for people and freight.**
- 5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.**
- 6. Enhance the integration and connectivity of the transportation system, across and between modes, people and freight.**
- 7. Promote efficient system management and operation.**
- 8. Emphasize the preservation of the existing transportation system.**

PURPOSE

Federal law requires that Metropolitan Planning Organizations (MPO's) in cooperation with the State and affected transit operators develop Transportation Improvement Programs (TIPs) for their planning areas. These Transportation Programs then becomes part of the State Transportation Improvement

Program (STIP). The Transportation Improvement Program shall include capital and non-capital surface transportation projects (or phases of projects) within the boundaries of the metropolitan planning area proposed for funding under 23 U.S.C. and 49 U.S.C. Chapter 53 (including transportation enhancements; Federal Lands Highway program projects; safety projects included in the State's Strategic Highway Safety Plan; trails projects; pedestrian walkways; and bicycle facilities), except those projects that may (but are not required to) be included as identified in 23 CFR Part 450 Subpart C, 450.324(c).

These projects are consistent with the long-range plan of the state. Project selection for projects involving Federal participation is carried out by the MPO in consultation with the State DOT. The program will include a project, or an identified phase of a project, only if full funding can reasonably be anticipated to be available within the time period that is contemplated for completion of the project.

The Texas Department of Transportation (TxDOT), and the Laredo Urban Transportation Study (MPO) have cooperatively developed the 2015-2018 TIP in accordance with the requirements of ISTEA, TEA-21, SAFETEA-LU and MAP 21, and is financially constrained.

DEFINITION OF AREA

The boundaries of the Metropolitan Planning Area and the Urbanized area were approved by the MPO on April 8, 2004, (see map).

PUBLIC INVOLVEMENT PROCESS

The Laredo Urban Transportation Study acting in the capacity of the Metropolitan Planning Organization developed in cooperation with the State and FHWA, in conformance with the requirements of 23 CFR 450.316 has an adopted public participation plan. The Laredo MPO's Public Involvement Process (PIP) was adopted on June 9th, 1994 and subsequently amended on November 22nd, 1996, and on July 24th, 2003. After a required 45 day public review and comment period, the Laredo MPO Policy Committee adopted the Public Participation Plan (PPP) which replaced the PIP. The PPP is intended to provide every opportunity for the involvement of citizens in the transportation planning process in conformance with the requirements of 23 CFR 450.316 (a).

PROJECT SELECTION PROCESS

The Metropolitan Transportation Plan (MTP) is the primary planning tool for selecting major projects to be included in the Unified Transportation Program (UTP) and TIP. On September 9, 2004, the Laredo Urban Study (LUTS), the designated Metropolitan Planning Organization (MPO) for the Laredo urbanized area, adopted MTP Project Selection Procedures at a public meeting held, which was noticed and whose agenda was posted pursuant to the requirements of the Texas Open Meetings Act. Only projects consistent with a FHWA/FTA approved MTP and/or TIP may be eligible for funds administered by FHWA or FTA. The approved Transportation Improvement Program shall be utilized for programming projects within the metropolitan area in accordance with 23 CFR 450.330 (a) and (c).

PROGRESS FROM PREVIOUS YEAR

The FY 2013-2016 TIP was adopted on a May 21, 2012. Enclosed is a summary detailing the status of all ongoing projects.

AIR QUALITY ISSUES

The Laredo metropolitan planning area is considered to be in attainment for ozone and carbon monoxide. The City's transit department is currently in the process of replacing its diesel vehicles

with those which utilize compressed natural gas. Over 50% of all City buses currently operate on compressed natural gas.

AMERICANS WITH DISABILITIES ACT (ADA)

The City Transit Department has created the El Lift Program to address ADA considerations. The Transit Department has also actively involved the Laredo Metropolitan Transportation Study in the formulation and amendment process of its Americans with Disabilities Plan and Plan Update.

GLOSSARY

CSJ - Control Section Job Number – This is a TxDOT assigned number for projects entered into the Project Development Program (PDP).

PROJ ID Project Identification Number – This is a number or code assigned by the MPO for local tracking or identification of a project and is intended to relate projects to the Metropolitan Transportation Plan (MTP).

F. CLASS Federal Functional Classification – This identifies the Federal Functional classification of streets and highways according to functional operating characteristics. The Federal Functional Classifications are:

- 1 - Interstate
- 2 - Other Freeways and Expressways
- 3 - Other Principal Arterials
- 4 - Minor Arterials
- 5 - Major Collectors
- 6 - Minor Collectors
- 7 - Local Streets

CATEGORY - Federal Funding Category – The current major federal funding categories as established by the Intermodal Surface Transportation Equity Act of 1991 (ISTEA) the Transportation Equity Act for the 21st Century (TEA-21), the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and Moving Ahead For Progress in the 21st Century (MAP 21) are:

- 1 - Preventive Maintenance and Rehabilitation
- 2M or 2U - Metropolitan and Urban Corridor Projects
- 3 - Non-Traditionally Funded Transportation Projects
- 4 - Statewide Connectivity Corridor Projects
- 5- Congestion & Mitigation Air Quality Funds (CMAQ)
- 6- Structures Replacement & Rehabilitation
 - Highway Bridge Program, and Federal Railroad Grade Separation Program
- 7- Metropolitan Mobility and Rehabilitation
- 8 - Safety
 - Highway Safety Improvement Program, the High Risk Rural Roads Sub Program, the Safety Bond Program, and the Federal Railway Highway Safety Program
- 9 – Transportation Enhancements
 - The Transportation Enhancements Program, The Safety Rest Area Program, and the Transportation Alternatives Program
- 10 – Supplemental Transportation Projects
 - Green Ribbon Landscape Improvement Program, Curb Ramp Program, Miscellaneous Landscape Incentive Award Program, Coordinated Border Infrastructure Program, Railroad Rehabilitation and

Improvement Projects, Railroad Grade Crossing and Replanking Program and the Railroad Signal Maintenance Program.

11- District Discretionary

12 - Strategic Priority

- CMAQ and STP-MM Reconciliation

FLHP - Federal Land Highway Program

FTA - Federal Transit Administration Funding

PHASE - Project Phase for Federal Funding (E-Preliminary Engineering, R-Right of Way Acquisition & C-Construction)

Grouped Statewide Projects

For projects not determined to be regionally significant in one line item, the Federal Highway Administration has allowed TxDOT to develop statewide groupings of projects that are identified by a statewide CSJ. Use of statewide groupings of projects allows for a more efficient method of programming and letting projects decreases the need to make revisions to the TIP. The following table shows the statewide groupings of projects and provides a description of the type of projects that are placed in each grouping.

CSJ	STATEWIDE PROGRAM	DEFINITION
5000-00-950	PE—Preliminary Engineering	Preliminary Engineering for any project that is not added capacity in a non-attainment area. Includes activities which do not involve or lead directly to construction such as planning and technical studies, grants for training and research programs.
5000-00-951	Right-of-way acquisition	Right-of-Way acquisition for any project that is not added capacity in a non-attainment area. Includes relocation assistance, hardship, acquisition and protective buying.
5000-00-952 5000-00-957 5000-00-958	Preventive Maintenance and Rehabilitation	Projects to include pavement repair to preserve existing pavement so that it may achieve its designed loading. Includes seal coats, overlays, resurfacing, restoring and rehabilitation done with existing ROW. Also includes modernization of a highway by reconstruction, adding shoulders or adding auxiliary lanes (e.g. parking, weaving, turning, climbing, non-added capacity).
5000-00-953	Bridge Replacement and Rehabilitation	Projects to replace and/or rehabilitate functionally obsolete or structurally deficient bridges.
5000-00-954	Railroad Grade Separation	Projects to construct or replace existing highway-railroad grade crossings and to rehabilitate and/or replace deficient railroad underpasses, resulting in no added capacity.
5800-00-950	Safety	Projects to include the construction or replacement/rehabilitation of guard rails, median barriers, crash cushions, pavement markings, skid treatments, medians, lighting improvements, railroad/highway crossing warning devices, fencing, intersection improvements (e.g. turn lanes), signalization projects and interchange modifications. Also includes projects funded via the Federal Hazard Elimination Program and the Federal Railroad Signal Safety Program.
5000-00-956	Landscaping	Projects consisting of typical right-of-way landscape development, establishment and aesthetic improvements to include any associated erosion control and environmental mitigation activities.
5800-00915	Intelligent Transportation Safety Deployment	Highway traffic operation improvement projects including installation of ramp metering control devices, variable message signs, traffic monitoring equipment and projects in the Federal ITS/IVHS programs.
5000-00-916	Bicycle and Pedestrian	Construction or rehabilitation of bicycle and pedestrian lanes, paths, and facilities.

5000-00-918	Transit Improvements	Projects include the construction and improvement of small passenger shelters and information kiosks. Also includes the construction and improvement of rail storage/maintenance facilities, bus transfer facilities where minor amounts of land are required and there is not a substantial increase in number of users.
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<u>PROPOSED CSJ</u>	<u>GROUPED PROJECT CATEGORY</u>	<u>DEFINITION</u>
<u>5000-00-950</u>	<u>PE - Preliminary Engineering</u>	<u>Preliminary Engineering for any project except added capacity projects in a nonattainment area. Includes activities which do not involve or lead directly to construction, such as planning and research activities; grants for training; engineering to define the elements of a proposed action or alternatives so that social, economic, and environmental effects can be assessed.</u>
<u>5000-00-951</u>	<u>Right-of-way acquisition</u>	<u>Right of Way acquisition for any project that is not added capacity in a nonattainment area. Includes relocation assistance, hardship acquisition and protective buying.</u>
<u>5000-00-952</u> <u>5000-00-957</u> <u>5000-00-958</u>	<u>Preventive Maintenance and Rehabilitation</u>	<u>Projects to include pavement repair to preserve existing pavement so that it may achieve its designed loading. Includes seal coats, overlays, resurfacing, restoration and rehabilitation done with existing ROW. Also includes modernization of a highway by reconstruction, adding shoulders or adding auxiliary lanes (e.g., parking, weaving, turning, climbing, non-added capacity) or drainage improvements associated with rehabilitation</u>
<u>5000-00-953</u>	<u>Bridge Replacement and Rehabilitation</u>	<u>Projects to replace and/or rehabilitate functionally obsolete or structurally deficient bridges.</u>
<u>5000-00-954</u>	<u>Railroad Grade Separation</u>	<u>Projects to construct or replace existing highway-railroad grade crossings and to rehabilitate and/or replace deficient railroad underpasses, resulting in no added capacity.</u>
<u>5800-00-950</u>	<u>Safety</u>	<u>Projects to include the construction or replacement/rehabilitation of guard rails, median barriers, crash cushions, pavement markings, skid treatments, medians, lighting improvements, highway signs, curb ramps, railroad/highway crossing warning devices, fencing, intersection improvements (e.g., turn lanes), signalization projects and interchange modifications. Also includes projects funded via the Federal Hazard Elimination Program, Federal Railroad Signal Safety Program, or Access Management projects, except those that result in added capacity.</u>
<u>5000-00-956</u>	<u>Landscaping</u>	<u>Project consisting of typical right-of-way landscape development, establishment and aesthetic improvements to include any associated erosion control and environmental mitigation activities.</u>
<u>5800-00915</u>	<u>Intelligent Transportation Systems Deployment</u>	<u>Highway traffic operation improvement projects including the installation of ramp metering control devices, variable message signs, traffic monitoring equipment and projects in the Federal ITS/IVHS programs.</u>
<u>5000-00-916</u>	<u>Bicycle and Pedestrian</u>	<u>Construction or rehabilitation of bicycle and pedestrian lanes, paths, and facilities.</u>
<u>5000-00-917</u>	<u>Safety Rest Areas and Truck Weigh Stations</u>	<u>Construction and improvement of rest areas and truck weigh stations.</u>
<u>5000-00-918</u>	<u>Transit Improvements</u>	<u>Projects include the construction and improvement of small passenger shelters and information kiosks. Also includes the construction and improvement of rail storage/maintenance facilities bus transfer facilities where minor amounts of additional land are required and there is not a substantial increase in the number of users.</u>

Note 1: Project funded with Transportation Alternative Program (TAP), Transportation Enhancement, and Congestion Mitigation Air Quality funding required a Federal eligibility determination, and not approved to be grouped.

Note 2: Projects funded as part of the Recreational Trails Program (RTP) consistent with the revised grouped project category definitions may be grouped. RTP projects that are not consistent with the revised grouped project category definitions must be individually noted in the Transportation Improvement Program (TIP) and State Transportation Improvement Program (STIP).

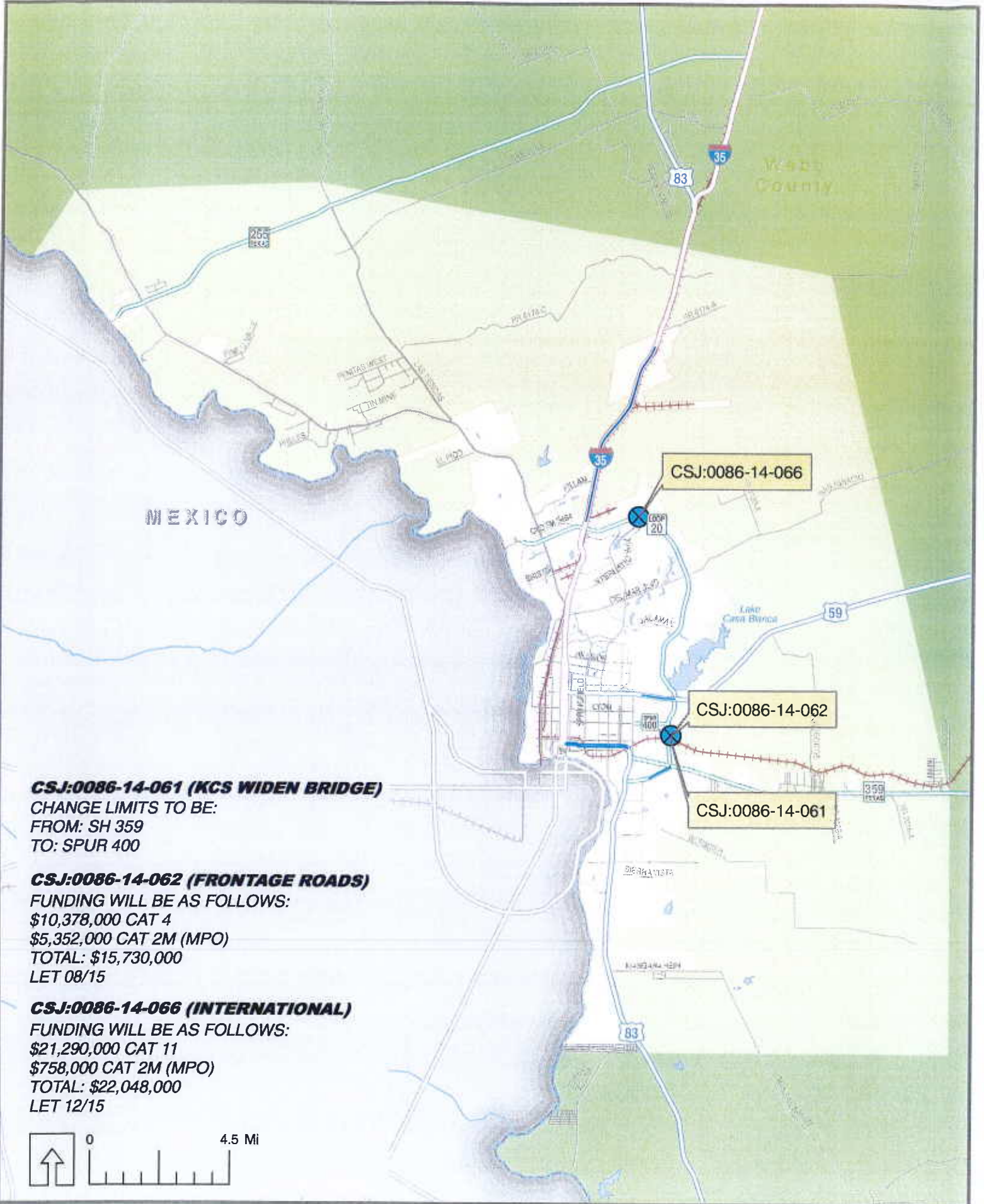
FEDERAL HIGHWAY

**GROUPED
PROJECTS**

For Informational Purposes Only

At present there are no grouped projects
programmed in the 2015-2018 TIP

2015-2018 TIP LOCATIONS OF PROJECTS FOR PROPOSED REVISIONS



CSJ:0086-14-061 (KCS WIDEN BRIDGE)

CHANGE LIMITS TO BE:
FROM: SH 359
TO: SPUR 400

CSJ:0086-14-062 (FRONTAGE ROADS)

FUNDING WILL BE AS FOLLOWS:
\$10,378,000 CAT 4
\$5,352,000 CAT 2M (MPO)
TOTAL: \$15,730,000
LET 08/15

CSJ:0086-14-066 (INTERNATIONAL)

FUNDING WILL BE AS FOLLOWS:
\$21,290,000 CAT 11
\$758,000 CAT 2M (MPO)
TOTAL: \$22,048,000
LET 12/15



STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM
TIP FY 2015-2018
LAREDO METROPOLITAN PLANNING ORGANIZATION
FY 2015

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
22 - LAREDO	WEBB	0086-14-061	SL 20	C,E			\$ 10,655,472
LIMITS FROM SH 359						REVISION DATE: 05/2015	
LIMITS TO: SPUR 400						MPO PROJ NUM:	
PROJECT WIDEN OF EXISTING BRIDGE						FUNDING CAT(S): 7,11	
DESCR:							
REMARKS							
P7:							
PROJECT HISTORY:							
TOTAL PROJECT COST INFORMATION				AUTHORIZED FUNDING BY CATEGORY/SHARE			
PRELIM ENG:	\$ 464,725	COST OF APPROVED PHASES:	7-METRO MOBLTY:	\$ 6,000,000	\$ 1,500,000	\$ 0	\$ 7,500,000
ROW PURCHASE:	\$ 405,000		11-DIST DISC:	\$ 2,524,378	\$ 631,094	\$ 0	\$ 3,155,472*
CONST COST:	\$ 9,484,176		TOTAL:	\$ 8,524,378	\$ 2,131,094	\$ 0	\$ 10,655,472
CONST ENG:	\$ 706,571						
CONTING:	\$ 0						
IND COSTS:	\$ 0						
BND FINANCING:	\$ 0						
TOTAL PRJ COST:	\$ 11,287,144						

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
22 - LAREDO	WEBB	0086-14-062	SL 20	C,E			\$ 17,613,584
LIMITS FROM 1.09 MI S OF SPUR 400 (MARIA LUISA)						REVISION DATE: 05/2015	
LIMITS TO: SPUR 400						MPO PROJ NUM:	
PROJECT NEW NON FREEWAY FRONTAGE ROAD						FUNDING CAT(S): 1,2M,4	
DESCR:							
REMARKS							
P7:							
PROJECT HISTORY:							
TOTAL PROJECT COST INFORMATION				AUTHORIZED FUNDING BY CATEGORY/SHARE			
PRELIM ENG:	\$ 786,034	COST OF APPROVED PHASES:	1-PRVNT	\$ 1,506,867	\$ 376,717	\$ 0	\$ 1,883,584*
ROW PURCHASE:	\$ 0		2M-METRO CRDR:	\$ 0	\$ 5,352,000	\$ 0	\$ 5,352,000
CONST COST:	\$ 16,041,515		4-STWIDE CNCT:	\$ 0	\$ 10,378,000	\$ 0	\$ 10,378,000
CONST ENG:	\$ 786,034		TOTAL:	\$ 1,506,867	\$ 16,106,717	\$ 0	\$ 17,613,584
CONTING:	\$ 200,519						
IND COSTS:	\$ 0						
BND FINANCING:	\$ 0						
TOTAL PRJ COST:	\$ 18,689,970						

PHASE: C = CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

* FUNDING NOT FIXED

**STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM
TIP FY 2015-2018
LAREDO METROPOLITAN PLANNING ORGANIZATION
FY 2016**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST	
22 - LAREDO	WEBB	0086-14-066	SL 20	C			\$ 22,777,543	
LIMITS FROM 0.45 MI EAST OF INTERNATIONAL BLVD						REVISION DATE: 05/2015		
LIMITS TO: 0.25 MI WEST OF MCPHERSON ROAD						MPO PROJ NUM:		
PROJECT FOR THE CONSTRUCTION OF INTERCHANGE FACILITY OVER INTERNATIONAL BLVD						FUNDING CAT(S): 1,2M,11		
DESCR:								
REMARKS						PROJECT HISTORY:		
P7:						FOR THE CONSTRUCTION OF MAINLANES OVER IH 35		
TOTAL PROJECT COST INFORMATION				AUTHORIZED FUNDING BY CATEGORY/SHARE				
PRELIM ENG:	\$ 1,116,100	COST OF APPROVED PHASES:		FEDERAL	STATE	LOCAL	LC	TOTAL
ROW PURCHASE:	\$ 0		1-PRVNT	\$ 583,634	\$ 145,909	\$ 0	\$ 0	\$ 729,543 *
CONST COST:	\$ 22,777,543		2M-METRO CRDR:	\$ 0	\$ 758,000	\$ 0	\$ 0	\$ 758,000
CONST ENG:	\$ 1,068,267		11-DIST DISC:	\$ 0	\$ 21,290,000	\$ 0	\$ 0	\$ 21,290,000
CONTING:	\$ 881,049		TOTAL:	\$ 583,634	\$ 22,193,909	\$ 0	\$ 0	\$ 22,777,543
IND COSTS:	\$ 0							
BND FINANCING:	\$ 0							
TOTAL PRJ COST:	\$ 26,665,669							

PHASE: C = CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

* FUNDING NOT FIXED



Laredo Metropolitan Planning Organization - 22
FY 2015 - 2018 Transportation Improvement Program

Funding by Category

Category	Description	FY 2015		FY 2016		FY 2017		FY 2018		Total FY 2015 - 2018	
		Programmed	Authorized	Programmed	Authorized	Programmed	Authorized	Programmed	Authorized	Programmed	Authorized
1	Preventive Maintenance and Rehabilitation	\$1,883,584	\$1,883,584	\$729,543	\$729,543	\$0	\$0	\$0	\$0	\$2,613,127	\$2,613,127
2M or 2U	Urban Area (Non-TMA) Corridor Projects	\$5,352,000	\$5,352,000	\$758,000	\$758,000	\$0	\$0	\$0	\$0	\$6,110,000	\$6,110,000
3	Non-Traditionally Funded Transportation Project	\$246,685	\$246,685	\$8,194,433	\$8,194,433	\$0	\$0	\$0	\$0	\$8,441,118	\$8,441,118
4	Statewide Connectivity Corridor Projects	\$10,378,000	\$10,378,000	\$0	\$0	\$0	\$0	\$0	\$0	\$10,378,000	\$10,378,000
5	CMAQ	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5 Flex	Map21 Flex	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Structures	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	Metro Mobility & Rehab	\$7,500,000	\$7,500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$7,500,000	\$7,500,000
8	Safety	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	Enhancements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9 Flex	TAP	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	Supplemental Transportation	\$1,800,514	\$1,800,514	\$14,819,709	\$14,819,709	\$0	\$0	\$0	\$0	\$16,620,223	\$16,620,223
11	District Discretionary	\$3,155,472	\$3,155,472	\$21,290,000	\$21,290,000	\$0	\$0	\$0	\$0	\$24,445,472	\$24,445,472
12	Strategic Priority	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12C	Strategic Priority RECON	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12S	Strategic Priority RECON	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SBPE	Strategy Budget PE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SB 102	Strategy 102	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total		\$30,316,255	\$30,316,255	\$45,791,685	\$45,791,685	\$0	\$0	\$0	\$0	\$76,107,940	\$76,107,940

Funding Participation Source

Source	FY 2015	FY 2016	FY 2017	FY 2018	Total
Federal	\$11,474,656	\$13,509,758	\$0	\$0	\$24,984,414
State	\$18,237,811	\$22,193,909	\$0	\$0	\$40,431,720
Local Match	\$360,403	\$1,893,585	\$0	\$0	\$2,253,688
CAT 3 - Local Contributions	\$246,685	\$8,194,433	\$0	\$0	\$8,441,118
CAT 3 - Prop 12	\$0	\$0	\$0	\$0	\$0
CAT 3 - Prop 14	\$0	\$0	\$0	\$0	\$0
Cat 3 - Prop 14 SB	\$0	\$0	\$0	\$0	\$0
CAT 3 - Texas Mobility Fund	\$0	\$0	\$0	\$0	\$0
CAT 3 - Pass Thru Toll Revenue	\$0	\$0	\$0	\$0	\$0
CAT 3 - Regional Toll Revenue	\$0	\$0	\$0	\$0	\$0
CAT 3 - Match to Regional Toll Revenue	\$0	\$0	\$0	\$0	\$0
CAT 3 - Unique Federal Program - Tiger II	\$0	\$0	\$0	\$0	\$0
CAT 3 - TDC	\$0	\$0	\$0	\$0	\$0
Other - Section 5306	\$0	\$0	\$0	\$0	\$0
Other - Strategy PE Budget	\$0	\$0	\$0	\$0	\$0
Other - Strategy 102 Budget	\$0	\$0	\$0	\$0	\$0
Total	\$30,316,255	\$45,791,685	\$0	\$0	\$76,107,940

COMMENTS/CORRESPONDENCE



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL TRANSIT ADMINISTRATION FEDERAL HIGHWAY ADMINISTRATION
819 TAYLOR STREET, ROOM 8A36 300 E. 8TH STREET, ROOM 826
FORT WORTH, TEXAS 76102-9003 AUSTIN, TEXAS 78701

December 2, 2014

Refer to: HPP-TX

Joint Approval of FY 2015-2018 Statewide
Transportation Improvement Program (STIP)

Lt.Gen Joe Weber (Ret)
Executive Director
Texas Department of Transportation
125 E. 11th Street
Austin, Texas 78701

Attention: Marc Williams

Dear General Weber:

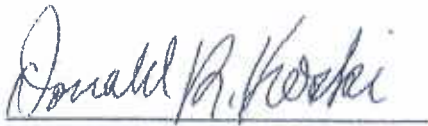
We have reviewed the FY 2015-2018 Statewide Transportation Improvement Program (STIP) received on October 16, 2014. In accordance with 23 CFR 450.216 (b), the FY 2015-2018 STIP includes the Transportation Improvement Programs (TIP) for each of Texas' Metropolitan Planning Organizations (MPO) directly.

Based upon our review, we jointly find that the State of Texas and its twenty-five MPOs have generally complied with the joint statewide and metropolitan planning regulations issued by FTA and FHWA pursuant to Title 23 United States Code (USC) Sections 134 and 135, and the Federal Transit Act under Title 49 USC, as certified within the STIP documentation. Accordingly, the FY 2015-2018 STIP is hereby approved subject to the enclosed general and project specific comments generated upon review of the subject document.

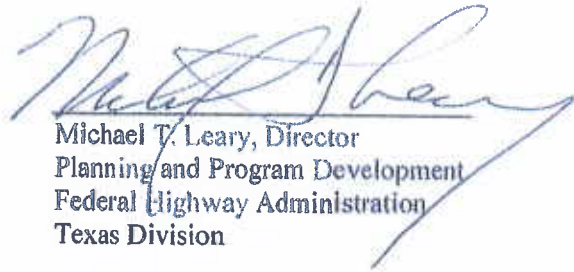
Additionally, portions of the STIP corresponding to the Dallas-Fort Worth, El Paso and Houston-Galveston non-attainment and maintenance areas, have been reviewed for consistency with their currently conforming Transportation Plans. Based upon this review we hereby find that the TIPs for these areas conform, except as otherwise noted in the enclosed project specific comments.

We look forward to continuing to work with TxDOT and Texas' MPOs on the successful implementation of the electronic STIP. Please contact Ms. Lynn Hayes, FTA at (817) 978-0565, or Ms. Genevieve Bales, FHWA at (512) 536-5941 should you have any questions concerning this action.

Sincerely yours,



Donald R. Koski, Director
Planning and Program Development
Federal Transit Administration
Region VI



Michael T. Leary, Director
Planning and Program Development
Federal Highway Administration
Texas Division

Enclosure

cc:

Lynn Hayes, FTA, Region VI
Lori Morel, TxDOT TPP
Kelly Kirkland, TxDOT PTN
FHWA-HA-TX, HB-TX, HAM-TX, HPP-TX

- Federal Comments

District / MPO	CSJ Number	STIP comment
1 Statewide	General	Please ensure that the MPO financial tables are transferred correctly into the Statewide fiscal constraint tables. Discrepancies noted in Houston and El Paso areas.
2 Statewide	General	Please provide Statewide fiscal constraint table with expenditures by type: Advance Construction, Grouped Projects, etc.
3 Statewide	General	Fiscal Constraint please provide documentation of STIP fiscal constraint comparison with the current UTP.
4 Statewide	General	Please revised the Statewide Self-Certification with corrected language provided by FHWA.
5 Statewide	General	TxDOT staff will require MPOs to update documents with current grouped project definitions approved in May 2014.
6 Statewide	General	Projects that meet the approved grouped project list definitions, but are listed individually in the STIP, will be treated as an individual project. Grouped projects must be distinguished as grouped projects and identified for information purposes only to qualify as a grouped project.
7 Statewide	General	TxDOT staff will identify rules and oversight process for TAP funded projects in Texas.
8 Statewide	General	MPOs will provide proposed project information to FHWA prior to inclusion in the STIP in order for FHWA to determine TAP funding eligibility.
9 Statewide	4800-00-0094	Not Approved. Please provide additional information concerning project eligibility.
10 Statewide	4800-00-092	Not Approved. Please provide additional information concerning project eligibility (brochures, research, web updates).
11 Statewide	4800-00-093	Not Approved. Please provide additional information concerning project eligibility.
12 Austin / CAMPO	0914-33-068	Not approved. The proposed project does not appear consistent with CAMPO's 2035 RTP (i.e., construction of 2-lanes versus construction of 4-lanes). Approval is withheld pending clarification of the proposed project's consistency with CAMPO's fiscally constrained 2035 RTP.

- Federal Comments

District / MPO	CSJ Number	STIP comment
13 Austin / CAMPO	1556-01-009	Not approved. The CAMPO 2035 RTP appears to include conflicting project descriptions for this portion of FM 1660 (i.e., Regional Project listing indicates construction of 2-lane roadway on new location, while the Local Project listing indicates widening to 4-lanes for this portion of FM 1660). Approval is withheld pending resolution of the noted discrepancies.
14 Austin / CAMPO	3542-02-900	Not approved. The proposed project does not appear consistent with CAMPO's 2035 RTP (i.e., construction of 2-lanes versus construction of 4-lanes and substantially greater Total Project Cost (TPC), \$61.5 million versus \$38.5). Approval is withheld pending clarification of the proposed project's consistency with CAMPO's fiscally constrained 2035 RTP.
15 Austin / CAMPO	General	We note that Category 3 "Programmed" funding amounts noted for fiscal years 2015 and 2016 in the "Funding by Category" table on page 15, do not appear consistent with the Category 3 funding amounts noted in the "Funding Participation Source" table on page 15. Please clarify and or revise the noted discrepancies as appropriate.
16 Corpus / CCMPO	General	Regionally Significant projects regardless of the funding source need to be included in planning documents.
17 Corpus Christi	0916-38-010	Not Approved. Project is not consistent with 2012 TE funding prioritization by the TTC.
18 Corpus Christi / CCMPO	0101-06-095	Not Approved. Project does not appear to be consistent with the MTP.
19 Corpus Christi / CCMPO	0617-01-170	Not Approved. Project does not appear to be consistent with the MTP.
20 Corpus Christi / CCMPO	0916-35-174	Not Approved. Project is not consistent with 2012 TE funding prioritization by the TTC.

- Federal Comments

	District / MPO	CSJ Number	STIP comment
21	DALLAS / NCTCOG	0000-18-004	Not approved. The CMAQ project description is too vague and non-descriptive in terms of scope of work for individual projects. We request additional information regarding the individual scope of work and emissions benefits for each of the individual projects. Additionally, we recommend that the blended proposed CMAQ project activities as shown be separated out individually as part of the STIP/TIP documentation. (Years 2015 and 2016)
22	DALLAS / NCTCOG	0000-18-005	Not approved. The CMAQ project description is too vague and non-descriptive in terms of scope of work for individual projects. We request additional information regarding the individual scope of work and emissions benefits for each of the individual projects. Additionally, we recommend that the blended proposed CMAQ project activities as shown be separated out individually as part of the STIP/TIP documentation. (FY 2017)
23	DALLAS / NCTCOG	0000-18-006 (FY 2016)	Not approved. The CMAQ project description is too vague and non-descriptive in terms of scope of work for individual projects. We request additional information regarding the individual scope of work and emissions benefits for each of the individual projects. Additionally, we recommend that the blended proposed CMAQ project activities as shown be separated out individually as part of the STIP/TIP documentation. (FY 2016)
24	El Paso / EPMPPO	0002-01-093	Not Approved. Project does not appear to be consistent with the MTP.
25	El Paso / EPMPPO	0924-06-460	Not Approved. A revision to the scope of the project is necessary before the project may be approved.
26	El Paso / EPMPPO	0924-06-461	Not Approved. A revision to the scope of the project is necessary before the project may be approved.
27	El Paso / EPMPPO	0924-06-465	Not Approved. The description of work needs to be amended. The purchase of a bus is eligible, however, purchase of a bus in exchange for service is not appropriate.
28	El Paso / EPMPPO	0924-06-467	Not Approved. This project appears to be eligible for CMAQ funding, however, questions related to how the emissions analysis addresses the proposed project remain unresolved.

2015-18 STIP
- Federal Comments

District / MPO	CSJ Number	STIP comment
29 El Paso / EPMPPO	0924-06-474	Not approved. Please review and revise air quality analysis assumptions and procedures followed to calculate the emissions benefits. Explain how the benefit applies to all vehicles crossing the POE? Provide additional information on the proposed geometric improvement.
30 El Paso / EPMPPO	0924-06-486	Approved. Approval is limited to CMAQ eligible items.
31 El Paso / EPMPPO	0924-06-499	Not Approved. Please modify planning documents to ensure consistency between the TIP and the MTP.
32 El Paso / EPMPPO	0924-06-500	Not Approved, Please update project costs to ensure consistency between the TIP and the MTP.
33 El Paso / EPMPPO	0924-06-503	Not Approved. The project does not appear to be consistent with the MTP.
34 El Paso / EPMPPO	0924-06-504	Not Approved. The project does not appear to be consistent with the MTP.
35 El Paso / EPMPPO	0924-06-505	Not Approved. The project does not appear to be consistent with the MTP.
36 El Paso / EPMPPO	0924-06-506	Not Approved. The project does not appear to be consistent with the MTP.
37 El Paso / EPMPPO	0924-06-507	Not Approved. Please clarify consistency with the MTP.
38 El Paso / EPMPPO	2121-01-091	Not Approved. The project does not appear to be consistent with the MTP.
39 El Paso / EPMPPO	2121-02-150	Not Approved. Approval is withheld pending clarification of the proposed project's consistency with EPMPPOs conforming 2040 MTP.
40 El Paso / EPMPPO	2121-03-131	Not Approved. Project does not appear to be consistent with the MTP.
41 El Paso / EPMPPO	2552-03-049	Not Approved. This project does not appear to be consistent with the MTP. Specifically a PE phase is listed in the MTP, and the 2018 TIP lists as construction.
42 Houston / H-GAC	0110-05-119 0110-04-188	Not approved. Please provide estimated emission reductions for the proposed project. Also, please clarify how proposed reconfiguration is to be accomplished (i.e., restriping, conversion of HOV lanes, etc.). Approval is withheld pending clarification of proposed project's scope of work and receipt of the estimated emission reductions.
43 Houston / H-GAC	0188-07-005	Not approved. Please provide estimated emission reductions for the proposed project. Also, please revise the project limits consistent with 2035 RTP Update (SH 36 to 17th St. versus SH 35 to 17th St.). Approval is withheld pending receipt of the estimated emission reductions.

- Federal Comments

District / MPO	CSJ Number	STIP comment
	0192-05-050 0500-03-572 0912-72-314 0912-00-499 0912-00-506 0188-07-005 0271-17-157 0912-00-496 0912-00-500 0912-00-507 0912-00-508 0912-72-324 0912-72-330 0912-72-325	Not approved. Please provide estimated emission reductions for the proposed projects. Approval is withheld pending receipt of the estimated emission reductions.
44	Houston / H-GAC	Not approved. Please provide estimated emission reductions for the proposed project. Also, please clarify the proposed project's scope of work (e.g., construction of new direct connectors versus reconstruction of existing direct connectors). Approval is withheld pending receipt of estimated emission reductions and clarification of the proposed project's scope of work.
45	Houston / H-GAC	Not approved. H-GAC's 2035 RTP Update indicates a 2017 transportation conformity analysis year, however assuming a 2-year construction time-frame and 2016 letting the proposed project is anticipated to the completed in 2018. Approval is withheld pending clarification of the proposed project's consistency with H-GAC's conforming 2035 RTP Update.
46	Houston / H-GAC	Not approved. Please provide estimated emission reductions for the proposed project. Also, please revise the project description to better identify the location of the proposed improvements along SH 6/FM 1092/FM 2234. Approval is withheld pending receipt of the estimated emission reductions.
47	Houston / H-GAC	Not approved. Please provide estimated emission reductions for the proposed project. Also, please revise the project description to better identify the location of the proposed improvements along SH 6/FM 1092/FM 2234. Approval is withheld pending receipt of the estimated emission reductions.

- Federal Comments

	District / MPO	CSJ Number	STIP comment
48	Houston / H-GAC	0912-00-501 0912-00-502	Not approved. Please provide estimated emission reductions for the proposed project. Also, please clarify the proposed project's scope of work (i.e., what vanpool activities are proposed to be conducted with this project). Approval is withheld pending receipt of the estimated emission reductions and clarification of the proposed project's scope of work.
49	Houston / H-GAC	0912-00-503 0912-00-504	Not approved. Please clarify the proposed project's scope of work (i.e., what vanpool activities are proposed to be conducted with this project). Approval is withheld pending clarification of the proposed project's scope of work.
50	Houston / H-GAC	0912-31-291 0912-31-292 0912-72-313 0912-56-052	Not approved. Please provide clarification concerning FHWA's determination of eligibility for Transportation Alternatives Program (TAP) funding for the proposed projects.
51	Houston / H-GAC	0912-31-293	Not approved. H-GAC's 2035 RTP Update indicates a 2017 transportation conformity analysis year, however assuming a 2-year construction time-frame and 2017 letting, the proposed project is anticipated to be completed in 2019. Approval is withheld pending clarification of the proposed project's consistency with H-GAC's conforming 2035 RTP Update.
52	Houston / H-GAC	0912-70-076	Not approved. This project is proposed for Transportation Enhancement (TE) funding, however the project's consistency with the approved TxDOT Commission approved TE project listing could not be determined. Approval is withheld pending clarification of the proposed project's eligibility for and the allocation of TE funding for the proposed project.
53	Houston / H-GAC	0912-72-312	Not approved. Please provide estimated emission reductions for the proposed project. Also, please clarify the purpose of the sidewalk reconstruction noted in the project description. Approval is withheld pending clarification of proposed project's scope of work and receipt of the estimated emission reductions.

- Federal Comments

District / MPO	CSJ Number	STIP comment
54 Houston / H-GAC	0912-72-331	Not approved. Please provide estimated emission reductions for the proposed project. Additionally, please clarify the difference between the proposed project's Year of Expenditure (YOE) cost and Total Project Cost (TPC). Approval is withheld pending receipt of the estimated emission reductions and clarification of the YOE cost and TPC discrepancy.
55 Houston / H-GAC	0912-73-196 0912-73-197	Not approved. Please provide estimated emission reductions for the proposed project. Also, please provide information concerning the purpose of the proposed multimodal terminal (e.g., new or increased service, etc.). Approval is withheld pending clarification of the proposed project's purpose and receipt of the estimated emission reductions.
56 Houston / H-GAC	3510-06-007	Not approved. H-GAC's 2035 RTP Update indicates a 2018 transportation conformity analysis year, however assuming a 2-year construction time-frame and 2015 letting the proposed project is anticipated to the completed in 2017. Approval is withheld pending clarification of the proposed project's consistency with H-GAC's conforming 2035 RTP Update.
57 Houston / H-GAC	3510-10-901	Not approved. H-GAC's 2035 RTP Update indicates a 2018 transportation conformity analysis year, however assuming a 2-year construction time-frame and 2015 letting the proposed project is anticipated to the completed in 2017. Approval is withheld pending clarification of the proposed project's consistency with H-GAC's conforming 2035 RTP Update.
58 Houston / H-GAC	General	Table 2-1 on page 2-7 of H-GAC's 2015-2018 TIP provides a funding summary for the TIP. The notes for this table indicate that the funding amounts reflected in the table for certain funding categories include funding for grouped projects. Please clarify the allocation of non-grouped and grouped project funding and consistency with the statewide financial constraint summaries by fiscal year. Additionally, please also clarify which funding categories noted on Table 2-1 were utilized to determine the amount of Category 3 - Local Contributions noted in the statewide financial summaries by fiscal year.

- Federal Comments

	District / MPO	CSJ Number	STIP comment
59	Houston / H-GAC	MPO Project ID 10052	Approved. However, it is recommended that the project's description of work be revised consistent with the response provided by H-GAC to FHWA/FTA's August 2013 Quarterly STIP revision comments.
60	Houston / H-GAC	MPO Project ID 11815	Not approved. Please verify that the proposed project does not provide additional capacity. Approval is withheld pending clarification of the proposed project's scope of work.
61	Houston / H-GAC	MPO Project ID 13730	Not approved. The project description indicates the addition of one northbound and one southbound through lane. However, the project is noted as "N/A" regarding transportation conformity in H-GAC's 2035 RTP Update. Additionally, H-GAC's 2035 RTP Update includes a project (MPO Project ID 13643) that proposes the widening of this section of roadway from 4 to 6-lanes. Approval of this project is withheld pending clarification of the proposed project's scope of work and applicability of consistency with the transportation conformity requirements.
62	Houston / H-GAC	MPO Project ID 15475	Not approved. The proposed project does not appear to be consistent with H-GAC's 2035 RTP Update (i.e., project limits and transportation conformity analysis year). Approval is withheld pending clarification of the proposed project's consistency with H-GAC's conforming 2035 RTP Update.
63	Lubbock / LMPO	0905-06-090	Not Approved. The project does not appear to be consistent with the MTP.
64	Lufkin	0911-38-068	Not Approved. Project is not consistent with 2012 TE funding prioritization by the TTC.
65	Pharr / Brownsville	0921-06-270	Not Approved. The project does not appear to be consistent with the MTP.
66	Pharr / Brownsville	0921-06-275	Not Approved. The project does not appear to be consistent with the MTP.
67	San Angelo	0035-03-047, 0035-04-032, 0070-04-033	Not Approved. The projects descriptions need to include more detail (will there be widening?). The current descriptions read as grouped projects (grading, base, paving and structures). If the projects are grouped projects, should be included as an appendix versus an individual project. Please review and revise as necessary.

- Federal Comments

	District / MPO	CSJ Number	STIP comment
68	San Angelo / STJ MPO	2574-01-044, 0069-07-103, 0077-06-090, 0158-02-085	Not Approved. Please clarify if the "Grouped CSJ Highway projects" are grouped projects or individual projects. If the projects are grouped, these should be listed in an appendix for information. Alternatively, if these are listed individually in the STIP, they cannot be described as grouped projects. Please review and revise as necessary.
69	San Antonio / AAMPO	0915-00-172	Not Approved. The funding identified does not appear to fully fund the Lone Star Rail project or phase. Please review and revise with supporting documentation as necessary.
70	San Antonio / AAMPO	0915-12-496	Not Approved. Require eligibility determination of Federal funds.
71	San Antonio / AAMPO	0915-46-041	Not Approved. The project does not appear consistent with 2012 list of eligible TE projects.
72	San Antonio / AAMPO	General	Please revise the 2015-2018 TIP document to consistently identify the newly named Alamo Area Metropolitan Planning Organization (AAMPO). Throughout document there are references to the San Antonio Bexar County Metropolitan Planning Organization (MPO).
73	Tyler / TAMPO	0919-01-063	Not Approved. The project does not appear to be consistent with the MTP.

Grouped Projects CSJs

Definition of Grouped Project for Use in the STIP

Revised May 22, 2014

Proposed CSJ	Grouped Project Category	Definition
5000-00-950	PE - Preliminary Engineering	Preliminary Engineering for any project except added capacity projects in a nonattainment area. Includes activities which do not involve or lead directly to construction, such as planning and research activities; grants for training; engineering to define the elements of a proposed action or alternatives so that social, economic, and environmental effects can be assessed.
5000-00-951	Right of Way Acquisition	Right of Way acquisition for any project that is not added capacity in a nonattainment area. Includes relocation assistance, hardship acquisition and protective buying.
5000-00-952 5000-00-957 5000-00-958	Preventive Maintenance and Rehabilitation	Projects to include pavement repair to preserve existing pavement so that it may achieve its designed loading. Includes seal coats, overlays, resurfacing, restoration and rehabilitation done with existing ROW. Also includes modernization of a highway by reconstruction, adding shoulders or adding auxiliary lanes (e.g., parking, weaving, turning, climbing, non-added capacity) or drainage improvements associated with rehabilitation
5000-00-953	Bridge Replacement and Rehabilitation	Projects to replace and/or rehabilitate functionally obsolete or structurally deficient bridges.
5000-00-954	Railroad Grade Separations	Projects to construct or replace existing highway-railroad grade crossings and to rehabilitate and/or replace deficient railroad underpasses, resulting in no added capacity
5800-00-950	Safety	Projects to include the construction or replacement/rehabilitation of guard rails, median barriers, crash cushions, pavement markings, skid treatments, medians, lighting improvements, highway signs, curb ramps, railroad/highway crossing warning devices, fencing, intersection improvements (e.g., turn lanes), signalization projects and interchange modifications. Also includes projects funded via the Federal Hazard Elimination Program, Federal Railroad Signal Safety Program, or Access Managements projects, except those that result in added capacity.
5000-00-956	Landscaping	Project consisting of typical right-of-way landscape development, establishment and aesthetic improvements to include any associated erosion control and environmental mitigation activities.

Grouped Projects CSJs

Definition of Grouped Project for Use in the STIP

Revised May 22, 2014

Proposed CSJ	Grouped Project Category	Definition
5800-00-915	Intelligent Transportation Systems Deployment	Highway traffic operation improvement projects including the installation of ramp metering control devices, variable message signs, traffic monitoring equipment and projects in the Federal ITS/IVHS programs.
5000-00-916	Bicycle and Pedestrian	Construction or rehabilitation of bicycle and pedestrian lanes, paths and facilities.
5000-00-917	Safety Rest Areas and Truck Weigh Stations	Construction and improvement of rest areas and truck weigh stations.
5000-00-918	Transit Improvements	Projects include the construction and improvement of small passenger shelters and information kiosks. Also includes the construction and improvement of rail storage/maintenance facilities bus transfer facilities where minor amounts of additional land are required and there is not a substantial increase in the number of users.

Note 1: Projects funded with Transportation Alternatives Program (TAP), Transportation Enhancement, and Congestion Mitigation Air Quality funding required a Federal eligibility determination, and not approved to be grouped.

Note 2: Projects funded as part of the Recreational Trails Program (RTP) consistent with the revised grouped project category definitions may be grouped. RTP projects that are not consistent with the revised grouped project category definitions must be individually noted in the Transportation Improvement Program (TIP) and State Transportation Improvement Program (STIP).

FTA-FHWA Review Findings from Laredo “Mock” Certification Review

Draft Date: December 4, 2014

Commendations

- Laredo TMA is commended on the timely development and future adoption of its 2040 MTP which includes the eight planning areas of MAP-21 and was formed after extensive public involvement and interagency coordination.
- Laredo TMA is commended on its excellent working relations with the TxDOT TPP Traffic Analysis Section and efforts to update its new regional travel demand model as part of the 2040 MTP development.
- Laredo TMA is commended on the development of a draft primer on the MPO planning process, and should continue efforts to educate decision-makers and the general public on the metropolitan planning process.
- Laredo TMA is commended on its efforts to update and make more accessible metropolitan planning-related products, agreements, policies, meeting agendas/minutes, and other studies and documents related to the transportation planning process on its Internet homepage website. We are of the understanding the Laredo TMA is also in the midst of updating its Internet homepage website to make it more streamlined and easier to navigate for the general public and transportation decision-makers.
- Laredo TMA is commended on its use of regional roundtable workshops to incorporate input and recommendations from private freight providers and railroad representatives (as well as safety/security agencies) as part of the 2040 MTP update.
- Laredo TMA is commended on its efforts to develop its first bicycle and pedestrian plan in FY 2015. This plan will provide the MPO and its planning partners with the tools it needs to create an environment conducive to walking or cycling as a viable mode choice, as well as providing recreational opportunities to promote healthy lifestyles.
- Laredo TMA is commended on its efforts to include a member of the regional transit authority on its Transportation Policy Committee board per MAP-21 requirements.

Recommendations

- Laredo TMA needs to update its FY 15-18 TIP to include the eight planning areas of Moving Ahead for Progress in the 21st Century (MAP-21).
- Laredo TMA needs to develop a Title VI/EJ Working Group in order to develop procedures for the purpose of improving data collection, monitoring and analysis tools that assess the needs of, and analyze potential impacts on minorities and low-income populations. The purpose of this effort will be to ensure that transportation-related programs and policies do not have a disproportionately high and adverse human health or environmental effects on minority and low-income populations.
- Laredo TMA should explore publishing its announcements of major transportation planning-related products (including the TIP/STIP and MTP Updates and revisions) in Spanish language newspapers within the metropolitan area.
- Laredo TMA should consider the development of Measures of Effectiveness (MOE) to measure the effectiveness of its public involvement process to ensure success in reaching out to all citizens, especially low-income and minority populations, and effectively engaging the public in the development of TIPs and MTP updates. The Laredo TMA should be periodically reviewing the effectiveness of its public involvement process to ensure a full and open participation by all members of its community.
- Laredo TMA is encouraged to complete its Limited English Proficiency (LEP) plan and procedures as part of its FY 2015 UPWP work program to accommodate minority and low-income communities and populations that are not proficient in English.
- Laredo TMA needs to develop Transportation Alternatives Program (TAP) criteria and procedures for funding and selection of alternative transportation enhancements and bicycle-pedestrian programs and projects under Category 9 of the UTP.
- Laredo TMA is encouraged to attend and participate in the “Managing the Travel Demand Forecasting Process” offered by the TxDOT Transportation Planning & Programming (TPP Traffic Analysis) Division.
- Laredo TMA should consider the hosting and development of an EPA-DOT-HUD Livability Summit over the course of the next calendar year in order to spur actions for moving forward livability and sustainability projects and programs within the metropolitan planning area.

- Laredo TMA will need to incorporate Management & Operations (M&O) estimated revenues and costs over a 25-year period into the 2040 MTP in a table summary format for both highway and transit modes.
- Laredo TMA is encouraged to participate in a future 1.5 day PEL Workshop over the next fiscal year- possibly in the San Antonio region. The Laredo TMA is also encouraged to take additional NEPA training within the near future.
- Laredo TMA needs to include Year of Expenditure (YOE) costs for each individual highway project identified within the 2040 MTP update.
- Laredo TMA needs to consider alternative funding revenues for its transit-related projects including, but not limited to STP-MM (UTP Category 7) and possibly UTP Categories 2 and 9 as part of its metropolitan planning process.
- Laredo TMA needs to ensure full operation of its Congestion Management Process (CMP) to show implementation efforts prior to the upcoming TMA on-site certification review in CY 2015.
- Laredo TMA needs to make efforts to coordinate, collaborate, and communicate with TxDOT, city, county transportation (highway/transit) agencies in order to address future revenue forecast projections over the 25-year period of the MTP and the four-year TIP.
- Laredo TMA needs to set up regularly scheduled Technical Advisory Committee meetings and agendas, prior to the monthly Transportation Policy Committee meetings. Schedules of future TAC and TPC meetings should be placed on the MPO website homepage for easy access by committee members and the general public.

Vanessa Guerra

From: Ana Duncan [Ana.Duncan@txdot.gov]
Sent: Wednesday, March 11, 2015 11:02 AM
To: Vanessa Guerra
Cc: Randy Aguilar
Subject: Updated run

Vanessa,

For the KCS bridge added work, we submitted a request for an updated run and are waiting on a response. We will forward that to you as soon as we receive it. Based on the previous request, I can't say whether that will be today or not.

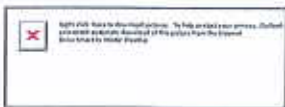
The change was the amount for CSJ 0086-14-061. Limits did not change.

Change from \$7.5 million to \$9.3 million
\$7.5 million Cat 7
\$1.8 million Cat 11
Total: \$9.3 million

Ana Alicia Duncan, P.E.
Transportation Engineer

Texas Department of Transportation - Laredo District
1817 Bob Bullock Loop * Laredo, TX 78043
O: 956/712-7460 F: 956/712-7401
Email: ana.duncan@txdot.gov

Drive Smart in Winter Weather



Vanessa Guerra

From: Randy Aguilar [Randy.Aguilar@txdot.gov]
Sent: Friday, March 06, 2015 4:34 PM
To: Vanessa Guerra
Cc: Ana Duncan; Roberto Rodriguez III
Subject: MPO Revision

Vanessa,

We will be adding the following to the May Revision of the STIP.

CSJ:0086-14-062 (frontage roads)

Funding will be as follows:

\$10,378,000 CAT 4

\$5,352,000 CAT 2M (MPO)

Total \$15,730,000

Let: 08/15

CSJ:0086-14-066 (International)

Funding will be as follows:

\$21,290,000 CAT 11

\$758,000 CAT 2M (MPO)

Total \$22,048,000

Let: 12/15

CSJ:0086-14-061 (KCS widen bridge)

Change limits to be:

From: SH 359

To: Spur 400

Randy Aguilar

956-712-7457

Randy.Aguilar@txdot.gov

Drive Smart in Winter Weather



CANDIDATE PROP 1 & CBI PROJECTS IN LAREDO							
	LETTING DATE	TOTAL COST	PROP 1	PROP 1	PROP 1	PROP 1	CBI
			CAT 1 MAINTENANCE	CAT 2 (MPO)	CAT 2	ENERGY SECTOR	(Designated to SL 20/I-69 in WCCL-RMA Petition)
AVAILABLE FUNDS -->			\$ 10,250,000	\$ 6,110,000	\$ 10,378,000	\$ 21,290,000	\$ 42,686,126
IH 35 - Reconstruction (LA SALLE)	Mar-15	\$ 2,200,000	\$ 2,200,000				
FM 1472 - Roadway Improvements (WEBB)	May-15	\$ 2,300,000	\$ 2,300,000				
US 59 - Rehabilitation (DUVAL)	Aug-15	\$ 5,750,000	\$ 5,750,000				
SL 20 - International Interchange (WEBB)	Dec-15	\$ 22,048,000		\$ 758,000		\$ 21,290,000	
SL 20 - Frontage Road Bridges over KCS Railroad (WEBB)	Aug-15	\$ 15,730,000		\$ 5,352,000	\$ 10,378,000		
PROPOSITION 1 TOTAL		\$ 48,028,000					
SL 20 - Mainlanes Bridge over IH 35 (WEBB)	Aug-16	\$ 40,000,000					\$ 40,000,000
TOTAL		\$ 122,438,000	\$48,028,000				\$ 40,000,000

2086 -
4-066
086 -
4-062

PROPOSITION 1:

A statewide public meeting was held on January 20, 2015, which presented this recommended list of projects to be included in an amended Unified Transportation Plan (UTP), which the Texas Transportation Commission will consider for approval on February 26, 2015.

The Legislative Budget Board (LBB) set forth guidelines for the use of these funds:

- Must be used for on-system roadways
- Cannot be used for toll road projects, projects including tolled elements or projects proposed for future tolling.
- Scheduled to let on or before December 2015

CBI FUNDS:

CBI funds referenced above have been allocated in the Webb County and City of Laredo RMA (WCCL-RMA) Petition approved in February 2014, for use by the WCCL-RMA. Funds are proposed to be reallocated from the Loop 20/I-69 project (CSJ 0086-14-950) to the IH 35 mainlanes project (CSJ 0086-14-065). Concurrence by Webb County, City of Laredo, Laredo MPO, TxDOT, WCCL-RMA, and FHWA is proposed.

PROJECT INFORMATION

	SL 20 - FRONTAGE ROAD BRIDGES AT KCS RR (WEBB)	SL 20 - INTERNATIONAL (WEBB)	IH 35 / U-P Railroad (WEBB)
PROJECT DESCRIPTION:	Construct non-freeway frontage road bridges over KCS Railroad (This project is proposed to let in conjunction with a separately funded project to widen the mainlanes bridge over KCS Railroad)	Construct Loop 20 mainlanes bridge over International Blvd. (including the connection to mainlanes at McPherson)	Construct SL 20 mainlanes bridge over IH 35 and UP Railroad (including the connection to mainlanes at McPherson)
PROJECT LIMITS:	From : 1.09 miles South of Spur 400 (Maria Luisa) To: Spur 400	From: 0.25 miles West of McPherson To: 0.45 miles east of International	From: 0.33 miles West of IH 35 To: 0.16 miles West of McPherson
LETTING DATE:	Aug-15	Dec-15	Aug-16
CONSTRUCTION ESTIMATE (in millions):	\$15.73 M	\$22.0 M	\$40.0 M

**LAREDO URBAN TRANSPORTATION STUDY
ACTION ITEM**

DATE: 4-20-15	SUBJECT: A RESOLUTION(S) Receive public testimony and approve Resolution No. MPO 2015-04 adopting the proposed revision(s) of the 2015-2040 Laredo Metropolitan Transportation Plan (MTP). MTP15-40/REV 01		
INITIATED BY: Staff		STAFF SOURCE: Nathan Bratton, MPO Director	
PREVIOUS ACTION: On December 15, 2014, the Policy Committee adopted the 2015-2040 Metropolitan Transportation Plan. A 10 day public review and comment period was initiated by the Policy Committee on March 16, 2015.			
<p>BACKGROUND: The Laredo Metropolitan Transportation Plan is an official, comprehensive, intermodal transportation plan developed and adopted for the metropolitan planning area. The MTP identifies the existing and future transportation needs and develops coordinated strategies to provide the necessary transportation facilities essential for the continued mobility and economic vitality of Laredo. These coordinated transportation strategies include roadway development and operations, truck and rail freight movement, transit operations, bikeways and pedestrian facilities. The development of the MTP is required under the Transportation Equity Act for the 21st Century (TEA-21), and the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005, and Moving Ahead for Progress in the 21st Century (Map 21) to assure the continuation of federal transportation funds. The plan must address, at a minimum, a continuous twenty-year planning horizon.</p> <p>As of December 11, 2007, SAFETEA-LU required that all revisions to the Transportation Improvement Program (TIP) shall also be reflected in the Metropolitan Transportation Plan (MTP). That is a continued requirement under MAP21. As the 2015-2018 TIP is being proposed for revision, the MTP is also recommended for revision as follows.</p>			
MOBILITY: Proposed amendments: (See also attached MTP Table 12-10)			
1	Purpose of Revision	Add project	
	CSJ #	0086-14-062	
	Project Description	New Nonfreeway frontage road	
	Location	Loop 20 at KCS Bridge	
	Limits	From: 1.09 S of Spur 400 to Spur 400	
	Funding	17,613,584 Total	10,378,000 CAT 4 5,352,000 CAT 2 (MPO) 1,883,584 CAT 1
	Letting	August of 2015	
2	Purpose of Revision	Revise proj. ID, description, limits and funding	
	Existing Proj. ID	2	New Project ID 0086-14-066
	Existing Proj. Descp.	Construction overpass and approach roadways	New Description Construction of interchange facility over International Blvd.
	Location	Loop 20 at International	
	Existing limits	At International	New Limits 0.45 m. east of Internation Blvd.to 0.25 m. west of Mcpherson
	Existing Funding	16,361,542 CAT 7	
	New Funding	22,777,543 Total	21,290,000 Cat 11 758,000 CAT 2M(MPO) 729,543 CAT 1
	Letting	December of 2015	
Staff comments continued.....			
COMMITTEE RECOMMENDATION: Approval		STAFF RECOMMENDATION: Approval.	

**LAREDO URBAN TRANSPORTATION STUDY
ACTION ITEM**

Staff Comments continued:

3	Purpose of Revision	Revise limits and funding amounts		
	CSJ #	0086-14-061		
	Project Description	Widen existing bridge		
	Location	SL 20		
	Existing limits	From: Spur 400 to SH 359	New Limits	From: SH 359 to Spur 400
	Existing funding	8,905,357 CAT 7 0 Cat 11	New Funding	7,500,000 CAT 7 3,155,472 CAT 11
	TOTAL	8,905,357		10,655,472
	Letting	August of 2015		

TRANSIT

No Transit Revisions at this time.

RESOLUTION NO. MPO 2015-04

BY THE LAREDO URBAN TRANSPORTATION STUDY
METROPOLITAN PLANNING ORGANIZATION POLICY COMMITTEE

**ADOPTING THE REVISION(S) OF THE 2015-2040 LAREDO METROPOLITAN
TRANSPORTATION PLAN**

WHEREAS, the Laredo Urban Transportation Study (LUTS), the designated Metropolitan Planning Organization (MPO) for the Laredo urbanized area has reviewed the proposed revision of the 2015-2040 Laredo Metropolitan Transportation Plan; and,

WHEREAS, the Laredo Urban Transportation Study finds that the proposed revision of the 2015-2040 Laredo Metropolitan Transportation Plan meets federal and state requirements, and meets the transportation needs of the Laredo Metropolitan Area;

NOW THEREFORE BE IT RESOLVED, that the Laredo Urban Transportation Study, as the designated Metropolitan Planning Organization for the Laredo urbanized area, adopted the proposed revision of the 2015-2040 Laredo Metropolitan Transportation Plan on April 20, 2015 which is attached hereto and made a part hereof for all purposes.

Honorable Pete Saenz
Mayor of Laredo and Chairperson of the
LUTS Transportation Planning Committee

We certify that the above resolution was adopted on the above mentioned date at a public meeting of the Policy Committee of the Laredo Urban Transportation Study.

Nathan Bratton
MPO Director

Melisa Montemayor
District Administrator

Table 12-11 Category 2 Roadway Projects

1 Loop 20 at IH 35: Construct overpass and approach roadways

Description: The project will provide main lanes and a grade separation for through traffic on Loop 20 to pass IH 35 without encountering controlled delays at the intersection. The operational efficiency of the through traffic on Loop 20 will be improved. Loop 20 is one of the designated truck routes in the Laredo MPO region, and the improved operational efficiency will benefit freight transportation. The project is same as Project 1 in Category 7 and Project 0086-14-065 in Category 12.

Letting Year: 2017

Total Project Cost (2014 Dollars):

\$32,509,223

YOE Cost: \$36,568,455

Programmed Amount:

Category 2: \$6,830,000

Category 7: \$6,822,967

Category 12: \$9,000,000

Other Amount: \$13,915,488

Funding: Federally funded

Environmental Impacts and Environmental Justice:

The project is close to 100-year flood plains, but it is not near low income areas or cultural resources.



0086-14-062 Construct New Non-freeway Frontage Road

Description: The project will construct a new non-freeway frontage road from 1.09 miles south of Spur 400 to Spur 400. The segment according the latest Travel Demand Model currently operates at LOS F (volume over capacity), and the project would add capacity to mitigate congestion. Loop 20 provides connection between South Laredo with predominantly residential areas to the industrial areas in North Laredo. Also, Loop 20 is one of the designated truck routes in the Laredo MPO region, and the improved operational efficiency will benefit freight transportation.

Letting Year: 2015

Total Project Cost (2014 Dollars): \$18,689,516

YOE Cost: \$17,613,584

Programmed Amount:

Category 1: \$1,883,584

Category 2M: \$5,352,000

Category 4: \$10,378,000

Other Amount: \$1,075,932

Funding: Federally funded

Environmental Impacts and Environmental Justice:

The project is close to 100-year flood plains, but it is not near low income areas or cultural resources.



Table 12-11 Category 7 Roadway Projects

0086-14-061

Loop 20 from Clark Blvd (Spur 400) to SH 359 SH 359 to Spur 400: Widen overpass from 4 lanes to 6 lanes

Description: The project will widen the overpass on Loop 20 from Clark Boulevard to SH 359 from the existing four lanes to six lanes. The segment according the latest Travel Demand Model currently operates at LOS F (volume over capacity), and the project would add capacity to mitigate congestion. Loop 20 provides connection between South Laredo with predominantly residential areas to the industrial areas in North Laredo. Also, Loop 20 is one of the designated truck routes in the Laredo MPO region, and the improved operational efficiency will benefit freight transportation.

Year: 2015

Total Project Cost (2014 2015 Dollars):

~~\$9,113,121~~ 11,287,144

YOE Cost: ~~\$9,477,646~~ 10,655,472

Programmed Amount: ~~\$8,905,357~~

Cat 7 : \$ 7,500,000

Cat 11: 3,155,472

Other Amount: ~~\$572,289~~ 631,672

Funding: Federally funded

Environmental Impacts and Environmental Justice:

The project is close to 100-year flood plains, but it is not near low income areas or cultural resources.



20086-14-066

Loop 20 at International Blvd: Construct ~~overpass and approach roadways~~ interchange facility over International Blvd.

Description: The project will provide main lanes and a grade separation for through traffic on Loop 20 to pass International Boulevard without encountering an intersection; therefore the operational efficiency of the through traffic on Loop 20 will be improved. Loop 20 is one of the designated truck routes in the Laredo MPO region, and the improved operational efficiency will benefit freight transportation.

Letting Year: 2016

Total Project Cost (2014 2015 Dollars):

~~\$15,127,165~~ 26,665,669

YOE Cost: ~~\$16,361,542~~ 22,777,543

Programmed Amount: ~~\$3,174,857~~

Cat 1: \$729,543*

Cat 2M: \$758,000

Cat 11: \$21,290,000

Other Amount: ~~\$13,186,685~~ 3,888,126

Funding: Federally funded

Environmental Impacts and Environmental Justice:

The project is close to 100-year flood plains, but it is not near low income areas or cultural resources.



Figure 12-1: Federally Funded Roadway and Bicycle and Pedestrian Projects

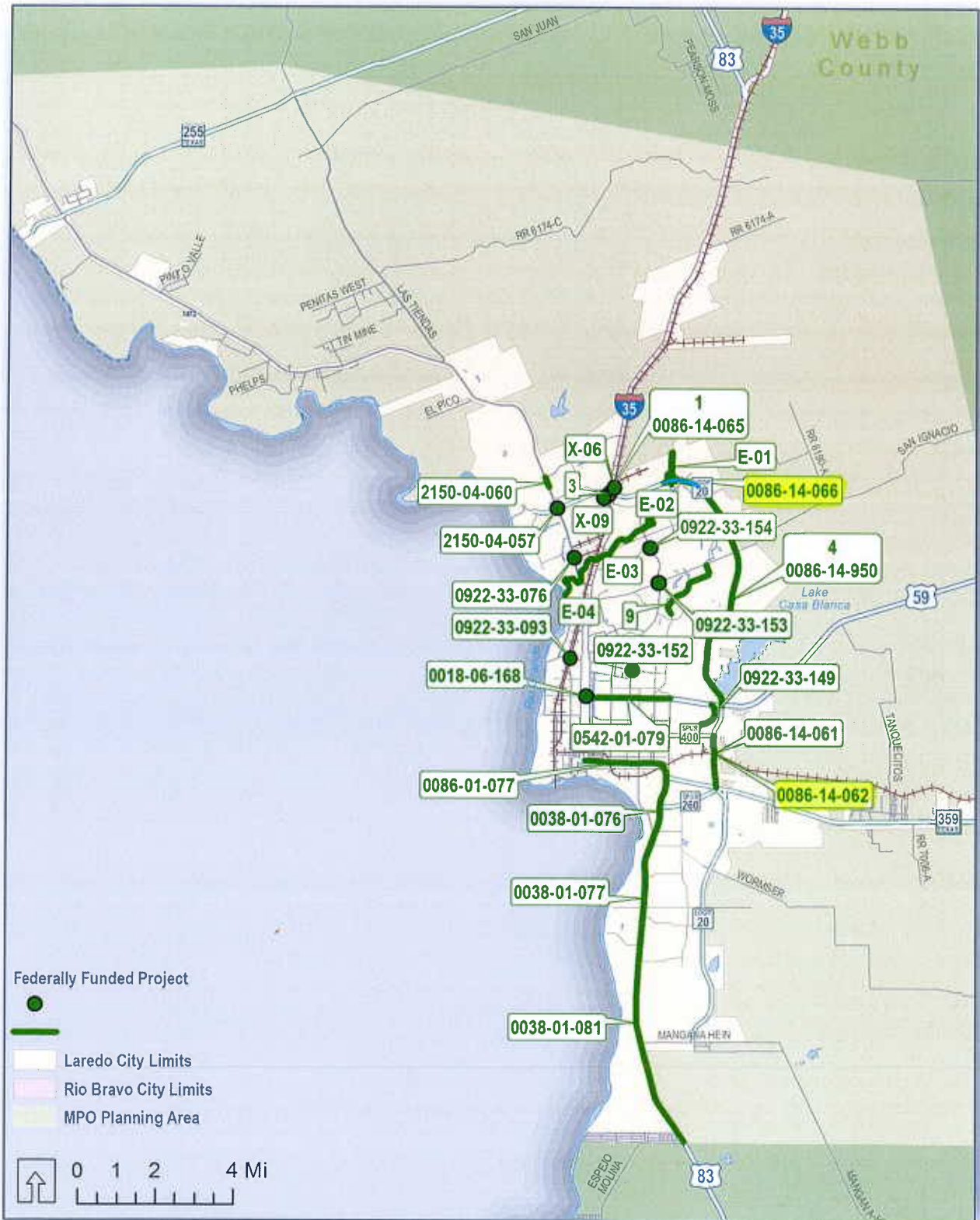


Table 12-10: Roadway and Bicycle/Pedestrian Projects Summary

Cat	CSI No./ID	Roadway	Limits	Description	Letting Year	Project Cost		Projected Revenue		
						Total Project Cost (in 2014 dollars)	Year of Expenditure Cost	Federal Revenue	Other Revenue (BMA and Local Sources)	
7	0086-14-061	Loop 20	Clark Blvd to SH 359	Widen overpass from 4 lanes to 6 lanes	2015	\$9,112,121	\$9,477,646	\$4,909,387	\$572,339	
7, 11	0086-14-061	Loop 20	SH 359 to Spur 400	Widen existing bridge	2015	N/A	\$10,655,472	\$8,524,378	\$2,131,094	
1, 2, 4	0086-14-062	Loop 20	1.09 S. of Spur 400 to Spur 400	New Nonfreeway frontage road	2015	N/A	\$17,613,584	\$1,506,867	\$16,106,717	
8	0018-00-168	IH 35	At US 59 Intersection	Improve traffic signal on frontage road	2015	\$96,146	\$99,992	\$81,702	\$18,290	
8	0038-01-076	US 83	Palo Blanco to SH 359	Improve traffic signals - interconnect signals	2015	\$124,873	\$129,868	\$109,625	\$20,243	
8	0038-01-077	US 83	Cielito Lindo to Palo Blanco	Improve traffic signals - interconnect signals	2015	\$171,131	\$177,976	\$131,375	\$46,601	
8	0086-01-077	US 83	IH 35 to SH 359	Improve traffic signals - interconnect signals	2015	\$174,922	\$181,919	\$153,625	\$28,294	
8	0542-01-079	US 59	IH 35 to Arkansas	Improve traffic signals - interconnect signals	2015	\$140,963	\$146,602	\$123,750	\$22,852	
8	2150-04-057	FM 1472	At Loop 20	Improve traffic signal, interconnect signals, and install overhead guide signs	2015	\$90,700	\$94,328	\$77,074	\$17,254	
8	2150-04-060	FM 1472	Killam Industrial Blvd to Pellegrino Alexander Hike and	Install raised median	2015	\$149,669	\$155,656	\$128,438	\$27,218	
9	9	Bike Trail	Zacate Dam to Del Mar Blvd	Construct hike and bike trail	2015	\$986,078	\$1,025,521	\$1,025,521	\$0	
10	0086-14-051	Loop 20	At the intersection of FM 1472 and Flecha	Schematic, environmental, ROW-survey/mapping & PSE	2015	\$4,256,385	\$4,426,640	\$4,000,845	\$425,795	
10	0922-33-076	Ln/Las Cruces Dr		Re-align intersection	2015	\$3,377,269	\$3,512,360	\$1,440,411	\$2,071,949	
11	0922-00-060	VA	Districtwide	Upgrade bridge rail and MBGF	2015	\$3,059,036	\$3,181,397	\$2,500,000	\$681,397	
12	0038-01-081	US 83	Cielito-Lindo Blvd (NB) to Espejo Molina Rd (NB)	Resurface of existing highway	2015	\$253,823	\$263,976	\$6,593,622	\$0	
1, 2M,	2	Loop 20	At International Blvd	Construct overpass and approach roadways	2016	\$15,127,165	\$16,261,542	\$3,174,857	\$11,186,685	
11	0086-14-066	Loop 20	McPherson	Construction of interchange	2016	N/A	\$22,777,543	\$583,634	\$22,193,909	
9	E-01	Manadas Creek Hike and Bike Trail, Phase III	United High School to Loop 20	Construct hike and bike trail	2016	\$886,846	\$959,213	\$959,213	\$0	
10	0922-33-093	Calton Rd	Santa Maria Ave	Construct overpass	2016	\$23,309,669	\$25,211,738	\$12,926,124	\$12,285,614	
10	0086-14-058	Loop 20	East of International Blvd to US 59/Loop 20 interchange	Schematic, environmental, ROW-survey/mapping & PSE	2016	\$3,880,224	\$4,196,850	\$3,500,000	\$696,850	
11	0922-00-056	VA	Districtwide	Upgrade bridge rail and MBGF	2016	\$3,089,177	\$3,341,254	\$2,500,000	\$841,254	
2, 7, 12	1/0086-14-065	Loop 20	At IH 35	Construct overpass and approach roadways	2017	\$32,509,223	\$36,568,455	\$22,652,967	\$13,915,488	
8	0922-33-152	McPherson Rd	At Calton Rd	Install raised median	2017	\$231,362	\$260,251	\$203,829	\$56,422	
8	0922-33-153	McPherson Rd	At Del Mar Blvd	Install raised median and add right turn lane	2017	\$573,721	\$645,358	\$505,445	\$139,913	
8	0922-33-154	McPherson Rd	At International Blvd	Install raised median	2017	\$347,446	\$390,830	\$306,098	\$84,732	
9	E-02	Manadas Creek Hike and Bike Trail, Phase IV	McPherson Rd to North Central Park	Construct hike and bike trail	2017	\$335,305	\$377,172	\$377,172	\$0	
11	0922-33-149	Chacon Creek	Eastwoods Park to US 59	Construction of a pedestrian trail at Chacon Creek in Laredo (Phase 3)	2017	\$1,786,746	\$2,009,846	\$1,410,000	\$599,846	
2, 7	3	Loop 20	At IH 35	Construct ramps from IH 35 southbound to Loop 20 eastbound, and from Loop 20 westbound to IH 35 southbound	2018	\$44,200,000	\$51,707,748	\$9,276,602	\$42,431,146	
9	E-03	Manadas Creek Hike and Bike Trail, Phase V	IH 35 to McPherson Rd	Construct hike and bike trail	2018	\$654,910	\$766,152	\$766,152	\$0	
9	E-04	Manadas Creek Hike and Bike Trail, Phase VI	Rio Grande River NW of water treatment plant	Construct hike and bike trail	2019	\$746,471	\$908,196	\$908,196	\$0	
11	0922-00-951	VA	Districtwide	Upgrade bridge rail and MBGF	2019	\$3,089,178	\$3,758,457	\$2,500,000	\$1,258,457	
7, 10	4/0086-14-950	Loop 20	International Blvd to US 59	Upgrade to interstate standards, including overpasses at Shiloh Dr, Del Mar Blvd, University Blvd, Jacaman Rd, and Airport	2020	\$391,400,000	\$495,245,864	\$116,608,517	\$378,637,347	
11	0922-00-953	VA	Districtwide	Upgrade bridge rail and MBGF	2020	\$3,089,177	\$3,908,795	\$2,500,000	\$1,408,795	
11	0922-00-955	VA	Districtwide	Upgrade bridge rail and MBGF	2021	\$3,089,178	\$4,065,147	\$2,500,000	\$1,565,147	
11	0922-00-960	VA	Districtwide	Upgrade bridge rail and MBGF	2022	\$3,089,178	\$4,227,753	\$2,500,000	\$1,727,753	
11	0922-00-970	VA	Districtwide	Upgrade bridge rail and MBGF	2023	\$3,089,178	\$4,396,863	\$2,500,000	\$1,896,863	
7	X-06	IH 35	At Loop 20	Construct ramp from Loop 20 Westbound to IH 35 Northbound	2037	\$35,520,000	\$87,546,696	\$7,454,863	\$80,091,833	
7	X-09	IH 35	At Loop 20	Construct ramp from Loop 20 Eastbound to IH 35 Southbound	2039	\$35,520,000	\$94,690,506	\$7,454,863	\$87,235,643	
Total							\$627,558,270	\$884,418,567	\$228,756,243	\$641,991,870

Table 12-6: Roadway and Bicycle/Pedestrian Financial Constraint of Federal Funding

<i>Category</i>	<i>FY 2015 to 2040 Projected Amount of Revenue</i>	<i>Programmed Amount of Project Cost</i>
1	\$0*	\$0*
2	\$6,830,000	\$6,830,000
2- Prop. 1	\$6,110,000	\$6,110,000
3	\$0*	\$0*
4	\$0*	\$0*
5	\$0**	\$0**
6	\$0*	\$0*
7	\$116,330,357	\$116,330,357
8	\$1,820,961	\$1,820,961
9	\$16,448,000	\$4,036,254
10	\$65,235,049	\$65,235,049
11	\$18,910,000	\$18,910,000
12	\$15,593,622	\$15,593,622

*No funding projections are available

** The MPO is not eligible to receive revenue from this funding category

ACTION ITEM

DATE: 04/20/15	SUBJECT: Motion(s) Receive public testimony, accept the Congestion and Delay Study and initiate a 20-day public review and comment period for the selected Congestion Management Process (CMP) network and performance measures.
INITIATED BY: Staff	STAFF SOURCE: Nathan Bratton, MPO Director
PREVIOUS ACTION: On January 21, 2014, the Policy Committee approved Resolution No. MPO 2014-01, adopting the Congestion Management Process. A presentation was given by Steve Taylor of CoPLAN LLC at the Policy Board meeting of March 26, 2015.	
BACKGROUND: The Unified Planning Work Program (UPWP) describes and schedules work to be undertaken by the MPO. The development of the Congestion Management Plan is an objective of the 2013 Unified Planning Work Program, adopted by the MPO in Subtask 5.1. The project was carried over to the 2014 and 2015 fiscal periods. <u>5.1 Congestion Management Plan:</u> As a newly designated Transportation Management Area, the Laredo MPO is federally required to develop and implement a Congestion Management Plan as an integral part of the metropolitan planning process. Congestion management is the application of strategies to improve transportation system performance and reliability by reducing the adverse impacts of congestion on the movement of people and goods. A Congestion Management Process (CMP) is a systematic and regionally accepted approach for managing congestion that provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management that meet state and local needs. The plan is intended to identify and evaluate the likely performance and expected benefits of a variety of congestion management strategies. The plan evaluated the entire CMP network using the selected performance measures, identified the top 20 most congested locations, and provided congestion management recommendations intended to facilitate the safe and efficient transportation network, in accordance with all Federal guidelines. The CMP network is comprised of 272 centerline miles of roadway, as selected with the assistance of the Technical Committee. (See attached) The Laredo MPO has introduced congestion index and volume weighted delay as two primary performance measures for use in the CMP. The congestion index allows easy comparison of the efficiency of roadways and is expressed as a ratio of average travel speed to the posted speed limit. Volume weighted delay calculates the delay or number of minutes drivers wait as compared to free-flow conditions. On March 10, 2015, The Technical Committee recommended approval for the 2015 Congestion and Delay Study.	
COMMITTEE RECOMMENDATION: Approval.	STAFF RECOMMENDATION: Staff recommends approval.



**2015 Laredo
Metropolitan Planning Organization**

**CONGESTION AND DELAY STUDY
Final Report
EVALUATION PERIOD - FALL 2013**

Prepared for:

Laredo Urban Transportation Study

Prepared by:

CoPLAN

5508 Sandalwood
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March 2015

ACKNOWLEDGEMENTS

Laredo Urban Transportation Study

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Eloy Sanchez or Arturo Dominguez – Kansas City Railroad Representative
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Eduardo Alvarez – Transportation Provider Representative

School System Representatives

Esteban Rangel – Laredo Independent School District Representative
Michael Barron – United Independent School District Representative

The contents of this report reflect the views of the preparers who are responsible for the opinions, findings, and conclusions herein. The contents do not necessarily reflect the views or policies of the Federal Highway Administration, Federal Transit Administration, or the Texas Department of Transportation.

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EXECUTIVE SUMMARY

Congestion management is the use of strategies to optimize operations of a transportation system through management of the existing system. As such, a congestion management process (CMP) is a systematic approach coordinated regionally that provided current performance measures detailing the systems performance and evaluates strategies that meet the local objectives.

By definition, the CMP is not to be a stand-alone study...it is to be an integral component of the metropolitan transportation planning process. Once an MPO exceeds a population of 200,000, the CMP is required according to SAFETEA-LU, while the federal regulations are not strictly stated as to the methodology or approach that is to be followed.

The flexibility is intentional within the regulations to allow the MPO to development a living methodology that evolves with the local objectives and needs.

By responding to congestion through a process that involves developing congestion management objectives, developing performance measures to support these objectives, collecting data, analyzing problems, identifying solutions, and evaluating the effectiveness of implemented strategies, the CMP provides a structure for responding to congestion in a consistent, coordinated fashion.

The Laredo Urban Transportation Study (LUTS) is initiating its' inaugural congestion management process (CMP) to monitor the transportation network in Laredo study area. The study area includes a portion of Webb County and all of the City of Laredo. The goal of the monitoring system is to ensure optimal performance of the transportation system by identifying congested areas and related transportation deficiencies.

The primary purpose of the 2015 Congestion and Delay Study is to evaluate the transportation system and prepare a report as part of the Congestion Management Process (CMP) in compliance with the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requirements. The secondary purpose of the study was to

The CMP, as defined in federal regulation, is intended to serve as a systematic process that provides for safe and effective integrated management and operation of the multimodal transportation system. The process includes:

- ***Development of congestion management objectives***
- ***Establishment of measures of multimodal transportation system performance***
- ***Collection of data and system performance monitoring to define the extent and duration of congestion and determine the causes of congestion***
- ***Identification of congestion management strategies***

identify trends in congestion and travel time in order to identify problem locations for possible improvements.

Being the inaugural study, the MPO is establishing the baseline of existing congestion for comparison in future years. To help establish the CMP network, the MPO staff invited representatives of local agencies and units of government to a kick-off meeting in October 2013. The primary goal of the meeting was to provide an overview of the CMP objectives. The study network, as defined by the Technical Committee, included 272 centerline miles of roadway spread over 92 different roadways divided into 1154 directional links bound by a traffic signal, stop sign, or major cross street.

The CMP is intended to use an objectives-driven, performance-based approach to planning for the management of congestion. Through the use of congestion management objectives and performance measures, the CMP provides a mechanism for ensuring that investment decisions are made with a clear focus on desired outcomes. The purpose of this study was to identify problem areas using travel time studies. The results of this study are used as factors in prioritizing needed improvements. Through the use of a Global Positioning System (GPS) in the travel time runs congestion is pinpointed. By collecting position and speed data every one second, areas of delay were highlighted. This data provide the needed reference material to prepare recommendations that are focused on the true cause of the congestion.

Travel time runs were conducted using the floating car method. Roadways included arterials and freeways. Intersection delay for through vehicles was recorded at signalized intersections and compared with criteria in the Highway Capacity Manual (HCM) to determine level of service. In order to differentiate between congested roadways and roadways with low speed limits, a performance measure for illustrating the data was introduced. The preferred performance measure as determine by the technical committee is composed of two parts. The first element is a ratio of actual travel speed to posted speed limit and is referred to as the Congestion Index (CI) or % of posted speed. The second element begins with the link daily volumes as included in the travel demand model prepared by TxDOT. By applying the volumes to the measured delays on the links, the volume weighted delay was determined. By combining the strengths of these two elements, the "hybrid" performance measure was determined and used to identify the operating results of each link of the CMP network.

Of the 272 directional miles studied in AM and PM, it was determined to classify the top 15% of the segments as congested including both the results of the AM and PM periods. **Table E-1** and **Figure E-1** below shows the Top 20 congested segments in this study based on the combined hybrid performance measure that includes consider of CI and Volume Weighted Delay.

The CMP is intended to be a structured, transparent, process for effective allocation of limited transportation funding among operations and capital projects and programs. As comprehensively tabulated in Appendix A, the recommended mitigation for those segments found to be congested is heavily weighted (70%) toward operational solutions or signal timing optimization. Through an integrated congestion monitoring process, decision-makers are provided with system performance and the effectiveness of potential solutions as well as the results of implemented strategies.

Table E-1-Top 20 Congested Segments

Hybrid Combined Rank	RouteID	Route Name	Intersection Segment	Peak Period	Recommendation
1	1164	DEL MAR - WB	SPRINGFIELD to SAN DARIO	PM	3 Intersections run by one controller, very long cycle which limits operations, consider alternative timing configurations
2	1090	FM 1472 - SE	MULLER MEMORIAL to INTERAMERICA	PM	Delays limited to intersections that appear to be uncoordinated along corridor, consider coordinating the corridor
3	1164	DEL MAR - WB	SPRINGFIELD to SAN DARIO	AM	3 Intersections run by one controller, very long cycle which limits operations, consider alternative timing configurations
4	1085	BOB BULLOCK / CUATRO VIENTOS - NB	MCPHERSON to IH 35 NBFR	PM	Delays due to excessive volume on frontage road ahead of mainlanes being constructed. Large portion of delay will be eliminated with construction of mainlanes beginning in 2016.
5	1111	US 59 - EB	BUENA VISTA to BARTLETT	PM	Evaluate the coordination on US 59 given the number of years since last studied
6	1180	MCPHERSON / MCCLELLAND - SB	COUNTRY CLUB to DEL MAR	PM	Consider access mgmt strategies along corridor to limit friction and improve operations
7	1170	MEADOW - SB	CORPUS CHRISTI to GUADALUPE	AM	Minor approach to Guadalupe and Matamoros, delays by design, signals not coordinated n/s b/n corridors. Consider 1-way pair b/n Seymour and Meadow
8	1115	US HIGHWAY 83 NB - NB	CANONES to SIERRA VISTA	PM	TxDOT Communication project in the works, update coordination in this area of US 83 taking into account volume changes due to Loop 20
9	1090	FM 1472 - SE	FM 3464 to BOB BULLOCK WBFR	PM	Heavy Industrial area, recent access mgmt changes, widening into shoulder, and updated changed timings to support improvements
10	1180	MCPHERSON / MCCLELLAND - SB	TIERA TRAIL to SHILOH	PM	Consider adding SB left turn lane given high volume movement
11	1115	US HIGHWAY 83 NB - NB	PALO BLANCO to ZACATECAS	AM	School zone. Delays expected with lower speeds during school zone periods. Considering 1 way pair b/n Zacatecas and Palo Blanco
12	1164	DEL MAR - WB	MCPHERSON to LINDENWOOD	AM	School zone. Delays expected with lower speeds during school zone periods.
13	1179	MCPHERSON / MCCLELLAND - NB	CALLE DE NORTE to JACAMAN	PM	Consider access mgmt strategies along corridor to limit friction and improve operations
14	1084	IH 35 - SB	Scott Off-Ramp to VICTORIA	PM	Frontage road signals are maintained by TxDOT, need to evaluate for N/S progression given the observed delays
15	1112	US 59 - WB	MEADOW to MCPHERSON	PM	Evaluate the signal coordination on US 59 given the number of years since last studied
16	1113	SANTA MARIA / OLD SANTA MARIA - NB	INDUSTRIAL to DEL MAR	PM	3 Intersections run by one controller, very long cycle which limits operations, consider alternative timing configurations
17	1170	MEADOW - SB	CORPUS CHRISTI to GUADALUPE	PM	Minor approach to Guadalupe and Matamoros, delays by design, sigs not coordinated n/s b/n corridors. Consider 1-way pair b/n Seymour and Meadow
18	1011	CLARK - EB	AGUILA AZTECA to BOB BULLOCK	AM	Planned interchange will address delays at the intersection
19	1090	FM 1472 - SE	INTERAMERICA to RIVER BANK	PM	Heavy Industrial area, recent access mgmt changes, widening into shoulder, and updated changed timings to support improvements
20	1155	BARTLETT - NB	LANE to CLARK	PM	Minor approaches to Clark, side street delay is expected given the 1 lane side street geometry. Evaluate signal timing

Managing demand and implementing operations strategies are more cost-effective in the short-term, than larger added capacity projects. Other Texas MPOs have created funding set-asides to be used to address operation projects that can be quickly addressed without the need for lengthy ROW process.

Overall, the current transportation system provides sufficient capacity for the current demand. However, the CMP determined that increased focus be placed on operations to maximize the benefits of these investments and minimizing the overall delays along the corridors and side streets. Attention to operations may be accomplished through the integration of coordinated signal timing plans which provide consistent results to the commuting public during the peak periods.

INTRODUCTION

History of the Congestion Management Process

The Laredo MPO has initiated the Congestion Management Process (CMP) to monitor the transportation network in the region. The goal of the monitoring system is to ensure optimal performance of the transportation system by identifying congested areas and related transportation deficiencies. This information will then be used in the transportation planning process to develop strategic improvement projects that will improve and maintain the performance of roadways at a system level.

The 2015 study was conducted in the Fall 2013 with travel time runs in September - November 2013. The primary tasks completed as part of this study include:

- Mapping of the routes included to the CMP network
- Travel time data collection
- Delay Calculations
- Addition of volumes from travel demand model

What is the Congestion Management Process?

Guidance provided by FHWA includes eight (8) “actions” that comprise a well-developed CMP. The elements are referred to as actions to indicate that the process is not to be thought of as a linear methodology to step through, but may include variations and at times one may need to revisit previous steps as a result of another. The actions below taken directly from the 2011 FHWA published “*Congestion Management Process: A Guidebook*” were used as the basis for the structure for this report, as well as the MPO’s inaugural CMP itself.

1. Develop Regional Objectives for Congestion Management – First, it is important to consider,—What is the desired outcome? —What do we want to achieve? It may not be feasible or desirable to try to eliminate all congestion, and so it is important to define objectives for congestion management that achieve the desired outcome.

2. Define CMP Network – This action involves answering the question, —What components of the transportation system are the focus...and involves defining both the geographic scope and system elements (e.g., freeways, major arterials, transit routes) that will be analyzed in the CMP.

3. Develop Multimodal Performance Measures – The CMP should address, —How do we define and measure congestion? This action involves developing performance measures that will be used to measure congestion on both a regional and local scale. These performance measures should relate to, and support, regional objectives.

4. Collect Data/Monitor System Performance – After performance measures are defined, data should be collected and analyzed to determine, —How does the transportation system perform? Data collection may be on-going and involve a wide range of data sources and partners.

5. Analyze Congestion Problems and Needs – Using data and analysis techniques, the CMP should address the questions, —What congestion problems are present in the region, or are anticipated? —What are the sources of unacceptable congestion?

6. Identify and Assess Strategies – Working together with partners, the CMP should address the question, —What strategies are appropriate to mitigate congestion? This action involves both identifying and assessing potential strategies, and may include efforts conducted as part of the MTP, corridor studies, or project studies.

7. Program and Implement Strategies – This action involves answering the question...How and when will solutions be implemented? It typically involves including strategies in the MTP, determining funding sources, prioritizing strategies, allocating funding in the TIP, and ultimately, implementing these strategies.

8. Evaluate Strategy Effectiveness - Finally, efforts should be undertaken to assess, —What have we learned about implemented strategies? This action may be tied closely to monitoring system performance under Action 4, and is designed to inform future decision making about the effectiveness of transportation strategies.

1.0 Action 1 – Develop Regional Objective for Congestion Management

The starting point for the CMP is to develop regional objectives for congestion management. These objectives draw from the regional vision and goals that are articulated in the MTP.

The goal of the CMP is not eliminate congestion, but rather to manage this congestion while balancing community livability, access, and pedestrian safety.

Therefore, the objective is to manage congestion and identify those roadway segments with “unacceptable” congestion and establish objectives for congestion management in line with regional goals.

The MPO will work to promote projects and policies that support the stated vision, goals, and objectives.

The goals and objective to support the stated vision include the following:

- Provide a safe transportation system
 - Promote policies and projects that reduce the number and severity of vehicle collisions
- Provide an efficient transportation system
 - Encourage a proactive approach to addressing future transportation needs
 - Promote policies and projects that reduce travel delay
- Provide affordable travel choices for people and goods

The MPO vision is to “Develop a transportation system that offers safe, efficient, and affordable travel choices for people and goods, while supporting economic development and long term quality of life”

- Promote the increase of viable, affordable travel choices for people and goods
- Promote policies and programs to increase transit ridership on existing services
- Promote awareness of multimodal facilities
- A transportation system that promotes economic vigor and long term quality of life
 - Promote the efficient and effective connection of people, jobs, goods, and services
 - Promote the minimization of environmental impact and improved environmental quality
 - Promote the unique identities and qualities of neighborhoods, communities, and region as a whole

Stakeholders and participants in this study were part of the Technical Advisory Committee. The committee included representatives of the following governments units or agencies:

- City of Laredo,
- Webb County,
- El Metro Transit,
- South Texas Economic Development,
- Laredo Independent School District,
- United Independent School District,
- Federal Highway Administration, and
- TxDOT Laredo District and Region staff.

2.0 Action 2 – Define CMP Network

To help establish the CMP network, the MPO staff invited representatives of local agencies and units of government to a kick-off meeting in October 2013. The primary goal of the meeting was to provide an overview of the CMP objectives.

The 2015 inaugural CMP network, as determined by the MPO and technical committee, included a large portion of the roadway network functionally classified as major collectors, arterials, and freeways.

The fall study was conducted on approximately 272 centerline miles of roadways in the MPO region. **Figure 1** shows the city limits and CMP network, while a few of the roadways extend outside the city limits into the county.

The study included 92 different roadways, divided into 1154 separate segments that ranged from 500 feet to 11.4 miles in length in the rural area.

All of the CMP network roadways were evaluated during the AM and PM peak periods between the hours of 7:00 AM-9:00 AM and 4:00 PM-6:00 PM respectively. The total directional and centerline miles during each study period are shown in **Table 1**.



Figure 1 – 2015 CMP Network

Table 1-Total Study Miles Summary

Study Period	Total Directional Miles	Total Centerline Miles
AM	445	272
PM	445	272
Total	890	544

3.0 Action 3 – Develop Multimodal Performance Measures

Performance measures are a critical component of the CMP. According to Federal regulation, the CMP must include “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 goods. 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 MPO(s), and local officials in consultation with the operators of major modes of transportation in the coverage area.”23 CFR 450.320 (c) 2

3.1 Traffic Flow

The Highway Capacity Manual 2010 defines capacity as “...the maximum hourly rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions.”

The capacity of a roadway, and its operational characteristics, is a function of a number of elements including: the number of lanes and lane widths, shoulder widths, roadway alignment, access, traffic signals, grades, and vehicle mix. Generally, roadways with wider travel lanes, fewer traffic control devices, straight alignments, etc. allow faster travel speeds.

3.2 Congestion Index (CI) and Volume Weighted Delay

Federal guidance recommends that CMPs include performance measures that are clearly understood and relatable to the public, decision makers, and technical practitioners. The Laredo MPO has introduced the use of congestion index (CI) as one element of the primary performance measure in the inaugural CMP. This performance measure allows easy comparison of the efficiency of roadways as a ratio of average travel speed to the posted speed limit. The second element of the preferred performance measure is volume weighted delay. This performance measure calculates the delay or number of minutes drivers wait as compared to free-flow conditions. Also, by multiplying it by the travel demand link volume, the overall impact of the delay can be measured. CI is purely a measure of delay, but does not relate the number of cars in the delay. Many times the minor or secondary roads are high on the ranking of this measure

while the volume weighted delay includes the volume, thus relating the overall magnitude of the delay is reported. By combining these two measures as follows, the ranking represents not only the regional significant higher volume roads, but also the lower volume local streets where high delays were observed.

- $CI = \text{Actual Average Speed} / \text{Weighted Average Posted Speed Limit}$

CI = Congestion Index
Actual Average Speed = Average speed of all runs on a segment
Weighted Average Posted Speed Limit = Average of all posted speed limits on the segment weighted by length
- Volume Weighted Delay (VWD) = Delay * Segment Volume from Travel Demand Model
- Hybrid Performance Measure Rank = 60% of the VWD Ranking + 40% of the CI Ranking

Based on the local conditions in the Laredo region, attention was focused on the peak periods and intersection level delays. The duration of congestion and other performance measures were not as much of a concern with the short peaking of congestion within the region. This also is applicable in most areas of the region to performance measures based on volume. There are a few areas within the region where capacity is an issue, but most delay occurs at the node level and is not a link problem. Because volume is measured mid-block and does not consider the operations of the nodes (intersections), attention is being focused at the moment where the MPO can get the most benefit.

The Laredo MPO's primary performance measures, as selected by the Technical Committee, on the intersection segment level are Congestion Index (CI) and Volume Weighted Delay. The MPO technical committee evaluated thresholds to define what would be used as "unacceptable" congestion. In order to narrow the focus on those roadway segments that need attention and commonly have recurring delay, a combined performance measure was used and the highest 15% of the network was categorized as congested. Overtime, with future updates, the committee will be able to revisit these thresholds and adjust as desired. FHWA encourages the MPO to be flexible with the process and customize the methodology and performance measures to respond to the local and regional objectives.

The MPO can also consider adding other performance measures in future updates that are multi-modal based that reflect the accessibility of transit, bike, and pedestrian facilities. This can be as direct on the regional level as the % of jobs or households within ¼ mile of transit. This will serve as an indicator of the accessibility to transit and should have some correlation to the ridership.

4.0 Action 4 – Collect Data / Monitor System Performance

It is necessary for Laredo MPO to maintain an accurate, up to date regional transportation model in order to conform to State and Federal regulations for transportation planning. TxDOT maintains the regions model using current information

on the roadway network, area development, and other relevant characteristics. The MPO will collect data as necessary to support the CMP and planning process.

For this 2015 study, the base conditions of the selected corridors were collected including: roadway characteristics, field-measured travel time, and travel speed data. The primary purpose of this year's 2015 CMP is to establish the MPOs initial CMP base.

Mapping of the roadway attributes and floating car travel time runs were conducted on major collectors, arterials and freeways. The breakdown of mileage by peak period is:

- 272.0 centerline miles AM and PM peak periods

The routes that were studied in 2013 are shown in **Figure 1**. In future years, the MPO may consider analysis of a subset of the overall network based on the results of this year's baseline analysis. That way, the MPO can maximize the detail collected on a smaller roadway set, while not collecting data just for the sake of treating the entire network the same. FHWA favors using professional judgment on defining the network with consideration given for a systematic data collection plan that may include cyclical analysis of certain roadways based on historic results or known changes since the last update.

Through the integrate datasets assembled in GIS and the additional data assembled below, the data collected in this study has a variety of additional uses outside the CMP. Because the information is all housed in a GIS, queries can group data by area for use in individual planning processes. Within the GIS, the MPO will have access to the following datasets:

- CMP Routes
- Speed Limits
- School Zones
- Intersection Control
- Jurisdiction
- Average Speed
- Congestion Index (% posted speed)
- Free Flow Travel Time
- Peak Period Travel Time
- Segment Delay
- Travel Demand Segment Volume
- Volume Weighted Delay

Study's like a CMP are data intensive and typically require a large amount of resources and time to assemble. Other data sources may include El Metro on transit operations and ridership along with impacts of border crossing delays and incidents through the South Texas Regional Advanced Transportation Information System (STRATIS).

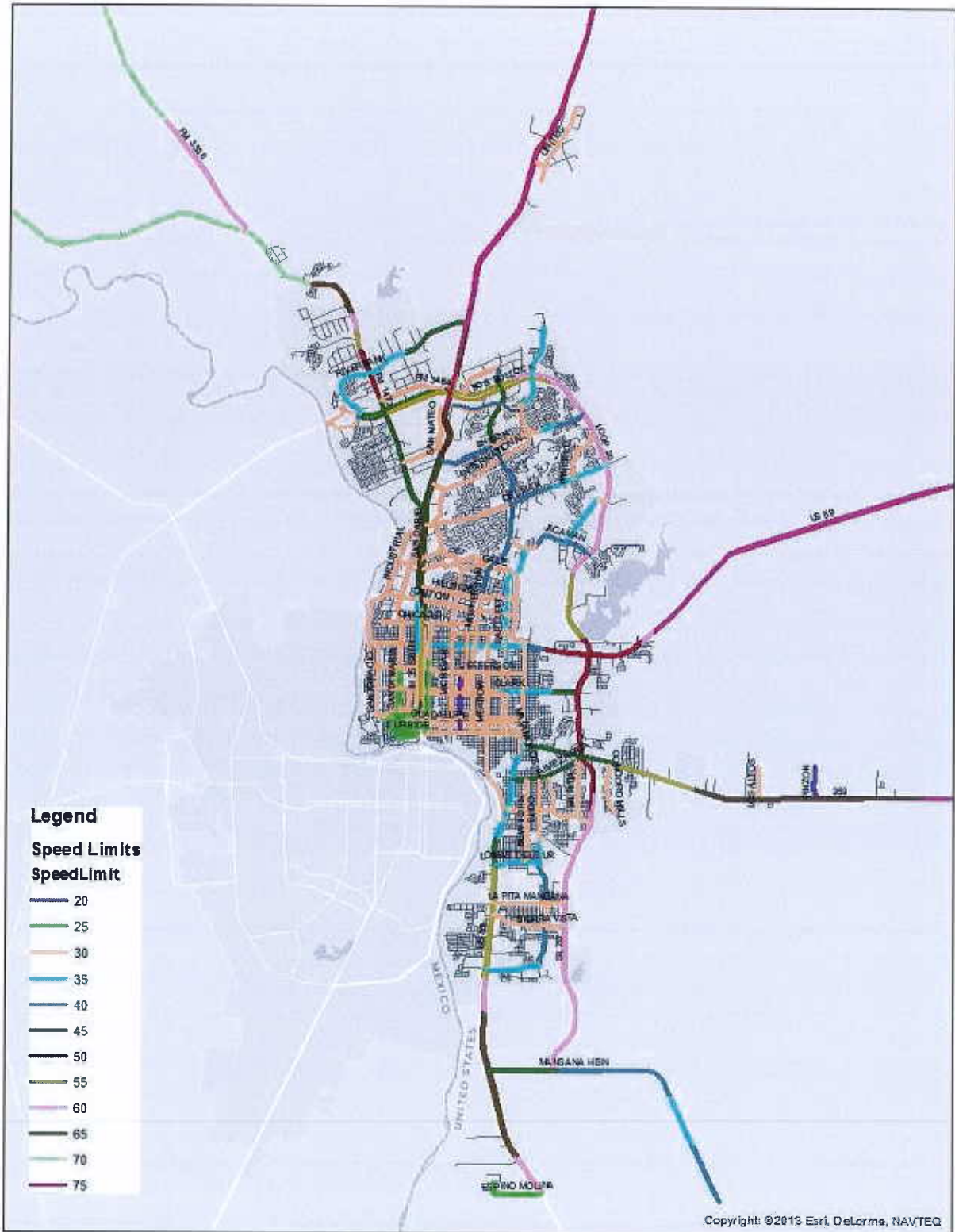


Figure 2 – Speed Limits

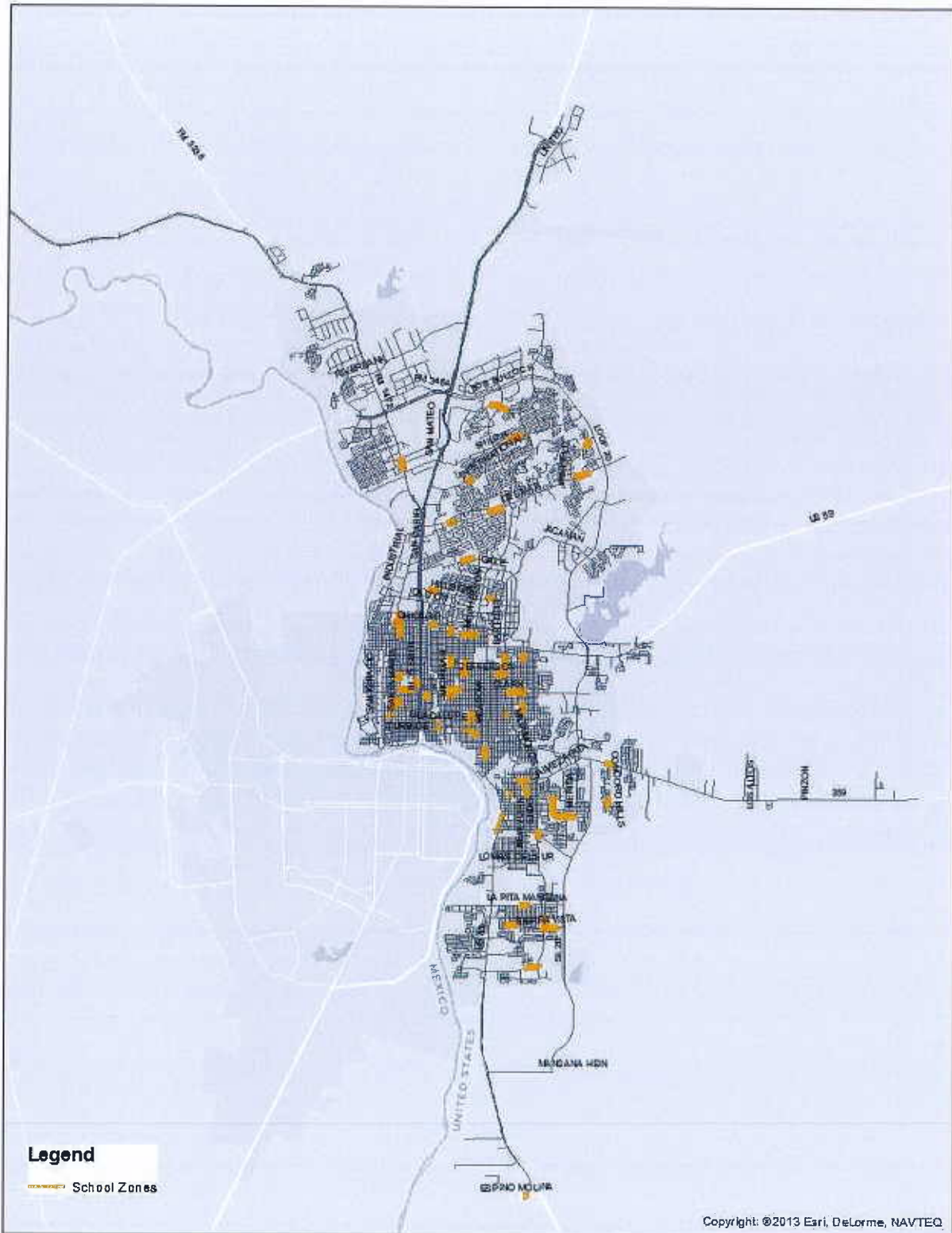


Figure 3 – School Zones

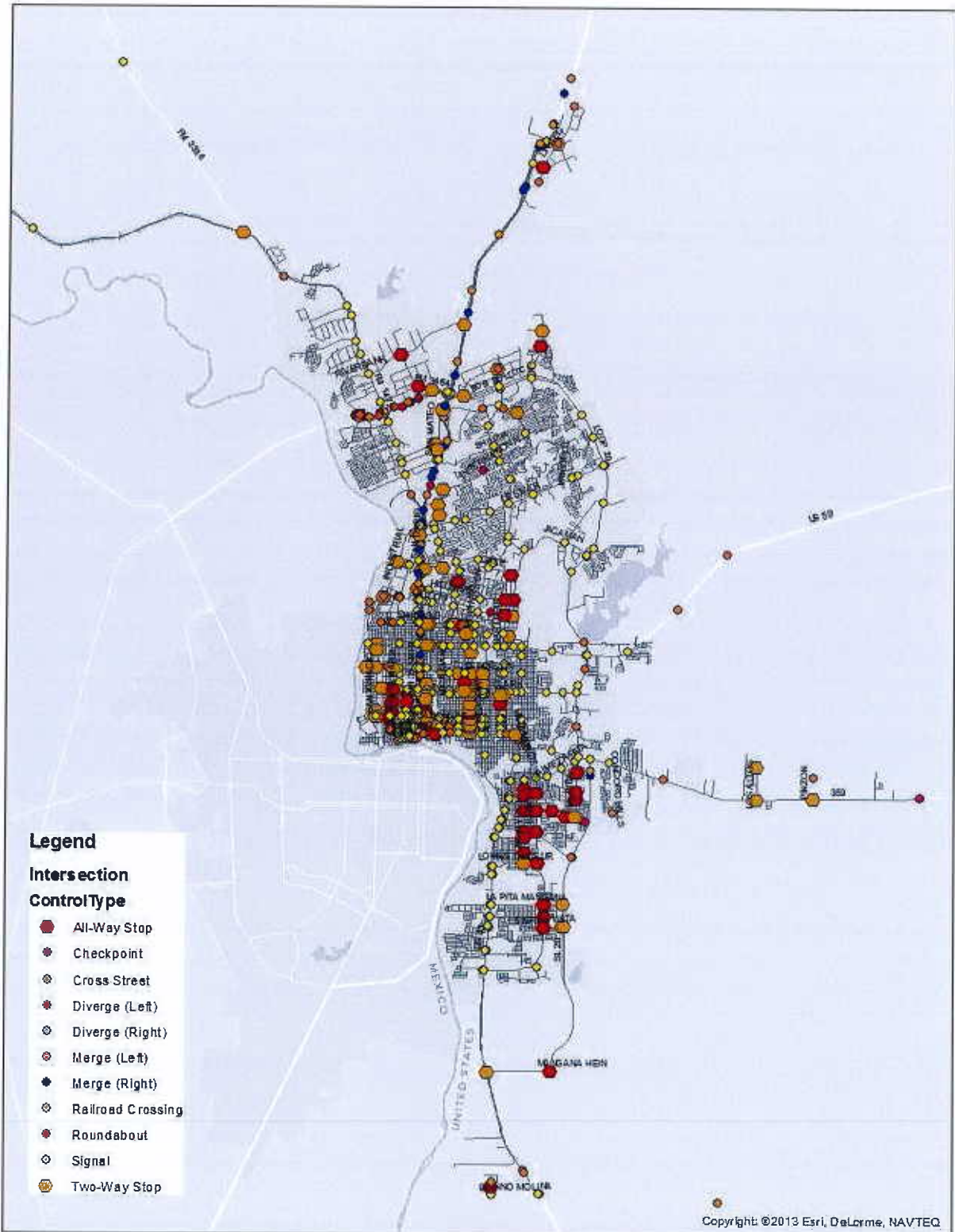


Figure 4 – Intersection Control

5.0 Action 5 – Analyze Congestion Problems and Needs

Given the data collected and dataset assembled, the primary performance measure for the CMP is a combination or “hybrid” of Congestion Index (CI) and Volume Weighted Delay. CI is the ratio of the actual average speed to the weighted average posted speed limit while Volume Weighted Delay accounts for the travel demand segment volume and the measured delay.

According to the MPO thresholds developed by the technical committee, the top 15% of the hybrid performance measure were identified as being congested.

5.1 Roadway Segment Definition

Utilizing the roadway attributes, the CMP corridors were divided into segments with the endpoint or nodes being represented by controlled intersections or major cross-streets. In addition to these segments, they were further broken down into common unit lengths of approximately 0.1 mile to allow for direction comparisons between sub-segments.

The roadway segment endpoints are defined at each traffic signal or stop sign. This allowed the segments to be evaluated on a detailed level and then combined, as appropriate, to make corridor recommendations. In addition, for the approximately 272.0 miles of roadways including 92 different roads, the network was further divided into 1154 directional links for detailed evaluation. These segments either had a traffic signal, stop sign, or a major cross street in rural areas with limited controlled intersections, as the end points.

The methodology developed and applied specifically for this project resulted in a calculated CI for each 1-second GPS data point. The actual speed between successive points provides detailed results that can highlight the problem areas. This is in contrast to other performance measures that are primarily link based (Level of Service, V/C) and do not include assessment of the intersection delays. These other performance measures may categorize a segment as congested when actually the intersection created sufficient delay to pull the full segment down. A detailed intersection segment and 0.1 sub-segment level CI were used to develop the appropriate recommendations for the congested segments. In addition to the intersection segment CI analysis, one-tenth of a mile segmentation was included to better highlight local areas of delay. The approach is described in Section 6.1.

5.2 Data Reduction

The method of recording roadway information and travel times using GPS results create large amounts of data that require manipulation into a useable format. City limits were added directly into the database using the most current boundary files in the MPO's system. Each roadway was defined as a “route” in both directions and beginning and ending points were determined in order to calculate travel time for the segment. The GIS coordinate system provided by the MPO was modified to match the NAD 83 (feet) coordinate system used in the data collection.

5.3 Data Formatting

The travel time information and associated CI's were formatted into tables, graphs, and in ArcGIS. ArcGIS is a geographic information system (GIS) software that allows the user a quick, easy-to-understand graphical reference. ArcGIS reads the study data files, stored in geo-databases, and presents the information graphically. ArcGIS allows the user to group and summarize data for specific purposes.

The 1-second data points are color coded according to the criteria for congested conditions. These 1-second points can be used to determine at what point along a segment a traveler experiences delays or congestion.

When congestion occurs during only one time period, the user can study the detailed information to determine the cause of the delay. This information includes the 1-second data points. Thus, improvements can be better focused to ensure the most appropriate use of funds.

ArcGIS can be used to view the information provided in this study for reference and for future projects. Maps and figures can be made for presentations. Information such as speed limits along specific roadways, location and number of traffic signals, the location and number of stop signs, and the location and length of school zones can be summarized and viewed. The information can be summarized for the entire County or broken down and summarized by city, and can be used to identify future improvements.

Figure 5 illustrates the Hybrid Performance Measure Congestion results for the CMP network. More detailed results can be seen within the tabular summaries included.

5.4 Multimodal Analysis

This year's network also reflects the existence of the transit network. Specific details on the transit operations are not currently included in the analysis, but the MPO will need to continue building on the system created so the CMP can truly be multi-modal not only with transit but bike and pedestrian accessibility also. El Metro was an active participant in the CMP effort considering the impacts of delay on the transit operations and ridership in the region. The CMP can and should reflect various performance measures to evaluate the components of an integrated multimodal transportation system.

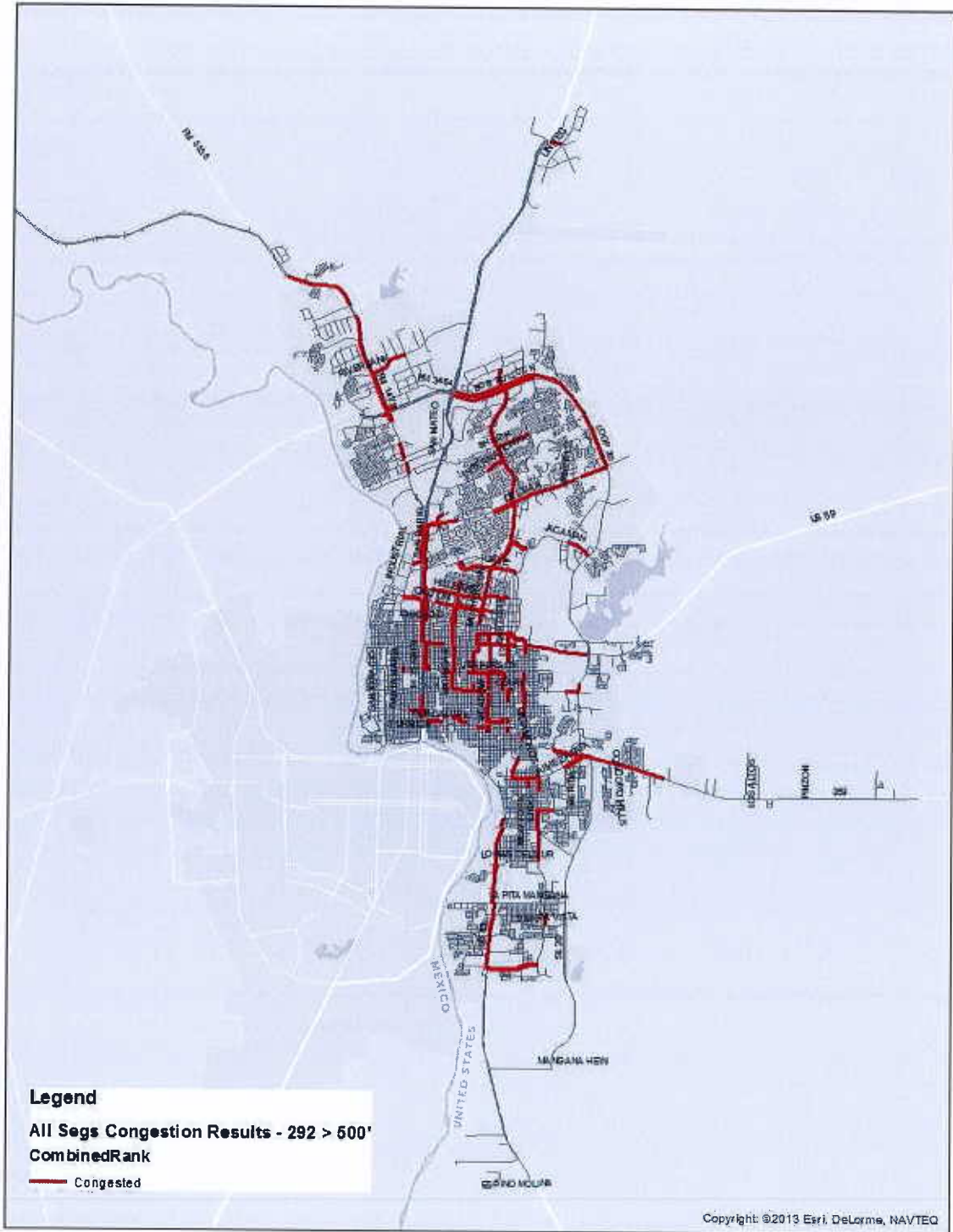


Figure 5 – Peak Period Congestion Results

6.0 Action 6 – Identify and Assess CMP Strategies

6.1 Congestion Results

The travel speeds on congested segments are slower than drivers typically want to drive, and there may be less opportunity for lane changing and maneuvering. Stable sections are accommodating volumes less than capacity. Travel speeds are somewhat slower than the speed limit, but generally acceptable to drivers. Lane changing and maneuvering is less difficult than in congested segments. Free-flow sections are operating well below capacity. Travel speeds equal or exceed the speed limit and traffic can maneuver without interference.

Appendix B lists each roadway segment and the performance measure results for the travel time runs. Of the 272 directional miles studied in AM and PM, the Technical Committee determined to classify the top 15% of the segments as congested including both the results of the AM and PM periods. **Table 2** below shows the Top 20 congested segments in this study based on the combined hybrid performance measure that includes consider of CI and Volume Weighted Delay.

Only the congested segments are summarized in **Appendix A**. In these tables, the top 15% of the hybrid performance measure are shown. The table lists the roadway, direction, endpoints, distance, weighted average Hybrid Performance Measure results.

The 20 worst segments are summarized in **Table 2** and illustrated in **Figure 6**. This table was developed by ranking segments by the combined hybrid performance measure. Starting with the most congested, the segments were examined in detail to determine the cause of congestion. Some segments were removed from the list because the congestion was caused by construction or a very short segment length. Thereby only segments with actual congestion problems are shown in the Top 20 list.

In many cases, congestion or delays occurred due to stop signs or traffic signals. These situations can be clearly seen in ArcGIS. The one-second speeds are green (free-flow) along the length of a segment and then several red one second speeds (congested) occur while the vehicle is stopped at a stop sign or traffic signal. An example is provided in **Figure 7**. Traffic may be traveling at good speeds until they hit a red light. Less than optimal timing or signal progression may be the cause of delay in these areas.

In order to further pin-point the congested segments and provide a common unit length for equitable comparison of segments, the intersection segments were divided into shorter 0.1 mile (~528 feet) segments and the congestion statistics were generated for these 0.1 mile segments in AM and PM peak periods.

A total of 9,238 such 0.1 mile segments were analyzed in AM and PM peak periods. It was found that 55 combined miles of segments in AM (approximately 13%) and 62 miles of segments in PM (approximately 15%) had a CI < 0.60. Of the PM congested segments, 83% include a controlled intersection (Signal, Stop Sign etc.) as the downstream node in both peak periods while the other 14% were midblock uncontrolled links. This observation shows that a majority of the delays are localized within 0.1 miles

of a controlled intersections and do not occur mid-block. These delays can be reduced by either signal timing improvements or intersection geometric changes.

Table 2 – Top 20 Congested Segments

Hybrid Combined Rank	RouteID	Route Name	Intersection Segment	Peak Period	Average Speed (mph)	Wt Avg Speed Limit (mph)	CI	Average Seg Delay (sec)	Length (ft)	Volume (Direct ADT)
1	1164	DEL MAR - WB	SPRINGFIELD to SAN DARIO	PM	3.98	30.00	0.13	150	1,241	11,624
2	1090	FM 1472 - SE	MULLER MEMORIAL to INTERAMERICA	PM	7.79	53.49	0.15	112	1,527	14,579
3	1164	DEL MAR - WB	SPRINGFIELD to SAN DARIO	AM	5.88	30.00	0.20	124	1,241	11,624
4	1085	BOB BULLOCK / CUATRO VIENTOS - NB	MCPHERSON to IH 35 NBFR	PM	11.76	55.00	0.21	259	5,507	7,137
5	1111	US 59 - EB	BUENA VISTA to BARTLETT	PM	6.45	35.00	0.18	75	829	13,381
6	1180	MCPHERSON / MCCLELLAND - SB	COUNTRY CLUB to DEL MAR	PM	9.18	40.00	0.23	161	2,852	16,477
7	1170	MEADOW - SB	CORPUS CHRISTI to GUADALUPE	AM	3.56	30.00	0.12	127	667	6,354
8	1115	US HIGHWAY 83 NB - NB	CANONES to SIERRA VISTA	PM	11.16	55.00	0.20	53	1,076	16,162
9	1090	FM 1472 - SE	FM 3464 to BOB BULLOCK WBFR	PM	10.88	45.00	0.24	60	1,113	20,539
10	1180	MCPHERSON / MCCLELLAND - SB	TIERA TRAIL to SHILOH	PM	13.18	44.15	0.30	89	2,408	19,043
11	1115	US HIGHWAY 83 NB - NB	PALO BLANCO to ZACATECAS	AM	10.34	35.00	0.30	53	1,084	23,277
12	1164	DEL MAR - WB	MCPHERSON to LINDENWOOD	AM	8.16	30.00	0.27	143	2,363	6,018
13	1179	MCPHERSON / MCCLELLAND - NB	CALLE DE NORTE to JACAMAN	PM	12.97	40.00	0.32	166	2,958	20,207
14	1084	IH 35 - SB	Scott Off-Ramp to VICTORIA	PM	13.76	42.58	0.32	144	2,578	14,393
15	1112	US 59 - WB	MEADOW to MCPHERSON	PM	10.24	35.00	0.29	62	1,326	17,382
16	1113	SANTA MARIA / OLD SANTA MARIA - NB	INDUSTRIAL to DEL MAR	PM	7.58	30.00	0.25	102	975	8,121
17	1170	MEADOW - SB	CORPUS CHRISTI to GUADALUPE	PM	4.62	30.00	0.15	94	667	6,354
18	1011	CLARK - EB	AGUILA AZTECA to BOB BULLOCK	AM	10.29	45.00	0.23	87	1,454	8,764
19	1090	FM 1472 - SE	INTERAMERICA to RIVER BANK	PM	15.83	50.00	0.32	71	2,463	15,420
20	1155	BARTLETT - NB	LANE to CLARK	PM	7.22	30.00	0.24	100	1,366	7,651

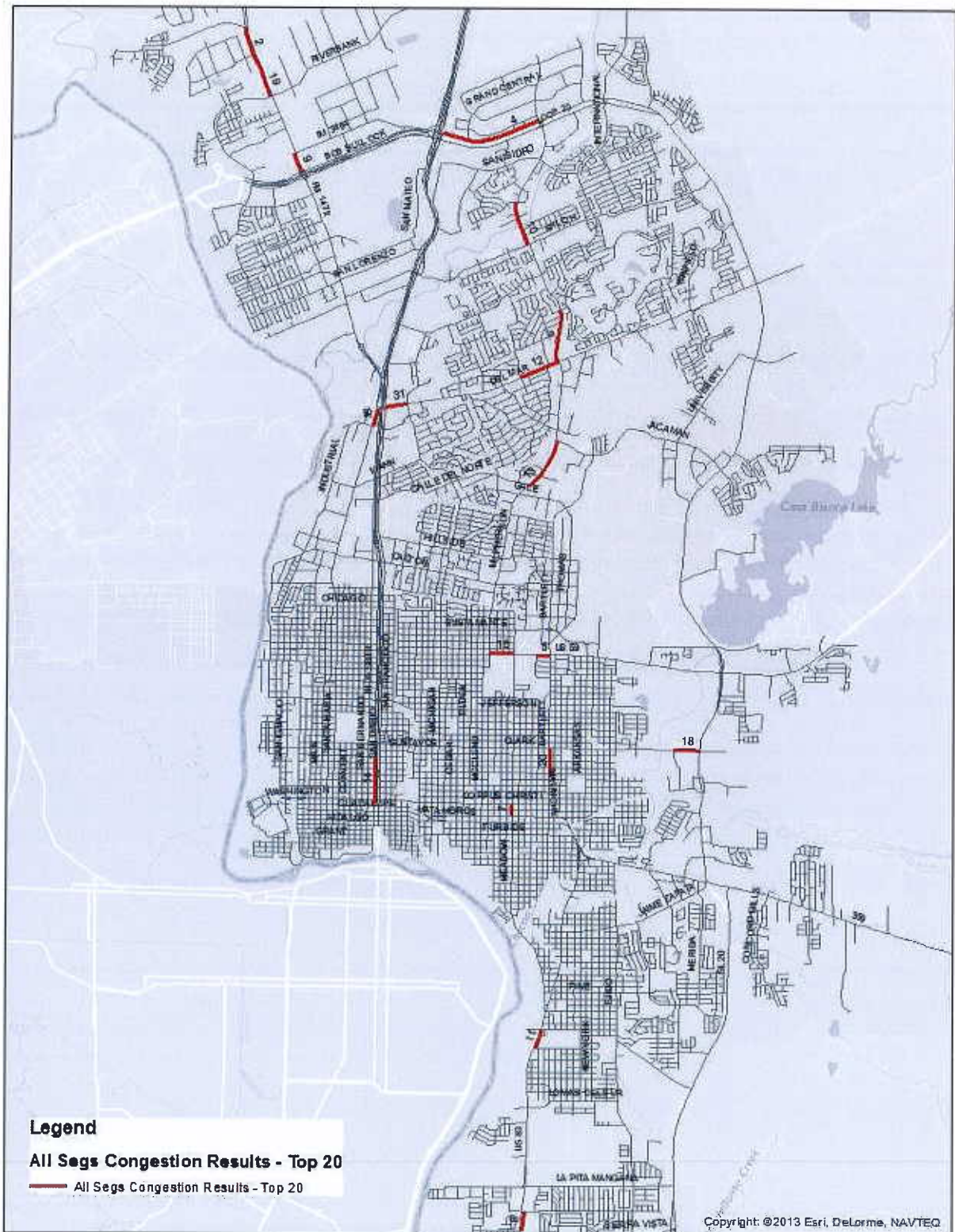


Figure 6 – Top 20 Congested Segments

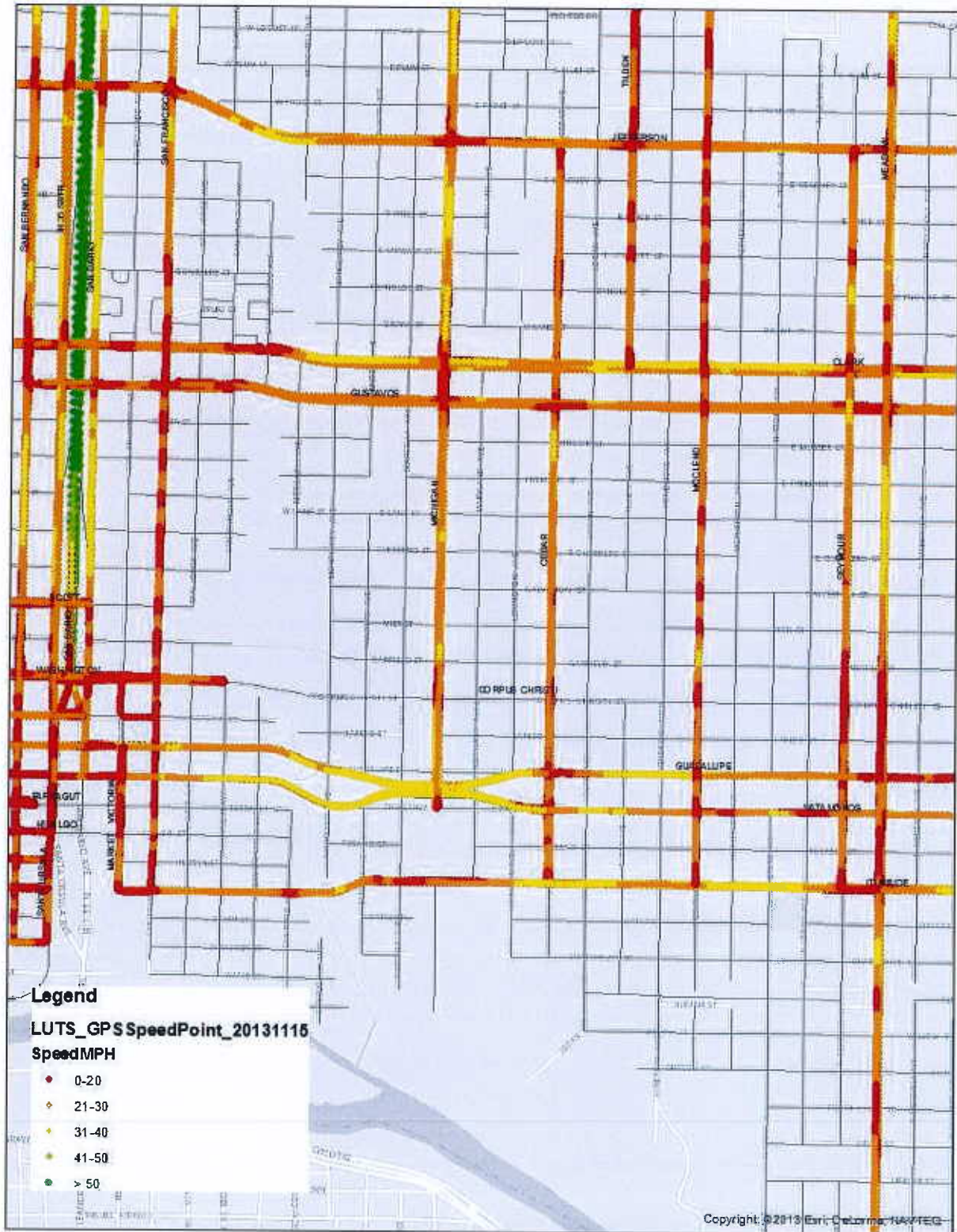


Figure 7 – Travel Time Run Example

6.2 Recommendations

Recommendations for each section of congested roadway are shown in **Appendix A** and recommendations for the 20 roadway segments with the worst hybrid results are summarized in **Table 3**.

Signal Timing

Improvements include signal timing optimization / traffic signal progression, access management, additional capacity, and adding signals in place of stop signs. Benefits of these improvements are described below. Additionally, the use of alternative modes such as public transit, bicycling, and walking to the extent possible should be encouraged.

Many of the recommendations include signal timing improvements. Signal timing improvements are a relatively inexpensive way to make significant improvements on a transportation network. Improved signal timing can decrease delay by appropriately allocating green time among competing phases. This allows more traffic to pass through the signal with less delay. By adjusting cycle lengths and offsets, drivers can travel longer distances along a corridor before having to stop for a red light. This decreases travel time and improves air quality. Both signal timing optimization and traffic signal progression are low cost improvements to make the best use of existing capacity and optimize allocation of funding. The cost for a signal timing improvement project varies depending on the number of traffic signals, the controller capabilities, the location of the traffic signals and adjacent signals, the number of timing plans required, and implementation and fine-tuning needs.

The U.S. Department of Transportation's Federal Highway Administration (FHWA) has produced a video showing that retiming traffic signals is one of the more cost-effective techniques available to state and local agencies in their efforts to manage congestion and growing travel demand. The video, "It's About Time, Traffic Signal Management: Cost-Effective Street Capacity and Safety," demonstrates how signal timing on roads can improve air quality while reducing fuel consumption, decreasing traffic congestion, and saving time for commercial and emergency vehicles. Two-thirds of all highway miles in the United States are roads with traffic signals. According to the Institute of Transportation Engineers, the United States has about 300,000 traffic signals. The performance of about 75 percent of them could be improved easily and inexpensively by updating equipment or by simply adjusting the timing.

The Federal Highway Administration defines access management as "the process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding system in terms of safety, capacity, and speed."

The Laredo region has a few elements that require interagency coordination between TxDOT and Federal border crossings. With regard to local operations and managers, many times the conditions and delays at the border crossings are unavoidable, so local city staff can only manage regional operations for travelers to/from the crossings. There are other locations where TxDOT currently manages the operations of the signals and somewhat do so independent of the approaches to these locations. In the absence of close and on-going coordination between TxDOT and the City of Laredo, delays in the local areas of the IH 35 intersections will also be unavoidable.

Table 3 – Top 20 Recommendations to Mitigate Congestion

Hybrid Combined Rank	RouteID	Route Name	Intersection Segment	Peak Period	Average Speed (mph)	Volume (Direct ADT)	Recommendation
1	1164	DEL MAR - WB	SPRINGFIELD to SAN DARIO	PM	3.98	11,624	3 Intersections run by one controller, very long cycle which limits operations, consider alternative timing configurations
2	1090	FM 1472 - SE	MULLER MEMORIAL to INTERAMERICA	PM	7.79	14,579	Delays limited to intersections that appear to be uncoordinated along corridor, consider coordinating the corridor
3	1164	DEL MAR - WB	SPRINGFIELD to SAN DARIO	AM	5.88	11,624	3 Intersections run by one controller, very long cycle which limits operations, consider alternative timing configurations
4	1085	BOB BULLOCK / CUATRO VIENTOS - NB	MCPHERSON to IH 35 NBFR	PM	11.76	7,137	Delays due to excessive volume on frontage road ahead of mainlanes being constructed. Large portion of delay will be eliminated with construction of mainlanes beginning in 2016.
5	1111	US 59 - EB	BUENA VISTA to BARTLETT	PM	6.45	13,381	Evaluate the coordination on US 59 given the number of years since last studied
6	1180	MCPHERSON / MCCLELLAND - SB	COUNTRY CLUB to DEL MAR	PM	9.18	16,477	Consider access mgmt strategies along corridor to limit friction and improve operations
7	1170	MEADOW - SB	CORPUS CHRISTI to GUADALUPE	AM	3.56	6,354	Minor approach to Guadalupe and Matamoros, delays by design, signals not coordinated n/s b/n corridors. Consider 1-way pair b/n Seymour and Meadow
8	1115	US HIGHWAY 83 NB - NB	CANONES to SIERRA VISTA	PM	11.16	16,162	TxDOT Communication project in the works, update coordination in this area of US 83 taking into account volume changes due to Loop 20
9	1090	FM 1472 - SE	FM 3464 to BOB BULLOCK WBFR	PM	10.88	20,539	Heavy Industrial area, recent access mgmt changes, widening into shoulder, and updated changed timings to support improvements
10	1180	MCPHERSON / MCCLELLAND - SB	TIERA TRAIL to SHILOH	PM	13.18	19,043	Consider adding SB left turn lane given high volume movement
11	1115	US HIGHWAY 83 NB - NB	PALO BLANCO to ZACATECAS	AM	10.34	23,277	School zone. Delays expected with lower speeds during school zone periods. Considering 1 way pair b/n Zacatecas and Palo Blanco
12	1164	DEL MAR - WB	MCPHERSON to LINDENWOOD	AM	8.16	6,018	School zone. Delays expected with lower speeds during school zone periods.
13	1179	MCPHERSON / MCCLELLAND - NB	CALLE DE NORTE to JACAMAN	PM	12.97	20,207	Consider access mgmt strategies along corridor to limit friction and improve operations
14	1084	IH 35 - SB	Scott Off-Ramp to VICTORIA	PM	13.76	14,393	Frontage road signals are maintained by TxDOT, need to evaluate for N/S progression given the observed delays
15	1112	US 59 - WB	MEADOW to MCPHERSON	PM	10.24	17,382	Evaluate the signal coordination on US 59 given the number of years since last studied
16	1113	SANTA MARIA / OLD SANTA MARIA - NB	INDUSTRIAL to DEL MAR	PM	7.58	8,121	3 Intersections run by one controller, very long cycle which limits operations, consider alternative timing configurations
17	1170	MEADOW - SB	CORPUS CHRISTI to GUADALUPE	PM	4.62	6,354	Minor approach to Guadalupe and Matamoros, delays by design, sigs not coordinated n/s b/n corridors. Consider 1-way pair b/n Seymour and Meadow
18	1011	CLARK - EB	AGUILA AZTECA to BOB BULLOCK	AM	10.29	8,764	Planned interchange will address delays at the intersection
19	1090	FM 1472 - SE	INTERAMERICA to RIVER BANK	PM	15.83	15,420	Heavy Industrial area, recent access mgmt changes, widening into shoulder, and updated changed timings to support improvements
20	1155	BARTLETT - NB	LANE to CLARK	PM	7.22	7,651	Minor approaches to Clark, side street delay is expected given the 1 lane side street geometry. Evaluate signal timing

Operations Case-Studies

In support of the CMP, the MPO included a case study that combines the intersection and corridor level strategies. The case-study was performed of 8 intersections along US 83, and included in **Appendix C** to demonstrate the possible benefits of signal coordination and optimization to reduce travel time and delay. These types of improvements are the foundation of the CMP.

As a demonstration of the benefits of coordinated signal operations and local geometric improvements, the MPO included a case-study of 8 intersections selected by the technical committee for evaluation. The intersections were selected along US 83 in order to treat them as a system. Those selected included 8 starting on the south at Zacatecas and continuing north to Mercer. The characteristics of this corridor vary between the AM and PM peak periods. As shown in **Table 4**, the AM volume distribution heavily favors the northbound direction with at times more than twice the volume northbound than southbound. In contrast as included in **Table 5**, the PM period is balanced with equal volumes between northbound and southbound.

Table 4 – AM Peak Hour Volumes

Start Time	Eastbound			Westbound			US 83 Northbound			US 83 Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Zacatecas	80	44	14	150	43	100	74	2042	77	269	939	5
San Luis	0	23	296	42	48	35	613	1683	53	71	802	0
Pine	4	42	4	42	69	33	183	1581	29	143	838	2
Santa Barbara	42	0	13	0	0	0	111	1688	0	0	980	22
Napoleon	0	0	0	42	0	29	0	1735	17	36	961	0
Jaime Zapata	43	17	2	182	27	620	37	1606	88	202	811	4
Wooster	8	1	13	11	2	8	8	2140	13	14	1018	4
Mercer	0	0	0	17	0	8	0	2205	12	29	1030	0

Table 5 – PM Peak Hour Volumes

Start Time	Eastbound			Westbound			US 83 Northbound			US 83 Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Zacatecas	183	89	141	126	124	93	189	1331	30	178	1490	1
San Luis	7	49	374	31	45	33	315	1258	20	140	1269	6
Pine	18	88	24	39	53	31	164	1249	32	185	1243	8
Santa Barbara	49	0	26	0	0	0	103	1260	0	0	1327	39
Napoleon	0	0	0	49	0	22	0	1426	19	90	1365	0
Jaime Zapata	53	32	8	213	14	425	47	1193	191	386	1422	27
Wooster	12	1	13	30	8	9	14	1689	26	24	1756	13
Mercer	0	0	0	30	1	6	0	1693	27	52	1793	0

After collecting current turning movement counts, a Synchro traffic signal model for both AM and PM periods were developed. Working closely with City of Laredo traffic staff by fine tuning the parameters of the signal system, final models were assembled that represented the best theoretical signal timing plans for the corridor. The results indicate

that the existing timing plans being used by the City during the AM produce the lowest delays possible within the current geometry.

With the balanced flow during the PM period, there are a few changes that would reduce the delays observed in the area. Those primarily include changing left turn phasing sequences and using shorter cycle lengths. By changing the left turn phasing sequence, it is easier to accomplish two-way progression through the corridor given the balance volumes. In most cases the side streets have substantially less volume than that on US 83 and the shorter cycle lengths will therefore reduce the delays on those from the local streets in addition to making the signal more responsive to local demand and thus reducing the length of the queue. These changes, as included in **Appendix C** and summarized in **Table 6**, produce a reduction in the PM delays by close to 50% in the southbound direction. This is accomplished by actually increasing delays for the northbound thru vehicles to balance things out. All aside, the delays to side street traffic will be greatly reduced.

In addition to just pure signal timing, local geometric improvements can produce dramatic reductions in delays in the area. The largest benefit is recognized by restriping the shoulder north of Jaime Zapata to allow westbound turning traffic to have a dedicated lane vs. a yield condition. This will not only benefit that large volume making that turn, but free up time needed on that approach and be able to distribute the green time to other phases the intersection. This will produce an approximate 70% reduction in delays for the overall intersection. The other minor change that can be implemented with just striping is to create separate lanes for right turns and the thru/left for the westbound approach at Zacatecas. This would reduce delays at the intersection by 50%.

Table 6 – Case-Study Delay Results

Start Time	US 83 Northbound					US 83 Southbound				
	Approach Delay (sec)					Approach Delay (sec)				
	Existing (sec)	Proposed (sec)	Difference (sec)	Rec (sec)	Difference (sec)	Existing (sec)	Proposed (sec)	Difference (sec)	Rec (sec)	Difference (sec)
Zacatecas	3	24	21	5	2	38	6	-32	17	-21
San Luis	7	11	4	10	3	2	15	13	15	13
Pine	20	3	-17	2	-18	1	8	7	8	7
Santa Barbara	2	9	7	3	1	2	3	1	3	1
Napoleon	19	29	10	20	1	5	6	1	2	-3
Jaime Zapata	6	8	2	3	-3	74	29	-45	22	-52
Wooster / Mercer	57	84	27	43	-14	122	67	-55	67	-55
			47.4%		-24.6%			-45.1%		-45.1%

Access Management

Access management is accomplished in a variety of ways such as managing the design of access points, the location of access points, the number of access points allowed within a given distance (access density), and the roadway median treatment. Generally, the number of access points is minimized and regularly spaced from each other so that conflict points are separated.

Access management can provide a number of benefits to the public agency and to the traveling public. Capacity is preserved and safety (motorized and non-motorized) is improved by minimizing conflict points and minimizing speed differentials between through traffic and slow moving turning traffic. Safety for turning movements is also improved by providing adequate turning (auxiliary) lanes or by prohibiting turns in key locations using a raised median. In addition to safety and efficiency improvements, access management also provides environmental and financial benefits with reduced vehicle emissions and improved fuel economy by maintaining the flow of traffic.

On new roadways, or on undeveloped corridors, access management can be used to minimize operational traffic problems, due to unmanaged development, before they occur. In these cases, it is inexpensive and fairly easy to accomplish. The traveling public benefits from a safe and efficient corridor. Property owners benefit from safe access. The agency benefits from a low cost management plan from the onset rather than costly highway improvement projects once problems occur. Once corridors are developed, it is more difficult, expensive, and time consuming to retrofit managed access. Whenever possible, access management should be given high priority on undeveloped corridors.

Access management can be very challenging on existing 'built-up' urban roadways. Common issues include limited right-of-way and opposition by land owners. Still, retrofitting a corridor with access management can provide benefits. Possible retrofitting improvements include: consolidating and closing driveways, constructing raised medians, constructing auxiliary lanes, providing regularly spaced traffic signals to encourage use of a major cross-street or driveway, and providing alternative routes such as internal access roads.

Added Capacity

Roadway widening is necessary where traffic signal timing and access management are unable to provide enough capacity for heavy traffic volumes. Some segments may improve in the short term with optimized signal timing, but may ultimately warrant additional capacity through widening. Widening could include adding a through lane for a long section of road, or providing turn lanes at intersections. Adding capacity through roadway widening is generally expensive.

Stop Signs / New Signals

Adding signals may be an improvement at four-way stop intersections or intersections with heavy major-street and cross-street traffic. This reduces delay for previously stop-controlled movements but may increase delay for movements that were not controlled. As traffic volumes increase, traffic signals or other types of intersection design such as roundabouts or continuous flow intersections should be considered to efficiently move traffic.

As included in Appendix A, the most often recommended improvement for 2015 study is local operations related to intersection signal timing at 71% as shown in **Figure 8**.

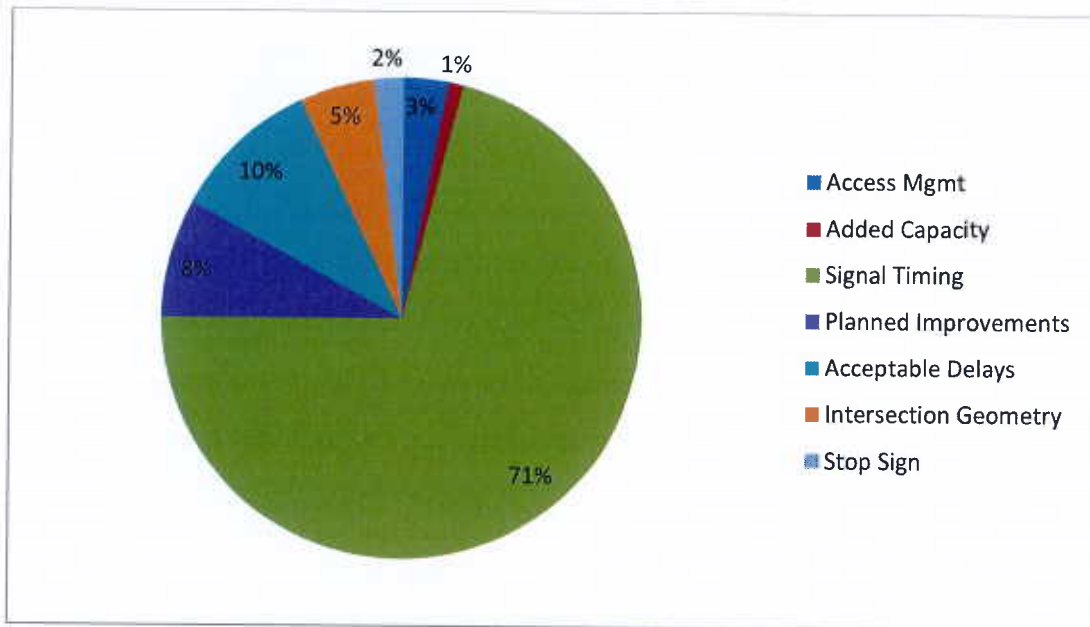


Figure 8 – Category of Recommended Congestion Mitigation

Signal timing is an area that deserves attention within the region to allow maximum efficiency of the existing system before costly widening to add capacity. The results will be very evident as has been demonstrated previously with localized projects. A regional perspective would produce consistent travel time runs even when crossing from one city / agency to another.

As transportation funding continues to be limited, operations are being highlighted by many MPOs across the country. It has been clearly proven locally and nationally that operational improvements provide the highest benefit/cost ratio and on a regional scale as compared to local capacity projects that benefit a smaller portion of the county.

Similar to the effort included in the “case studies”, data collection, development of a model for each desired timing plan, signal timing optimization, and implementation can be accomplished along a corridor for around \$3,000 per intersection (not including any necessary hardware in the signal cabinet).

The methods will vary as to how to accomplish the desired results depending on the signal hardware currently in place and the expansion capabilities. It can be as simple as installing a GPS clock at each intersection (\$500) to synchronize the controller clocks to more advanced systems where each intersection needs vehicle detection (\$15,000) and wireless communications (\$2,500) between signals. Either way, the benefit / cost ratio of this type of work is unmatched in today’s funding environment.

Until a time when the system is fine-tuned to operate efficiently within the existing roadway cross-section, it is difficult to identify those areas that may need more attention including local geometric improvements, access management, or finally added capacity.

7.0 Action 7 – Program and Implement CMP Strategies

A fully integrated CMP not only evaluates the current congestion conditions and recommends mitigation, but prioritizes the improvements and incorporates into the planning process. Those improvements can be viewed as local improvements, corridor strategies, or regional programs / initiatives.

Regions are expected to manage their system to get as much capacity out of the existing system prior to capital projects to widen the roadways. Ideally, every effort should be exhausted and documented before getting to the end of the line and adding capacity.

This study serves as the initial element of the CMP and should not be viewed as a complete CMP. The CMP is a living process that is part of the planning process. This initial study is documenting the current conditions, ranking the magnitude of observed congestion, recommending possible mitigation, and prioritizing those improvements. The MPO will apply these findings and integrate them into the planning process.

One option that many MPOs have used is in the form of “set aside” funding category for localized bottleneck and operational projects. These projects are “quick fixes” and do not need the sometime lengthy process required for capital projects. Also, the prioritization of operational projects compared to the larger capital projects at times is tough to compare. By having a separate category for operational projects makes the time to market much shorter and the community can benefit much sooner.

8.0 Action 8 – Evaluate Strategy Effectiveness

This 2015 Congestion and Delay Study is the first effort toward development of a full CMP. Therefore, the MPO is not able to evaluate the benefits of implemented strategy this time around. However, in the future the Laredo MPO’s CMP will go full circle to identify the conditions, recommend mitigation, prioritize the improvements, plan the schedule and funding, and then evaluate the benefits.

CONCLUSION

The Congestion Management Process (CMP) plays an essential role within the transportation planning and programming process by providing decision-makers at MPOs, local governments, and state agencies a clear analytical understanding of congestion in the region. The CMP must be an integral element in well-organized, objectives-driven, performance-based planning approach.

The flexibility of the regulations and guidelines has allowed the MPO to customize the CMP in various ways to both reflect regional needs and priorities. MPOs around the country have developed unique methods of implementing the CMP. The MPO looks forward to continue working with the members of the committee to build on the momentum begun through the development of this component of the overall CMP by using the performance measures identified here within, by aligning the CMP closely with the MTP and TIP, and using the CMP performance measures to directly influence project prioritization and funding.

Overall, the current transportation system provides sufficient capacity for the current demand. However, the CMP determined that increased focus be placed on operations to maximize the benefits of these investments and minimizing the overall delays along the corridors and side streets. Attention to operations may be accomplished through the integration of coordinated signal timing plans which provide consistent results to the commuting public during the peak periods.

Appendix A

2013 Congested Segments and Mitigation

Hybrid Combined Rank	Route ID	Route Name	Intersection Segment	Peak Period	Average Speed (mph)	WT Avg Speed Limit (mph)	CI	Average Seg Delay (sec)	Length (ft)	Volume (Direct ADT)	Recommendation
1	1164	DEL MAR - WB	SPRINGFIELD to SAN DARIO	PM	3.98	30.00	0.13	150	1,241	11,624	3 Intersections run by one controller, very long cycle which limits operations, delays expected
2	1090	FM 1472 - SE	MULLER MEMORIAL to INTERAMERICA	PM	7.79	53.49	0.15	112	1,527	14,579	Delays limited to intersections that appear to be uncoordinated along corridor
3	1164	DEL MAR - WB	SPRINGFIELD to SAN DARIO	AM	5.88	30.00	0.20	124	1,241	11,624	3 Intersections run by one controller, very long cycle which limits operations, delays expected
4	1085	BOB BULLOCK / CUATRO VIENTOS - NB	MCPHERSON to IH 35 NBFR	PM	11.76	55.00	0.21	259	5,507	7,137	Delays due to excessive volume on frontage road ahead of mainlanes being constructed
5	1111	US 59 - EB	BUENA VISTA to BARTLETT	PM	6.45	35.00	0.18	75	829	13,381	Evaluate the coordination on US 59 given the number of years since last studied
6	1180	MCPHERSON / MCCLELLAND - SB	COUNTRY CLUB to DEL MAR	PM	9.18	40.00	0.23	161	2,852	16,477	Consider access mgmt strategies along corridor to limit friction and improve operations
7	1170	MEADOW - SB	CORPUS CHRISTI to GUADALUPE	AM	3.56	30.00	0.12	127	667	6,354	Minor approach to Guadalupe and Matamoros, delays by design, sigs not coordinated n/s b/n corridors. Consider 1-way pair b/n Seymour and Meadow
8	1115	US HIGHWAY 83 NB - NB	CANONES to SIERRA VISTA	PM	11.16	55.00	0.20	53	1,076	16,162	TxDOT Communication project in the works, update coordination in this area of US 83 taking into account volume changes due to Loop 20
9	1090	FM 1472 - SE	FM 3464 to BOB BULLOCK WBFR	PM	10.88	45.00	0.24	60	1,113	20,539	Heavy industrial area, recent access mgmt changes and widening into shoulder, changed timings to support improvements
11	1180	MCPHERSON / MCCLELLAND - SB	TIERA TRAIL to SHILOH	PM	13.18	44.15	0.30	89	2,408	19,043	Consider adding SB left turn lane given high volume movement
12	1115	US HIGHWAY 83 NB - NB	PALO BLANCO to ZACATECAS	AM	10.34	35.00	0.30	53	1,084	23,277	School zone. Delays expected with lower speeds during school zone periods. Considering 1 way pair b/n Zacatecas and Palo Blanco
13	1164	DEL MAR - WB	MCPHERSON to LINDENWOOD	AM	8.16	30.00	0.27	143	2,363	6,018	School zone. Delays expected with lower speeds during school zone periods.
14	1179	MCPHERSON / MCCLELLAND - NB	CALLE DE NORTE to JACAMAN	PM	12.97	40.00	0.32	166	2,958	20,207	Consider access mgmt strategies along corridor to limit friction and improve operations
15	1084	IH 35 - SB	Scott Off-Ramp to VICTORIA	PM	13.76	42.58	0.32	144	2,578	14,393	Frontage road signals are maintained by TxDOT, need to evaluate for N/S progression given the observed delays
16	1112	US 59 - WB	MEADOW to MCPHERSON	PM	10.24	35.00	0.29	62	1,326	17,382	Evaluate the coordination on US 59 given the number of years since last studied
17	1113	SANTA MARIA / OLD SANTA MARIA - NB	INDUSTRIAL to DEL MAR	PM	7.58	30.00	0.25	102	975	8,121	3 Intersections run by one controller, very long cycle which limits operations, delays expected
18	1170	MEADOW - SB	CORPUS CHRISTI to GUADALUPE	PM	4.62	30.00	0.15	94	667	6,354	Minor approach to Guadalupe and Matamoros, delays by design, sigs not coordinated n/s b/n corridors. Consider 1-way pair b/n Seymour and Meadow
20	1011	CLARK - EB	AGUILA AZTECA to BOB BULLOCK	AM	10.29	45.00	0.23	87	1,454	8,764	Planned interchange will address delays at the intersection
21	1090	FM 1472 - SE	INTERAMERICA to RIVER BANK	PM	15.83	50.00	0.32	71	2,463	15,420	Heavy industrial area, recent access mgmt changes and widening into shoulder, consider SB dual left, changed timings to support improvements
23	1155	BARTLETT - NB	LANE to CLARK	PM	7.22	30.00	0.24	100	1,366	7,651	Minor approaches to Clark, side street delay is expected given the 1 lane side street geometry
24	1163	DEL MAR - EB	LINDENWOOD to MCPHERSON	PM	8.65	30.00	0.29	137	2,363	6,018	Evaluate timing options
25	1164	DEL MAR - WB	COUNTRY CLUB to MCPHERSON	PM	11.17	38.65	0.29	124	2,899	6,669	Consider dual lefts for all approaches

Appendix B
2013 Intersection Segment Results

RouteID	Route Name	Intersection Segment	Start Measure	Peak Period	Average Speed	Weighted Avg Speed Limit	CI	Average Segment Delay	Intersection Control	Length Ft	Segment Volume (Directional ADT)	CI Rank	Relative Delay Rank	Combined Rank
1001	ANNA - NB	JEFFERSON to LAFAYETTE	100000.00	AM	29.13	30.00	0.97	1.76	Signal	2,681	675	1,788	1,876	1,891
1001	ANNA - NB	JEFFERSON to LAFAYETTE	100000.00	PM	29.87	30.00	1.00	0.43	Signal	2,681	675	1,845	1,922	1,925
1002	ANNA - SB	LAFAYETTE to JEFFERSON	104562.97	AM	26.69	30.00	0.89	7.48	Two-Way Stop	2,681	675	1,614	1,685	1,763
1002	ANNA - SB	LAFAYETTE to JEFFERSON	104562.97	PM	26.24	30.00	0.87	8.75	Two-Way Stop	2,681	675	1,558	1,652	1,733
1003	ARKANSAS - NB	WILLOW to MARKET	100204.19	AM	11.61	30.00	0.39	29.13	Signal	748	8477	119	277	146
1003	ARKANSAS - NB	WILLOW to MARKET	100204.19	PM	18.76	30.00	0.63	12.04	Signal	748	8477	762	659	596
1003	ARKANSAS - NB	MARKET to RAILROAD	100952.59	AM	22.00	30.00	0.73	6.29	Cross Street	845	8115	1,096	942	1,005
1003	ARKANSAS - NB	MARKET to RAILROAD	100952.59	PM	23.65	30.00	0.79	5.16	Cross Street	845	8115	1,287	1,021	1,185
1003	ARKANSAS - NB	RAILROAD to CORPUS CHRISTI	101797.44	AM	22.63	30.00	0.75	7.23	Signal	819	8918	1,172	849	971
1003	ARKANSAS - NB	RAILROAD to CORPUS CHRISTI	101797.44	PM	19.39	30.00	0.65	15.70	Signal	819	8918	836	501	515
1003	ARKANSAS - NB	CORPUS CHRISTI to CLARK	102616.67	AM	17.41	30.00	0.58	90.62	Signal	3,020	6576	645	79	190
1003	ARKANSAS - NB	CORPUS CHRISTI to CLARK	102616.67	PM	12.34	30.00	0.41	117.41	Signal	3,020	6576	751	54	58
1003	ARKANSAS - NB	CLARK to LYON	105637.02	AM	21.85	30.00	0.72	21.49	Signal	2,020	6301	1,072	519	639
1003	ARKANSAS - NB	CLARK to LYON	105637.02	PM	16.91	30.00	0.56	36.43	Signal	2,020	6301	603	304	310
1003	ARKANSAS - NB	LYON to MONTGOMERY	107657.40	AM	18.85	30.00	0.63	27.30	Signal	2,001	6713	778	387	422
1003	ARKANSAS - NB	LYON to MONTGOMERY	107657.40	PM	23.45	30.00	0.78	16.33	Signal	2,001	6713	1,259	620	823
1003	ARKANSAS - NB	MONTGOMERY to SAUNDERS	109658.67	AM	11.04	30.00	0.37	45.35	Signal	1,016	6617	177	222	104
1003	ARKANSAS - NB	MONTGOMERY to SAUNDERS	109658.67	PM	10.71	30.00	0.36	63.19	Signal	1,016	6617	163	142	70
1004	ARKANSAS - SB	SAUNDERS to MONTGOMERY	100000.00	AM	17.31	30.00	0.58	17.80	Signal	1,016	6617	640	585	490
1004	ARKANSAS - SB	SAUNDERS to MONTGOMERY	100000.00	PM	23.49	30.00	0.78	6.23	Signal	1,016	6617	1,263	1,027	1,176
1004	ARKANSAS - SB	MONTGOMERY to LYON	101016.07	AM	24.25	30.00	0.81	13.37	Signal	2,001	6713	1,364	712	967
1004	ARKANSAS - SB	MONTGOMERY to LYON	101016.07	PM	20.82	30.00	0.69	21.47	Signal	2,001	6713	995	484	581
1004	ARKANSAS - SB	LYON to CLARK	103017.34	AM	18.06	30.00	0.60	35.88	Signal	2,020	6301	700	311	342
1004	ARKANSAS - SB	LYON to CLARK	103017.34	PM	10.64	30.00	0.35	88.31	Signal	2,020	6301	159	91	50
1004	ARKANSAS - SB	CLARK to CORPUS CHRISTI	105037.72	AM	22.63	30.00	0.75	22.06	Signal	3,020	6576	1,174	477	661
1004	ARKANSAS - SB	CLARK to CORPUS CHRISTI	105037.72	PM	20.74	30.00	0.69	30.76	Signal	3,020	6576	988	349	485
1004	ARKANSAS - SB	CORPUS CHRISTI to RAILROAD	108058.07	AM	24.88	30.00	0.83	3.88	Cross Street	819	8918	1,427	1,099	1,341
1004	ARKANSAS - SB	CORPUS CHRISTI to RAILROAD	108058.07	PM	23.88	30.00	0.80	4.44	Cross Street	819	8918	1,310	1,046	1,214
1004	ARKANSAS - SB	RAILROAD to MARKET	108877.30	AM	20.16	30.00	0.68	15.40	Signal	845	8115	929	553	600
1004	ARKANSAS - SB	RAILROAD to MARKET	108877.30	PM	21.71	30.00	0.72	7.43	Signal	845	8115	1,073	866	931
1004	ARKANSAS - SB	MARKET to WILLOW	108722.15	AM	21.61	30.00	0.72	6.78	Cross Street	748	8477	1,069	886	945
1004	ARKANSAS - SB	MARKET to WILLOW	108722.15	PM	20.62	30.00	0.69	7.40	Cross Street	748	8477	974	858	860
1129	AVENIDA LOS PRESIDENTES - NB	DORADO to MEXICO	100479.20	AM	25.63	30.00	0.85	8.25	All-Way Stop	2,129	2172	1,498	1,352	1,560
1129	AVENIDA LOS PRESIDENTES - NB	DORADO to MEXICO	100479.20	PM	22.70	30.00	0.76	31.32	All-Way Stop	2,129	2172	1,179	825	958
1129	AVENIDA LOS PRESIDENTES - NB	MEXICO to PINE	102607.85	AM	24.56	30.00	0.82	9.94	All-Way Stop	1,985	3648	1,397	1,084	1,303
1129	AVENIDA LOS PRESIDENTES - NB	MEXICO to PINE	102607.85	PM	23.55	30.00	0.78	13.64	All-Way Stop	1,985	3648	1,249	947	1,104
1129	AVENIDA LOS PRESIDENTES - NB	PINE to JAMIE ZAPATA	104592.43	AM	24.12	30.00	0.80	23.11	Signal	3,952	5898	1,344	516	786
1129	AVENIDA LOS PRESIDENTES - NB	PINE to JAMIE ZAPATA	104592.43	PM	29.13	30.00	0.97	5.07	Signal	3,952	5898	1,787	1,150	1,552
1130	AVENIDA LOS PRESIDENTES - SB	JAMIE ZAPATA to PINE	100000.00	AM	24.21	30.00	0.81	24.00	All-Way Stop	3,952	5898	1,359	495	778
1130	AVENIDA LOS PRESIDENTES - SB	JAMIE ZAPATA to PINE	100000.00	PM	28.44	30.00	0.95	4.91	All-Way Stop	3,952	5898	1,751	1,161	1,543
1130	AVENIDA LOS PRESIDENTES - SB	PINE to MEXICO	103952.21	AM	21.50	30.00	0.72	18.40	All-Way Stop	1,985	3648	1,057	830	879
1130	AVENIDA LOS PRESIDENTES - SB	PINE to MEXICO	103952.21	PM	26.05	30.00	0.87	6.96	All-Way Stop	1,985	3648	1,537	1,215	1,474
1130	AVENIDA LOS PRESIDENTES - SB	MEXICO to DORADO	105936.80	AM	26.34	30.00	0.88	6.73	Cross Street	2,129	2172	1,570	1,410	1,617
1130	AVENIDA LOS PRESIDENTES - SB	MEXICO to DORADO	105936.80	PM	27.02	30.00	0.90	5.64	Cross Street	2,129	2172	1,646	1,466	1,680
1155	BARTLETT - NB	MARKET to MATAMOROS	100000.00	AM	7.74	30.00	0.26	42.96	Signal	664	2890	80	557	251
1155	BARTLETT - NB	MARKET to MATAMOROS	100000.00	PM	7.98	30.00	0.27	58.25	Signal	664	2890	84	422	177
1155	BARTLETT - NB	MATAMOROS to GUADALUPE	100664.04	AM	4.36	30.00	0.15	43.75	Signal	328	3151	11	533	212
1155	BARTLETT - NB	MATAMOROS to GUADALUPE	100664.04	PM	13.30	30.00	0.24	32.79	Signal	328	3151	70	652	305
1155	BARTLETT - NB	GUADALUPE to CORPUS CHRISTI	100992.07	AM	7.30	30.00	0.27	26.07	Signal	670	7657	355	357	237
1155	BARTLETT - NB	GUADALUPE to CORPUS CHRISTI	100992.07	PM	16.85	30.00	0.56	17.68	Signal	670	7657	600	520	426
1155	BARTLETT - NB	CORPUS CHRISTI to MIER	101662.10	AM	22.71	30.00	0.76	6.44	Signal	668	7304	1,183	970	1,088
1155	BARTLETT - NB	CORPUS CHRISTI to MIER	101662.10	PM	24.17	30.00	0.81	3.27	Signal	668	7304	1,352	1,237	1,402
1155	BARTLETT - NB	MIER to LAINE	107330.15	AM	23.33	30.00	0.78	6.51	Signal	990	7166	1,247	967	1,113
1155	BARTLETT - NB	MIER to LAINE	107330.15	PM	27.57	30.00	0.92	1.75	Signal	990	7166	1,689	1,454	1,685
1155	BARTLETT - NB	LAINE to CLARK	103320.52	AM	25.49	30.00	0.85	5.78	Signal	1,366	7651	1,486	991	1,283
1155	BARTLETT - NB	LAINE to CLARK	103320.52	PM	7.22	30.00	0.24	99.85	Signal	1,366	7651	66	58	23
1155	BARTLETT - NB	CLARK to LYON	104686.32	AM	16.72	30.00	0.56	37.20	Signal	2,014	6184	590	302	304

Appendix C
2015 US 83 Case Study

Lanes, Volumes, Timings
2: US 83 & Mercer St

3/30/2015



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑↑↑		↘	↑↑↑
Volume (vph)	30	6	1693	27	52	1793
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	215	
Storage Lanes	1	0		0	1	
Taper Length (ft)	0				25	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Frt	0.976		0.998			
Flt Protected	0.960				0.950	
Satd. Flow (prot)	1745	0	5075	0	1770	5085
Flt Permitted	0.960				0.090	
Satd. Flow (perm)	1745	0	5075	0	168	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	7		6			
Link Speed (mph)	30		35			35
Link Distance (ft)	462		398			926
Travel Time (s)	10.5		7.8			18.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	1869	0	57	1949
Turn Type	NA		NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases					6	
Detector Phase	8		2		1	6
Switch Phase						
Minimum Initial (s)	3.0		3.0		3.0	3.0
Minimum Split (s)	10.0		10.0		10.0	10.0
Total Split (s)	12.0		56.0		12.0	68.0
Total Split (%)	15.0%		70.0%		15.0%	85.0%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	-1.5		-1.5		-1.5	-1.5
Total Lost Time (s)	4.5		4.5		4.5	4.5
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		C-Min		None	C-Min
Act Effct Green (s)	8.6		61.9		67.6	68.9
Actuated g/C Ratio	0.11		0.77		0.84	0.86
v/c Ratio	0.21		0.48		0.20	0.45
Control Delay	30.2		1.2		7.1	2.8
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	30.2		1.2		7.1	2.8
LOS	C		A		A	A
Approach Delay	30.2		1.2			2.9
Approach LOS	C		A			A

Intersection Summary
 Area Type: Other
 Cycle Length: 80

Lanes, Volumes, Timings

2: US 83 & Mercer St

3/30/2015

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 2.4

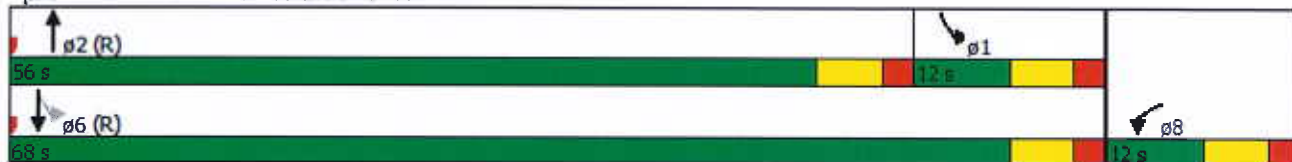
Intersection LOS: A

Intersection Capacity Utilization 51.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: US 83 & Mercer St



Lanes, Volumes, Timings
3: US 83 & Wooster ST

3/30/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↕↕		↗	↕↕↕	
Volume (vph)	12	1	13	30	8	9	14	1689	26	24	1756	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	135		0	125		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	0			0			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Fr _t		0.932			0.974			0.998			0.999	
Flt Protected		0.977			0.969		0.950			0.950		
Satd. Flow (prot)	0	1696	0	0	1758	0	1770	5075	0	1770	5080	0
Flt Permitted		0.826			0.791		0.082			0.087		
Satd. Flow (perm)	0	1434	0	0	1435	0	153	5075	0	162	5080	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			10			5			2	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		323			540			2197			398	
Travel Time (s)		7.3			12.3			42.8			7.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	0	52	0	15	1864	0	26	1923	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		11.0	10.0		11.0	10.0	
Total Split (s)	15.0	15.0		15.0	15.0		11.0	54.0		11.0	54.0	
Total Split (%)	18.8%	18.8%		18.8%	18.8%		13.8%	67.5%		13.8%	67.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		-1.5			-1.5		-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)		5.5			5.5		5.5	5.5		5.5	5.5	
Lead/Lag							Lag	Lead		Lag	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)		8.7			8.8		64.3	62.8		65.8	65.3	
Actuated g/C Ratio		0.11			0.11		0.80	0.78		0.82	0.82	
v/c Ratio		0.17			0.31		0.06	0.47		0.10	0.46	
Control Delay		23.7			32.6		5.9	6.9		2.2	3.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		23.7			32.6		5.9	6.9		2.2	3.1	
LOS		C			C		A	A		A	A	
Approach Delay		23.7			32.6			6.9			3.1	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 80

Lanes, Volumes, Timings
 3: US 83 & Wooster ST

3/30/2015

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 5.5

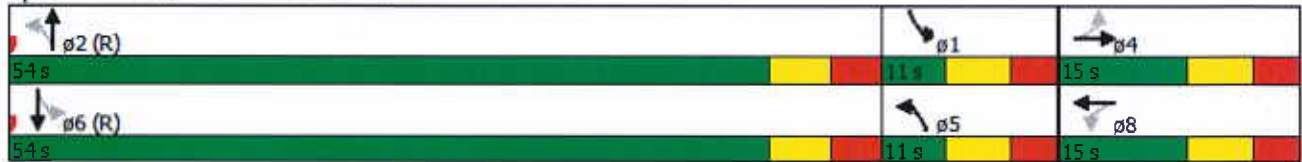
Intersection LOS: A

Intersection Capacity Utilization 47.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: US 83 & Wooster ST



Lanes, Volumes, Timings
 4: US 83 & Ross St/Jaime Zapata Memorial

3/30/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕	↕	↕	↕	↕	↕	↕	↕
Volume (vph)	53	32	8	213	14	425	47	1193	191	386	1422	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	550		0	325		300	450		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	0			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fr _t		0.988				0.850			0.850		0.997	
Fl _t Protected		0.972		0.950	0.958		0.950			0.950		
Satd. Flow (prot)	0	1789	0	1681	1695	1583	1770	3539	1583	1770	3529	0
Fl _t Permitted		0.972		0.950	0.958		0.164			0.164		
Satd. Flow (perm)	0	1789	0	1681	1695	1583	305	3539	1583	305	3529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				406			208		3	
Link Speed (mph)		45			45			35			35	
Link Distance (ft)		957			1642			1658			2197	
Travel Time (s)		14.5			24.9			32.3			42.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)												0
Shared Lane Traffic (%)				47%								
Lane Group Flow (vph)	0	102	0	123	124	462	51	1297	208	420	1575	0
Turn Type	Split	NA		Split	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	4	4		8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Total Split (s)	10.0	10.0		17.0	17.0	17.0	10.0	34.0	34.0	19.0	43.0	
Total Split (%)	12.5%	12.5%		21.3%	21.3%	21.3%	12.5%	42.5%	42.5%	23.8%	53.8%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.5		-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	
Total Lost Time (s)		4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	
Act Effct Green (s)		5.5		11.3	11.3	11.3	30.7	30.7	30.7	43.7	43.7	
Actuated g/C Ratio		0.07		0.14	0.14	0.14	0.38	0.38	0.38	0.55	0.55	
v/c Ratio		0.80		0.52	0.52	0.81	0.22	0.96	0.28	0.97	0.82	
Control Delay		78.2		39.7	39.7	18.4	15.7	33.1	5.0	60.8	16.5	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		78.2		39.7	39.7	18.4	15.7	33.1	5.0	60.8	16.5	
LOS		E		D	D	B	B	C	A	E	B	
Approach Delay		78.2			25.9			28.7			25.8	
Approach LOS		E			C			C			C	

Intersection Summary

Area Type: Other

Lanes, Volumes, Timings
6: US 83 & Napoleon St

3/30/2015



Lane Group	WBL	WBH	NBT	NBR	SBL	SBT
Lane Configurations	↘		↕		↗	↕
Volume (vph)	49	22	1426	19	90	1365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	350	
Storage Lanes	1	0		0	1	
Taper Length (ft)	0				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Flt	0.958		0.998			
Flt Protected	0.967				0.950	
Satd. Flow (prot)	1726	0	3532	0	1770	3362
Flt Permitted	0.967				0.112	
Satd. Flow (perm)	1726	0	3532	0	209	3362
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	23		3			
Link Speed (mph)	30		35			35
Link Distance (ft)	980		326			1658
Travel Time (s)	22.3		6.4			32.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)						0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	1571	0	98	1484
Turn Type	NA		NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases					6	
Detector Phase	8		2		1	6
Switch Phase						
Minimum Initial (s)	3.0		3.0		3.0	3.0
Minimum Split (s)	10.0		10.0		9.5	10.0
Total Split (s)	13.0		56.0		11.0	67.0
Total Split (%)	16.3%		70.0%		13.8%	83.8%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	-1.5		-1.5		-1.5	-1.5
Total Lost Time (s)	4.0		4.0		4.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		C-Min		None	C-Min
Act Effct Green (s)	8.8		57.4		65.4	66.2
Actuated g/C Ratio	0.11		0.72		0.82	0.83
v/c Ratio	0.36		0.62		0.32	0.53
Control Delay	29.7		9.3		13.4	5.0
Queue Delay	0.0		0.0		0.0	0.0
Total Delay	29.7		9.3		13.4	5.0
LOS	C		A		B	A
Approach Delay	29.7		9.3			5.5
Approach LOS	C		A			A

Intersection Summary

Area Type: Other

Lanes, Volumes, Timings
6: US 83 & Napoleon St

3/30/2015

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 7.9

Intersection LOS: A

Intersection Capacity Utilization 59.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: US 83 & Napoleon St



Lanes, Volumes, Timings
7: US 83 & Santa Barbara St

3/30/2015



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	49	26	103	1260	1327	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	300			0
Storage Lanes	1	0	1			0
Taper Length (ft)	0		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.953				0.996	
Flt Protected	0.968		0.950			
Satd. Flow (prot)	1718	0	1770	3539	3525	0
Flt Permitted	0.968		0.117			
Satd. Flow (perm)	1718	0	218	3539	3525	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	27				7	
Link Speed (mph)	30			35	35	
Link Distance (ft)	1019			1416	326	
Travel Time (s)	23.2			27.6	6.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	0	112	1370	1484	0
Turn Type	NA		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Detector Phase	4		5	2	6	
Switch Phase						
Minimum Initial (s)	3.0		3.0	3.0	3.0	
Minimum Split (s)	10.0		9.5	10.0	10.0	
Total Split (s)	12.0		14.0	68.0	54.0	
Total Split (%)	15.0%		17.5%	85.0%	67.5%	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	-1.5		-1.5	-1.5	-1.5	
Total Lost Time (s)	3.5		3.5	3.5	3.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Min	C-Min	
Act Effct Green (s)	9.0		66.1	66.8	57.2	
Actuated g/C Ratio	0.11		0.83	0.84	0.72	
v/c Ratio	0.37		0.33	0.46	0.59	
Control Delay	28.4		5.3	2.1	3.0	
Queue Delay	0.1		0.0	0.1	0.1	
Total Delay	28.5		5.3	2.2	3.0	
LOS	C		A	A	A	
Approach Delay	28.5			2.5	3.0	
Approach LOS	C			A	A	

Intersection Summary

Area Type: Other
Cycle Length: 80

Lanes, Volumes, Timings
 7: US 83 & Santa Barbara St

3/30/2015

Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 3.4 Intersection LOS: A
 Intersection Capacity Utilization 57.9% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 7: US 83 & Santa Barbara St



Lanes, Volumes, Timings
8: US 83 & Pine St

3/30/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Volume (vph)	18	88	24	39	53	31	164	1249	32	185	1243	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	500		0	600		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	0			0			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr _t		0.975			0.966			0.996			0.999	
Fl _t Protected		0.993			0.985		0.950			0.950		
Satd. Flow (prot)	0	1803	0	0	1772	0	1770	3349	0	1770	3359	0
Fl _t Permitted		0.943			0.786		0.129			0.106		
Satd. Flow (perm)	0	1713	0	0	1414	0	240	3349	0	197	3359	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			18			5			1	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		431			1501			1060			1416	
Travel Time (s)		9.8			34.1			20.6			27.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)								0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	0	0	134	0	178	1393	0	201	1360	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		9.5	10.0		9.5	10.0	
Total Split (s)	17.0	17.0		17.0	17.0		16.2	45.5		17.5	46.8	
Total Split (%)	21.3%	21.3%		21.3%	21.3%		20.3%	56.9%		21.9%	58.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-1.5			-1.5		-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)		3.5			3.5		3.5	3.5		3.5	3.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effect Green (s)		11.8			11.8		56.1	46.0		59.3	47.6	
Actuated g/C Ratio		0.15			0.15		0.70	0.58		0.74	0.60	
v/c Ratio		0.54			0.60		0.49	0.72		0.54	0.68	
Control Delay		36.4			38.7		18.2	9.5		24.0	5.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		36.4			38.7		18.2	9.5		24.0	5.2	
LOS		D			D		B	A		C	A	
Approach Delay		36.4			38.7			10.5			7.6	
Approach LOS		D			D			B			A	
Intersection Summary												
Area Type:	Other											

Lanes, Volumes, Timings
9: US 83 & S. Meadow/San Luis St

3/30/2015



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔↔↔		↔	↔	
Volume (vph)	7	49	374	31	45	33	315	1258	20	140	1269	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	375		0	375		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	0			0			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Frt			0.850		0.959			0.998			0.999	
Flt Protected		0.993			0.986		0.950			0.950		
Satd. Flow (prot)	0	1850	1583	0	1761	0	1770	5075	0	1770	3536	0
Flt Permitted		0.967			0.897		0.141			0.125		
Satd. Flow (perm)	0	1801	1583	0	1602	0	263	5075	0	233	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			360		25			4			1	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		837			1796			999			1060	
Travel Time (s)		19.0			40.8			19.5			20.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	407	0	119	0	342	1389	0	152	1386	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0		9.5	10.0		9.5	10.0	
Total Split (s)	20.0	20.0	20.0	20.0	20.0		19.3	46.2		13.8	40.7	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		24.1%	57.8%		17.3%	50.9%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		-1.5	0.0		-1.5		-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)		3.5	5.0		3.5		3.5	3.5		3.5	3.5	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Min		None	C-Min	
Act Effct Green (s)		11.8	10.3		11.8		47.7	47.7		42.1	42.1	
Actuated g/C Ratio		0.15	0.13		0.15		0.60	0.60		0.53	0.53	
v/c Ratio		0.23	0.79		0.46		0.76	0.46		0.48	0.74	
Control Delay		30.6	17.5		29.3		18.2	2.7		12.3	15.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		30.6	17.5		29.3		18.2	2.7		12.3	15.3	
LOS		C	B		C		B	A		B	B	
Approach Delay		19.2			29.3			5.7			15.0	
Approach LOS		B			C			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Lanes, Volumes, Timings

9: US 83 & S. Meadow/San Luis St

3/30/2015

Actuated Cycle Length: 80

Offset: 76 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 11.8

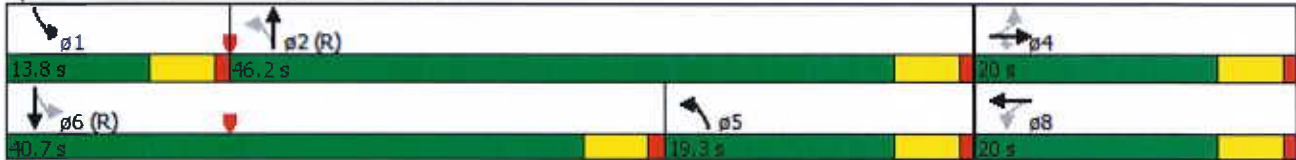
Intersection LOS: B

Intersection Capacity Utilization 75.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 9: US 83 & S. Meadow/San Luis St



Lanes, Volumes, Timings
10: US 83 & Zacatecas St

3/30/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	183	89	141	126	124	93	189	1331	30	178	1490	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	240		0	350		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			0			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Fr		0.908			0.963			0.997				
Flt Protected	0.950				0.982		0.950			0.950		
Satd. Flow (prot)	1770	1691	0	0	1762	0	1770	5070	0	1770	3539	0
Flt Permitted	0.456				0.626		0.165			0.165		
Satd. Flow (perm)	849	1691	0	0	1123	0	307	5070	0	307	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102			24			5				
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		541			2159			1106			999	
Travel Time (s)		12.3			49.1			21.5			19.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	250	0	0	373	0	205	1480	0	193	1621	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		9.5	10.0		9.5	10.0	
Total Split (s)	28.0	28.0		28.0	28.0		10.4	36.2		15.8	41.6	
Total Split (%)	35.0%	35.0%		35.0%	35.0%		13.0%	45.3%		19.8%	52.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.5	-1.5		-1.5	-1.5		-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	24.5	24.5		24.5	24.5		31.2	31.2		38.1	38.1	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.39	0.39		0.48	0.48	
v/c Ratio	0.77	0.43		1.04	1.04		0.84	0.75		0.48	0.96	
Control Delay	47.0	15.4		86.0	86.0		47.6	23.6		15.6	24.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	47.0	15.4		86.0	86.0		47.6	23.6		15.6	24.6	
LOS	D	B		F	F		D	C		B	C	
Approach Delay		29.4		86.0	86.0		26.5	26.5		23.7	23.7	
Approach LOS		C		F	F		C	C		C	C	
Intersection Summary												
Area Type:	Other											
Cycle Length:	80											

Lanes, Volumes, Timings
10: US 83 & Zacatecas St

3/30/2015

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 30.7

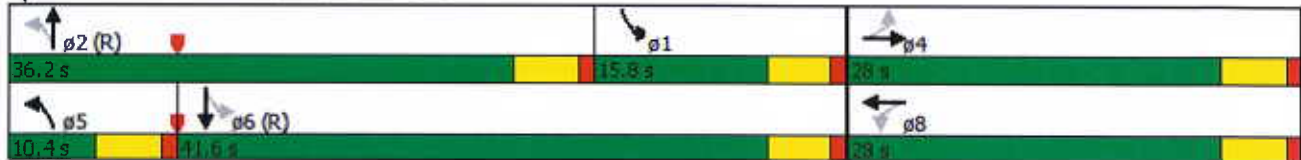
Intersection LOS: C

Intersection Capacity Utilization 97.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 10: US 83 & Zacatecas St



Discussion with possible action on allocating monies for signal timing improvements

**Presentation by Killam Development LTD on
Vallecillo Road**

Discussion and status report on the Regional
Mobility Authority (RMA)

Discussion and status report on the Toll
Feasibility Study for the main lanes over
Interstate Highway 35 project

Report on the meeting held by Webb County,
the RMA, and TxDOT on the Reuthinger
property

Presentation by TxDOT on funding alternatives
available to fund the Hachar Parkway project