



Lake Charles Urbanized Area MTP 2034

The 2034 Metropolitan Transportation Plan for the Lake Charles Urbanized Area

Developed for:
The Lake Charles Urbanized Area Metropolitan Planning Organization
And
The Louisiana Department of Transportation and Development

Developed by:



In Association with



Adopted August 4, 2009

This document was prepared in cooperation with:

The Lake Charles Urbanized Area MPO Technical Advisory Committee
And
The Louisiana Department of Transportation and Development

The document was reviewed and approved by:

**The Lake Charles Urbanized Area MPO Policy Committee
On August 4, 2009**

This document was developed under contract with the:



STATE PROJECT NO. 736-10-0144

FEDERAL AID PROJECT NO. SPR-0010(031)

LAKE CHARLES TRANSPORTATION PLAN UPDATE

CALCASIEU PARISH



"The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation."

Table of Contents

CHAPTER 1 INTRODUCTION AND OVERVIEW OF THE MTP PLANNING PROCESS	1-1
INTRODUCTION	1-1
PURPOSE OF THE PLAN	1-6
MTP VISION AND GOALS	1-7
LEGISLATIVE AUTHORITY FOR THE MTP	1-9
SAFETEA-LU	1-10
METROPOLITAN PLANNING ORGANIZATION	1-11
THE MTP PLANNING PROCESS	1-12
VISIONING PROCESS	1-13
NEEDS ASSESSMENT	1-14
NEEDS PLAN.....	1-15
SCENARIO ANALYSIS – SYSTEMS LEVEL	1-16
PROJECT SELECTION AND PRIORITIZATION.....	1-18
FINANCIAL ANALYSIS AND CONSTRAINTS	1-18
ADOPTION PROCESS	1-19
CHAPTER 2 REGIONAL VISIONING PROCESS	2-1
INITIAL DATA COLLECTION PROCESS.....	2-1
LAND USE PLANNING	2-1
ECONOMIC DEVELOPMENT	2-6
DEMOGRAPHICS & EMPLOYMENT.....	2-7
ENVIRONMENT	2-8
TRANSPORTATION SYSTEM	2-8
PUBLIC VISIONING PROCESS	2-12
OUTREACH METHODS	2-12
VISIONING WORKSHOP OVERVIEW.....	2-13
CONSULTATION PROCESS	2-22
THE TRANSPORTATION SYSTEM IN TERMS OF TRAVEL PURPOSES AND TRAVEL MARKETS	2-25
ESTABLISHMENT OF VISION AND GOALS	2-30
GOALS OF THE MTP PROCESS	2-30
CREATING MEASURES OF EFFECTIVENESS.....	2-31
THE CRITERIA	2-31
CHAPTER 3 IDENTIFICATION OF REGIONAL TRANSPORTATION NEEDS.....	3-1
ROADWAY NEEDS ASSESSMENT	3-1
ESTIMATING BASE TRAVEL DEMAND.....	3-1

LAKE CHARLES URBANIZED AREA TRAVEL DEMAND MODEL	3-2
SOCIOECONOMIC DATA DEVELOPMENT	3-6
MODEL CALIBRATION AND VALIDATION	3-13
ROADWAY DEFICIENCIES ANALYSIS.....	3-16
ROADWAY DEFICIENCIES ANALYSIS CONCLUSION	3-26
NON-ROADWAY NEEDS ASSESSMENT.....	3-26
TRANSIT DEFICIENCIES ANALYSIS	3-27
BIKE AND PEDESTRIAN FACILITIES	3-30
PORTS, AIRPORTS, PASSENGER RAIL, AND OTHER INTERMODAL TERMINALS.....	3-31
CHAPTER 4 NEEDS PLAN (UNCONSTRAINED).....	4-1
NO-BUILD STRATEGIES FOR ADDRESSING UNMET NEEDS.....	4-1
TRANSPORTATION SYSTEM OPERATIONS AND MANAGEMENT.....	4-1
TRANSPORTATION DEMAND MANAGEMENT.....	4-3
SAFETY	4-5
SECURITY.....	4-5
BUILD STRATEGIES FOR ROADWAYS	4-5
ANALYSIS NETWORKS.....	4-6
MODEL RESULTS.....	4-8
PROJECT EVALUATION	4-14
CHAPTER 5 SYSTEMS LEVEL ANALYSIS OF PROPOSED PROJECTS.....	5-1
LAND USE GROWTH SCENARIO ANALYSIS	5-1
ENVIRONMENTAL MITIGATION ANALYSIS	5-1
WETLANDS & FLOODPLAIN DEVELOPMENT	5-2
AIR QUALITY	5-5
ENVIRONMENTAL JUSTICE ANALYSIS	5-5
HUMAN SERVICE TRANSPORTATION COORDINATION ANALYSIS.....	5-7
CHAPTER 6 FINANCIAL ANALYSIS AND FISCAL CONSTRAINT	6-1
CALCULATING REVENUES	6-1
CALCULATING TRANSIT REVENUE.....	6-3
CALCULATING COSTS	6-3
CONSTRAINING THE PLAN	6-6
CHAPTER 7 FISCALLY CONSTRAINED PLAN PROJECT DESCRIPTIONS	7-1
WIDENING OR EXTENSION OF EXISTING ROADWAYS	7-1
TRANSPORTATION SYSTEM OPERATIONS AND MANAGEMENT	7-4
ROADWAY OVERLAY PROJECTS.....	7-6

RECONSTRUCTION / REHABILITATION PROJECTS	7-7
HIGHWAY SAFETY / HAZARD ELIMINATIONS.....	7-8
TRANSIT SYSTEM MAINTENANCE AND OPTIMIZATION.....	7-9
ENVIRONMENTAL ASSESSMENTS.....	7-11
TRANSPORTATION ENHANCEMENTS	7-12
TRANSPORTATION SYSTEM PRESERVATION.....	7-13
BRIDGE REPLACEMENT / INSPECTION.....	7-13
AMERICAN RECOVERY AND REINVESTMENT ACT PROJECTS	7-15
PUBLIC REVIEW AND COMMENT.....	7-15
APPENDIX A- TPC AND TAC.....	A-1
APPENDIX B- ABBREVIATIONS AND FUNDING CATEGORIES.....	B-1
APPENDIX C- FINANCIALLY CONSTRAINED AND UNCONSTRAINED PLAN PROJECTS .	C-1

Table of Tables

Table 2-1 Stakeholders Present	2-14
Table 2-2 Criteria Ranking by Participants	2-16
Table 2-3 Final Criteria Ranking.....	2-17
Table 2-4 Individual Criteria Ranking.....	2-18
Table 3-1 New TAZs.....	3-2
Table 3-2 Added E+C Projects	3-3
Table 3-3 External Stations	3-6
Table 3-4 Demographic Data Forecast (2007 - 2034).....	3-13
Table 3-5 Percent Count / RMS by Functional Class.....	3-14
Table 3-6 Percent Count / RMS by Area Type	3-15
Table 3-7 Percent Count / RMS by Volume.....	3-15
Table 3-8 Percent Links Within +/- VMT	3-15
Table 3-9 Count Link Totals.....	3-15
Table 3-10 VMT / VHT Totals.....	3-16
Table 3-11 E+C Added Projects	3-17
Table 3-12 Project Summary	3-21
Table 3-13 Assignment Summary.....	3-21
Table 3-14 Congestion by Functional Class	3-22
Table 3-15 External Stations	3-26
Table 4-1 E+C Plus Projects	4-7
Table 4-2 Assignment Results.....	4-8
Table 4-3 Qualitative and Quantitative Project Evaluation	4-17
Table 6-1 Typical Improvement Costs by Type.....	6-4

Table of Figures

Figure 3-1 Refined TAZ Locations	3-2
Figure 3-2 Added E+C Projects	3-3
Figure 3-3 Count Locations	3-4
Figure 3-4 Added Projects.....	3-20
Figure 3-5 2014 Assignment.....	3-23
Figure 3-6 2024 Assignment.....	3-24
Figure 3-7 2034 Assignment.....	3-25
Figure 4-1 E+C Plus Assignment.....	4-10
Figure 4-2 MTP Only Assignment.....	4-11
Figure 4-3 2034 MTP minus Ryan.....	4-12
Figure 4-4 2034 MTP minus Ryan plus Enterprise.....	4-13
Figure 4-5 2034 Arterials Only Assignment.....	4-14

Table of Maps

Local Jurisdictions.....	1-2
Study Area.....	1-3
2007 Population by TAZ.....	1-4
2034 Population by TAZ.....	1-5
Functional Classification.....	2-9
National Highway System.....	2-10
City of Lake Charles Transit System Routes.....	2-11
Lake Charles Central Business District.....	2-24
2007 Retail Employment by TAZ.....	3-8
2034 Retail Employment by TAZ.....	3-9
2007 Total Employment by TAZ.....	3-10
2034 Total Employment by TAZ.....	3-11
Residential Building Permits 2000-2007.....	3-12
Population Below Poverty Level by Census Block Group.....	5-6
Stage I Projects.....	C-16
Stage II Projects.....	C-19
Stage III Projects.....	C-22
Financially Unconstrained Needs Projects.....	C-24

Chapter 1

Introduction and Overview of the MTP Planning Process

Introduction

This document is the update of the Lake Charles Urbanized Area Metropolitan Transportation Plan for the years 2009 to 2034. It was adopted on August 4, 2009 by the Policy Committee of the Lake Charles Urbanized Area Metropolitan Planning Organization (MPO). The MPO planning functions are housed at the Imperial Calcasieu Regional Planning and Development Commission (IMCAL), which also functions as the regional planning commission for the five-parish region in southwest Louisiana. This document constitutes the latest update to the region's long-range transportation plan, and fulfills the federal planning requirements necessary to receive transportation funds from the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which was signed into law in 2005 to provide guaranteed federal funding for highways, highway safety, and public transportation.

The Lake Charles Urbanized Area is located wholly within Calcasieu Parish and includes the

cities of Lake Charles, Sulphur, and Westlake, as well as the unincorporated areas known as Moss Bluff, and Carlyss (see map on following page). The map on page three shows the current boundaries of the MPO and the expanded study area that was included in this plan. The study area is that portion of the region that is anticipated to be included in the urbanized area within the 25-year planning horizon.

Following the 1970 US Census, the Census Bureau determined that the densely populated areas in and around the City of Lake Charles met the Bureau's definition of an urbanized area because it had "*a population exceeding 50,000 people with a population density of over 1,000 people per square mile in a contiguous geographical area.*" Since that time, the Lake Charles Urbanized Area has continued to grow, and now has an estimated population of 172,182, with an expected population of 210,429 by 2034 (see maps on following pages for the current and predicted population projections by Traffic Analysis Zone (TAZ)).

Review of recent Census data indicates that the residential population in the urbanized area has been redistributing out of the incorporated areas and into the unincorporated areas south of Lake Charles and also into the census designated places (CDPs) known as Moss Bluff and Carlyss. Because of the redistribution of population, the incorporated areas have actually lost population. This pattern of population change was first seen in the 2000 census and is anticipated to continue into the future.

Although there has been a decided change in the distribution of residential areas in the Lake Charles Urbanized Area in the last decade, the major centers of employment continue to be

Insert Map

L C_Jurisdictions.pdf

Insert map

LC_Study_Area.pdf

Insert map

LC_2007_pop.pdf

Insert map

LC_2034_pop.pdf



located in the same places as in the 2000 census. Downtown Lake Charles, the chemical plants west of the Calcasieu River, the casinos, and the port are the existing and anticipated major employment centers.

In addition to the continuation of previous patterns, there have been significant events in the region since the last Metropolitan Transportation Plan Updates in 2001 and 2004 that have the potential to affect the transportation system over the 25 years covered by this MTP Update. Hurricanes Rita and Ike and the resulting damage to large areas of the community have created changes in development patterns in the region. This plan addresses these changing conditions while attempting to anticipate future needs and opportunities.

This MTP Update is designed to meet the anticipated transportation needs of the Lake Charles Urbanized Area through the maintenance and enhancement of that portion of its transportation system that is funded by state and federal dollars.

The Lake Charles Area transportation system is the network of transportation related facilities and activities that moves both people and goods through the community by connecting its residential and commercial areas within the urbanized area, as well to the external world. The transportation system includes multiple

modes of transportation, i.e. streets and highways; public transit; bike and pedestrian facilities; air, rail, and water freight and passenger facilities; and intermodal facilities.

The needs of the community have been identified through a process that supports the economic development, land use, security, environmental protection, resource conservation, and historic preservation goals of the community.

This plan is the result of a 14-month planning process that included consultation with other local, state and federal agencies and governing bodies, as well as extensive public input. The plan details a process for addressing the transportation needs of the urbanized area over the next 25 years that takes into account both the priorities of the community and physical and financial constraints under which transportation projects must be selected.

Purpose of the Plan

The purpose of the Lake Charles Urbanized Area Metropolitan Transportation Plan (MTP) is to identify the transportation needs of the community over the next 25 years, establish priorities for funding those improvements, and chart a course for meeting the community's identified transportation needs. In achieving this purpose, the plan is designed to allow the Lake Charles Urbanized Area to meet its established goal for an economically viable community while preserving its quality of life. The study identifies the existing and future land use trends and transportation needs, and develops coordinated strategies to provide necessary transportation facilities essential for the continued mobility and

economic vitality of the Lake Charles Urbanized Area.

The MTP is the principal transportation planning document for the region. The MTP is a Long Range Transportation Master Plan, which is a blueprint to guide the establishment of priorities for development programs and transportation projects within Lake Charles Urbanized Area. The MTP seeks to balance investments in various transportation modes against anticipated funding from federal, state and local sources while being flexible enough to address the dynamic changes in both the needs and the resources of the community.



Access to transportation shapes the lives of the members of the community. The transportation system supports the individual's access to jobs and shopping, to recreation and socialization, to health care and emergency services, to evacuation routes and travel routes, and to people and places near and far. The transportation system also supports the movement of goods and services to, from, and through the community. The transportation system is the structure upon which many of the other aspects of the life of the community rests.

As the transportation system grows, so grows the community. The transportation system affects both the physical and social environment of the community. It affects the physical health of the residents and the economic health of the businesses. Transportation systems cost millions of dollars to build and maintain, and changes can take many years to implement. Because of the many and varied impacts of transportation on the community, as well as the large investment of public resources, and the extended time frame necessary to design and implement changes in the transportation system, it is essential that the community be involved in the planning process that creates the future transportation system. To that end, the community has established a vision and a set of goals for its transportation system.

MTP Vision and Goals

The Vision and Goals developed for the MTP are the result of a collaborative effort between the Policy Committee, Technical Committee, and the Public. The following Vision Statement reflects a collective vision that defines important transportation issues for the Lake Charles Urbanized Area.

VISION: The Lake Charles Urbanized Area is served by a safe, secure, and environmentally friendly transportation system where all users are able to walk, ride, drive or wheel in a safe, convenient, and affordable manner to their desired destination.

The following goals for the MTP provide the framework for implementing the vision:

- ▶ Invest in the development of a regional transportation system that serves to increase the mobility and efficiency of the movement of persons and freight in and through the region.
- ▶ Encourage the cost effective expansion of a regional transportation system that integrates all transportation modes and meets the growing mobility needs of people and freight while ensuring good air quality; enhancing the safety and security of the traveling public; fostering appropriate land use patterns; advancing alternative modes of transportation; and, increasing accessibility for the traditionally underserved segments of the community.
- ▶ Enhance the safety of the transportation system during both normal travel patterns and emergency evacuations.
- ▶ Enhance the security of the transportation system especially related to emergency evacuation from either natural or manmade disasters.
- ▶ Support systematic and coordinated maintenance programs, and make available the adequate resources to preserve existing roadways and transit systems as well as future expansions.
- ▶ Increase the efficiency of the existing transportation system and decrease traffic congestion by coordinating traffic operations, and developing and implementing strategies to reduce travel demand at both the regional and corridor levels.
- ▶ Invest in a public transit system that meets the existing and projected needs of the region by developing coordinated routes and

schedules through the establishment of a coordinated region transit authority.

- ▶ Incorporate the spirit and intent of the Americans with Disabilities Act pertaining to mobility and accessibility into all levels of the transportation system.



- ▶ Enhance the effectiveness of the regional transportation system by addressing the social, economic, energy and environmental issues of the region in all transportation planning efforts by ensuring that the MTP supports and is consistent with other local, regional, and state land use, social, economic, energy and environment plans.
- ▶ Improve the opportunities for alternative means of transportation that diminish the growth in single occupancy vehicles and enhance air quality by upgrading the availability of bicycle and pedestrian facilities; and encouraging programs that support multiple occupancy vehicle commuting.
- ▶ Promote the development of a regional transportation system that recognizes the unique characteristics of the Calcasieu Parish area and ensures respect for neighborhoods, historic and archeological resources, wetlands, and other social and environmental issues.

- ▶ Facilitate the involvement and participation of individual citizens, neighborhood and other interested groups, business and community leaders, local governments, and state agencies in the transportation planning process.

The method by which the vision and goals were developed is described in Chapters 2 through 5 of this document.

Legislative Authority for the MTP

With the passing of the Federal Aid Highway Act of 1962, Congress made urban transportation planning a condition for receipt of federal funds for highway projects in urban areas with a population of 50,000 or more. That legislation encouraged a continuing, comprehensive transportation planning process carried on cooperatively by the states and local communities. Metropolitan Planning Organizations were designated by the governor in each state to carry out this legislative requirement. Following that initial Federal legislation, there have been a series of acts by Congress that have continued to fund transportation projects, with the most recent act being the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

In August 2005, SAFETEA-LU was authorized and currently serves as the regulatory and funding framework for transportation planning in metropolitan areas. SAFETEA-LU succeeded a series of transportation legislative acts that drastically changed the process of planning for transportation systems. These legislative acts included the Intermodal Surface Transportation

Efficiency Act (ISTEA) in 1991 and the Transportation Equity Act for the 21st Century (TEA-21) in 1998. Both were a direct result of the Clean Air Act Amendments of 1990 (CAAA), which broadened the goals of transportation system planning to include reducing vehicle miles traveled, expanding travel mode options, improving air quality, and integrating land use considerations into the planning process.

The authorization of ISTEA in 1991 created a major shift in metropolitan transportation planning. In coordination with the CAAA, it required transportation agencies to promote the protection of ecological and human environments. ISTEA mandated metropolitan areas within regions in violation of the National Ambient Air Quality Standards to plan for improvements in emissions, while preserving mobility. These additional considerations required planning for reductions in privately occupied vehicles, and expansion of transit and bike/pedestrian options. In addition, ISTEA recognized the growing changes in cultural and economical diversity within urban areas and provided metropolitan planning organizations with greater control of transportation systems in each region.

In 1998 the Transportation Equity Act for the 21st Century was authorized and replaced the ISTEA. TEA-21 incorporated many of the same regulatory requirements as the previous legislation. However, various key additions were implemented in TEA-21, which included a greater focus on safety and security for motorized and non-motorized users; accessibility and mobility for people and freight; efficient systems management and operation; and

integration or connectivity within and across different transportation modes.

SAFETEA-LU is essentially an expansion of ISTEA and TEA-21. This legislation maintains the core considerations of mobility, accessibility, quality of life, safety and security, environmental protection, air quality, economical development and operations management. This legislation also establishes a metropolitan planning process that is a cooperative, continuous, and comprehensive framework for making transportation decisions in metropolitan areas.

SAFETEA-LU

SAFETEA-LU provides funding for highways, highway safety, transit, bike and pedestrian facilities, and multi-modal infrastructure for a five year period, 2005 to 2009. The MTP is one of the planning documents required to obtain federal funds through the SAFETEA-LU.

SAFETEA-LU also requires that the MPO select and prioritize a set of regionally significant transportation projects for programming in a Transportation Improvement Program (TIP), which must be updated every four years. The Tip identifies federally funded transportation projects to be implemented during the next four years. These projects are included in the TIP based on a realistic estimate of the available revenues and are consistent with the MTP.

The MTP consists of a set of short- and long-range strategies to address transportation needs and guides investment in the regional transportation system in a manner that will address the deficiencies of the system. The MTP must also be consistent with the region's land use and economic development objectives in addition to the region's overall social,

environmental, system performance, and energy conservation objectives.

Federal regulations require that the planning process for the MTP include:

- ▶ Consideration of social, economic, and environmental effects;
- ▶ Public Participation in the planning process;
- ▶ No discrimination based on race, color, sex, national origin, or physical disabilities;
- ▶ A special effort to plan for public transportation facilities and services for the elderly, people with disabilities, and people of low-income;
- ▶ Consideration of energy conservation;
- ▶ Involvement of all appropriate public and private transportation providers; and
- ▶ Consultation and coordination with other public agencies.

SAFETEA-LU, Section 5303, also requires that a metropolitan planning area carry out a planning process that provides for consideration and implementation of projects and strategies and services that will:

1. Support the economic vitality of the United States, the States, nonmetropolitan areas, and metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and nonmotorized users;
3. Increase the security of the transportation system for motorized and nonmotorized users;
4. Increase the accessibility and mobility of people and for 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 throughout the State, for people and freight;
7. Promote efficient system management and operation; and
8. Emphasize the preservation of the existing transportation system.

Together, these are known as the 8 SAFETEA-LU planning factors.

Metropolitan Planning Organization

Currently, Title 23 of the Code of Federal Regulations (CFR), Part 450 defines a Metropolitan Planning Organization (MPO) as “the forum for cooperative transportation decision making for the metropolitan planning area.” An MPO is generally composed of local government representatives, transportation officials and other stakeholders, who form technical and policy committees. The policy committee provides policy direction to the MPO staff, and reviews and authorizes adoption of the MPO developed plans. The technical committee reviews and recommends changes to the technical aspects of the MPO’s developed plans such as the planning process, forecasting models, and collected data.

An MPO has many functions, but there are five core elements that distinctively define its role in



transportation planning. The first core function is establishing a fair and unbiased regional planning process. Secondly, MPO’s must be inclusive and provide ample opportunities for the public and other key stakeholders to provide feedback. This function is carried out through the Public Participation Plan. Thirdly, MPO’s analyze various regional transportation development scenarios and implement the most viable options; this work effort is included in their Unified Planning Work Program (UPWP). Additionally, MPO’s are responsible for developing and updating a long-range transportation plan, usually a 20-25 year planning horizon, called the Metropolitan Transportation Plan (MTP). During the MTP planning process each MPO must create alternatives for improving the movement of people and goods, preserving the existing transportation system, and enhancing quality of life within their region. Lastly, MPO’s must develop a short term plan with a two to four year horizon, known as the Transportation Improvement Program (TIP). The TIP serves as a strategic plan for implementing improvements identified in the MTP.

After the results of the 1970 US Census were made available, the urbanized area around the City of Lake Charles qualified for a MPO. In 1973 the Governor of Louisiana passed Executive Order No. 27 designating the Imperial Calcasieu (IMCAL) Regional Planning and Development Commission - the regional planning authority for Allen, Beauregard, Calcasieu, Cameron, and Jefferson Davis Parishes - as the agency that would 'house' the MPO. IMCAL serves as a regional clearinghouse for designated census information, provides guidance on cross jurisdictional issues, and serves as the Economic Development District for southwest Louisiana. Although IMCAL's primary responsibility is to facilitate growth and development in the entire five-parish area, it also has the responsibility for housing the Metropolitan Planning Organization (MPO) that is responsible for transportation planning in the only urbanized area within IMCAL's jurisdiction, the Lake Charles Urbanized Area.

The Lake Charles Urbanized Area MPO is composed of local government representatives, transportation officials and other stakeholders, who form the technical and policy committees. The policy committee provides policy direction to the MPO staff, and subsequently reviews, and authorizes adoption of the MPO developed plans. Similarly, the technical committee reviews and recommends changes to the technical aspects of the MPO's developed plans such as the planning process, forecasting models and collected data. The current membership rosters of both committees can be found in Appendix A.

As the designated MPO for the Lake Charles urbanized area, IMCAL is responsible for facilitating transportation planning in the cities of

Lake Charles, Sulphur, Westlake; and the unincorporated areas of Moss Bluff and Carlyss.

The MPO works cooperatively with the Louisiana Department of Transportation and Development (LaDOTD), operators of transit services, and the public to develop the MTP. The MPO urban transportation planning process is designed for the MPO Policy Committee to make decisions on transportation policies and programs. The process utilizes the technical analysis of data collected by professional planners that describes the impacts of alternative courses of action relative to possible policy and program decisions, such as new roads, bus routes, intermodal transfer stations, or signalization changes. This planning process includes both technical analysis of collected data, and values of the community to develop a plan that meets the federal mandate for a planning process that is cooperative, continuous, and comprehensive. Several of the technical tools used in the planning process are described in the next section.

The MTP Planning Process

The planning process for creating the MTP is prescribed by state and federal regulations, but the vision that drives the process is locally developed. The MTP is designed to implement this locally derived vision. In order to create the MTP for the Lake Charles Urbanized area, the following planning process was used by the Study Team, which was comprised of IMCAL staff, technical representatives of member jurisdictions acting as a Technical Advisory Committee, the DOTD, and supported by professional planning consultants. The planning process was conducted under the authority of

the Lake Charles Urbanized Area Metropolitan Planning Organization.

Visioning Process

The first step in the planning process was the identification of the vision that the community wished to implement; the goals and objectives that define that vision; and the criteria by which the community would evaluate whether those goals and objectives were being met. In order to develop these basic elements of the plan, a variety of methodologies were employed in an effort to build a strong foundation for developing the long-range transportation plan that would best meet the needs of the community over the next 25 years. The following is an overall description of those methodologies.

Gathering Existing Data and Professional Expertise

At the beginning of the process, meetings were held with professional planners and engineers from the MPO and its member agencies, as well as state and local agencies. These meetings were designed to gather together all existing plans, reports, data, and professional knowledge of ongoing projects, development patterns, and community concerns to create an initial framework around which to start the planning process.

Conducting Public Visioning Meeting and Scenario Based Planning Meetings

A series of public meetings were held, to gather information on perceived needs, community values, and desired community growth and development patterns. An outreach and advertising campaign was conducted to both invite as large and diverse a group of

stakeholders as possible to participate in the public meetings and to educate the public on the metropolitan planning process including the public's roll in providing community vision and values to guide the MTP planning process. Starting with the SAFETEA-LU planning emphasis areas, the public was asked to determine what criteria should be used in making decisions. The public was then asked to rank the criteria based on community needs and values. At the public meetings, public participation specialists worked with the community to help them visualize alternative land use scenarios and future multi-modal transportation system options to serve and be integrated with the land use, economic development, and other community plans.

Coordinating with Other On-going Land Use and Economic Development Planning Processes

One of the important planning guidelines mandated by SAFETEA-LU is the support of local land use and economic development plans as one factor by which all transportation projects must be evaluated. Therefore, coordinating with the on-going land use and economic development planning processes was conducted as a key element in the visioning phase of the MTP development.

Consulting with Other Agencies and Organizations

SAFETEA-LU requires that MPOs consult with state and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of a long-range transportation plan. Many of these agencies are included in the MPO's technical

advisory committee, or MPO staff members regularly participate in coordination processes hosted by the other agencies. In addition, to this ongoing consultation process, an effort was made by the study team to consult with any other agencies not regularly consulted to gather their input regarding the transportation system.

Incorporating New Research

New research indicates that many current transportation planning practices have room for improvement. However, current regulations constrain some of the options recommended by that research. Nevertheless, taking new ideas into consideration when developing a plan that covers a 25-year time frame can sometimes help the community anticipate both future problems and future solutions that can more effectively address market objectives and travel purposes. For this reason, a brief review of the new research on planning processes from the perspective of travel purposes was included in the MTP planning process. This review helped the participants to look at the transportation system as a whole rather than as separate parts during the visioning process.

Defining the Vision, Goals and Objectives, and Evaluation Criteria

After all of the data, information, professional opinion and public input was collected, the study team crafted all of the received input and technical resources into a recommended vision, set of goals and objectives, and list of evaluation criteria that were reviewed and adopted by the MPO Policy Committee.

Needs Assessment

The second step in the MTP planning process was the determination of the transportation needs of the community over the next 25 years.

Conduct Demographic Analysis

A demographic analysis was conducted to determine both the current and future land use and economic development patterns of the community. The resulting demographics were used in the Travel Demand Model to analyze various highway projects, and to a lesser degree by the qualitative analysis used for other modes of travel.

Inventory Existing Transportation System

The base line for assessing the future needs of the community is the existing transportation system. Wherever possible, all of the modes of the existing transportation system were inventoried, including: the urban and rural transportation system by functional class; the national highway system; the fixed route transit system; other public transit systems and their service areas; ports; airports; passenger rail; intercity bus; intermodal terminals; bike and pedestrian facilities; and bridges.



Calibrate the Travel Demand Model

The current Travel Demand Model was calibrated and validated against observed data.

Establish the Transportation System Assumptions for Future Years

The Travel Demand Model simulates the distribution of traffic on the transportation network based on a set of assumptions. The current assumptions were updated for future years.

Conduct Deficiency Analyses to Define Need

Using the Travel Demand Model, alternative highway projects were tested by comparing the improvements to the condition of the system if no new projects were built other than those already committed (that would be built even if this plan were not implemented). For non-highway projects, available needs assessments and professional judgment were used to conduct a deficiency analysis.

Needs Plan

The next step in the planning process was to determine the transportation needs for the area.

Strategies Considered for Addressing Identified Needs

It is not possible to address all identified needs by building new facilities. Not only has there never been enough money to meet all identified needs, but some identified needs are best met by the adoption of strategies other than building something new. Therefore, the MTP planning process included consideration of preservation of the existing system through preventative and rehabilitative maintenance; the institution of a

transportation system management plan; the inclusion of an access management plan; the development of a pavement management plan; and the incorporation of travel demand management strategies.



Initial Project Identification

Once these other strategies were considered, and/or adopted, projects to build new facilities or purchase new equipment were considered. Working from the results of technical planning studies; highway and corridor studies; ongoing management systems analysis; consultation with local traffic engineers and planners, and other stakeholders, a slate of candidate projects was developed and then assembled into complimentary packages of improvements.

Testing Alternative Packages of Projects

These packages of highway improvements were then coded into the travel demand model network. Using the travel demand model, these staged improvements were then tested to determine what impact they might have in addressing the identified deficiencies of the transportation system.

Analysis of Projects Based on Qualitative Criteria

Non-highway projects were analyzed to determine what impact they would have in addressing identified deficiencies using a combination of existing data, forecasts, and professional judgment.

Creation of a Prioritized List of Projects – Preferred Alternative Scenario (Unconstrained List)

The quantitative performance measures provided by the travel demand model were used in conjunction with the qualitative measures developed through the visioning process to create a prioritized list of projects. Financial factors and policy constraints were not considered until later in the process.

Policy Review of the Weighted Criteria

The Study Team presented a list of projects derived from the weighted criteria and quantitative analysis to the MPO Policy Committee as part of the consultation process. At this point, the MPO Policy Committee had the opportunity to either accept or revise the methodology used by the Study Team to weight the criteria.

Scenario Analysis – Systems Level

Systems level analyses are used to look at how the proposed slate of candidate projects would impact community issues that are system wide concerns. This was a holistic evaluation of systemic impacts.

Analysis of Project Alternatives

The study team incorporated a scenario based planning approach into the development of the Lake Charles Urbanized Area 2034 MTP. Scenario based planning is the process of looking at the various ways that land use decisions, economic development initiatives, and transportation system investments can come together in an articulated vision of the future community. The process is supported by the development (in conjunction with the participating public, stakeholders and other interested parties) of performance measures that can be used to examine which transportation investment decisions are most likely to provide optimal transportation system performance that will meet travel market needs while also supporting a spectrum of community goals and values.

This approach allowed the Study Team to better evaluate proposed solutions in terms of, not only transportation system performance, but also community impacts and the effectiveness of transportation solutions in meeting community needs and societal objectives, including social equity.

In the case of the Lake Charles Urbanized Area, the dominant scenario was driven by a reshaping of the community's land use patterns in response to the dramatic impacts of Hurricanes Rita and Ike. Hurricane induced flooding has put the

sustainability of development in the southern portions of the study area in doubt and inspired a shift to development north of I-10. In the analysis of alternative scenarios, it was necessary to take into consideration the fact that there is never enough money to fix all identified problems or to make the transportation system function perfectly for all users. However, the use of a scenario based planning process did allow for prioritization of transportation investment based on broader community issues. It also provided insight into how innovative planning activities, such as access management studies, or regional coordination processes could begin the process of finding cost effective methods to meet those unmet needs in the future.

Environmental Mitigation Analysis

An environmental mitigation analysis was conducted on the prioritized list of projects to look for fatal flaws or obvious environmental contraindications to the plan elements. This was a high level conceptual analysis conducted with the intent to avoid any obvious environmental constraints that would prevent the project from being implemented. This included assessing any obvious environmental justice issues with the project. Once projects reach implementation stage, a more detailed environmental evaluation will be done as a part of the preconstruction process.

Human Services Transportation Coordination Analysis

An analysis was conducted to determine whether the MTP adequately supports the goals and objectives of the regional human services transportation coordination plan. Although this

plan covers a much broader geographic area than the MTP, the coordination plan was designed to improve the quality and quantity of services available to disadvantaged populations throughout the Lake Charles urbanized area.

Transit Level of Service Analysis

A market analysis was conducted to determine if the transit system is accessible to likely patrons and is connected to the most likely destinations in order to identify transit service area and routing deficiencies. Although increasing the ridership of the transit systems by all stakeholder groups is desirable, particular emphasis was placed on assessing the accessibility and connectivity of the current fixed route transit system as it serves transit dependent populations – the elderly, disabled and economically disadvantaged.

Analysis of Other Modes – Bike, Pedestrian, Freight

A systems level analysis of the projects was conducted to determine whether the community's needs for alternative transportation options were being met.



Project Selection and Prioritization

All of the input and technical analyses listed above were reviewed by the study team comprised of MPO staff, technical representatives of member jurisdictions acting as a Technical Advisory Committee, and supported by professional planning consultants. The study team then created a list of candidate projects that were submitted for financial analysis.

Financial Analysis and Constraints

Fiscal achievability is a significant priority in determining the final list of improvements to be included in the MTP. Not only does SAFETEA-LU mandate that the MTP be fiscally constrained (i.e. only include projects that can realistically and reasonably be expected to have adequate funding), but many times there is also a requirement that local communities provide matching funds out of limited, and often dwindling, local revenue streams in order to receive federal funds. The process for establishing both estimated costs and revenues is critical for the creation of a viable long-range transportation plan.

Determine Factors to be Used in Fiscal Calculations

Before fiscal analyses can be conducted, several factors, or “givens”, to be used in the financial calculations have to be determined. For consistency purposes, these factors are often determined by the state and used in all MTPs developed throughout the state, or it may provide different factors for each region of the state. For example, the inflation cost for the calculation of future year costs must be determined, as well as the average cost of Right-of-Way acquisition in the state. Louisiana

DOTD provided information that helped develop the factors that were included in the financial analysis of this plan.

Develop a Cost for Each Project Selected in Year-of-Expenditure Dollars

Using these established factors, a cost was calculated for each project. Cost is defined as the total project cost, which includes: planning elements (e.g. environmental studies and functional studies); engineering costs (e.g. preliminary engineering and design); preconstruction activities (e.g. line and grade studies, right-of-way acquisition and corridor preservation); construction activities, and contingencies. These costs also include an inflation factor so that costs can be determined based on year-of-expenditure dollars.

Develop Revenue Projections

A revenue projection was developed that identified the anticipated revenue stream for local, state and federal funds. This revenue stream was also indexed using economic indicators to establish year-of-receipt revenue estimates.

Conduct a Fiscal Constraint Analysis

A fiscal constraint analysis was performed that compared the anticipated year-of-expenditure dollar costs to the year-of-receipt anticipated revenues to determine if sufficient and timely financial resources were likely to exist to fund the proposed program of projects.

Selection of a Proposed Package of Projects

Based on costs and revenue projections, a package of fiscally constrained projects

anticipated to best meet community defined goals and objectives was selected by the study team and then submitted to the MPO Policy Committee for approval.

Adoption process

Publish List of Proposed Projects.

The proposed list of projects was published for public review and comment.

Solicit Public Input

Public input on the proposed list was solicited through both the MPO website and through public meeting(s).

Evaluate Proposed List Based on Public Input

Any further analysis requested by the MPO Policy Committee based on public comment was conducted. All technical analysis was rerun on the changes made to the adopted package as a result of public input, and the same metrics were reported as those reported on the original package presented to the public.

Adopt Final List of Projects.

The MPO Policy Committee adopted a final fiscally constrained list of projects and approved the MTP.

LaDOTD and FHWA/FTA Review and Comment

The MTP was forwarded to the Louisiana Department of Transportation and Development, the Federal Highway Administration, and the Federal Transit Administration for their review and comment.

Chapter 2

Regional Visioning Process

The initial step in creating this Lake Charles Urbanized Area MTP was the creation of a guiding vision and set of goals for the process. This chapter describes the process by which the vision and goals of the MTP planning process were established. In addition, the chapter describes the process by which the set of criteria - used to evaluate whether recommended transportation projects support the established vision and goals - was developed and ranked.

The MTP planning process is mandated by federal legislation and funded by the Louisiana Department of Transportation and Development (LaDOTD), and therefore must conform to the rules and regulations established by these governing authorities. Nevertheless, the MTP is a local plan designed specifically to meet local community needs and reflect local community values. This MTP visioning process, therefore, focused on gathering the locally generated plans and information, as well as the knowledge and wisdom of the local community while following the state and federal guidelines that structured the planning process.

Initial Data Collection Process

In April of 2008, a Study Team was established to begin the process of developing the Lake

Charles Urbanized Area 2034 MTP Update. The Study Team consisted of the Lake Charles Urbanized Area MPO Technical Advisory Committee, the MPO staff, and a professional planning and engineering consulting team. The role of the Study Team was to provide technical expertise and professional judgment throughout the process of creating the MTP update.

In order to create a baseline from which to start the planning process, the Study Team gathered existing data, plans, reports, and institutional knowledge about land use patterns, economic development goals, demographic trends, environmental issues, and the transportation system of the study area. From this information, the following picture of the current conditions of the study area was created.

Land Use Planning

Changes in the transportation system and land use are interrelated. Therefore, it is important that land use be taken into consideration in planning for the future transportation needs of the community. Transportation infrastructure is necessary for growth in new areas and for the maintenance of growth in established areas. When the transportation system is inadequate, land use growth is negatively impacted. Therefore, developing an accurate picture of current conditions was undertaken by the Study Team as part of the baseline from which future forecasts of land use growth and transportation demand could be forecast.

The Study Team met with planners and elected officials from Calcasieu Parish and the Cities of Lake Charles, Sulphur and Westlake to discuss current zoning and land use planning efforts. Four major land use planning efforts were

reviewed by the Study Team while developing this MTP: 1) Vision Calcasieu – an ongoing effort to develop a comprehensive land use plan for Calcasieu Parish; 2) Lake Charles Comprehensive Plan – an ongoing effort to develop a comprehensive land use plan for the City of Lake Charles; 3) the Lakeshore Downtown Action Plan – a plan for downtown development in Lake Charles; and 4) the North Lake Charles Riverfront Parkway and Redevelopment Plan – a plan for development along the Calcasieu River north of the I-10 Bridge. A brief section is provided below regarding each of these planning documents.

Vision Calcasieu

Calcasieu Parish is currently undergoing a comprehensive planning process. During development of this MTP, the final draft of the Vision Calcasieu plan had not been adopted by the Calcasieu Parish Police Jury. The plan is designed to provide a vision for the growth and development of the Parish through the year 2030 that incorporates local community values and ideals about the best management of community resources. The study team reviewed the existing draft documentation and carefully monitored the progress of the development of this comprehensive plan, and took into consideration the major themes being discussed when evaluating transportation projects. Several ‘corridors of interest’ were identified in one draft of the plan that was carefully considered during the project identification phase of this MTP planning effort. The draft goals of the Vision Calcasieu Plan were especially important when considering the criteria related to supporting land use goals, supporting economic development goals, and protecting the community’s quality of life.

Lake Charles Comprehensive Plan

The Lake Charles Comprehensive Plan was also under development during this MTP planning process. However, the Study Team did review the few draft documents that were available and interviewed the City Planning Director concerning goals and objectives of the plan and how they would impact current transportation planning in the region. The goals identified by the City also weighed heavily in drafting the criteria related to supporting land use goals, supporting economic development goals, and protecting the community’s quality of life.

Lakeshore Downtown Action Plan

The Lake Charles Downtown Development Authority has completed its Action Plan (developed by Moore Planning Group, LLC) and has begun implementing Phase I. Overall, the Plan has the following goals:





- ▶ To Extend the urban fabric to the waterfront
- ▶ To Provide lakefront amenities conducive to public use
- ▶ To Upgrade waterfront storm surge and flood protection
- ▶ To Entice private development through innovative codes
- ▶ To Resolve existing traffic problems
- ▶ To Accommodate / encourage transit-friendly development patterns
- ▶ To Integrate projects under consideration before Rita
- ▶ To Catalyze high-quality housing construction in the downtown area
- ▶ To Use environmentally responsible building techniques
- ▶ To Feature reduced storm-related risks

Downtown Lake Charles is the one area in the region that has a defined ‘character.’ While much of the plan focuses on developing the waterfront, there are aspects that address and intend to extend that ‘character.’ Below is a list of projects that are offered in the plan for implementation:

- ▶ Short Term (6-24 months)
 - ▶ Ryan Street Streetscape
 - ▶ Lakefront Promenade

- ▶ Public Realm Renovations
- ▶ Gateways- Ryan Street North and South and South Lakeshore Drive
- ▶ South Park Marina Structure
- ▶ Medium Term (25-60 months)
 - ▶ North Beach Site Improvements
 - ▶ Lake Shore Drive Median Enhancement
 - ▶ South Park Development Yacht Club/Marina
 - ▶ Lifecycle Management Program
- ▶ Long Term (+60 months)
 - ▶ Harbor and Infrastructure
 - ▶ American Wetland Discovery Center
 - ▶ Veterans Park Renovations



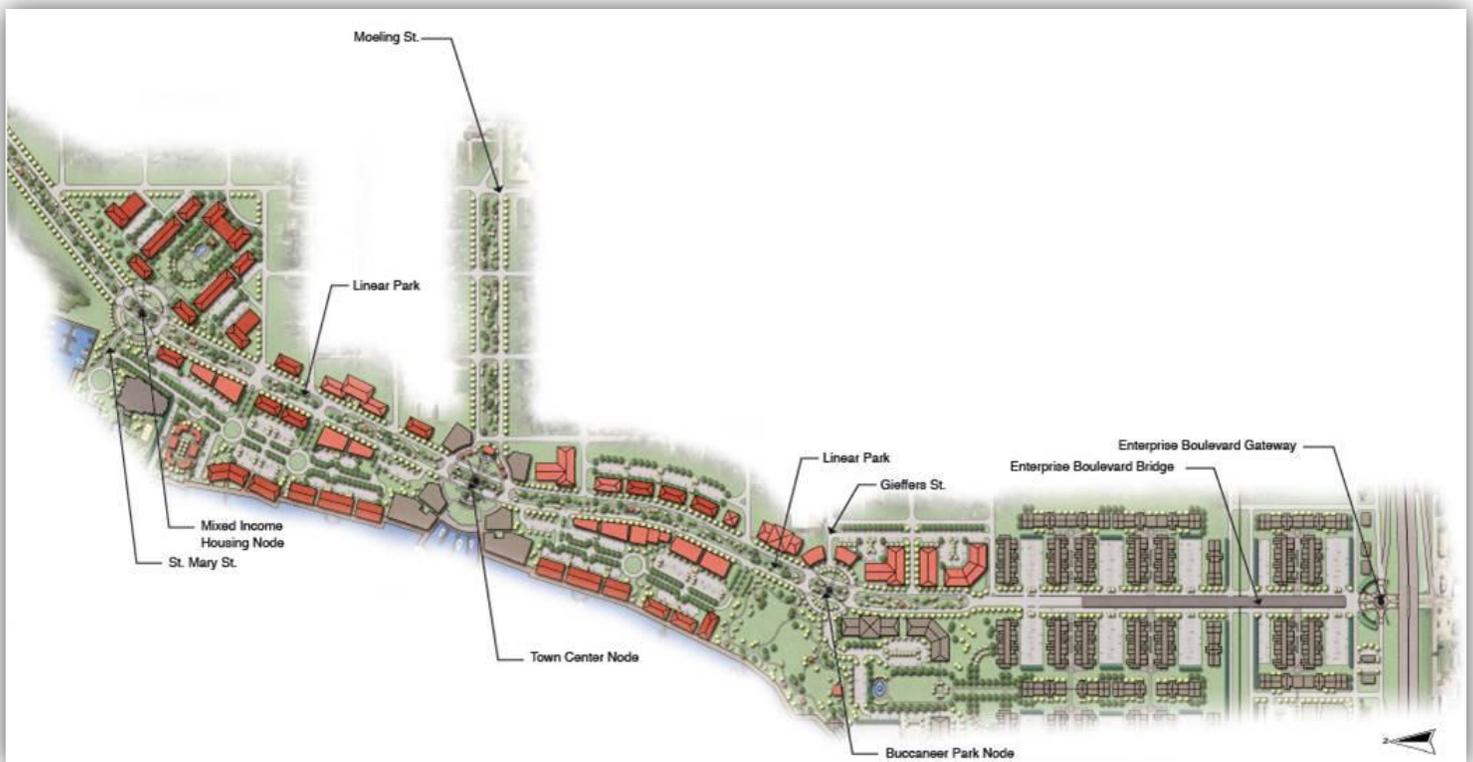
It will be important that future MPO planning efforts address some of the specific goals such as ‘resolve existing traffic problems’ and some of the specific projects such as the ‘Ryan Street Streetscape’ and the ‘Lake Shore Drive Median Enhancement.’ Each of these was considered during development of this MTP.

North Lake Charles Riverfront Parkway and Redevelopment Plan

Development along the Calcasieu River area north of the I-10 Bridge will be impacted by the decision to replace the bridge with a 73' high structure. The current bridge is much higher. However, the land use planning efforts for that area capitalize on the natural settings and the proximity to I-10. The Study Team consulted with Lake Charles city officials and planners and local developers regarding the development that could take place along the river. As reported in a study that was conducted by ARCADIS for the U.S. Army Corps of Engineers (ARCADIS et al. 2007. *North Lake Charles Riverfront Redevelopment Plan. Prepared for the U.S. Army Corps of Engineers.*):

“The time when this reach of the river could be used for intensive maritime and industrial activities has passed, and retrofitting to support them is no longer economically efficient or environmentally sustainable. The plan proposes a transition to uses that will engender both economic redevelopment and environmental restoration and enhancement.”

The North Lake Charles Riverfront Parkway and Redevelopment Plan captures the potential residential, recreational, economic development, and intermodal possibilities for the area. Below are a series of graphics showing the various planning districts envisioned, which includes a riverfront parkway, riverfront boardwalk, intermodal warehouse, mixed income housing, fisherman’s landing and boat launch, wetlands research park complex, discovery center, and regional transportation center.





(The three plan view graphics depicted here for the North Lake Charles Riverfront Parkway were developed by Joey Furr Design Studio, 2007.)

Since this redevelopment plan relies heavily on an extension of Enterprise Boulevard and other interactions with the transportation system, the Study Team carefully considered the interaction between this land use potential and the transportation network.



Other Planning Documents

In addition to the land use documents listed above, the Study Team also reviewed the Louisiana Speaks Plan. This document was developed in response to the devastating affect that Hurricanes Katrina and Rita had on the coastal communities of Louisiana. Much of the Louisiana Speaks deals with development related issues in south Louisiana and planning techniques to address those issues.

Economic Development

The transportation system supports economic development in a region. From the dawn of cities and empires, the ability to move people and goods on safe, secure, and efficient transportation arteries has been a requirement for their economic growth and the lack thereof a symptom of their decline. If a region's plans for economic development are to succeed, they must be supported by a strong transportation system. Planning for the future growth of the Lake Charles Urbanized Area's transportation system required the development of a picture of how the transportation system was currently supporting the region's economy.

The transportation system of the community has both direct and indirect impacts on the economy. The transportation system connects customers with goods, and people with jobs. When a transportation system works effectively it has a direct positive impact on economic growth by connecting the community to larger markets and saving time (and money) in moving goods to market. An efficient transportation system can also have an indirect multiplier impact on the economy by providing additional job opportunities and increased variety of goods

and services available to the population of the region.

An efficient transportation system is also a system that provides for intermodal transfer of people and goods. For example, airports and seaports connect the economy of the region to external markets, both national and international, but these ports would be almost useless if they were not connected to ground transportations systems that allow the people and goods arriving at the ports to then be transferred to local destinations. This means that in addition to the various individual transportation modes (air, water, rail, highway, transit, bike, or pedestrian), intermodal connectivity also has a direct impact on the economy of the region.

In addition to the existence of transportation infrastructure, the condition of repair of the infrastructure also has a direct impact on the economy of the region. A bridge in poor repair can mean that heavy loads have to travel long distances to find another way to cross a water barrier. Pot holes, crumbling decks, or deteriorated rails can necessitate a reduction in travel speeds along a section of the transportation system costing the economy time and money and the flow of people and goods is slowed. In addition to the state of repair of the transportation system, the management and operations of the transportation system can impact the economy of the region. The speed at which traffic can flow through a transportation system is also impacted by the methods by which the system is managed. Law enforcement, signage, emergency response systems, access management, and intelligent transportation systems can all impact the capacity of the

transportation system to move people and goods in an efficient manner, and thus can directly impact the economy of the region.

The Study Team looked at all of these potential impacts of the transportation system on the economy of the region when trying to create a complete picture of these relationships. The Study Team used the InfoUSA data, which is a list of all of the businesses in the region, the geocoded location of those businesses, and the number of people working at those businesses, to create a map of the businesses of the region, which was also included in the Travel Demand Model [see chapter 3]. From this database, the Study Team determined that the total employment in the study area in 2007 was 77,473 with 16,410 being in retail.

In depicting the impact of a business on the transportation system, it is necessary to look at the number of trips that are generated on the transportation system as a result of the activities of that business. For the purposes of transportation planning, businesses are generally separated into two categories: retail and non-retail. The reason for this separation is based on the number of trips generated on the transportation system by retail businesses relative to most other business categories. Most businesses generated trips to and from the business as employees travel to and from work, and as goods move to and from the business operations center. Retail businesses generate these same trips, but also generate trips from customers who travel to the retail center to purchase goods and services. Although these are broad categories with many individual variations, they serve the purposes of defining economic based travel at the regional level.

The Study team also conducted research and solicited professional expertise and judgment to establish a clear understanding of how the current transportation system was supporting the economic vitality of the community relative to the current state of repair and operations of the system. Information was collected from the Louisiana Department of Transportation and Development District Office on the maintenance and operations of the regional highway system. Information was collected from the Chennault International Airport Authority and the Lake Charles Port Authority on the state of repair and operations of the ports. Information was also collected from the local jurisdictions on the state of repair and operations of the transit, bike and pedestrian infrastructure.

In addition to gathering this data and information, the Study Team collected existing economic development plans from the local jurisdictions within the study area to be used in determining whether the future transportation projects recommended by the MTP would support these local economic development goals and objectives.

Demographics & Employment

The nature and distribution of the residential population within the region also impacts the manner in which the transportation system is used. The density of population in an area can affect the congestion levels on the transportation system. The age of the population can affect the modes of transportation used in an area. Although the gender gap in economic activity and household responsibility is narrowing, there is still an appreciable difference in the number and types of trips generated by each gender. The socio-

economic level of the population impacts both the number of trips generated by each household as well as the modes of transportation used. Whether a household owns a car, or is located near a transit stop, or can safely walk or bike to work are all demographic factors that can affect how people in that household utilize the transportation system.

The Study Team created a picture of the demographics of the region from two sources; Census Data and residential building permit data. These two sources combined with historical trends and state projects allowed the Team to estimate current population and project population to the 2034 planning horizon.

Like population, the number, type and location of jobs is an important factor in planning for the future travel needs in an area. The Study Team obtained employment data from InfoUSA, which provides up to date employment, by employer for an area. This data, along with 2000 Census Bureau employment data were used to estimate current and project future employment.

The Study Team's methodology and use of the population and employment data is discussed in detail in Chapter 3.

Environment

Environmental issues can both affect the operations and maintenance of the transportation system and create barriers that restrict transportation options. Waterways, flood zones, wetlands, endangered species habitats, lack of bedrock, poor soils, air quality, steep grades (not usually found in Louisiana), and park lands, not to mention hurricanes, climate

change, and concrete buckling droughts are all examples of the kind of environmental issues that can negatively impact the transportation system.

A baseline of the environmental constraints on the transportation system was developed by the Study Team through the collection of flood plain maps (recently updated as a result of the flooding from Hurricane Rita) and historic air quality data. As the Lake Charles Urbanized Area is currently an attainment area for air quality, the major environmental issues that affect the current transportation system are the need to cross Lake Charles and the Calcasieu River that bisects the region north and south, and the wetlands and flood zone areas that are difficult to cross without inflicting additional harm to the community. The difficulty in crossing water barriers also creates problems for the community relative to emergency evacuations. Poor soil conditions and the lack of bedrock also impact the cost of building and maintaining highway infrastructure in the region.

Transportation System

A baseline picture of all infrastructure facilities for the various modes of transportation in the community was created by the Study Team. As shown in the maps on the following pages, that baseline included highways, rail, ports, airports, and transit (see maps on following pages).

In addition, a baseline of the level of service of the components of that infrastructure for which the MPO funds projects – highway, transit, bicycle and pedestrian – was also created. The MPOs current travel demand model was updated with the latest planning variables and information to conduct future 'what if' scenarios

Insert Map

L C_Func_Class.pdf

Insert Map

L C_ NHS.pdf

Insert Map

L C_Transit.pdf

on roadway projects. Travel demand model updates and methodology are discussed in Chapter 3.

The Transit System in the region is operated by three different providers. Within the city limits of Lake Charles, the Department of Public Works Transit Division operates a fixed route bus service. There are currently four fixed routes (a fifth is being added) that provide bus service Monday through Friday from 5:45 am to 5:45 pm (except on City holidays). Routes are approximately 55 minutes in length with the Amtrak Train Terminal being used as the origin and terminus of all routes. The Calcasieu Parish Police Jury, Office of Community Services offers transit services to residents on a demand response basis for all residents from any location within Calcasieu Parish, which includes the entire study area. The service is operated seven days a week from 5:30 am to 11:30 pm with limited service available on the weekends due to a reduced number of available drivers. The service is also limited by the number of people that can be transported in the 13 vans owned and operated by the Parish. Para Transit Service is offered to the elderly and disabled who meet Federal eligibility guidelines through the Lake Charles Para Transit Service, The Calcasieu Police Jury Transit Service, and through the Calcasieu Association for Retarded Citizens.

The Bicycle and Pedestrian System within the study area is difficult to identify and analyze. There was currently no local jurisdictional bike or pedestrian plans. Calcasieu Parish and the City of Lake Charles have provided wide shoulders in various locations for bike use, but few routes are designated and no inventory exists. Many neighborhoods have sidewalks, but

a sidewalk inventory of the region is not available. A systematic inventory of ADA sidewalk compliance is also not available for the study area.

Public Visioning Process

To gather public input regarding the planning process for the MTP Update, IMCAL held a series of Visioning and Scenario Based Planning Workshops. These workshops solicited public input regarding the future of the transportation system in the Lake Charles Urbanized area, which includes Lake Charles, Sulphur, Westlake, Moss Bluff and Carlyss. At these workshops, stakeholders and members of the public shared their concerns, ideas, values, and visions. The following is a description of that process and its outcomes.

Outreach Methods

The MTP Update Team utilized various outreach methods to inform the public about the update process and the Visioning and Scenario Based Planning Workshops. The Study Team invited transportation stakeholders and the public to attend one of three visioning workshops through personal invitations sent to 'interested parties' on IMCAL's mailing list. An invitation to the Visioning and Scenario Based Planning Workshops was posted on both the IMCAL and City of Westlake websites. In order to further notify citizens in the Lake Charles Urbanized area, advertisements were placed in local print media that announced the date, time, and location of the Visioning Workshops. The advertisements included a full week in the Lake Charles American Press, two weeks in the Southwest Daily News, and one month in both

the Lagniappe and Times (monthly magazines). The MTP Update Team also distributed media releases and advisories announcing the Visioning Workshops. The media advisory provided information on the date, time, location, and purpose of the Visioning Workshops. The workshops were also featured on a local talk radio station. [See a copy of the Metropolitan Transportation Plan Update Visioning and Scenario Based Planning Workshops Report in the appendices for further details.]

Visioning Workshop Overview

At each table, the participants were welcomed by a member of the Study Team and any elected officials in the room were introduced. Mr. Jim Harvey served as the moderator for all three workshops. Mr. JD Allen worked with the team to resolve problems and assist the facilitators in obtaining answers to any difficult questions that the participants might have.

The purpose of the workshop was for the public to tell the MPO about the transportation needs and challenges over the next 25 years as well as to give input as to the importance of the criteria used to evaluate MPO transportation projects. The participants were asked to do three things:

1. Help the MPO to understand the critical transportation issues that participants expected to face in the future.
2. Help the MPO to evaluate the importance of a new list of criteria, which were then used by the participants to evaluate various land use scenarios and transportation projects.
3. Share with the MPO the participant's Vision of what the future transportation system in the Lake Charles urbanized

area should look like in order to serve the needs of the people living in the study area.

The Moderator then used a PowerPoint presentation with maps, charts and graphics to guide the workshop discussion. The participants worked in table groups in order to facilitate the process of allowing every voice to be heard. At each table, a facilitator was available to assist in the dialogue process and to answer technical questions.

The participants were then guided through a series of workshop exercises designed to solicit their input into the Visioning Process.

Workshop Exercise I - Stakeholders Present

The Participants were directed to the list of stakeholder groups in their workbooks and asked to place an X in their own workbooks next to all of the stakeholder groups to which the participant belonged. The following are the results of that exercise.

Table 2-1 Stakeholders Present

STAKEHOLDER GROUP	No. Participants
Private Auto/SUV/Pickup User	21
Bicycle User	10
Pedestrian Facilities (sidewalks, hike & bike trails, etc.) User	21
Public Transit User (inside Lake Charles)	2
Public Transit User (outside Lake Charles)	2
Transit for the elderly and disabled User	4
Airport User	18
Intercity Bus and/or Rail User	3
Water Port User	2
Responsible for transportation of children	16
Business Owner	8
Member of Community Group (such as neighborhood association, civic club, etc.)	10
Member of Environmental Protection Organization	3
Member of Historic or Cultural Preservation Organization	1
Representative of an Agency that provides Traffic Control	7
Representative of an Agency that supports ride-sharing	2
Representative of an Agency that regulates public parking	3
Representative of an Agency that is responsible for transportation safety	2
Representative of a Law Enforcement Agency	1
Representative of an Agency that is responsible for Land Use Management	3
Representative of an Agency that is responsible for Natural Resources	1
Representative of an Agency that is responsible for Environmental Protection	3
Representative of an Agency that is responsible for Energy Conservation	1
Representative of an Agency that is responsible for Historic Preservation	1
Transit Operator	4
Airport Operator	1
Port Authority	1
Private Transportation Provider (e.g. taxis, buses, etc.)	0
City or Parish Elected Official	5
Tribal Official (no tribes are present in the study area)	0
Planning organization member (please name the organization)	5
Freight handler – or freight company owner	0
Member of a population that is traditionally underserved by the transportation system	3
Resident of Lake Charles, Sulphur or West Lake	16
Resident of Calcasieu Parish – outside of the city limits of any incorporated city	6

Workshop Exercise II - Current State of the Transportation System

The moderator introduced Workshop Exercise II by explaining to the participants how the MTP Update process works, focusing on the fact that the plan must address transportation issues over the next 25 years. The moderator then asked the participants to complete the following two tasks:

Task 1. With the other members of your table group, please answer the following question:

Thinking about future changes to the region and the nation, (Hurricanes and/or environmental changes – Gas prices – Aging Boomers – Economic Changes – Land Use Changes – etc.), are there any users of the transportation system that will be poorly served if there are no changes to the system?

Each table had a general discussion of the question. The facilitators recorded the following themes from that discussion:

- ▶ The elderly and disabled are currently not served very well, and the problem will only get worse
- ▶ Gas prices will go up and cause a lot of economic hardship, but if we don't get an improved transit system then they will be forced to drive (or ride with one who can afford a car) if they are going to work in the high paying jobs at the plants, casinos, etc.
- ▶ The current transportation system was designed for growth south of I-10, but most of the new residential areas will be north of I-10

- ▶ Our communities grew up separately, they will need to be better connected as the Parish grows
- ▶ The problem with only 2 bridges is only going to get worse

Task 2. If there are any important issues that have not been recorded by your facilitators, please write them in your workbook. The facilitators asked the participants to complete Task 2.

The following comments represent the general comments recorded in participant workbooks:

- ▶ Public transportation/vehicle engines/safety/northbound interstate quality road/access to port from Nelson Rd.
- ▶ Transit/bike/walking needs for seniors & youth, density, connectivity & mixed use land use patterns, special needs transport – sight impaired seniors
- ▶ Restricted access streets. Access to port off Nelson Rd. I08 railroad overpass
- ▶ Non-attainment air emissions
- ▶ West loop from Sulphur to Moss Bluff, I08 Houston River Rd. to Anthony Ferry Rd. to Damon Ferry Rd.
- ▶ Specific location traffic jams
- ▶ Public transportation
- ▶ Improve road on Prien Lake Rd. near Burger King (@ Ryan St.) – big hole in road right after red light going south
- ▶ Increase public transportation on Prien Lake and Nelson Rd., use natural gas vehicles
- ▶ Transit/air quality, north/south access, restricted access streets, Chennault access to I10, W Prien Lake @ I210, port access off Lake St., continue I08, RR overpass in W. Calcasieu

Workshop Exercise III - Ranking and Scoring Criteria

The moderator introduced Workshop Exercise III and asked facilitators to lead their respective table groups in completing the following three tasks:

Task 1. Briefly discuss the criteria presented by the moderator.

There was a brief discussion and explanation of the criteria after which the table groups moved on to complete Task 2.

Task 2. Group Ranking of the Criteria.

The participants at each table placed ten dots on a chart listing the criteria to indicate the criteria that they felt were the most important. By counting the dots next to each criterion, each table could clearly see which criteria were deemed the most important to the people at their table. By averaging the rank received by each table, an overall prioritized list of the criteria was revealed. The following table indicates the number of ranking dots received by each criterion.

Table 2-2 Criteria Ranking by Participants

Criteria	Total Number of ranking dots received from all tables	Weighted Rank across all tables
Congestion	68	1.5
Safety	67	2.5
Economic Goals	46	5
Efficiency	45	2.5
Access	37	9
Environment	35	8
Energy	35	5.5
Multi Modal	34	7
Land Use Goals	32	9
Quality of Life	32	7.5
Security	31	12.5
Modes	28	11.5
Connections	27	13
Right-of-Way	18	13

As a result, the following is a list of the criteria in ranked order:

Table 2-3 Final Criteria Ranking

Rank	Criteria
1	Improve Safety
2	Support Economic Dev Goals
3	Reduce Congestion
4	Conserve Energy
5	Promote Efficiency
6	Protect Environment
7	Improves Access
8	Improve Quality of Life
9	Increase Connections
10	Support Land Use Goals
11	Improve Security
12	Increase Multi-modal Options
13	Connect Modes of Travel
14	Preserve Right-of-Ways



Task 3. Individual Ranking of the Criteria.
The participants were asked to score each individual criterion in their workbooks. The workbooks were collected at the end of the workshop and the following results were tabulated from those workbooks.

Table 2-4 Individual Criteria Ranking

	Extremely Important		Very Important		Important		Not Very Imp		Unimportant		Not Answered	
Improve Safety	14	53.8%	7	26.9%	4	15.4%	0	0.0%	0	0.0%	1	3.8%
Improve Security	7	26.9%	6	23.1%	8	30.8%	4	15.4%	1	3.8%	1	3.8%
Protect Environment	9	34.6%	5	19.2%	9	34.6%	0	0.0%	0	0.0%	3	11.5%
Reduce Congestion	14	53.8%	5	19.2%	3	11.5%	4	15.4%	0	0.0%	0	0.0%
Promote Efficiency	7	26.9%	11	42.3%	5	19.2%	0	0.0%	0	0.0%	3	11.5%
Support Econ Dev. Goals	10	38.5%	11	42.3%	3	11.5%	1	3.8%	0	0.0%	1	3.8%
Support Land Use Goals	8	30.8%	7	26.9%	7	26.9%	0	0.0%	0	0.0%	4	15.4%
Increase Connections	9	34.6%	10	38.5%	4	15.4%	1	3.8%	0	0.0%	2	7.7%
Improve Access	11	42.3%	3	11.5%	8	30.8%	1	3.8%	1	3.8%	2	7.7%
Connect Modes	6	23.1%	4	15.4%	11	42.3%	3	11.5%	0	0.0%	2	7.7%
Conserve Energy	12	46.2%	6	23.1%	6	23.1%	0	0.0%	0	0.0%	2	7.7%
Improve Qual. Of Life	10	38.5%	7	26.9%	6	23.1%	1	3.8%	0	0.0%	2	7.7%
Increase Multi-modal Options	8	30.8%	5	19.2%	6	23.1%	7	26.9%	0	0.0%	0	0.0%
Preserve ROW	7	26.9%	4	15.4%	11	42.3%	2	7.7%	1	3.8%	1	3.8%

Presentation on Growth Scenarios

The moderator described several possible growth scenarios that could occur over the next 25 years. He explained the three maps in the participants' workbooks depicting possible population distributions for the region over the next 25 years. He explained that the maps were developed before Hurricanes Rita and Ike, and therefore might need to be amended using the knowledge and experience of the public as well as transportation professionals.

The moderator also explained that the three traffic flow diagrams in the workbooks (see Appendix D) are based on the currently available population projections and may need to be amended.

Lastly, the moderator explained the transit map and listed the three area transit providers and their service areas for the participants. The moderator once again asked that the participants share their knowledge and experience regarding transit needs of the community when completing the remaining exercises.

Workshop Exercise IV - Dialogue on Growth Scenarios

The moderator asked that the facilitators lead a dialogue answering the following question:

Do you think that these growth scenarios are accurate and/or desirable? What do you think they got right? What do you think they got wrong?

The facilitators took notes on the dialogue and the results are listed below:

- ▶ Population distribution will change from current projections
-

- ▶ Hurricanes will move people north of town – north of I-10 – and redistribute the population. High land north of I-10 is where the growth will happen.
- ▶ Many people from Cameron Parish are moving into Calcasieu Parish, but will want to stay as close to Cameron as possible
- ▶ New building codes, construction costs, and insurance costs will force people north to higher ground
- ▶ Sulphur is booming
- ▶ Carlyss is booming now but future growth will be limited by lack of high ground

The facilitators then asked the participants to record in their workbooks anything that the participant felt was of particular importance or anything that needed further clarification after the dialogue. Comments recorded in the books were much the same as those above.

Presentation - The Public's Role in the MTP Update Process

The moderator explained the public's role in the MTP update process and explained that the following factors should be considered in evaluating any transportation system:

Trip purposes that need to be considered when creating a working transportation system:

1. Journey to work
2. Goods movement and trade
3. Tourism, entertainment, and recreation
4. Economic generators
5. Community travel (small trips near home)
6. Evacuation for emergencies – natural and man-made

Modes of travel included in the transportation system:

1. Streets and highways
2. Public Transit
3. Bike ways
4. Pedestrian ways
5. Airports
6. Rail lines
7. Water ports
8. Intermodal transfer points – including parking

Users of the transportation system:

1. Adults who drive
2. Adults who do not drive – poor, elderly, disabled
3. Children
4. Freight movers
5. Tourists
6. Emergency services – ambulance, fire, police

Workshop Exercise V - The Transportation System in 2034

The moderator introduced Workshop Exercise V and asked the facilitators to lead the participants at each table in completing the following tasks:

Task 1. The table groups discussed the changes in their personal needs over the next 25 years as well as the changes in the environment and community.

Task 2. The participants marked a number of areas on the maps where they believed that changes were needed.

Task 3. The participants were asked to record in their workbooks any comments they had regarding the topic of this exercise.

The results from the map exercise and the comments written by the participants are listed below:

- ▶ Public policy to encourage land use changes is needed
- ▶ We need to ensure that there are sidewalks for people to walk and children to ride bikes, therefore we need to stop building – or letting developers build – streets without sidewalks.
- ▶ Zoning changes needed – especially, north Perkins Ferry Road – need for access to plants will grow as number of plants grows as well as enlarging of existing plants. We are currently allowing people to build houses too close to the road. We will need to widen the roads later and ROW will cost a fortune. Use zoning to mandate ROW preservation and keep people from building residences in area that will obviously be a thoroughfare for industrial tankers and other traffic.
- ▶ As Southwest Louisiana continues to grow, the public will need to get in and out of the City to areas like Moss Bluff. People will need to get back and forth. They will need better streets to handle increased traffic, but they will also need other options, e.g. transit or park and ride or vanpools/carpools.
- ▶ Land Use Goals need to keep people from building houses south of the surge
- ▶ If I71 is improved it would encourage more growth in that area – which is where the growth needs to be
- ▶ We need to protect the ROW in areas where future growth is anticipated

- ▶ Need more mixed use development
- ▶ Need to infill in Lake Charles and reclaim empty areas
- ▶ Need to build roads before developers are allowed to put in residential developments
- ▶ Control growth by putting in infrastructure prior to approving development
- ▶ Need right of way for underground utilities

Focus on environmental issues is needed

- ▶ Plants and the number of commercial vehicles they generate are an environmental problem
- ▶ The Lake Charles urbanized area will shortly be a non-attainment area for air quality – as more plants are built this will be a growing problem
- ▶ Not encouraging people to build in areas south of the surge will help protect the wetlands

There is a lack of east-west connectivity

- ▶ Because the Parish is divided by the Calcasieu River, east-west connectivity is a problem, especially since there are only two bridges across the river.
- ▶ There are only 2 bridges across the River/Lakes – unless more bridges are added the east-west flow will be worse in 25 years
- ▶ Bridges are only for auto/truck traffic – bike and pedestrian travelers cannot cross the river, except north of Moss Bluff
- ▶ Pedestrians and Bikes are not allowed on the only two bridges. In order to travel from the City of Lake Charles to the plants on the other side of the bridge, a person on foot or on a bike must travel about 30 miles. They must go north to almost the parish line

before being able to travel west, or vice versa to travel east.

- ▶ Need to improve transportation infrastructure to the two major economic generators, the port and the chemical plants.
- ▶ Need to address the safety of vehicles carrying toxic chemicals through the community
- ▶ Need better roads to and from port
- ▶ Need better evacuation routes from chemical plants
- ▶ Need transit to these economic generators
- ▶ Need to be able to bike to these economic generators
- ▶ Need to improve transit options
- ▶ We will need more services for the growing elderly population – and they are already underserved
- ▶ The current service providers for the elderly and the handicapped cannot meet current demand, especially as the number of very old increases and the number of disabled move out into the community (no longer concentrated in one location) as a result of new regulations on least restrictive environment for these persons are enforced
- ▶ Need to reduce congestion
- ▶ Need to improve security for hurricane or other (plant explosion) emergency evacuations

Workshop Closing

At the close of the workshop, the moderator thanked the participants for coming and sharing their knowledge and experience. He then explained the next steps in the MTP Update process, and the way in which participants could continue having input to the process.

Consultation Process

To develop a truly effective transportation plan that addresses the needs of all system users, it is necessary to obtain input from all stakeholders. For this reason, the consultation process is an important component of plan development. While community outreach and public participation meetings garner input from most transportation system users, there are those special interest groups that are traditionally under-represented.

Federal and state planning regulations require that MPOs attempt to involve all transportation stakeholders in the planning process. The following is a list of stakeholders that should be afforded the opportunity to participate:

- ▶ Federal and State government partners such as the Federal Highway Administration, Federal Transit Administration, Louisiana Department of Transportation and Development, and Louisiana Department of Environmental Quality
- ▶ Multimodal concerns and freight shippers such as the Lake Charles Regional Airport, Chennault International Airport Authority, Port of Lake Charles, Union Pacific Railroad, and other industries involved in freight shipping
- ▶ Transit agencies (both public and special needs providers) such as the Lake Charles Transit, Calcasieu Parish Public Transit, and the Calcasieu Association for Retarded Citizens (CARC)
- ▶ Disadvantaged and traditionally underserved citizens
- ▶ Business interests
- ▶ Environmental groups

- ▶ Historic preservation districts
- ▶ Emergency management services
- ▶ Bicycle and pedestrian advocates

As seen earlier in this Chapter, many of the stakeholders and interested parties attended the Visioning workshops. However, in the course of its ongoing planning efforts, the MPO staff interacts with many of these groups and individuals. Below is a discussion of the consultation that is either ongoing or was initiated during this planning process:

Federal and State Government Partners

The MPO staff interacts with their federal partners such as the FHWA and FTA on a continuing basis through meetings, conferences and workshops. Through this interaction, information and current best practices are exchanged. MPO planners also interact with and discuss the planning process with state partners such as DOTD and DEQ through similar meeting, conferences and workshops. In addition, the DOTD is a member of both the Technical Advisory Committee and the Policy Committee.

Multimodal Concerns and Freight Shippers

As with the DOTD, the Lake Charles Airport, Chennault International Airport Authority, and the Port of Lake Charles are represented on the Technical Advisory Committee and are involved in the MPO's ongoing transportation planning efforts. In addition, MPO staff regularly attend meetings of the Propeller Club and often present information on the transportation planning process. The Propeller Club is an association of marine transport and freight shippers in the region. Contact was also made with the Union

Pacific Railroad to discuss any issues they might have regarding the transportation system.

Transit Agencies

In addition to being included on the list of invitees for all Technical Advisory and Policy Committee meetings, the MPO has formed a Human Services Transportation Coordination Committee. This committee consists of all transit providers in the region as well as all other organizations that provide funding or services to those in need of public transportation. The goal of the committee is to coordinate services in the region so that trip making will be more accessible and abundant to the traveling public. The Study Team also met individually with the director's of both the Lake Charles Transit service and the Calcasieu Parish transit service in order to determine the needs of both the operators and their riders.

Disadvantage and Traditionally Underserved Citizens

During the public participation efforts surrounding this plan development, a special effort was made to reach this segment of the population. Meetings were held at convenient times and, were accessible to transit riders through the Calcasieu Parish transit service. Advertisement for the Public Visioning meetings was placed on the fixed route buses. Additionally, MPO staff members regularly attend meetings of the Lake Charles Mayors Committee on Disability and often provide input concerning transportation issues.

Business Interests

Many business interests were represented at the Visioning workshops. In addition to this, MPO

staff are members of or attend meetings of various business interest groups such as the Chamber Transportation Committee and the Louisiana Association of Business and Industry.

Environmental Groups

Several of the regions prominent environmentalists were present at the Visioning workshops. MPO staff also made contact with several persons belonging to the now disbanded Calcasieu League for Environmental Action Now (CLEAN). Former members of CLEAN expressed interest in protecting the wetlands and water quality, which is reflected in the goals established for development of this plan.

Historic Preservations Districts

There are two Historic Preservation Districts in the Lake Charles Urbanized Area; both are in or near the central business district of Lake Charles. The MPO contacted and spoke with representatives of the Charpentier and Margaret Place Historic Preservations Districts. The Charpentier District is the larger of the two districts and conducts an average of 30 tours of the District annually. Their main concern was for the City of Lake Charles to consider wider turning radii at intersection when making roadway improvements within the District. This would facilitate easier bus access during tours. Margaret Place is a small district just south of downtown Lake Charles. The Margaret Place representatives only concern was that the City not make any improvements (widening) on Lakeshore Drive, which could increase traffic along that edge of the District (see map on following page).

Insert Map

L C_CBD.pdf

Emergency Management Services

In Calcasieu Parish, the Calcasieu Parish Office of Emergency Preparedness (OEP) is the focal point for all emergency management services. Fire departments, emergency medical services and other first responders all coordinate closely with the OEP. The OEP Director and staff met with MPO planners to discuss the state of the transportation system in relation to emergency situations. OEP staff indicated that they follow transportation projects closely as they relate to emergency evacuations due to their concern relative to chemical plant incidents or hurricanes. One prevalent comment offered by the OEP was the need to complete the North Loop – the only remaining two-lane section of LA 378 that runs from John Stine Road in Westlake north to Phillips and then continues on north across the river into Moss Bluff. OEP indicated that the completion of this bottleneck link would greatly enhance their evacuation planning efforts.

Bicycle and Pedestrian Advocates

As noted earlier in this Chapter, many of the areas bicycle advocates were present at the Visioning meetings. They provided input that is



reflected in the goals laid out later in this Chapter. The Study Team also spoke with organizers of the ‘Tour Lafitte’ and the local triathlon group.

The Transportation System in Terms of Travel Purposes and Travel Markets

In developing the study design for the Lake Charles Urbanized Area 2034 Metropolitan Transportation Plan Update, the Study Team endeavored to incorporate the SAFETEA-LU metropolitan transportation regulation guidance and the Louisiana DOTD policy to employ innovative planning approaches and techniques to enhance the planning process. In keeping with this guidance, the Study Team employed the following approaches:

- ▶ Increased use of the Worldwide Web as a communications tool
- ▶ Use of geographic information systems (GIS) as a market and spatial analysis tool
- ▶ Scenario based planning to incorporate land use, economic development and community / societal objectives into the transportation planning process
- ▶ Treating major corridors and the transportation system as a whole as a market delivery system designed to address multiple travel purposes (how and why people make their travel choices)

Viewing MTP development from the standpoint of optimizing a transportation system to support the travel purposes and address the market demands of consumers enriches the MTP development process with a more comprehensive understanding of how the

various transportation markets interact with broader community land use, economic and societal influences and objectives. A holistic look at market forces acting on the transportation system allows transportation investments to be identified and prioritized using performance measures and criteria based on a broad spectrum of community values and objectives.

To implement this market based, systemic approach, the Study Team incorporated a scenario based planning approach into the development of the Lake Charles Urbanized Area 2034 MTP update. Scenario Based Planning is a process of working with travel consumers and suppliers (i.e. participating members of the public as well as local jurisdictional stakeholders such as policy makers and planning professionals) to look at the various ways that land use decisions, economic development initiatives, and transportation systems design and operation can come together in an articulated vision of the future community.

The process was supported by the development, in conjunction with the participating public, stakeholders and other interested parties, of a broad spectrum of travel and community performance measures that can be used to examine which transportation investment decisions are most likely to provide optimal transportation system performance that meets travel market needs while also supporting a spectrum of community goals and values.

In formulating the concept of how to best meet consumer's needs, the Study Team asked the participants to consider the purposes for which they and others presently travel and how these trends might change during the twenty-five year

horizon of the MTP. As noted earlier in the Visioning section, the five travel purposes we asked them to consider in going through this process were:

- ▶ Journey to work;
- ▶ Goods movement and trade;
- ▶ Tourism, entertainment, and recreation;
- ▶ Economic generators; and
- ▶ Community travel.

This approach allowed the Study Team to better evaluate proposed solutions in terms of not only transportation system performance but in terms of community impacts and the effectiveness of transportation solutions in meeting community needs and societal objectives including land use patterns, economic initiatives and social equity. In many cases, while traditional traffic engineering analysis indicated a transportation facility was working well and providing an adequate level of service, scenario based analysis of the transportation system in terms of travel purposes revealed that delivery of services did not meet market demand. The inadequacy of service delivery was particularly noted in regard to those transportation system consumers who chose or were dependent on walking, biking or transit as their primary means of journey-to-work or community travel.

In the case of the Lake Charles area, the dominant land use scenario was driven by a reshaping of the community's land use patterns in response to weather related impacts such as hurricane induced flooding in the southern portions of the study area that put in doubt the sustainability of development in that area. Exploring these current trends and emerging market forces as identified by the participants in the public participation process, the stakeholders

contacted in the consultation process and the technical specialist and agency professionals contacted in the technical review process, allowed the Study Team to identify the following challenges and opportunities with regard to the five travel purposes used to frame the discussion.

Journey to Work

Review of input regarding the journey to work purpose revealed major obstacles in accessing job sites, particularly for low income populations. The public participation process and consultation process revealed that there was poor connectivity between the labor force and job sites. There is a significant need for transit access to the casino area, a major producer of entry level jobs. The dialogue also revealed a need for transit service across the river to connect the residential labor force on the east side of the river with industrial sites and other employment generators on the western side of the study area.

Goods Movement and Trade

Although Lake Charles has many of the same goods movement activities and issues found in other communities of similar size, this section focuses on several unique local goods movement

issues related to the petrochemical industry as well as on the nationally significant I-10 corridor passing through the central portion of the study area.

Port of Lake Charles – The Port of Lake Charles is a strategic national asset because of the role it plays in import-export. The Port is ranked 11th in total cargo volume of all US ports. The majority of commodity flow to and from the port is bulk food stuffs, and is, therefore, a major generator of large truck freight traffic. Current port access is limited and the MTP proposes additional access capacity to serve current and planned port activity.

I-10 Trade Corridor – Lake Charles straddles Interstate 10, a major national and regional corridor for freight movement, tourist travel, and emergency evacuation of major metropolitan areas throughout the Gulf States. Although no capacity improvements are proposed for I-10 (projects have been completed recently to add capacity), there are several interstate maintenance projects and a major bridge reconstruction included in the MTP update. The MTP scenario based planning effort, consultation process and market analysis all highlighted the national significance of I-10 as a major NAFTA corridor, a major element of the

San Diego to Jacksonville Southern Land Bridge, as well as the vital role that I-10 plays in multi-state hurricane evacuation for major



metropolitan areas such as New Orleans and Houston. For these reasons, the Lake Charles Urbanized Area 2034 MTP pays particular attention to operations and management planning to maintain corridor capacity for these vital and nationally significant travel purposes during the construction phase of the various I-10 improvements, particularly the replacement of the I-10 Bridge over the Calcasieu River.

Commodity Transfer Among Local Industrial Sites – One unique element of the Lake Charles Goods Movement market shed is the large volume of transfer from one petrochemical industrial site to another. This transfer is the result of an economy of location strategy common in the petrochemical industry. In keeping with the principle that one man’s trash is another man’s treasure, many petrochemical industries locate near other plants because the waste byproduct of one industrial process is often the valuable feedstock of another industrial manufacturing process. Although many of these transfers take place by pipeline, many others are made by truck drayage from one industrial site to another within the study area. Providing adequate capacity and access to these sites was a major discussion point in the public participation process, particularly in the Westlake area where there is only one congested route of access to a major industrial corridor. Concerns were expressed over loss of efficiency in goods movement due to congestion and particularly with regard to the potential for an incident at one of the plants to sever all emergency response access and community evacuation. Completion of the North Loop project was one of the concepts put forward to address these issues.

Tourism, Recreation, and Entertainment

Lack of shuttle connections among major tourist attractors such as the casino(s), historic sites in and around downtown, and local restaurants and shops leaves visitors completely dependent on auto travel to completely experience the visitor destinations in the area. The result is increased congestion, reduced air quality and because drivers who are unfamiliar with an area often make sudden surprise moves or incorrect assessments of conditions, increased crashes.

Economic Generators

Large scale economic generators in the region include the Casinos (already discussed under Tourism), the Port of Lake Charles and the area petrochemical industries already discussed under goods movement and journey to work, and three areas in which focused economic development initiatives are taking place, the Lake Charles downtown, the Chennault International Airport and North Lake Charles Riverfront Redevelopment Area. The discussion in this section focuses on these latter three locations.

Lake Charles Downtown redevelopment - Downtown Lake Charles is the one area in the region that has a defined ‘character’ and local downtown economic development efforts focus on extending the urban fabric to the waterfront, providing lake front amenities and making the downtown a more walkable people place to induce increased private development and economic investment. The MTP has integrated these concepts into the strategies to resolve existing traffic problems and address modal conflicts in the downtown area.

Chennault International Airport Authority – Since closing the former US Airforce Base,

Chennault has been the center of aviation economic development activities. Currently, Northrop Grumman and Aeroframe have ongoing activities. The activity surrounding the Authority and its interaction with the transportation network were closely considered. One existing project that will improve traffic flow through the Chennault area is the expansion of J. Bennett Johnston, currently a two-lane facility.

North Lake Charles Riverfront Redevelopment – The Calcasieu River north of I-10 is no longer a viable venue for intensive maritime or heavy industrial uses. Proposed redevelopment in the area would encompass residential, commercial and community uses that are anticipated to substantially alter the travel purposes of consumers using the north riverfront corridor. To incorporate these changes into the MTP process, the Study Team, examined various transportation investment strategies in support of the redevelopment including a proposed extension of Enterprise Boulevard.

Community Travel

Community travel has always been a larger share of person travel than work trips. However, when our cities were made up of numerous neighborhood communities with their own grocery stores and other retail outlet, small neighborhood schools and neighborhood recreation centers, day care and after school care was provided by a parent in the home, and the majority of meals were eaten at home, most of these trips were walk trips or short vehicle trips conducted at off-peak hours.

With our society now well entrenched in the two-working parent household and our

economy shaped by large scale retail outlets located along or near major transportation corridors, non-work travel is increasingly performed as part of an elongated trip-chain occurring during or on the shoulders of peak-period travel. With our increasingly homogenous land use patterns that tends to separate trip destinations and spread them across the entire community market shed, picking up and dropping off passengers, (children to and from school, doctor, day care, sports practice, recreation) grocery shopping on the way home from work, taking the family out to dinner, shopping at a regional mall or big box retail center, has increased the vehicle miles traveled for community travel as well as pushed this travel into the peak period in order to gain efficiencies by bundling trips of various purposes. It has become more efficient to sit in traffic during peak or near peak period in order to combine multiple trips into a single tour, than it is to perform some trips in the peak and others in the off-peak, if such off-peak travel is even an option for households in which all of the driving age adults are working in jobs outside of the home.

Although the resources available did not allow the Study Team to address all of the challenges identified, it did allow the StudyTeam to prioritize implementation actions and strategies for inclusion in the Fiscally Constrained Lake Charles Urbanized Area 2034 MTP using a market based analysis that applied performance measures that included both transportation and community objectives. The understanding gained in the process also allowed the Study Team to recommend the pursuit, through subsequent planning studies, a set of transportation system management and

operations activities that have the potential to respond to market dynamics and meet fundamental economic and community goals through the use of cost effective alternatives to roadway capacity increases. The outcome of this process was not only a technically superior plan but also a base of policy and public support for plan implementation.

Establishment of Vision and Goals

The Study Team drew from all of the input processes listed above to develop the following vision and goals for the MTP planning process:

VISION:

The Lake Charles Urbanized Area is served by a safe, secure, and environmentally friendly transportation system where all users are able to walk, ride, drive or wheel in a safe, convenient, and affordable manner to their desired destination.

Goals of the MTP Process

- ▶ Invest in the development of a regional transportation system that serves to increase the mobility and efficiency of the movement of persons and freight in and through the region.
- ▶ Encourage the cost effective expansion of a regional transportation system that integrates all transportation modes and meets the growing mobility needs of people and freight while ensuring good air quality; enhancing the safety and security of the traveling public; fostering appropriate land use patterns; advancing alternative modes of transportation; and, increasing accessibility for the traditionally underserved segments of the community.
- ▶ Enhance the safety of the transportation system during both normal travel patterns and emergency evacuations.
- ▶ Enhance the security of the transportation system especially related to emergency evacuation from either natural or manmade disasters.
- ▶ Support systematic and coordinated maintenance programs, and make available adequate resources to preserve existing roadways and transit systems as well as future expansions.
- ▶ Increase the efficiency of the existing transportation system and decrease traffic congestion by coordinating traffic operations, and developing and implementing strategies to reduce travel demand at both the regional and corridor levels.
- ▶ Invest in a public transit system that meets the existing and projected needs of the region by developing coordinated routes and schedules through the establishment of a coordinated region transit authority.
- ▶ Incorporate the spirit and intent of the Americans with Disabilities Act pertaining to mobility and accessibility into all levels of the transportation system.
- ▶ Enhance the effectiveness of the regional transportation system by addressing the social, economic, energy and environmental issues of the region in all transportation planning efforts by ensuring that the MTP supports and is consistent with other local,

regional, and state land use, social, economic, energy and environment plans.

- ▶ Improve the opportunities for alternative means of transportation that diminish the growth in single occupancy vehicles and enhance air quality by upgrading the availability of bicycle and pedestrian facilities; and encouraging programs that support multiple occupancy vehicle commuting.
- ▶ Promote the development of a regional transportation system that recognizes the unique characteristics of the Calcasieu Parish area and ensures respect for neighborhoods, historic and archeological resources, wetlands, and other social and environmental issues.
- ▶ Facilitate the involvement and participation of individual citizens, neighborhood and other interested groups, business and community leaders, local governments, and state agencies in the transportation planning process.

Creating Measures of Effectiveness

The establishment of a vision and goals for the MTP planning process is meaningless unless there is a method for evaluating whether the goals are being met. Through the data gathering process, and consulting with technical advisors, a set of criteria for evaluating the transportation system was created that included both federal and state mandates and local values. After the set of values was created and ranked by the public, the Policy Committee of the MPO approved the ranked criteria. After consultation with the Technical Advisory Committee and the Policy Committee, one additional criterion was added to the bottom of

the criteria list – Cost Sharing (a measure of local financial participation). The Study Team then created a set of performance measures that would be used to apply those ranked criteria in the process of evaluating whether the community’s vision and goals were being met by any project or set of projects.

The following is an explanation of the list of criteria adopted for this MTP. Although many of the criteria have overlapping characteristics, e.g. reducing congestion can also improve the environment and support economic development goals, each of these criteria was used separately to evaluate whether suggested transportation projects were meeting the vision and goals of the community.

The Criteria

Improve Safety. Safety is defined as protection against unintentional harm and relates to both motorized and nonmotorized modes of travel. Examples of improved safety could be: a reduction in the number of automobile crashes involving personal injury; a reduction in the number of crashes involving bicycles and automobiles resulting in personal injury; a reduction in the number of infrastructure failures that cause personal injury, or improved operations of an emergency counter flow plan on major roadways in the area in response to a hurricane.

Improve Security. Security is defined as protection against intentional harm and relates to both motorized and nonmotorized modes of travel. Examples of improved safety could be: a reduction of the risk of individual acts of criminal behavior on a transit line; improvement in the emergency response capacity after an act of

terrorism; reduced time that it takes emergency vehicles to respond to incidents in a particular neighborhood due to improved access roads; or reduction in the number of injuries that occur as a result of broken sidewalks in the downtown area.

Protect the Environment. Methods for protecting the environment are as unique as the local environments that they serve. Therefore, examples of ways in which a transportation system can impact the environment are myriad. In the Lake Charles Urbanized Area, the most important environmental protection issues are wetlands protection and flood protection. The urbanized area has been designated as an air quality attainment area, but continuing to improve air quality is still important to the community, as is preservation of species habitat and the maintenance of water quality.

Reduce Congestion. Congestion is defined as a roadway system operating at speeds below that for which it was designed. Congestion levels can be measured quantitatively, but the tolerance for congestion is a local values decision. The numeric level of congestion that the people in Los Angeles find acceptable is not necessarily the numeric level of congestion that the people of Westlake find acceptable. Therefore, congestion is evaluated both quantitatively and qualitatively based on input from the public in the Lake Charles Urbanized Area. Examples of ways in which congestion could be reduced are: the addition of turning lanes; improvements to signalization; a reduction in the number of access points; an increase in the number of lanes; or restriction of freight movement during peak travel times.

Promote Efficiency. Efficiency is promoted by improved system management, the preservation of the existing transportation system, and the reduction in costs. Examples of the promotion of efficiency in the transportation system could be: the institution of a travel demand management program; improvement in the operations and management of the system; institution of a regular repair and maintenance program; or the use of cost sharing programs.

Support Economic Development Goals. The economic development goals of the community are defined by the economic development plans of the local jurisdictions and can be impacted by many factors, one of which is the transportation system. Economic development goals also include enabling global competitiveness, productivity, and efficiency. Examples of ways in which the Economic Development Goals of the community could be met: providing pedestrian amenities along a business corridor; improving the efficiency of freight movement to and from a port; providing transit access to mixed-use neighborhoods; or connecting tourist destinations by circulator buses.

Support Land Use Goals. The Land Use Goals of the community are defined by the planning and zoning ordinances and land use plans of the local jurisdictions and through the public visioning process. Examples of ways that the Land Use Goals of the community could be supported are: not building new roads into areas prone to flooding; providing transit to areas designated for transit oriented development; providing lanes for non-motorized travel; or expanding or improving the roads into areas designated for new residential construction.

Increase Connections. The connectivity of the streets network and circulation system is measured through the ease by which people and goods can move to their desired destinations. Connectivity relates not only to the ease of movement of people and goods within the community, but also to external destinations – regional, national and international. Examples of ways in which connections could be increased are: adding bridges across water barriers; adding access roads to neighborhoods; adding bike and pedestrian paths from neighborhoods to schools that do not necessitate crossing major arterials; providing transit service that allows people who live in the city to commute to suburban jobs; or providing highway facilities to ports and rail terminals.

Improve Access. Improving access involves control and management of the ingress and egress points to a transportation facility for people and freight. Increasing the number of access points does not necessarily improve access. Improved access is based on a balance between the number of access points and the efficient movement of traffic through the transportation facility. Improved access is often achieved through an access management program that establishes design standards that provide for this balance. Examples of ways in which access could be improved are: a reduction in the number of driveways that enter a major arterial; an increase in the number of transit stops in the community; improvement of roads before allowing new development; development of a hierarchical master street plan that designs roads based on use; or provision for bicycles and pedestrians to cross interstates.

Connect Modes of Travel. The various modes of travel within the community function best when people and goods can easily move from one mode of travel to another. This intermodal connectivity is often facilitated by intermodal transfer terminals.

Conserve Energy. Energy conservation has become a national priority in recent years and the efficient use of the transportation system can have a dramatic impact on the amount of energy consumed, as well as the corresponding costs - both direct dollar costs and indirect environment costs - to the community. Examples of ways in which this reduction could be achieved includes: a reduction in the number of miles driven; a reduction in the use of single occupancy vehicles; an increase in the use of non-motorized modes of travel; or a reduction in idling time by freight movers.

Increase Multi-modal Options. Increasing multi-modal options for the movement of people and goods creates choice. In order for people to choose to use a more energy efficient mode of travel, there has to be more than one mode of travel available. In order for shippers to reduce energy costs when transporting goods, there has to be a more energy efficient mode of travel available. This criterion is about creating options. Examples of ways in which multi-modal options could be increased are: expansion of the fixed route transit system into previously unserved areas; expansion of the hours of operation of the transit system; an increase in the number of streets with sidewalks; an increase in intermodal freight transfer facilities; an increase in park and ride facilities; or an increase in the number of sidewalks that meet ADA accessibility requirements.

Preserve Right-of-Ways. When streets and highways are expanded, either through the addition of miles or through widening of existing roadways, land must be purchased for this construction. The more developed the area is, the more expensive the land. Preservation of right-of-ways refers to purchasing land before development occurs in anticipation of future expansion of the transportation system. Examples of ways in which right-of-ways could be preserved are: the purchase of enough land to build a four lane highway even though the current plans only call for the construction of a two lane facility; the purchase of land at points along an interstate where future entrances are planned, but where no development currently exists; or the restriction of development through zoning or land use ordinances along transportation corridors to industrial areas.

Improve Quality of Life. The quality of life of a community is a term that the community must define for itself. In the Lake Charles Urbanized Area, this term was often referred to in the Vision Calcasieu draft document as “a measure of community wellness based on levels of service provided by the local government and other service providers, economic opportunity, social stability, land use compatibility and other qualitative and quantitative factors.” The transportation system can have both positive and negative impacts on the quality of life in a community. Examples of ways that a transportation system could have a positive impact on the quality of life are: a reduction in mobility gaps experienced by low-income communities; a reduction in the time that families spend commuting to school and work; a reduction of crime at transit stops; an increase in the walkability of the community; or improved

access to recreation areas. Examples of ways that the transportation system can have a negative impact on the quality of life in a community are: construction of roads that encourage suburban type development that gobbles up farmland in rural areas; addition of access points to a neighborhood that encourages through traffic that endangers children at play; widening of roadways to improve port access that also encourages truck traffic carrying hazardous materials through residential neighborhoods; an increase in the noise or pollution from added lanes; the lack of aesthetic amenities along a roadway; or the lack of restrictions on the movement of heavy trucks through historic neighborhoods causing destructive vibrations in historic structures.

Chapter 3

Identification of Regional Transportation Needs

A deficiencies analysis of the transportation system within the Lake Charles Urbanized Area was conducted by the Study Team to determine the needs to be addressed by the MTP. The current plans for future land use and economic development in the region were considered, as well as the information gathered from the public visioning and consultation processes.

The analysis of need included both quantitative and qualitative evaluations for the forecast years of 2009 to 2034. The region's existing travel demand model was updated and used to conduct the roadway needs analysis. Other qualitative analyses were used for the non-roadway elements. Therefore, this Chapter is split into roadway and non-roadway needs assessment.

While demographic forecasts were used throughout the MTP update process from visioning to needs analysis, the data was especially useful in updating the travel demand model. Therefore, the demographics estimation and forecasting methodology is discussed in the section relating to the travel demand model update.

Roadway Needs Assessment

Estimating Base Travel Demand

Current travel patterns, in combination with defensible assumptions regarding demographic and socioeconomic trends, are used to create estimates of future travel demand. Travel demand models are able to take demographic forecasts and estimate future travel (vehicle) demand on the roadways or demand on alternative transportation modes.

Figures and maps presented in this section provide an overview of the 2007 travel patterns within the Lake Charles model area and how well those model patterns match reality.

Travel Demand Model

Travel demand forecasting quantifies the existing and future interaction between supply and demand for the transportation system. The supply of transportation is represented by the characteristics of the highway network. The demand for transportation is created by the separation and intensity of urban activities. Land use forecasts provide estimates of where people will live and where businesses will locate in the future. These forecasts include the intensity of activity in an area, such as the number of households, employees, and socioeconomic data concerning income levels and household size. These forecasts are prepared for small geographic areas called traffic analysis zones (TAZ). Descriptions of the service characteristics of the highway and the land use forecasts are direct inputs to the travel demand-forecasting model.

Lake Charles Urbanized Area Travel Demand Model

TAZ Structure

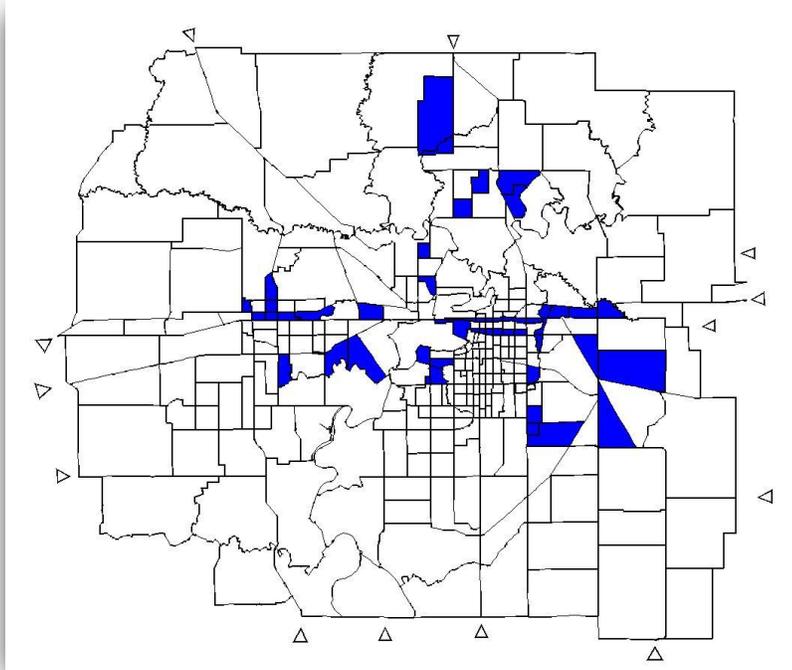
The existing model was expanded by fifty new zones to provide more realistic loadings on the

roadway network. These new zones were created from the existing TAZ structure without disrupting the existing TAZ boundaries. The following table shows the original and new zone IDs and the image depicts the areas where the TAZ structure was changed.

Table 3-1 New TAZs

Original Zone	New Zone								
22	322	32	332	69	369	137	537	173	473
23	323	33	333	70	370	140	440	176	476
24	324	33	433	71	371	140	540	178	478
25	325	34	334	127	427	143	443	185	485
26	326	34	434	128	428	146	446	185	585
27	326	35	335	130	430	154	454	185	685
28	328	35	435	130	530	159	459	186	486
29	329	63	363	130	630	162	462	201	501
30	330	65	365	131	431	168	468	215	515
31	331	66	366	137	437	170	470	215	615

Figure 3-1 Refined TAZ Locations



Roadway Network

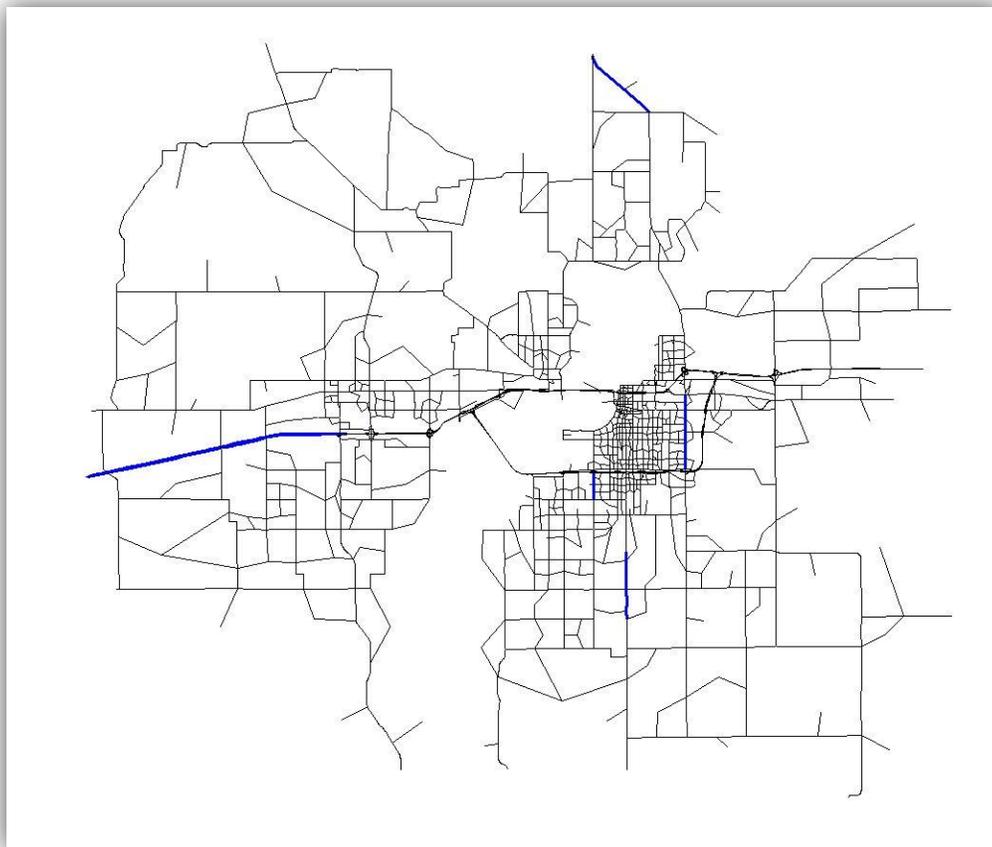
In addition to modifying the model zone structure, the roadway network was also modified to create a 2007 base year network. The previous 2005 Stage I network was used as a starting point. Projects were then selected from the existing E+C network (Existing plus committed network) for the appropriate project opening time frame. These projects were then reviewed by the MPO, and a member of the modeling team physically visited the project on the ground. The reviewed projects were then coded into the TransCAD

network to create the 2007 base network. New centroid connectors were coded in support of the refined zone structure. The following table and image below depict the added projects.

Table 3-2 Added E+C Projects

Route	Limits	Change
IH 10	West Model Boundary to Ruth St	6 lane
US 171	Model Boundary to Gillis	4 lane
MLK/US171	Fruge St to IH 210	turn lane
Common St	Petro Pt to Beauregard	turn lane
Lake St	IH 210 to Sale St	4 lane

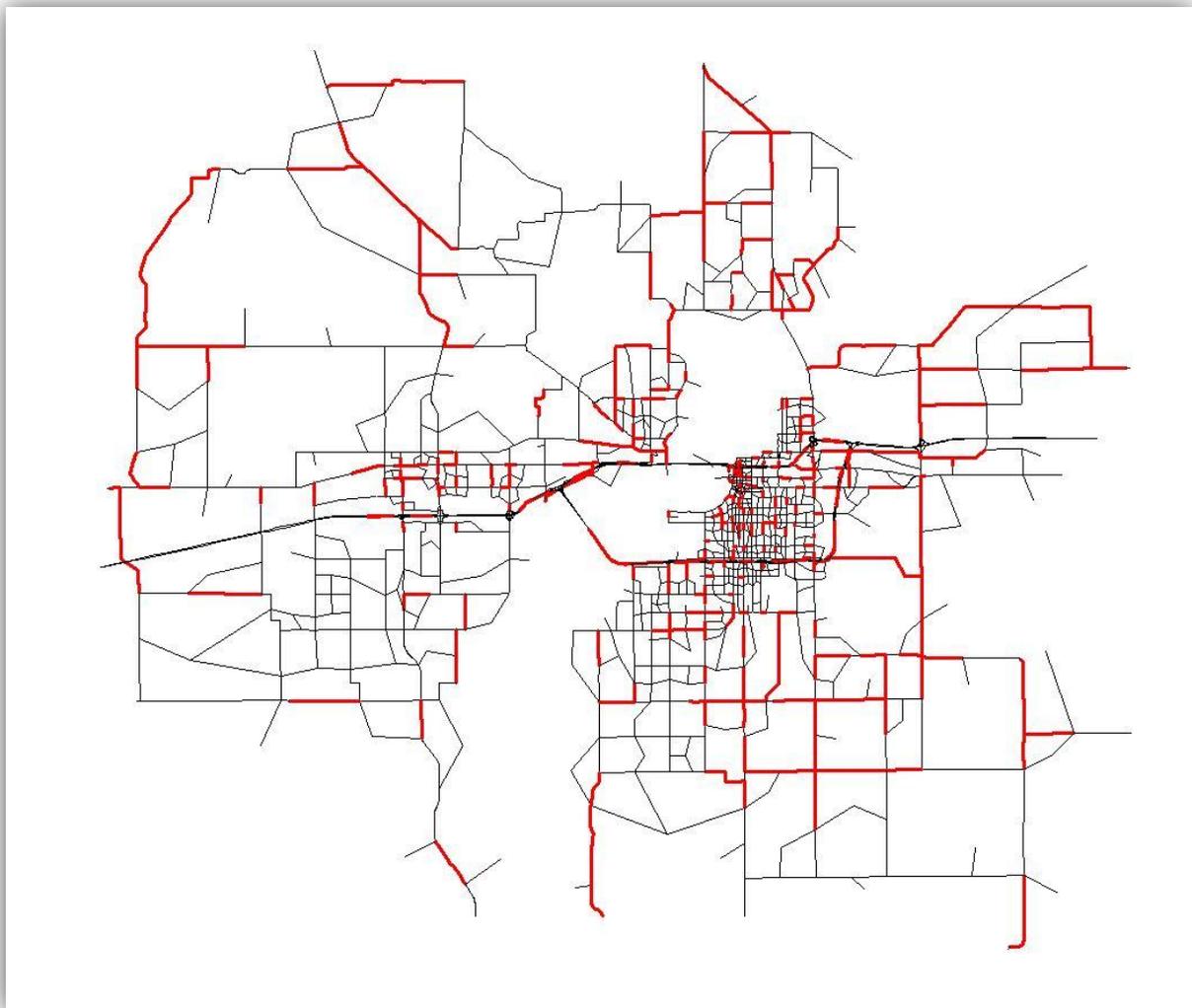
Figure 3-2 Added E+C Projects



Traffic counts are an important data source in model development. Traffic counts are stored on the roadway network and used to verify the accuracy of the travel model. The travel demand 2007 model was compared to available 2006 and 2007 traffic counts supplied by LaDOTD and the MPO. This ensured its predictive ability and allowed forecasts to be made with a certain

degree of confidence. The image below depicts the 2007 base roadway network showing count locations used for the model validation. Overall, this resulted in twenty-six percent of the links within the Lake Charles model having a count coded as an attribute.

Figure 3-3 Count Locations



Model Structure

The internal structure of the travel demand model remains unchanged. The model runs with the TransCAD software package and is composed of three steps: trip generation, trip distribution, and trip assignment. Trip generation is the first step in the travel demand model process. The result of the trip generation model is a set of trip productions and trip attractions for each traffic analysis zone (TAZ) that can be passed to the trip distribution model. Trip generation continues to produce trips for five trip purposes: home based work (HBW), home based other (HBO), non-home based (NHB), truck (TRK), and external/internal (EI). Trip purposes are used to group similar travel that can be predicted with similar variables.

Trip Distribution is the second step in the model. The trip distribution process takes the production and attraction trip ends produced during trip generation, and connects them as origin – destination pairs based on the trip length frequency curves for each trip purpose. The trip length frequency curves are applied through the use of what is described as a gravity model. In essence, while the trip generation models estimate “how many trips,” the trip distribution models estimate “where the trips go.” No changes were made to the distribution model.

The last step in the travel demand process is assignment. Traffic Assignment determines the path a trip will take to reach its destination based on travel time. This model uses TransCAD’s User Equilibrium methodology. This method ensures a solution where not all trips use the fastest route based on congested

travel times. No changes were made to the model structure or procedure.

External Trips

External-external (EE) trips are those trips that pass through the entire study area. External-internal (EI) trips are those trips that start outside the study area and end in the study area. New external-local (external-internal) and external-through (external-external) trip tables were necessary since 2007 external matrices did not exist and the TAZ structure was modified with the addition of fifty new zones.

To help estimate the external trips, 2006 and 2007 counts from the LaDOTD and the MPO were utilized where possible. Since an external survey was conducted as part of the original model estimation, the original external-through trip table was a valuable source of information. For those external stations where a count did not exist, a growth factor was developed using the previous forecast model runs. The external count computed from the growth factor was also compared to any existing counts on the internal model roadways so that the external counts could be adjusted, if necessary, to make the total external traffic logical compared to the other counts. The table below depicts the 2007 model external volumes.

The proportions of external-local and external-through were kept as they were in the 2000 base model reflecting the latest survey. This is also true for the external-through origin/destination proportions.

Table 3-3 External Stations

Original External Station ID	New External Station ID	Roadway	Count/Computed Count
245	901	US 171	11,541
246	902	LA 3059	1,671
247	903	IH 10	49,355
248	904	US 90	6,361
249	905	LA 14	2,117
250	906	LA 27	3,357
251	907	Gulf HWY	4,851
252	908	Big Lake RD	557
253	909	LA 27	5,692
254	910	LA 108	654
255	911	IH 10	37,114
256	912	US 90	7,137
257	913	LA 27	7,652

Socioeconomic Data Development

As mentioned earlier, travel demand is greatly influenced by the pattern of development or land use in the study area. Changes in land use and/or intensity will create new travel demand or modify existing patterns. A definite relationship exists between trip-making, land use and demographic data, such as: population, number of housing units, employment, and school attendance. For the Lake Charles Model, this data was compiled from several sources: population and housing from the 2000 Census; employment from a database of employers in Calcasieu Parish purchased from InfoUSA; and school attendance from the Calcasieu Parish School Board and individual private schools.

Throughout this section, there may be slight differences in the totals for this data. These discrepancies are due to mathematical rounding,

which takes place as a result of calculations by the computer modeling software.

Base Year (2007) Planning Data

The demographic data required as input into the trip generation programs can be subdivided into five major categories: occupied dwelling units, population, total employment, retail employment, and school attendance. These variables may be further described such as:

Dwelling Units

The largest single type of developed land use in the study area is residential land. The number of dwelling units plays a major role in trip generation since many trips have an origin and/or destination in residential areas. For the Lake Charles Model, the Total and Occupied Dwelling Unit counts from the 2000 Census were aggregated by TAZ. New residential building permit data for the years 2000 to 2007 were then collected from Calcasieu Parish, and

the Cities of Lake Charles, Sulphur and Westlake. The permits were geocoded by address and tabulated by TAZ. The new units were added to the 2000 Census numbers which resulted in an estimate of 2007 Total Dwelling Units in each TAZ. The TAZ occupancy rate (Occupied DU's/Total DU's) for the 2000 data was calculated and applied to the 2007 Total DU's to create an estimate of the 2007 Occupied DU's in each TAZ.

In 2000, there were 68,082 total DU's in the study area. Of that total, 61,656 (90.6%) were occupied. The 2007 total dwelling units were estimated at 72,859, with 66,178 being occupied. Occupied dwelling units were allocated to Household Size Groups of 1-2 persons, 3-4 persons, and 5+ persons based on the average population per dwelling unit in each TAZ.

Population

Population enters the trip generation equation in terms of calculating population per occupied dwelling unit by zone, which allows the distribution of units into household size categories. In 2000, the population of the study area was 164,762 persons. By applying the 2000 population per dwelling unit rate for each TAZ, the 2007 population was estimated to be 172,182.

Employment

The location of employment centers has a major impact on travel in the area, particularly home-based work trips. Total employment in the study area in 2007 was 77,473 with 16,410 being in retail. For modeling purposes, employment variables were differentiated into total employment, retail employment and other employment.

School Attendance

School attendance figures include public and private elementary, middle and high schools; colleges; universities; and vocational and business schools. Total school attendance in the study area in 2007 was 40,739 students. For modeling purposes, the school attendance is measure by the number of students attending a school in a traffic zone and not by the number of students residing in a traffic zone.

Demographic Data Forecast

To adequately forecast future transportation needs, projections of these demographic variables are needed. To accomplish this effort, data from the US Census and other demographic studies were analyzed to determine growth trends. The results from the Visioning Meetings and the consultation process held early in the study were used as a resource guide in predicting future trends. A recurring opinion in all three of the meetings was that, due to recent hurricane events, there would be a shift in residential development patterns. A larger percentage of the development would occur north of I-10. The population and dwelling unit figures for the forecast years reflect that shift.

The 2007 TAZ's were updated to include demographic forecasts used in the development of the current MTP and the soon to be completed Calcasieu Comprehensive Plan. The comparisons of the historic forecasts along with an analysis of recent aerial photography showing available land for future growth assisted in determining the location and timing of future growth within the Study Area (maps on the following pages show employment and permit data by TAZ).

Insert Map

L C_2007_RetEmp.pdf

Insert Map

L C_2034_RetEmp.pdf

Insert Map

L C_2007_TotEmp.pdf

Insert Map

L C_2034_TotEmp.pdf

Insert Map

L C_Permits.pdf

The table below presents the forecast demographic data for the study area. A complete listing of all the demographic variables by TAZ is found in Technical Memo I.

Table 3-4 Demographic Data Forecast (2007 - 2034)

Year	Population	Occupied DU's	Total Employment	Retail Employment	School Attendance
2007	172,182	66,178	77,473	16,410	40,739
2014	185,302	70,786	82,759	17,273	42,257
2024	197,567	75,300	88,638	18,846	45,843
2034	210,429	79,985	94,884	20,446	49,503

Source: N-S, 2009

Population figures do not include group quarters.

Model Calibration and Validation

2007 Base Calibration

Calibration refers to the process of estimating model variables such as trip rates, friction factors, mean trip length, and trip length frequency distributions. All variables are ideally based on surveyed or observed data. Since a recent survey was not available, the data from the most recent 2000 base year update was used as a starting point. As a quality check for reasonableness, this data was compared, where applicable, to the 2001 National Household Travel Survey (NHTS) in Louisiana.

2007 Base Validation

The ability of travel demand models to forecast future year traffic and other travel behavior are predicated on their ability to estimate “known” traffic volumes and travel patterns under base year conditions for which extensive data is available. There are two components to the process of matching model results to the observed base year travel data. These

components are calibration, noted above, and validation.

Validation refers to the process of using a calibrated model to estimate travel assignments for the base year and comparing these travel assignments to observed travel data. The typical comparison, when sufficient data is available, is between highway traffic assignments and actual traffic volumes derived from traffic count data. Extensive traffic counts must be available to validate a model.

Validation of the model to counted traffic flows is important to the model effort in two areas. First, it shows whether the calibration tools used in the model process and assumptions were reasonable. Second, the validation shows what level of confidence the user can have in the forecast results.

Although the principle of comparing traffic assignments to traffic count data is intuitively straightforward, subjective review of the travel demand model results and the observed traffic counts is not adequate. The comparative analysis must be carried out in a structured manner using clearly defined benchmarks or measures of success that allow the results of the

validation analysis to be tabulated, and quantitatively analyzed in a way that provides the user with a degree of confidence in the statistical foundation and structure of the model.

The model validation procedure for the Lake Charles model is similar to the procedure used by state DOTs and MPOs throughout the country. The locations of year 2006/2007 traffic counts provided by the LaDOTD and the MPO are coded to the roadway networks. Traffic assignment results for the validation year (2007) are compared to these traffic counts by two indices: Percent of Count and Percent Root Mean Squared Error (RMSE) that is aggregated and tabulated across a variety of categories. Percent of Count is used to measure the overall difference between modeled and counted flows. Percent Root Mean Squared Error is used to measure the difference between modeled flows and counted volumes on a link-by-link basis, which gives a better picture of the “closeness” between model flows versus counts. The Percent of Count and Percent RMSE calculation are described by the following equations:

$$\text{Percent of Count} = \frac{\sum_{j=1}^n \text{Modeled}_j}{\sum_{j=1}^n \text{Counted}_j}$$

$$\%RMSE = \frac{\sqrt{\frac{\sum_{j=1}^n (\text{Modeled}_j - \text{Counted}_j)^2}{n - 1}}}{\frac{\sum_{j=1}^n \text{Counted}_j}{n}}$$

Where *j* represents the individual network link with count, *n* is the total number of links with counts in the network for the specific categories.

When applied to model flows versus counts, RMSE values are usually between 10% and 100%. However for low volume links the percent error can be quite large but the volume to match can still be considered good. The following tables depict the model’s 2007 validation.

Table 3-5 Percent Count / RMS by Functional Class

Functional Class	% VMT	Count Links	NO Count Links	Count Coverage %	Counted VMT	Model VMT	% RMS
Rural Interstate (1)	100.00	2	10	16.67	9,770	9,770	0.00
Rural Principal Arterial (2)	92.68	3	0	100.00	29,494	27,335	14.97
Rural Minor Arterial (6)	112.14	4	2	66.67	22,981	25,770	36.01
Rural Major Collector (7)	102.90	19	20	48.72	113,324	116,613	16.17
Rural Minor Collector (8)	105.88	47	89	34.56	69,170	73,328	87.86
Urban Interstate (11)	106.97	38	196	16.24	452,517	484,045	14.78
Urban Principal Arterial (14)	90.32	55	114	32.54	257,654	232,712	40.31
Urban Minor Arterial (16)	110.14	67	197	25.38	286,702	315,779	46.82
Urban Collector (17)	102.93	161	457	26.05	284,325	292,574	68.04

Table 3-6 Percent Count / RMS by Area Type

Area Type	% VMT	Count Links	NO Count Links	Count Coverage %	Counted VMT	Model VMT	% RMS
Urban (1)	103.26	75	121	38.27	244,739	252,727	38.74
Rural (2)	103.34	321	964	24.98	1,281,179	1,323,969	40.02

Table 3-7 Percent Count / RMS by Volume

Volume Range	% VMT	Count Links	Counted VMT	Model VMT	% RMS
0 to 1000	113.17	43	21,587	24,484	145.30
1001 to 2000	134.86	37	51,317	69,024	99.64
2001 to 3000	105.46	35	51,612	54,223	62.96
3001 to 5000	104.74	54	120,776	127,094	66.76
5001 to 7000	105.62	43	157,350	166,406	44.03
7001 to 10000	111.41	40	157,854	175,766	49.97
10001 to 15000	99.43	51	266,224	263,966	23.14
15001 to 20000	104.03	33	298,422	310,664	21.07
20001 to 25000	93.81	24	184,114	172,532	30.18
25001 to 30000	94.57	17	141,576	134,602	24.37
30001 to 35000	110.23	5	53,934	59,691	21.43
35001 to 40000	70.46	2	9,123	6,427	41.78
40001 to 50000	100.00	1	6,329	6,329	0.00

Table 3-8 Percent Links Within +/- VMT

Counted VMT Category	%Links
+/- 1,000 Counted VMT	68.69
+/- 2,000 Counted VMT	87.88
+/- 3,000 Counted VMT	93.94
+/- 4,000 Counted VMT	97.47
+/- 5,000 Counted VMT	98.74

Table 3-9 Count Link Totals

Links Without Counts	Links With Counts	Total Count Volume	Total Model Volume	% Count	% RMS	Total Count VMT	Total Model VMT	% VMT	% RMS
1085	396	3,508,208	3,479,130	99.17	38.03	1,525,918	1,576,695	103.33	39.96

Table 3-10 VMT / VHT Totals

VMT on Count Links	VMT on Non-Count Links	VMT on Centroid Connectors	Total Model VMT	Total VHT	Network Speed	Total Delay (Hours)	% Delay
1,576,695	3,221,028	463,513	5,261,237	114,297	38.83	17,151	4.35

The criteria used for validation of the Lake Charles Urbanized Area Travel Demand Model are based on current FHWA and NCHRP guidance and standards and represent reasonable measures for determining the accuracy and reliability of the model.

The validation of the model described in this section accomplishes two goals. First, it demonstrates that the calibration tools used in the model process and assumptions are reasonable. Second, the validation provides the MPO and transportation professionals in the Lake Charles area with confidence in the accuracy and reliability of forecast results obtained from the travel demand model.

No travel demand model is ever complete. The model evolves as the region grows, as goals are met, and policy objectives change. Through the model calibration and validation process, it was determined that the Lake Charles model, as implemented, is a complete set of planning tools capable of performing the required transportation systems planning analyses and providing inputs for air quality analysis. The model will assist the MPO in carrying out all required transportation system planning activities, as well as performing implementation scenario analysis for the Lake Charles study area.

Roadway Deficiencies Analysis

This section provides an overview of the forecasted travel patterns within the Lake Charles Urbanized model area and how those travel patterns will affect the efficiency of the Lake Charles Urbanized Area Model network performance. This was done by applying 2014, 2024, and 2034 demographic data to the Existing Plus Committed (E+C) network. Using the ratio of the assigned volume to the existing capacity (V/C) generated from the model, deficiencies in the model network was identified.

A deficiencies analysis is the process of identifying future transportation infrastructure needs. To accomplish this task, future traffic is generated and assigned to the existing roadway network. The ratio of the assigned volume to the existing capacity (V/C) signifies whether or not a deficiency is occurring.

For example, link A has an existing volume of 4,000 vehicles and a capacity of 8,000 vehicles. Dividing the volume by the capacity, the resulting V/C ratio for Link A is 0.50. This ratio infers that there is remaining capacity on the sample link. Links that approach or exceed their capacities, showing a V/C ratio of equal to or greater than one, would be identified in the deficiencies analysis and become possible targets for improvement.

When traffic volumes on local roads increase, vehicle flow rates decrease. The quality of the flow rate of a given road is evaluated in terms of Level of Service (LOS). The LOS is a ratio of the volumes on the roadway to its traffic capacity. As the LOS scale is an attempt to rate the quality of flow, different drivers will have different interpretations of the various levels. To avoid this, the initial analysis will use absolute V/C values only.

Existing + Committed Network

In order to perform the deficiencies analysis for the MTP update, a roadway network for an existing plus committed (E+C) scenario was developed. An E+C scenario includes all existing roadways and all committed projects (projects that are under construction or have irrevocable funding commitments) that are reasonably expected to be operational in the analysis year. All of the projects that were added to the network are listed in the table and figure below. Those projects that were assumed to be E+C projects are shaded as such.

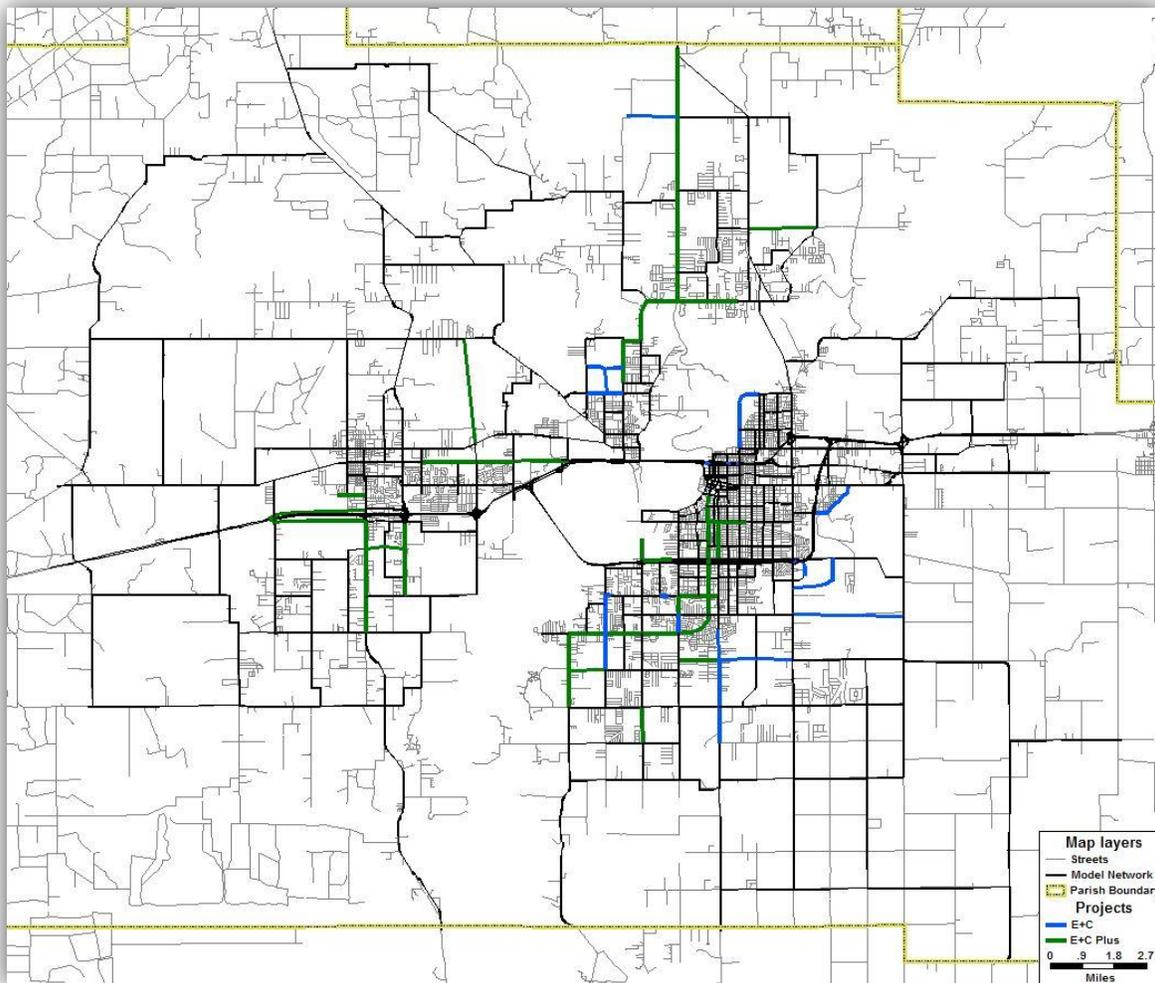
Table 3-11 E+C Added Projects

Project	Limits	Modification	Source	2014	2024	2034	E + C
Common St	Tank Farm to Petro Pt	5 Lanes	TIP				
IH 10	Ryan St	Exit Ramp	TIP				
LA 14	at IH 210	New Ramp	TIP				
IH 10	Turn Arouds Enterprise & Kirkman	New Frtg	TIP				
Red Davis Rd	Common to LA 14	New Rd	Parish CIP				
Red Davis Rd Ext	Lake to Common	New Rd	Parish CIP				
Carlyss Dr Ext	LA 1256 to LA 27	New Rd	Parish CIP				
Corbina Rd Ext	LA 14 to E Prien Lake	New Rd	Parish CIP				
Ham Reid Rd Ext	LA 384 to Elliot	New Rd	Parish CIP				
Hwy 108 Ext	OST to Houston River Rd	New Rd	MTP				
John Stine Rd	Myrtle Springs to Sampson	3 Lanes	TIP				
Gillis Cutoff Ext	N Perkins Ferry to Hickory Branch	New Rd	Parish CIP				

Project	Limits	Modification	Source	2014	2024	2034	E + C
Power Center Pkwy	Ext to E Prien Lake	New Rd	LC CIP				
Lake St	McNeese to University	4 Lanes	LC CIP				
E McNeese St	Ext to Parish Rd	New Rd	LC CIP				
Enterprise Blvd	Overpass to Moeling / Fitzenreiter	New Rd	LC CIP				
Ihles	From Sales to Country Club	4 Lanes	LC CIP				
Elliot	Country Club to Ham Reid	4 Lanes	LC CIP				
Sale Rd	Weaver to Prien Lake	Turn Lane	LC CIP				
Common St	Prien Lake to Alamo	Turn Lane	MTP				
Lake St	Sale to McNeese	4 Lanes	MTP				
J. Bennet Johnston	IH 210 to US 90	Turn Lane	MTP				
Parish Rd	Sulphur	Turn Lane	MTP				
I 138-2/Prien Lake	Lake to 1/4 mile east of Nelson	5 Lanes	MTP				
Sale Rd	Lake to Common	Turn Lane	MTP				
Ernest St	Glenn to 18th	Turn Lane	MTP				
Country Club	Big Lake to West Jefferson	5 Lanes	MTP				
S Beglis Pkwy	IH 10 to LA 108	4 Lanes	MTP				
Nelson Rd	Gauthier to Tank Farm	4 Lanes	MTP				
12 St	Ryan to 1st Ave	Turn Lane	MTP				
Big Lake Rd	Country Club to Gauthier	4 Lanes	MTP				
Sale Rd	Canal to Holly Hill	Turn Lane	MTP				
Ruth St	IH 10 to LA 108	4 Lanes	MTP				
Common St	12th to Prien Lake	4 Lanes	MTP				

Project	Limits	Modification	Source	2014	2024	2034	E + C
US 90	PPG Rd to Post Oak	4 Lanes	MTP				
LA 27	Dave Dugas to LA 108	4 Lanes	MTP				
N Perkins Ferry	LA 378 to US 171	4 Lanes	MTP				
Ryan St	I2th to Prien Lake	5 Lanes	MTP				
Ryan St	Prien Lake to Sale	5 Lanes	MTP				
Ryan St	Sale to McNeese	5 Lanes	MTP				
Ryan St	Clarence to I2th	5 Lanes	MTP				
North Loop/LA 378	Goss to Phillips	5 Lanes	MTP				
North Loop/LA 378	Phillips to south of Bridge	5 Lanes	MTP				
North Loop/LA 378	South of Bridge to Spur	5 Lanes	MTP				
Whispering Woods	Connect John Stine to Myrtle Springs to Hollis	New Rd	MTP				
Nelson Road	Access to Lake Charles Port	New Rd	MTP				
Pete Seay	Pete Seay at IH 10	Interchange	Parish CIP				
Pete Seay	LA 27 to Pete Seay	New Frtg	Parish CIP				

Figure 3-4 Added Projects



The projects list above only represents those projects coded into the model networks. Non-added capacity projects or those that do not result in a model network change are not listed. Examples of this would be pavement overlays or a re-alignment that will not affect the model traffic loadings or network coding. The E+C Plus projects listed above represent those

projects proposed in the current MTP but are not financially constrained. They are listed here for informational purposes only but will be incorporated into the model network in the next analysis of final projects testing. Below is a table showing the model statistics for the E+C projects.

Table 3-12 Project Summary

Added Projects Summary						
R o a d T y p e	Base 07 Lane Miles	E+C Lane Miles	Lane Mile Difference	Base 07 Capacity	E+C Capacity	Capacity Difference
Interstate	222.64	236.26	13.62	6,168,000	6,422,000	254,000
Primary Arterial	149.82	149.82	0.00	3,762,000	3,762,000	0
Minor Arterial	264.15	280.43	16.28	4,986,000	5,224,000	238,000
Collector/Local	800.28	825.24	24.96	11,126,998	11,285,998	159,000
Totals	1,436.89	1491.75	54.86	26,042,998	26,693,998	651,000

To ensure that the MTP was not developed in a vacuum, other plans and programs that would accomplish major transportation improvements in the model area were also considered. Some of the projects listed above were transportation improvements that existed in some form in other developed plans such as the Calcasieu Parish Transportation Master Plan or the Lake Charles Capital Improvement Plan.

The E+C network was then loaded with traffic generated based on the population, household, and employment demographic forecasts for the analysis years of 2014, 2024, and 2034. The volume of traffic assigned from each demographic forecast year was then compared

to the capacity of the system to determine any capacity deficiencies and to calculate a numerical level of service being delivered by the transportation system.

Model Results

The identified projects, depicting the E+C, were coded into the appropriate model network. Traffic was then generated, distributed, and assigned using the current Lake Charles Urbanized Area Travel Demand Model. The internal structure of the travel demand model remained unchanged as detailed above. The assignment results and deficiencies analysis are detailed below.

Table 3-13 Assignment Summary

Assignment Summary						
Scenario	Flow	VMT	VHT	Avg Speed	Delay (Hrs)	Avg % Delay
2014 EC	13,400,924	5,324,842	130,135	40.92	22,177	5.14
2024 EC	14,799,328	5,993,511	154,790	38.72	33,491	6.34
2034 EC	16,300,593	6,721,955	187,029	35.94	51,214	8.07

While the above table shows a modest 1.08% increase per year in VMT from 2014 to 2034, the total delay shows a 6.55% increase per year from 2014 to 2034. This delay translates into an overall 13.86% decrease in the average network

speed from 2014 to 2034. The total delay increase and network speed decrease, showing negative indicators of network performance through time, are not as pessimistic as they appear. As can be seen in Table 4 below, only a

relatively small number of roadway segments, as measured in lane miles, are contributing to the overall degradation of the network performance.

By 2034, only 16.86% of total lane miles show a volume-to-capacity ratio greater than or equal to one, and these account for almost two-thirds of the total delay in the model network. Much of the delay increase within that 16.86% of lane miles can be attributed to the IH 10 Bridge in Lake Charles. The bridge segments degrade to 11 mph during congested conditions compared

to 50 mph in free flow conditions. This translates into a delay of 8,351 hours or 26.13% of the total delay seen in Table 4: 2034.

The Primary Arterials remain stable through all forecasts, generally allowing for 12% of the total delay, while the Minor Arterials show a decrease in total delay from 23% to 16%. The Collectors/Locals show a slight increase in delay through the forecast years from 9% to 12%.

Table 3-14 Congestion by Functional Class

2014 Congestion by Functional Class				
Road Type	Lane Miles VC > 1	% Lane Miles VC > 1	Delay (Hrs) VC > 1	% Delay (Hrs) VC > 1
Interstate	1.97	0.13%	179	0.80%
Primary Arterial	39.97	2.68%	2,800	12.53%
Minor Arterial	54.62	3.66%	5,231	23.41%
Collector/Local	35.99	2.41%	2,063	9.23%
Total	132.55	8.89%	10,273	45.97%
2024 Congestion by Functional Class				
Road Type	Lane Miles VC > 1	% Lane Miles VC > 1	Delay (Hrs) VC > 1	% Delay (Hrs) VC > 1
Interstate	9.42	0.63%	5,075	15.59%
Primary Arterial	46.79	3.14%	3,996	12.28%
Minor Arterial	66.42	4.45%	6,411	19.70%
Collector/Local	57.08	3.83%	3,675	11.29%
Total	179.71	12.05%	19,157	58.86%
2034 Congestion by Functional Class				
Road Type	Lane Miles VC > 1	% Lane Miles VC > 1	Delay (Hrs) VC > 1	% Delay (Hrs) VC > 1
Interstate	13.23	0.89%	10,220	19.89%
Primary Arterial	55.95	3.75%	6,635	12.92%
Minor Arterial	85.60	5.74%	8,639	16.81%
Collector/Local	96.38	6.46%	6,465	12.58%
Total	251.46	16.86%	31,959	62.20%

The following figures display the flows and volume-to-capacity ratios for the 2014, 2024,

and 2034 demographic forecasts applied to the E+C model network.

Figure 3-5 2014 Assignment

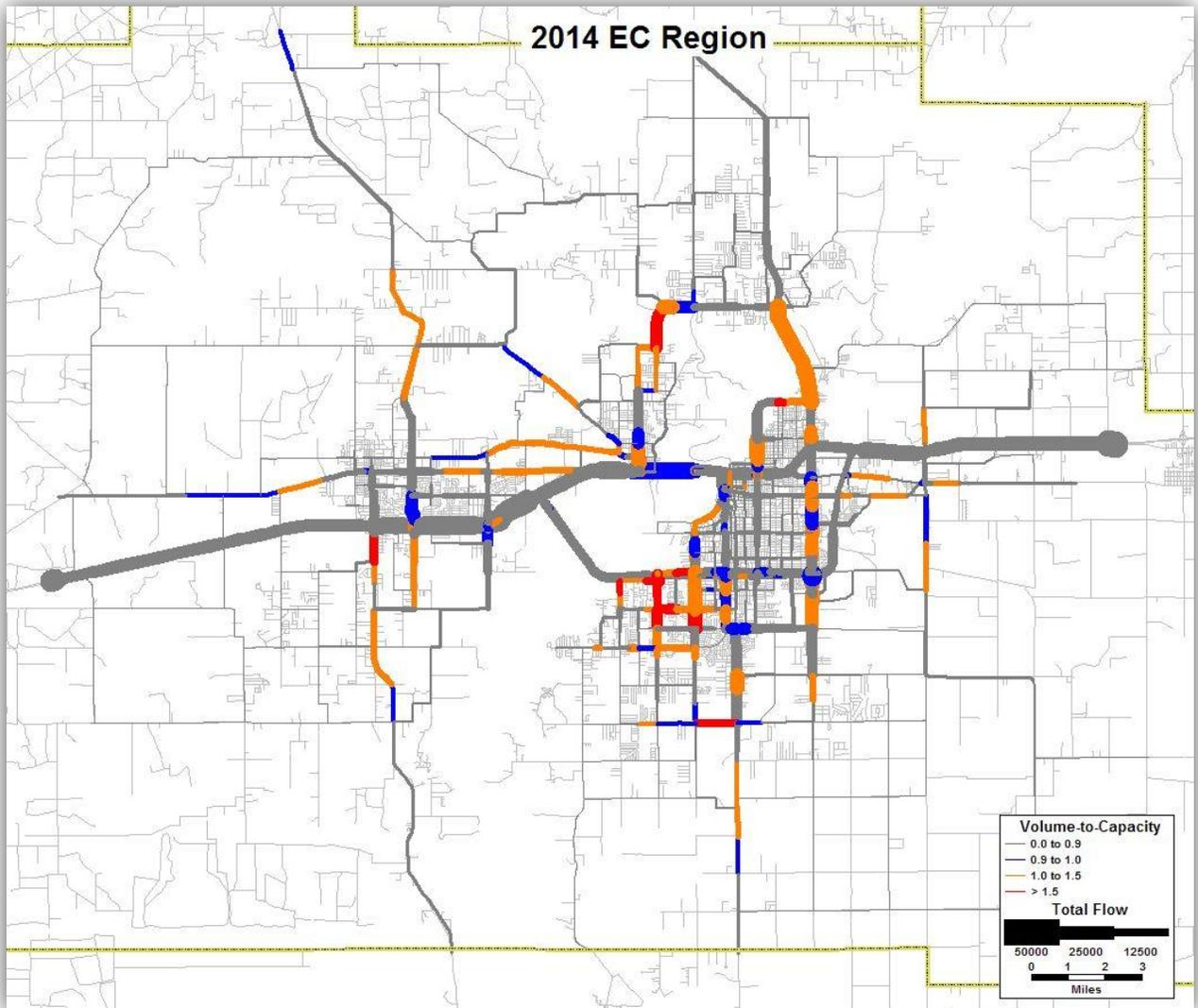


Figure 3-6 2024 Assignment

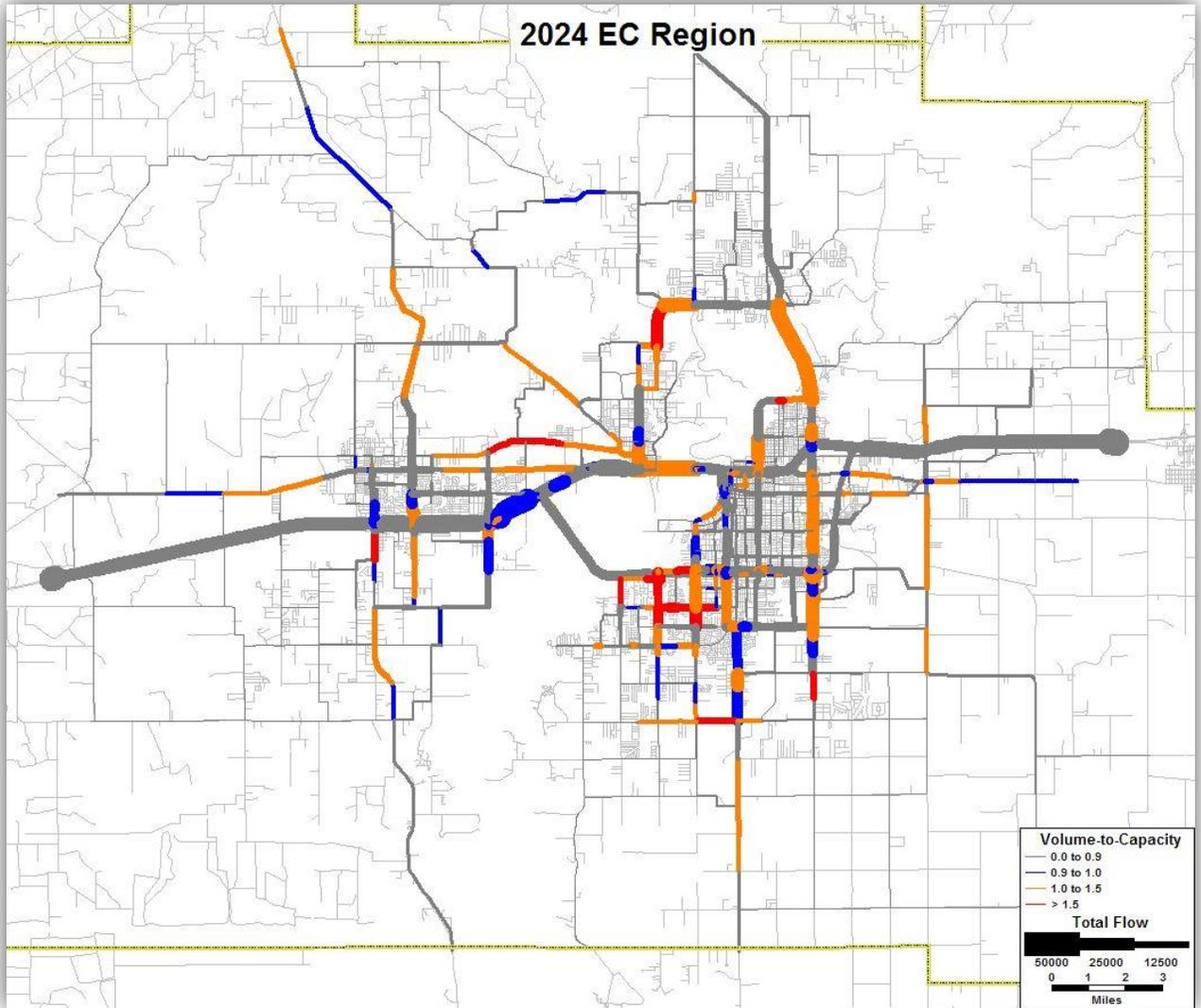
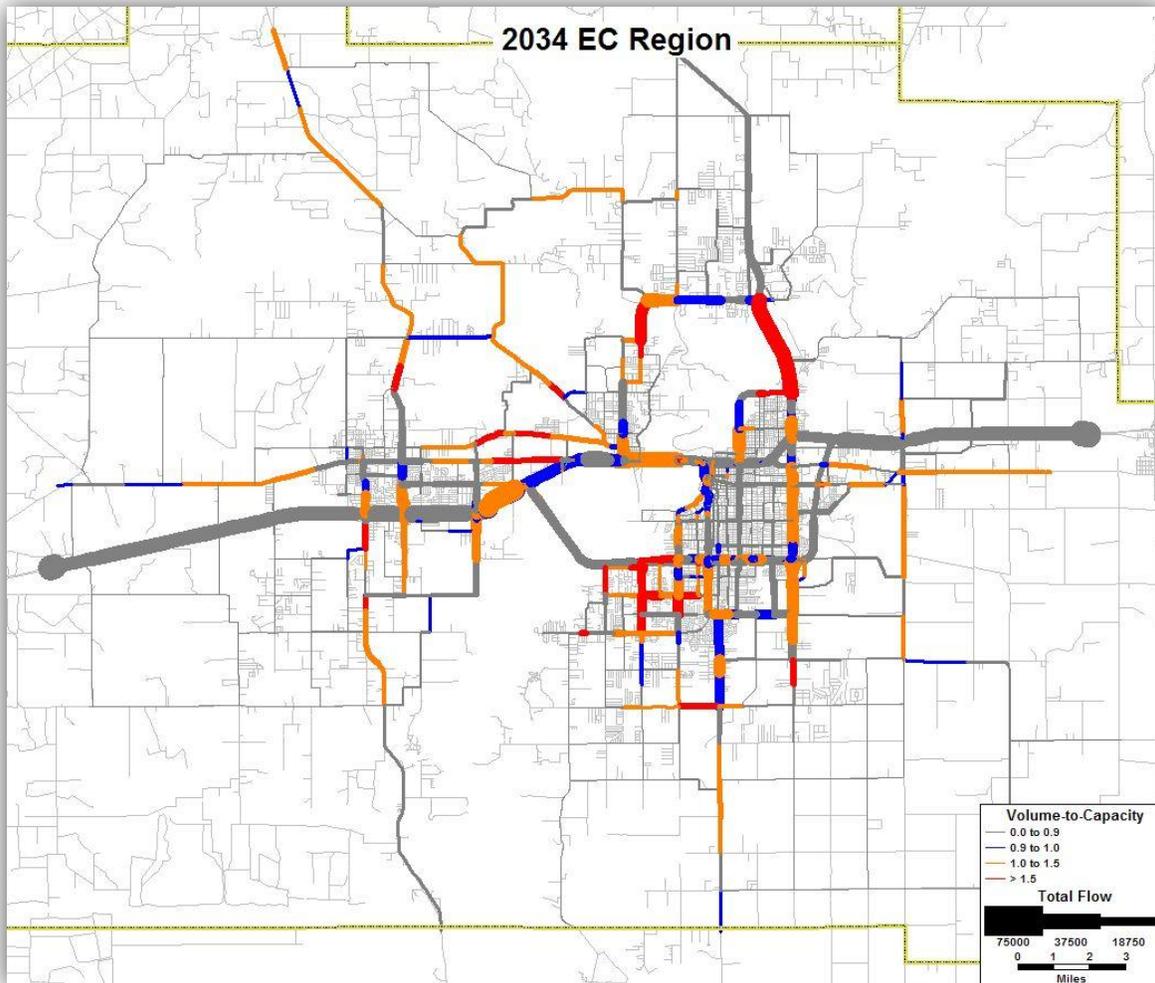


Figure 3-7 2034 Assignment



The external station locations were forecasted with growth rates developed for each station, and the station-to-station flows were projected using a Fratar methodology. Growth rates between 2000 and 2025 for the original model's external stations were calculated. A regression analysis based on traffic count history was performed for each external station. This

growth rate and the growth rate of the study area were taken into consideration when developing the 2014, 2024, 2034 external trip tables. The external station volumes are listed in the table below.

Table 3-15 External Stations

External Station ID	Roadway	2014 Volume	2024 Volume	2034 Volume
901	US 171	12,045	13,958	15,379
902	LA 3059	2,094	2,699	3,303
903	IH 10	34,775	61,512	68,664
904	US 90	7,089	9,987	12,120
905	LA 14	1,793	2,691	3,029
906	LA 27	2,912	4,468	5,121
907	Gulf HWY	5,869	7,753	9,460
908	Big Lake RD	622	761	880
909	LA 27	6,119	7,463	8,504
910	LA 108	752	921	1,078
911	IH 10	25,211	55,322	66,033
912	US 90	7,547	8,341	9,049
913	LA 27	8,529	11,020	13,001

Roadway Deficiencies Analysis Conclusion

The results of the deficiencies analysis on the E+C network for the forecast years as depicted above indicate that some important roadway sections are expected to degrade in operation in the future. The analysis indicates that anticipated traffic from growth and development will be more than the currently committed improvements can handle for some sections. This scenario is not unexpected given the growth rate of the area. There is a long lead-time required to select, prioritize, design and build transportation infrastructure improvements. However, in selecting projects to mitigate these deficiencies many factors must be considered, and the model result is but one tool to use and consider. Chapter 4 will provide project specific model results including flow, VMT, VHT, and speed to be used as inputs to rank projects.

Non-Roadway Needs Assessment

As noted in Chapter 2, the Lake Charles MPO area has three transit operators that receive federal funding: 1) Lake Charles Transit, which operates fixed route and paratransit service within the city limits of Lake Charles; 2) Calcasieu Parish Public Transit operated out of the Parish Office of Community Services, which provides public transit throughout the Parish (rural areas are served via the FTA Section 5311 Program and urban areas are served via Parish funding); and 3) Calcasieu Association for Retarded Citizens, which operates a special needs demand response service in the Parish.

Also noted in Chapter 2, bicycle and pedestrian facilities within the study area are difficult to identify and analyze. There are currently no local jurisdictional bike or pedestrian plans. Calcasieu Parish and the City of Lake Charles have provided wide shoulders in various

locations for bike use, but few routes are designated and no inventory exists. Many neighborhoods have sidewalks, but a sidewalk inventory of the region is not available. A systematic inventory of ADA sidewalk compliance is also not available for the study area.

Transit Deficiencies Analysis

The Lake Charles Transit Service receives both operating and capital funds from the City of Lake Charles and through the FTA 5307 program - Urbanized Area Formula Grants (40 USC 5307). The Calcasieu Parish Police Jury Office of Community Services transit service receives both operating and capital funds from Calcasieu Parish and through the FTA 5311 program - Section 5311 Rural Public Transportation Program (49 USC 5311); and capital funds through the FTA 5310 program - Elderly and Persons with Disabilities Program (49 USC 5310). The Calcasieu Association for Retarded Citizens (CARC) receives capital funds through the FTA 5310 program - Elderly and Persons with Disabilities Program (49 USC 5310).

Lake Charles Transit

The one fixed route public transportation service in the Lake Charles Urbanized Area is the Lake Charles Transit Service. This transit service is operated by the City of Lake Charles and runs four permanent fixed routes, serving only those areas within the city limits of Lake Charles. The four routes are in operation Monday through Friday from 5:30 a.m. to 5:30 p.m. Lake Charles Transit is currently proposing to add a fifth route to its service.

In order to analyze the needs and issues facing transit in the study area over the next 25 years and analysis of the fixed route services was conducted. As with most small urban transit systems, the ridership is limited to those who have few choices. Therefore, an analysis of the route system compared to where those individuals with limited transportation choices and their likely destinations was appropriate. This type of analysis is accomplished using a Geographic Information Systems (GIS) approach.

It is common knowledge within the transit planning field that, with some exceptions, most transit riders will not walk more than one quarter of a mile (.25 miles) to catch a bus. The Study Team assembled three pieces of information to conduct the analysis: 1) US Census data on households with low income or no car households; 2) a route system for each of the four current routes and the fifth proposed route; and 3) a list and location of travel attractors, such as shopping areas, hospitals, employment centers, and governmental offices.

The 'buffer zone' or 'travel band' analysis creates a zone ½ mile wide (1/4 mile on either side) along each route. The GIS provides information on the number of persons within your target population that live within that 'buffer zone.' The analysis found that by 2010 an estimated 46,300 residents will be living within .25 miles of a Lake Charles Transit route, and that by 2034 over 51,000 residents will live within .25 miles of a route.

Next, the GIS provided information on the number of likely destinations (shopping areas, hospitals, employment centers, and governmental offices) that fell within that 'buffer zone.' The analysis revealed that of the major

destinations within the city limits of Lake Charles, all of the major travel destinations identified fall within the current service area of Lake Charles Transit. Meaning, the destination was within .25 miles of at least one transit route and the routes are interconnected, all making their transfers at the Amtrak Station in north Lake Charles. In addition, the Greyhound bus terminal is located on a transit line. Therefore, there are two intermodal connections on the transit routes.

However, many major regional destinations are outside of the City Limits of Lake Charles. Major centers of employment or other necessary destinations included: the Lake Charles Regional Airport, all points within the communities of Sulphur, Westlake, Moss Bluff, or Carlyss; all points on the west side of the Calcasieu River including the jobs at the chemical plants and the Isle of Capri casino. The L'Aurberge casino is also not captured by the current route systems. And, while there was intermodal connectivity for ground transportation, air travel is inaccessible to transit only riders on the Lake Charles Transit system.

The information from this 'buffer zone' analysis is supported by the information gathered during the public visioning process in which participants pointed out the difficulty in using the Lake Charles Transit Service to reach the high paying jobs on the west side of the Calcasieu River. Several participants noted instances in which individuals dependent on transit, or without accessibility to an automobile, were forced to walk long distances, or rely on friends and relatives with private autos to reach desired destinations.

Additionally, several participants who currently do not take public transportation stated that they believe it to be too unreliable or inaccessible from their homes or places of work, to be a viable option for them to use for work trips. Several participants in the Visioning meetings expressed an interest in improved transit services. Reasons for this interest ranged from higher energy costs to a heightened awareness of environmental issues such as global warming and air and water quality.

The City of Lake Charles Para Transit Service also offers a special mode of transportation to elderly and disabled persons who have met federal eligibility guidelines. The Transit System is equipped with wheelchair accessible vans that transport passengers door to door within the city limits.

Calcasieu Parish Public Transit

As noted above, in addition to the fixed route service offered by the City of Lake Charles, the Calcasieu Parish Police Jury Office of Community Services operates a demand response public transportation system that serves the entire parish. This service also offers services within the city limits of Lake Charles (provided through 100% local funding).

The Calcasieu Parish transit service has 13 vans that operate from 5:30 a.m. to 11:30 p.m. Monday through Friday, and a limited number of vans that operate on the Weekends and Holidays from 5:30 a.m. to 11:30 p.m. Although the operator of this service indicated that any resident of the parish who registers for the service (including the elderly and handicapped that need special accommodations) is eligible to receive service, the number of vans, drivers, and

the amount of available funding creates a large unmet demand.

The operator also discussed the overlap in service areas between the two public transportation services in the region as an inefficient use of resources. The operator indicated that sometimes people who live within a block of a fixed route transit stop will call for a demand response van pick because it will pick them up at their door and drop them off at the door of their destination. Although this might be the ideal transit service from the customer point of view, it is not an economically viable option for large numbers of riders.

The operator also indicated that the Police Jury does not actively market the availability of the transit service to the general public because of the inability to meet the existing demand and the drain on local resources. The operator also indicated that at present “Most rides are generated in the urban area of Lake Charles, and the most frequent destinations are work sites and healthcare related facilities. There are approximately 45 people who currently use the service to commute to work.

The deficiency analysis of the Calcasieu Parish transit service indicated that there was a dramatic difference in the available transit service and the need for service. It also indicated an overlap between the two services without adequate institutional efforts to coordinate the provision of service for the general populations.

CARC

In addition to the two services described above, the Calcasieu Association for Retarded Citizens

(CARC) operates transit service for its special needs clients. The operator of this service indicated that not only do they not have the capacity to serve non-clients who meet eligibility requirements for the FTA 5310 program, but as residential patterns change from institutional placement to community placement for their clients, that they can no longer meet the expanding demand of their own clients.

Coordination

In 2007, a planning effort was initiated to coordinate the delivery of human service transportation activities in the larger five parish area served by IMCAL, and a Human Service Transportation Coordination Plan was written. This is an ongoing coordination process whose goal is the improved quality and quantity of service available to elderly, disabled and disadvantaged populations.

No similar coordination processes exist for the transit services for the general public. This means that many of the benefits of public transportation coordination are not being actualized in the Lake Charles Urbanized Area. These benefits could include:

- ▶ Reduction in costs through coordination of purchasing of equipment and supplies
- ▶ Reduction in duplicative services
- ▶ Increases in transit coverage areas for commuters
- ▶ Increases in connectivity for transit riders
- ▶ Increased efficiency through the reduction of duplication in administrative costs
- ▶ Increases in potential funding resources

Transit Deficiencies

A deficiencies analysis of the transit systems in the study area revealed the following needs:

- ▶ To reduce the duplication and overlap of transit services
- ▶ To improve the coordination of transit services through a regional transit authority
- ▶ To increase the availability of transit services from areas of concentrated poverty to areas of high paying jobs
- ▶ To increase the availability of transit services from residential areas outside of the City of Lake Charles to concentrated employment centers
- ▶ To increase transit service hours of operations so that commuters can use transit on nights, weekends, and holidays.
- ▶ To increase the marketing efforts to the general public of available transit services
- ▶ To provide transit service to the airport
- ▶ To institute a circulator bus service for the downtown and tourist areas (Lake Charles Transit may be addressing this in the future)
- ▶ To provide park and ride facilities in suburban areas

Bike and Pedestrian Facilities

Although there was no current inventory of existing facilities to use as a baseline, the information gathered through the public visioning and consultation processes provided sufficient information to develop the following list of deficiencies for the bicycle and pedestrian facilities in the urbanized area:

- ▶ Lack of an inventory of existing non-motorized facilities to use as a baseline for

developing and continuous analysis of the non-motorized transportation system.

- ▶ Lack of a plan for the development of a connected transportation network that meets the needs of those people who want or need to use non-motorized modes. Children and adults who cannot obtain a driver's license need non-motorized transportation options, as do people who either cannot or choose not to operate a motorized vehicle for health, budget or environmental reasons. As energy and fuel costs continue to rise and the desire to take advantage of the benefits of active transportation increases in the popular culture, the need for a plan to develop a system for meeting this increasing demand also increases.



- ▶ Lack of bridges that are accessible to non-motorized users within the primary travel corridors is a major deficiency of the system. The lack of bridges makes the Calcasieu River a major barrier to east/west travel for bicyclists and pedestrians. The only two bridges in the southern portion of the study area are the I-10 and I-210 bridges that do not allow non-motorized users. The only bridges that allow non-motorized use are in

the northern part of the study area. As a result, east/west connectivity for bicyclists and pedestrians is extremely limited. For example, for a tourist on bicycle or on foot to travel the one mile from downtown hotels on the east bank of the Calcasieu River to the casino on the west bank would necessitate traveling over 30 miles. A chemical plant worker who lives 2 miles away in a low income neighborhood in the City of Lake Charles would have to travel over 32 mile in each direction in order to bike to work.



- ▶ Lack of sidewalks in some of Lake Charles' commercial areas. Increased connectivity for non-motorized travel could increase economic development in these areas and reduce short motor vehicle trips people are taking to increase their safety.
- ▶ Lack of sidewalks and bikeways to schools leads to traffic congestion near schools in the morning and afternoon. This goes beyond a neighborhood issue when schools are located on or very near major arterials.

Not only does providing for larger numbers of students to bike or walk to school provide health benefits to the students, it also provides benefits to the community at large through the reduction in the number of auto trips and the reduction in congestion of roadways near schools.

- ▶ An inventory of ADA compliant sidewalks is not available. Without such an inventory, determining handicap accessibility is not possible.

Ports, Airports, Passenger Rail, and Other Intermodal Terminals

A deficiency analysis relative to intermodal terminals was conducted based on the public visioning process and consultation with intermodal terminal and transit operators. The deficiencies identified by the study team included:

- ▶ Roadway access for truck traffic heading to the Port of Lake Charles is limited to traveling through residential areas.
- ▶ Lack of transit options for air travelers.
- ▶ Lack of transit options for rail and bus travelers during night and weekend hours.

Chapter 4

Needs Plan (Unconstrained)

It is not possible to address all of the transportation needs of the community that were identified in the previous section by building new facilities. Not only has there never been enough money to meet all identified needs, but some identified needs are best met through adoption of strategies other than building new facilities. Therefore, the MTP planning process included consideration of the following strategies: preservation of the existing system through preventative and rehabilitative maintenance; institution of a transportation system management plan; inclusion of an access management plan; development of a pavement management plan; and incorporation of travel demand management strategies, in addition to the construction of new projects.

The following is a description of the process used to develop a fiscally unconstrained plan for meeting the transportation needs of the community. Applying fiscal constraints to the process and creating a financially constrained plan is described in the following chapters.

No-Build Strategies for Addressing Unmet Needs

The Study Team recommended adoption of the following strategies to address the unmet transportation needs of the community without

the necessity of expanding the existing transportation system.

Transportation System Operations and Management

Many parts of the national highway system that has been part of the backbone that supported the extraordinary American Post World War II economic expansion, is now approaching its anticipated lifespan. In order to build the system rapidly and with constrained financial resources, many roads and bridges were constructed with an anticipated 50-year life span. It is a general rule that as roads and bridges age, their maintenance and repair costs go up. As repair costs rise, fewer funds are available for expanding the transportation system. Therefore, SAFETEA-LU mandates that operations and management of the existing transportation system be taken into consideration in all MTPs.

Although all parts of the transportation system can be included in the process of management and operations, most research and tools focus on roadways and bridges. The management of transit facilities, intermodal facilities, bicycle, and pedestrian facilities is also important and should be brought into the discussion of management and operations.

This process is often referred to as asset management. The America Association of State Highway and Transportation Officials (AASHTO) defines asset management as: "...a strategic and systematic process of operating, maintaining, upgrading, and expanding physical assets effectively throughout their lifecycle." Asset management is a process for allocating scarce resources. As with most management process,

when planning and coordination includes all of the stakeholders in the process, better outcomes can be achieved. According to a study done for the AASHTO in October of 2008, the core principals of asset management are:

- ▶ *Policy-Driven – Resource allocation decisions are based on a well-defined and explicitly stated set of policy goals and objectives. These objectives reflect desired system condition, level of service, safety provided to customers, and typically are tied to economic, community and environmental goals as well.*
- ▶ *Performance-Based – Policy objectives are translated into system performance measures that are used for both day-to-day and strategic management.*
- ▶ *Analysis of Options and Tradeoffs – Decisions on how to allocate resources within and across different types of investments (e.g., preventive maintenance, rehabilitation, pavements, bridges, capacity expansion, operations, different modal mixes, safety, etc.) are based on an analysis of how different allocations will impact performance.*
- ▶ *Decisions Based on Quality Information – The merits of different options are evaluated using credible and current data. Where appropriate, decision support tools are used to provide easy access to needed information, to assist with performance tracking and predictions, and to perform specialized analysis such as optimization, scenario analysis, and life-cycle cost analysis.*
- ▶ *Monitoring to Provide Clear Accountability and Feedback – Performance results are monitored and reported. Feedback on actual performance influences agency goals and objectives, as well as future resource allocation decisions. These principles are not unfamiliar, nor are they*

radical. Most transportation practitioners would agree that investment decisions should be based on weighing costs against likely outcomes, that a variety of options should be considered and evaluated, and that quality information is needed for decision-making. Most agencies recognize that the application of asset management principles is critical in times of constrained resources, when investment and budget decisions are subject to increased public scrutiny.

Because the Lake Charles Urbanized Area is considered, under federal legislation, a small MPO (having less than 200,000 people), the maintenance and operations of the roadways and bridges within its jurisdiction is performed by LaDOTD. However, there are several ways in which the MPO can improve its participation in the planning and coordination process relative to the operation and management of the system. The following strategies for addressing operations and maintenance needs should be implemented by the MPO:

- ▶ Establish a process for collecting performance data in one location that is accessible to all of those agencies and other stakeholders who have the responsibility for management of any aspect of the system
- ▶ Create an inventory of transit, bicycle and pedestrian facilities and their current level of repair and operations through a cooperative process with the local jurisdictions in the study area
- ▶ Establish a process for coordinating with all of the agencies and other stakeholders who are responsible for the operations and management of any aspect of the transportation system, including, but not

limited to: state police, local police, the Office of Emergency Preparedness, etc.

- ▶ Create a program for addressing the need for signage that facilitates improved operations and management of existing facilities including tourist information systems
- ▶ Work with LaDOTD and local jurisdictions to improve synchronized signalization, which will improve use of the current system

Transportation Demand Management

In the Lake Charles Urbanized Area there are only a few major areas in which employment is concentrated. These areas are:

- ▶ Chemical Plants – located mostly on the west side of the Calcasieu River
- ▶ Downtown Lake Charles – located east of the river and south of I-10
- ▶ Casinos – located on both sides of the river and south of I-10
- ▶ Port of Lake Charles – located at 150 Marine Street in the City of Lake Charles

Over the next 25 years, it is anticipated that these will remain the largest areas of concentrated employment, with the chemical plants having the greatest likelihood of substantial increases in employment over current figures.

The vast majority of these commuting trips are made in single occupancy vehicles. Therefore, finding ways to reduce the number of these vehicles on the road will reduce congestion without the necessity of increasing the capacity of the roadways. There are two basic ways to reduce single occupancy vehicle trips. The first is to increase the number of non-auto trips

through the use of transit, bike or pedestrian trips and the second is to increase the number of multiple occupancy vehicle trips.

There are several barriers to reducing the number of non-auto trips. Geography, existing roadway infrastructure, limited transit options, and an auto culture create barriers to changing the traveling habits of commuters.

The major barrier to east/west travel in the region is the Calcasieu River and its accompanying lakes and wetlands. This geological water barrier is crossed by only two east/west bridges, the I-10/US 90 Bridge and the I-210 Bridge, and both are restricted to motorized vehicles only.



The limited transit options also create a barrier to reducing auto travel. In addition, the port, chemical plants, casinos and many service industry employers operate, if not 24 hours/7days a week, then at least well outside the time when the two transit systems cease to operate. This limits the effectiveness of the transit systems, as they currently operate, in providing viable options for commuters who want to reduce the number of commuting trips made in an auto.

Although the City of Lake Charles has existed since the late 1800s, it was not until the census

of 1970 that the area exceeded the 50,000 population necessary to establish an urbanized area under federal guidelines. And, although part of region is urbanized, most of Calcasieu Parish (and the surrounding parishes) remains rural in character. Like most rural areas in the county, the lack of sidewalks, need to travel long distances to retail and employment centers, and the limited access to public transit has created a historical cultural bias towards travel by personal auto/truck in both the mindset of individuals and the transportation planning of public agencies who represent them. Although this mindset is changing as the character of the area becomes more urbanized and as rising costs continue to make personal auto/truck travel less and less affordable for many families, it can still create a barrier to changing existing travel patterns.

There are several possible methods for decreasing the number of commuters using single occupancy vehicles.

- ▶ Implement rideshare, carpool, and/or vanpool programs. These programs are usually most effective when they are sponsored by employers. The MPO can work with employers to provide technical encouragement, technical expertise, and coordination to facilitate the development of these rideshare programs.
- ▶ Build or establish Park and Ride facilities near residential areas. The MPO can help coordinate the location of park and rides sites that utilize existing parking facilities that are underused during prime commuting times, e.g. church parking lots, recreation areas, or other public facilities.
- ▶ Create new transit service from park and ride facilities or other collection points to

large employment centers that operate for extended hours 7 days a week.

- ▶ Add bicycle amenities within the City of Lake Charles, such as bike racks on transit vehicles, and bike racks in public parking facilities.
- ▶ Add pedestrian amenities within the Cities in the urbanized areas – such as sidewalks linking commercial areas, shelters at stops, and signage for tourist pedestrian routes.
- ▶ Encourage employers to create programs that either 1) increase the number of employees in multiple occupancy vehicles, or 2) reduce the number of trips employees must make to the employment centers. Employers could receive both technical support and/or financial incentives to try innovative strategies such as:
 - ▶ Allowing employees to telecommute for some portion of the work week;
 - ▶ Creating a compressed work week – 4x10, or work nine hour days for eight days, then an eight hour day and take the tenth day off; 4 ten hour days per week; or other creative scheduling processes
 - ▶ Guaranteeing a Ride Home for people experiencing emergencies – generally available for people in rideshare programs;
 - ▶ Providing close-in parking for ride sharers, vanpools, etc.;
 - ▶ Working cooperatively with transit providers to reduce barriers to transit use; and/or
 - ▶ Providing a community education program on the costs and benefits of non-single occupancy auto/truck travel and the options available to the public.

By establishing the reduction of single occupancy vehicle commuting trips as a priority for the community, many low cost options can be implemented that can have a substantial impact on the congestion level of the major roadways during peak commuting times, as well as improving the access of many residents to job opportunities.

Safety

One of the criteria used in this MTP planning process is Improved Safety. Safety needs can be addressed in a variety of ways that do not require building new or expanded facilities. This plan recommends the following no-build measures be implemented:

- ▶ Work closely with the Louisiana State Highway Safety Plan. As a result of increasing highway fatalities during the rapid expansion of the federal highway system following World War II, Congress enacted The Highway Safety Act of 1966. The Act created a Federal highway safety program and required that states accepting federal transportation funds implement a state highway safety program. As a result, Louisiana has a well established Highway Safety Plan. Working closely to coordinate local activities with state activities will help ensure improved safety in the Lake Charles Urbanized Area.
- ▶ Establish a coordination process with the Office of Emergency Preparedness, Emergency Management System, and other local stakeholders involved in the management of emergency response efforts after severe accidents, hazardous materials incidents, and natural disasters.

- ▶ Implement the Demand Management and Operations and Maintenance recommendations above.
- ▶ Establish a public advisory group to work closely with the transit operators to recommend improvements in transit safety.

Security

Another criteria used in this MTP planning process is Improved Security. Security needs can be addressed in a variety of ways that do not require building new or expanded facilities. This plan recommends the same action for improving security as with improving safety. Whether an incident is a result of intentional harm (a security issue) or unintentional harm (a safety issue), establishing the coordination process with stakeholders involved in response to the incidents is an important and appropriate activity. Also, the establishment of a public advisory group to work with transit operators on improved safety can also address improved security issues.

Build Strategies for Roadways

This section builds on the work done in Chapter 2, which used the volume-to-capacity (VC) measure generated from the Lake Charles Urbanized Area Travel Demand Model to identify roadway segments that may approach or exceed their capacities in the future. This section outlines the steps taken to address or mitigate the roadway deficiencies identified by adding projects currently planned, either in the existing MTP or in local Capital Improvement Plans (CIP) to the model network and identifying addition projects. Those projects were then tested using the travel demand model to

measure the relative effectiveness of individual projects or various groupings of projects.

In order to test projects, a non-financially constrained model network, which included all remaining MTP projects and other projects identified by local entities (E+C Plus All Other Projects), was created and then loaded with the automobile traffic generated based on the demographic forecasts of 2034 population, households and employment. To determine the best set of project alternatives to address the identified deficiencies, various groupings of projects were tested - all based on the projects included in the E+C Plus network.

Analysis Networks

As described in Chapter 3, the E+C network includes only those projects that are either under construction and will be open and operational by the first analysis year, or have irrevocable funding commitments. The E+C Plus network added all of the projects remaining in the existing MTP and those projects that were locally funded regionally significant. The table below describes the projects added to the E+C network to create the E+C Plus analysis network.



Table 4-1 E+C Plus Projects

Project	Limits	Modification	Source
Red Davis Rd Ext	Lake to Common	New Rd	Parish CIP
Carlyss Dr Ext	LA 1256 to LA 27	New Rd	Parish CIP
Ham Reid Rd Ext	LA 384 to Elliot	New Rd	Parish CIP
Hwy 108 Ext	OST to Houston River Rd	New Rd	MTP
Common St	Prien Lake to Alamo	Turn Lane	MTP
Lake St	College to University	4 Lanes	MTP
J. Bennett Johnston	IH 210 to US 90	Turn Lane	MTP
Parish Rd	Sulphur	Turn Lane	MTP
Goos Rd	Paul Bellon to US 171	New Rd	MTP
Sale Rd	Lake to Common	Turn Lane	MTP
Ernest St	Glenn to 18th	Turn Lane	MTP
Country Club	Big Lake to McNeese	5 Lanes	MTP
S Beglis Pkwy	IH 10 to LA 108	4 Lanes	MTP
Nelson Rd	Gauthier to Tank Farm	4 Lanes	MTP
12 St	Ryan to 1st Ave	Turn Lane	MTP
US 90	PPG Rd to Post Oak	4 Lanes	MTP
Big Lake Rd	Country Club to Gauthier	4 Lanes	MTP
Sale Rd	Canal to Holly Hill	Turn Lane	MTP
LA 27	Dave Degas to LA 108	4 Lanes	MTP
N Perkins Ferry	LA 378 to US 171	4 Lanes	MTP
Ryan St	12th to Prien Lake	5 Lanes	MTP
Ryan St	Prien Lake Sale	5 Lanes	MTP
Ryan St	Sale to McNeese	5 Lanes	MTP
Ryan St	Clarence to 12th	5 Lanes	MTP
North Loop/LA 378	Westlake to Moss Bluff	5 Lanes	MTP
Nelson Road	Access to Lake Charles Port	New Rd	MTP
Common St	12th to Prien Lake	4 Lanes	MTP
Ruth St	IH 10 to LA 108	4 Lanes	MTP
Pete Seay	Pete Seay at IH 10	Interchange	Parish CIP
Pete Seay	LA 27 to Pete Seay	New Frtg	Parish CIP

As noted in Chapter 3 and in the earlier discussion, there were deficiencies identified in the future year networks, but none that could be easily solved with the application of a roadway widening or building a new roadway. Much of the congestion in future year networks appeared on existing four or five lane roadways that cannot, or should not, be widened due to their function and/or locations. These deficiencies will need to be the subject of transportation system demand techniques such as access management and channelization at intersections. The other deficiencies (areas of congestion) will be addressed, in large part, by a combination of those projects already included in existing plans.

In addition to the above noted issues, there are projects in the existing MTP that have been included in the MTP for the past 15 years with no real hope of funding or eventual construction due to right-of-way limitations and associated funding issues. These projects were identified

and then included and excluded from analysis to determine the impact on future travel. In all, four network scenarios were created to aid in project selection that included various groupings of projects from the above list and those listed in Chapter 3. These analysis networks included:

1. Existing MTP projects only;
2. Existing MTP projects only minus Ryan St (potentially non-feasible) projects (4);
3. Existing MTP projects only minus Ryan St projects (4) plus Enterprise Blvd project; and
4. Arterial projects only.

Model Results

The table below summarizes the model assignment results. For comparison purposes, all previous assignment results have been included as well.

Table 4-2 Assignment Results

Assignment Summary						
Scenario	Flow	VMT	VHT	Avg Speed	Delay (Hrs)	Avg % Delay
2007 Base	12,099,526	4,797,723	114,297	41.98	17,151	4.35
2014 EC	13,307,629	5,327,205	130,417	40.85	22,424	5.21
2024 EC	14,607,965	5,989,324	154,659	38.73	33,492	6.31
2034 EC	16,136,075	6,725,681	187,509	35.87	51,585	8.11
2034 EC Plus (All Projects)	16,154,935	6,669,846	175,549	37.99	41,029	6.81
2034 MTP Only	16,204,646	6,683,861	178,382	37.47	43,200	7.33
2034 MTP Minus Ryan	16,198,478	6,684,838	178,632	37.42	43,397	7.38
2034 MTP Minus Ryan Plus Enterprise	16,180,836	6,681,496	178,716	37.39	43,592	7.36
2034 Arterials Only	16,402,227	6,708,571	180,637	37.14	44,752	7.61

Not surprisingly, the E+C Plus scenario shows the largest positive effect in terms of VHT, speed, and delay. However, because of budgetary constraints, project feasibility, and other issues, not every project is likely to be built. In order to choose the best projects, based on the travel demand model results, the other analysis networks were created to give more insight as to what effect these projects may have on the roadway network.

The MTP Only network and the Ryan/Enterprise networks do not show much variation among themselves, but it is clear that the MTP projects alone will not create the most efficient transportation system for the Lake Charles Urbanized Area. Each of the other three scenarios shows a substantial negative difference as compared to the E+C Plus assignment.

Although Ryan is a major roadway and principle arterial in the Lake Charles area and appears congested, the Ryan projects may not be feasible due to right-of-way and the accompanying funding issues. Other ways to improve Ryan, such as channelization, may be necessary. To test the effect Ryan may have, the Ryan projects were removed from the MTP Only network. The results above show a minor positive effect in favor of the Ryan projects. The addition of the Enterprise project showed a mixed bag of results but overall the results did not vary much from the MTP minus Ryan assignment.

The Arterials Only network fared the worst of the analysis networks. All measures listed above in the Assignment Results Table show a negative effect on travel compared to all other

networks tested. It is clear that many of the projects on the lower functionally classified roadways, such as LA 1138-2 and Sale Road, are equally as important if not more so, than many of the arterial projects.

The following five figures show the assignment results for each of the five analysis networks.



Figure 4-1 E+C Plus Assignment

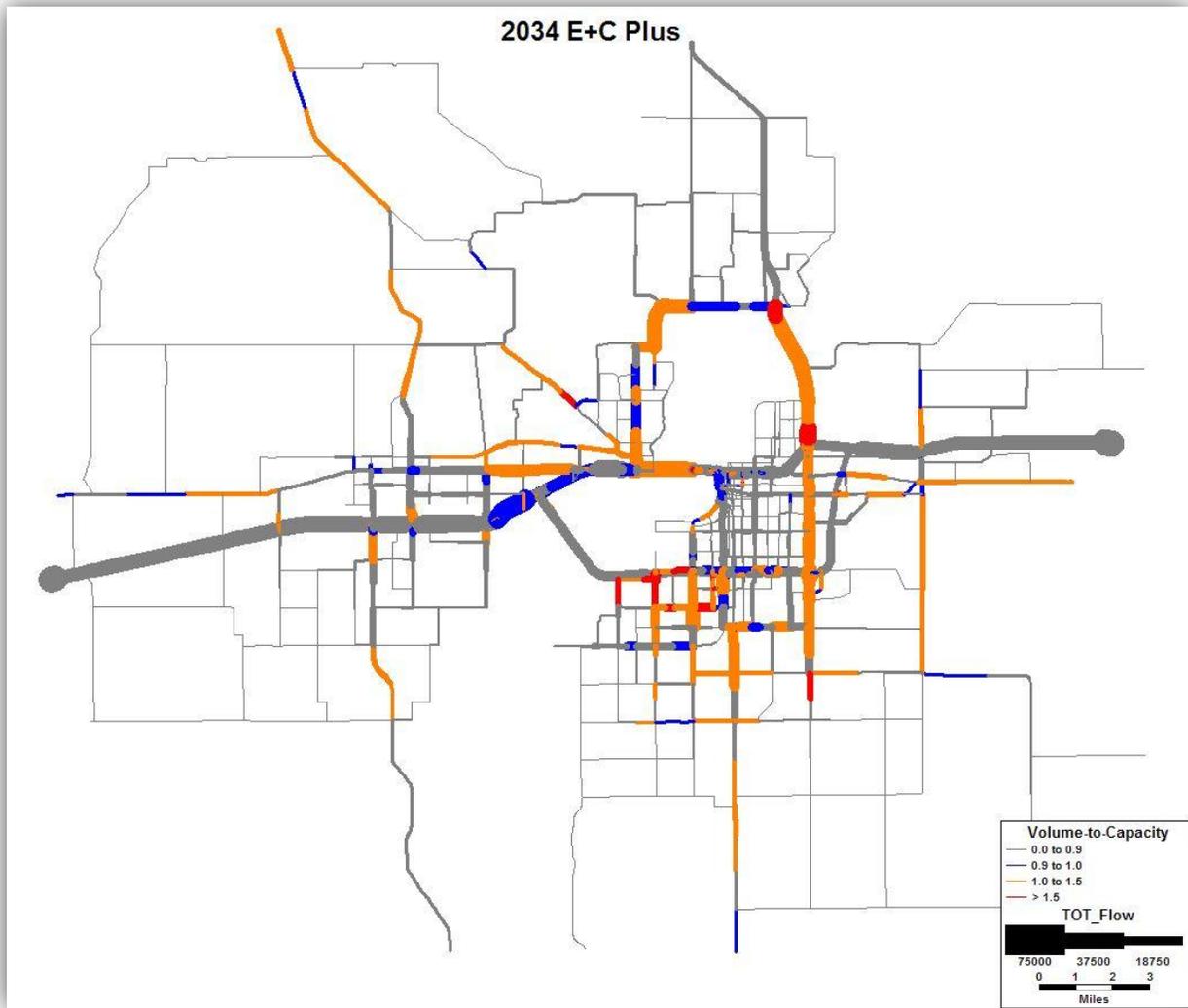


Figure 4-2 MTP Only Assignment

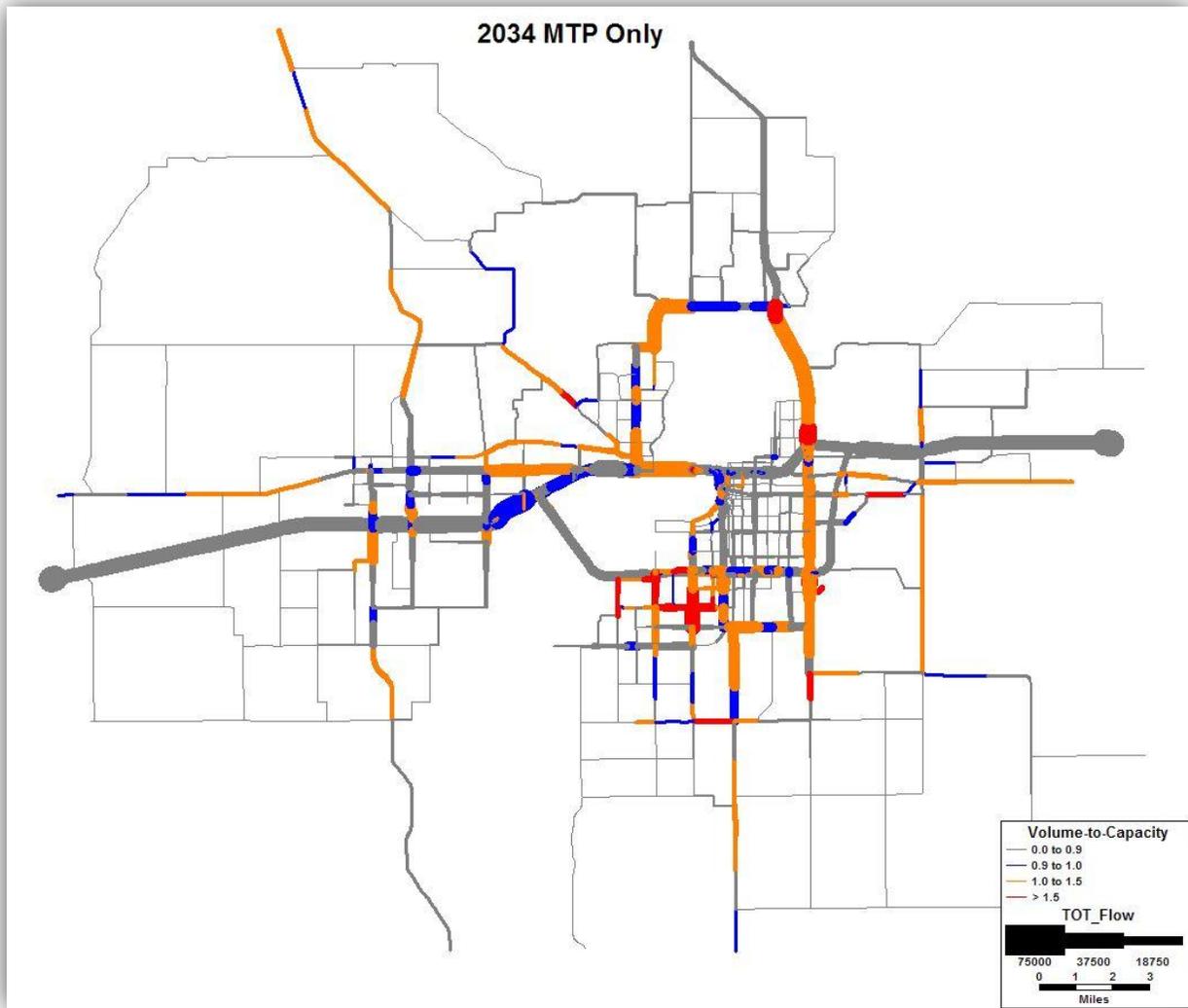


Figure 4-3 2034 MTP minus Ryan

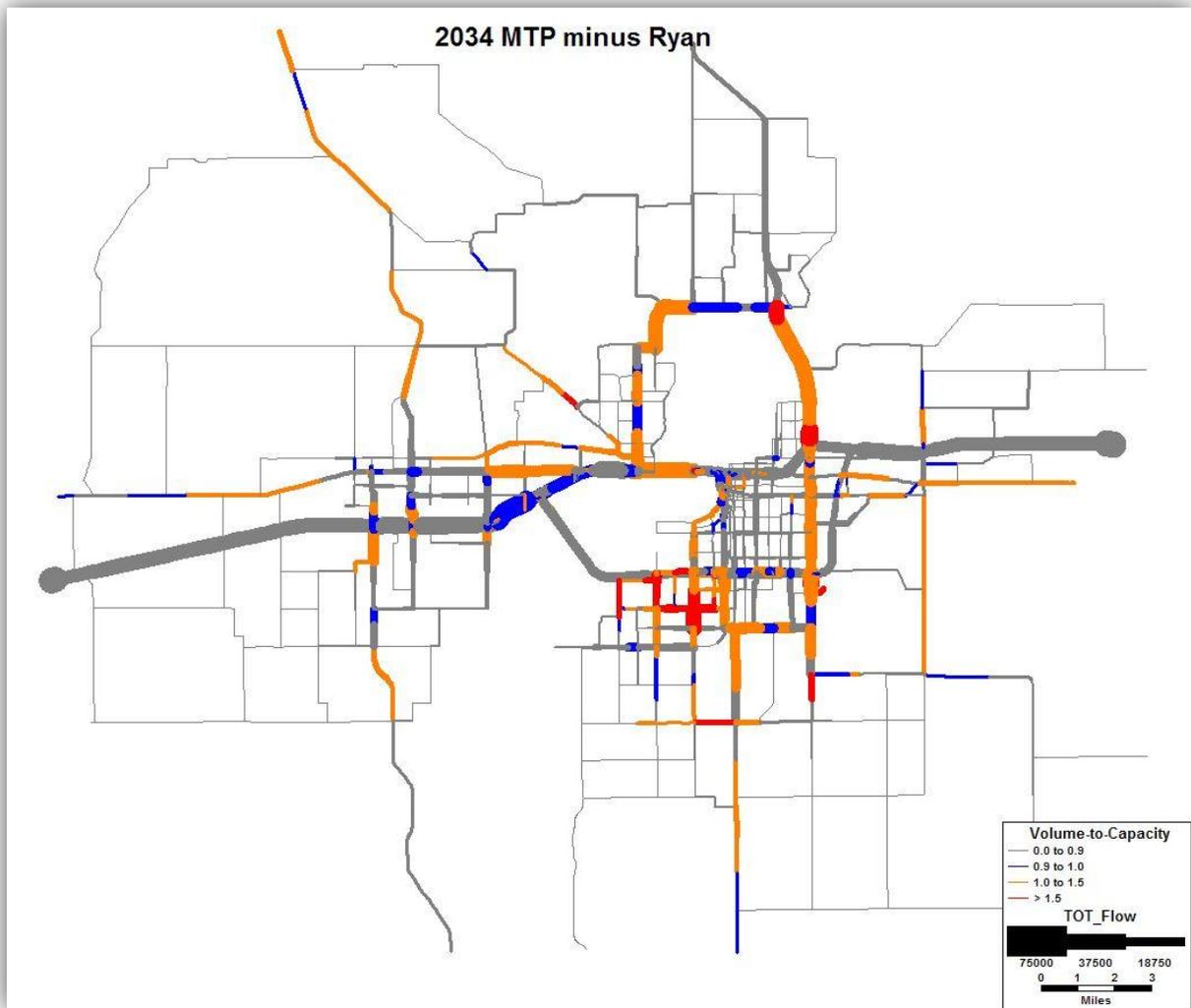


Figure 4-4 2034 MTP minus Ryan plus Enterprise

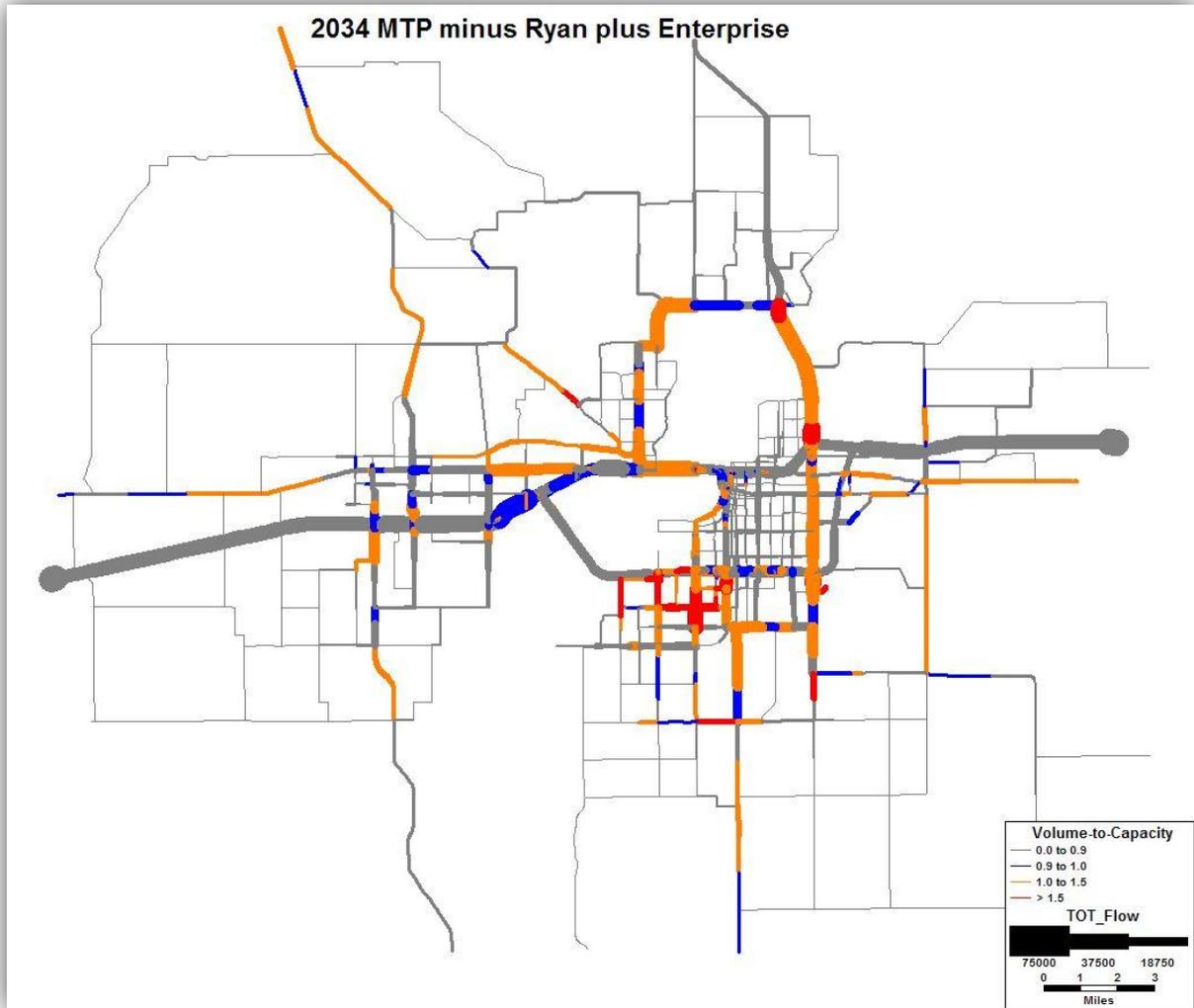
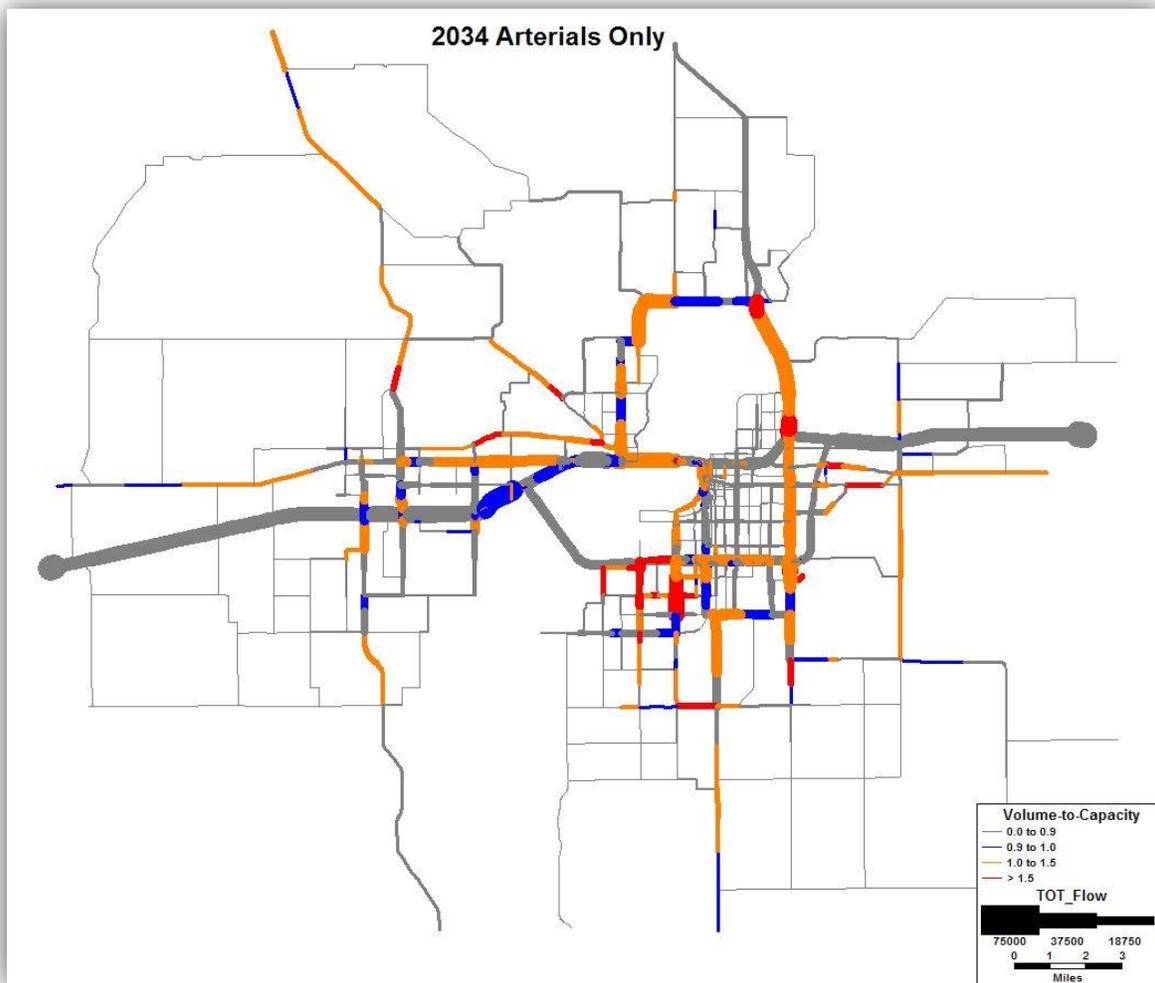


Figure 4-5 2034 Arterials Only Assignment



Project Evaluation

While the model results are an important tool for testing 'build' and 'no build' roadway alternatives, the model is merely another tool in the transportation planning arsenal. To ensure that the right set of project alternatives are

selected, it is important to consider the mobility needs and desires of all stakeholders including the public. During the visioning meetings conducted in October 2008, transportation stakeholders and public participants ranked a set of project selection criteria (see Chapter 2).

These criteria were developed by the Study Team and incorporate the US DOT mandated planning factors for use in project selection.

The goal of the project selection process is to achieve a fair, easy-to-understand, and systematic evaluation of all projects based on evaluation criteria deemed important by users of the local transportation system. To accomplish this goal, each project must be evaluated based on criteria designed to measure the project's ability to achieve the desired effects.

To facilitate the project selection process, a spreadsheet tool was developed to accommodate both the model results (quantitative) and the more subjective (qualitative) community based ranking criteria. The spreadsheet:

1. Takes the outputs from the various model runs and organizes the data by project;
2. Provides a mechanism for adding the qualitative evaluation measures to each project that reflect local goals and objectives;
3. Allows each quantitative and qualitative measure to be weighted to reflect its importance to the overall process; and
4. Generally provides an easy to use tool for conducting a project selection process that combines both quantitative and qualitative information.

As noted above, projects were evaluated based on the model outputs (volume, V/C ratio, speed, etc.), and the qualitative measures that reflect the local goals derived from outreach to local transportation stakeholders and the public.

Quantitative measures are those that can have a value determined directly from the model output. These included the traffic volume, the volume to capacity ratio (V/C), speed, vehicle hours traveled (VHT), vehicle miles traveled (VMT) and the increase or improvement in the value between runs for different years or roadway configurations. Volume provides a measure of the intensity or importance of the roadway but not the level of congestion. Volume to capacity ratio (v/c) is a common level of congestion performance measure and is widely used in plan development and transportation studies. Vehicle-miles traveled (VMT) and Vehicle-hours traveled (VHT) reflect mobility and the quality of travel. Specifically, the quantitative measures include:

- ▶ the increase in volume between runs,
- ▶ the average volume of traffic on the project,
- ▶ the increase in V/C between runs,
- ▶ the improvement in speed along the project,
- ▶ the VHT along the project, and
- ▶ the VMT along the project.

The weighting for each individual quantitative measure noted above are set to one. This effectively gives all quantitative measures the same importance; however, this to can be modified if deemed appropriate.

The qualitative measures used for the project evaluation were those developed and ranked during the Lake Charles Visioning process. The fourteen planning measures developed from the visioning process reflect the recommended criteria in the new SAFETEA-LU legislation. The following is the list of qualitative criteria with weighting factors employed for the Project Evaluation spreadsheet:

▶ Improve Safety	2.0
▶ Supports Econ. Dev. Goals	1.9
▶ Reduces Congestion	1.8
▶ Conserve Energy	1.7
▶ Promote Efficiency	1.6
▶ Protect Environment	1.5
▶ Improves Access	1.4
▶ Improve Quality of Life	1.3
▶ Increase Connections	1.2
▶ Support Land Use Goals	1.1
▶ Improve Security	1.0
▶ Increase Multi-modal Options	0.9
▶ Connect Modes of Travel	0.8
▶ Preserve Right-of-Ways	0.7
▶ Cost Sharing	1.0

(80% federal and 20% state or local) cost share from a local entity, the project received credit for cost sharing.

The table on the following page shows the quantitative score, taken from the model results, for 'Reduces Congestion' and the qualitative evaluation based on the other criteria. The projects are listed alphabetically and do not fall in any ranked order.

The evaluation shown in that table was used to conduct final project selection for inclusion in the financially constrained MTP listed in Appendix C.

As noted earlier, each of the quantitative measures were individually weighted as one (1) and a final score for those measures was calculated. However, overall, the modeling results were incorporated into the selection process under the 'Reduces Congestion' criteria. During the Visioning process, 'reduces congestion' was ranked number three (3), and as such, the modeling results are incorporated as the third highest priority in the criteria.

The relative importance of the other qualitative criteria with respect to each project was determined by the study team and input to the spreadsheet. The final project listing was determined by calculating each of the individual scores for each criteria and then multiplying that by the relative weighting of each criteria.

One additional criterion was added to the overall project evaluation - Cost Sharing. This criterion reflects the LaDOTD's desire to increase local participation in project funding and thereby 'stretching' Louisiana's federal funding. If a project has greater than the standard 80/20

Table 4-3 Qualitative and Quantitative Project Evaluation

Project	Limits	Modification	Source	Improves Safety	Supports Econ. Dev. Goals	Reduces Congestion (Model)	Conserves Energy	Promotes Efficiency	Protects the Environment	Improves Access	Improves Quality of Life	Increases Connections	Supports Land Use Goals	Improves Security	Increase Multi-modal Options	Connect Modes of Travel	Preserves ROW	Cost Sharing Rating
12 St	Ryan to 1st Ave	Turn Lane	MTP	✓		3.3		✓	✓						✓			
Big Lake Rd	Country Club to Gauthier	4 Lanes	MTP	✓	✓	1.4		✓	✓									
Carlyss Dr Ext *	LA 1256 to LA 27	New Rd	Parish CIP			1.1												
Common St	Prien Lake to Alamo	Turn Lane	MTP			3.6			✓									
Common St	12th to Prien Lake	4 Lanes	MTP	✓		2.1			✓									
Corbina Rd Ext *	LA 14 to E Prien Lake	New Rd	Parish CIP			3.7												
Country Club	Big Lake to West Jefferson	5 Lanes	MTP	✓	✓	5.7		✓	✓				✓					
E McNeese St *	Ext to Parish Rd	New Rd	LC CIP			1.3												
Elliot *	Country Club to Ham Reid	4 Lanes	LC CIP			1.3												
Enterprise Blvd	Overpass to Moeling/Fitzenreiter	New Rd	LC CIP	✓	✓✓	0.4		✓	✓	✓	✓	✓	✓					
Ernest St	Glenn to 18th	Turn Lane	MTP	✓		1.3			✓									
Gillis Cutoff Ext *	N Perkins Ferry to Hickory Branch	New Rd	Parish CIP			0.1												
Ham Reid Rd Ext *	LA 384 to Elliot	New Rd	Parish CIP			0.0												
Hwy 108 Ext	OST to Houston River Rd	New Rd	MTP	✓	✓	1.6		✓	✓	✓	✓	✓	✓	✓				
IH 10	Ryan St	Exit Ramp	TIP	✓	✓	0.4		✓	✓	✓	✓	✓	✓	✓				✓
IH 10	Turn Arounuds Enterprise & Kirkman	New Frtg	TIP	✓	✓	0.0		✓	✓	✓	✓	✓	✓	✓				
Ihies *	From Sales to Country Club	4 Lanes	LC CIP			2.9												
LA 1138-2/Prien Lake	From Lake St to 1/4 mile east of Nelson	5 Lanes	MTP	✓	✓	5.9		✓	✓									
LA 27	Dave Dugas to LA 108	4 Lanes	MTP	✓	✓	5.6		✓	✓									
Lake St *	Sale to McNeese	4 Lanes	MTP			7.1												
Lake St *	McNeese to University	4 Lanes	LC CIP			3.1												
N Perkins Ferry	LA 378 to US 171	4 Lanes	MTP			4.1		✓	✓				✓					
Nelson Rd	Gauthier to Tank Farm	4 Lanes	MTP			1.4		✓	✓									
Nelson Road	Access to Lake Charles Port	New Rd	MTP	✓	✓	0.4		✓	✓	✓	✓	✓	✓	✓	✓	✓		
North Loop/LA 378	John Stine to Philips	5 Lanes	MTP	✓	✓	8.9		✓	✓	✓	✓	✓	✓	✓				
North Loop/LA 378	Westwood to Sam Houston Jones Pkwy	5 Lanes	MTP	✓	✓	6.7		✓	✓	✓	✓	✓	✓	✓				
North Loop/LA 378	W Fork Calcasieu River North Loop Bridge	5 Lanes	MTP	✓	✓	5.9		✓	✓	✓	✓	✓	✓	✓				
Parish Rd *	Ruth to Picard	Turn Lane	MTP			0.9												
Pete Seay	Pete Seay at IH 10	Interchange	Parish CIP			0.4		✓	✓	✓	✓	✓	✓	✓				
Pete Seay	LA 27 to Pete Seay	New Frtg	Parish CIP			0.1		✓	✓	✓	✓	✓	✓	✓				
Red Davis Rd Ext *	Lake to Common	New Rd	Parish CIP			2.4												
Ruth St *	IH 10 to LA 108	4 Lanes	MTP			8.1												
Ryan St	Prien Lake to Sale	5 Lanes	MTP	✓	✓	6.7		✓	✓									
Ryan St	Sale to McNeese	5 Lanes	MTP	✓	✓	4.9		✓	✓									
Ryan St	12th to Prien Lake	5 Lanes	MTP	✓	✓	4.0		✓	✓									
Ryan St	Clarence to 12th	5 Lanes	MTP	✓	✓	3.7		✓	✓									
S Beglis Pkwy	IH 10 to LA 108	4 Lanes	MTP	✓	✓	7.3		✓	✓									
Sale Rd	Canal to Holly Hill	Turn Lane	MTP	✓	✓	5.3		✓	✓				✓					
Sale Rd	Lake to Common	Turn Lane	MTP	✓	✓	6.7		✓	✓									
Sale Rd *	Weaver to Prien Lake	Turn Lane	LC CIP			2.0												
US 90	PPG Rd to Post Oak	4 Lanes	MTP		✓	8.6			✓									

* Denotes those projects that only received a score from the travel demand model because they were locally funded

Chapter 5

Systems Level Analysis of Proposed Projects

Systems level analyses are used to look at how the proposed slate of candidate projects will impact community issues that are system wide concerns. This is a holistic evaluation of systemic impacts. This chapter describes the process of looking at environmental, social justice, and other system level issues that should be taken into consideration in the development of the MTP.

Land Use Growth Scenario Analysis

As outlined in earlier chapters, the study team used a scenario based planning approach in developing the Lake Charles Urbanized Area 2034 MTP. This approach allowed the Study Team to evaluate proposed solutions in terms of, not only transportation system performance, but also community impacts and the effectiveness of transportation solutions in meeting community needs and societal objectives, including social equity.

The dominant scenario was driven by changing land use patterns in response to the dramatic impacts of Hurricanes Rita and Ike. Hurricane induced flooding has put the sustainability of development in the southern portions of the

study area in doubt and inspired a shift to development north of I-10. A review of the proposed list of projects showed no obvious constraints or fatal flaws to oppose this community based future land use scenario. In fact, completion of the North Loop projects were all highly recommended by the public visioning process and the consultation process as projects that were essential to addressing the future land use changes in the study area.

Environmental Mitigation Analysis

An environmental mitigation analysis was conducted on the study area to identify any potential environmentally sensitive areas that should be considered during the MTP planning process. This was a high-level conceptual analysis conducted with the intent to identify any fatal flaws or obvious environmental constraints that would prevent the Plan from being implemented. This analysis was applied to the list of identified projects to ascertain where further investigation would be necessary. Once individual projects reach implementation stage, a more detailed environmental evaluation will be done as a part of the National Environmental Protection Act (NEPA) process.

The data and information used to conduct the environmental mitigation analysis included Federal Emergency Management Agency's (FEMA) flood plain maps; Louisiana's wetlands maps; and consultation with state and federal wildlife and environmental protection agencies.

Although the Lake Charles Urbanized Area is an Air Quality Attainment Area, maintaining air quality remains a community priority. Therefore, the following environmental

mitigation issues have been identified for consideration when developing future projects for this metropolitan transportation plan update:

- ▶ Maintenance of wetland and floodplain
- ▶ Air quality mitigation

Wetlands & Floodplain Development

Calcasieu Parish, which contains the entire MTP study area, because of its proximity to the Gulf of Mexico and low elevation, is often subject to severe weather, including flash flooding, hurricanes, heavy rainfall and tornados. Its coastal location also ensures that it is home to various coastal and wetlands habitats including marshes, bayous, rivers and lakes. These habitats are often home to a wide variety of waterborne and water-dependant animal and bird species and migratory populations which rely on the fresh or brackish water within these ecosystems. In addition, the wetlands act as nurseries for many species of ocean-going animals. Without wetlands nurseries, the fishing industry of Louisiana would be on the endangered list.

Development within and around these habitats can be a threat to these important natural resources if not managed in a sustainable and deliberate way as to not impede the natural water cycle or the movements and habitats of the indigenous animal species. This involves maintaining the natural water flows needed to support the optimal concentrations of fresh, brackish and sea water in the wetlands system and ensuring that sufficient natural habitat is available for year-round indigenous animal species and seasonally migrating water fowl and other species.

Wetlands protection includes the maintenance of these areas as natural buffer zones between human development and severe weather phenomenon, especially storm surges from hurricanes and other tropical disturbances. Research has shown that some of the most efficient and cost-effective storm protection on the Gulf Coast can be achieved by the maintenance and presence of healthy and unobstructed natural wetlands systems. The

presences of healthy wetland ecosystems can provide an important natural buffer against storm surges and hurricane-force winds that have been seen in recent powerful hurricanes along the Louisiana Gulf Coast.

Calcasieu Parish is located within the Local Coastal Protection Region 6 of Southwest Louisiana. The local coastal management ordinance was adopted by Calcasieu Parish in 1986 and



includes all property that falls between the Intracoastal Waterway, the Calcasieu-Cameron parish line, and the Texas border. The entirety of this local coastal protection area falls outside of the MTP study area, in the south of the Parish. However, many of the areas within the MTP study area fall within the 100-year or 500-year floodplain as seen in the floodplain map.



A 100-year flood, is defined as a flood from a storm that has a 1% chance of meeting or exceeding the proposed water surface elevation in any given year. According to the City of Lake Charles floodplain management program, approximately 20% of the land area of the City is within the 100-year flood plain. According to the Calcasieu Parish Policy Jury 32% of Calcasieu Parish is located in a floodplain or flood hazard zone. Even the area of the City outside of the 100-year flood plain is still impacted by the 100-year flood event. Calcasieu Parish has been a “Presidentially Declared” disaster area on eight different occasions since 1965 due to flooding events. Two of these declarations were for hurricanes and the addition five declarations were for severe storms and flooding events. The City also contains a number of “flood zones” which are geographical areas that historically have flooded, but many don’t

necessarily lie within a 100-year floodplain. As such, much of the City of Lake Charles and Calcasieu Parish are at risk of being affected by flooding and severe weather, regardless of the specific designation of the area.

Channel overflow is the principal flood problem in the Lake Charles area. Streams flowing through and around the study area have gradients of a few feet per mile, and thus are easily affected by storm surges from the Gulf of Mexico. Flooding caused by hurricane surges affects the Calcasieu River and backwater areas of its tributaries, many of which are located within the MTP study area. These areas susceptible to flooding include urban bayous and other tributaries of the Calcasieu River, many of which have experienced rapid residential, commercial and industrial development in the past few decades. Development in and around these natural wetland areas not only poses a risk to those structures which are built in the flood-prone areas and the people within them, but they also reduce the amount of natural wetland area that is available for fowl and wildlife habitat and protection.

During the Visioning meetings, numerous members of the public voiced concerns about development in the floodplains. Concerns included the safety of the structures and the people inside during severe weather as well as the effects of continued development in the floodplain areas. Several members of the public denoted a “surge zone” line across the southern portion of the study area should be developed. Many felt that development of new road infrastructure and intensive land uses should be strictly limited south of the surge zone.



Many of the comments collected during the public meetings gave support for increasing development intensity and density in already developed areas, especially those in the more northern section of the study area.

The plan appears to have only modest environmental impacts and no fatal flaws were identified. However, a map of the plan projects was overlaid on flood plain and wetlands geographic layers to identify any project specific environmental issues. The analysis indicated that the following three projects may have sections that intersect with environmentally sensitive areas and need further review:

- ▶ Corbina Rd
Limits: LA 14 to E Prien Lake Rd
Modification: New Rd
Source: Parish CIP
- ▶ Enterprise Blvd
Limits: Overpass to Moeling/Fitzenreiter
Modification: New Rd
Source: Lake Charles CIP
- ▶ LA 378
Limits: Westlake to Moss Bluff
Modification: Widen 2 to 5 lanes
Source: MTP

These projects will be flagged for further review as they approach implementation. If further environmental review indicates that there are conflicts with environmentally sensitive areas, there is potential to resolve them through strategic alignment shifts or through wetlands offsets such as the Louisiana Land Bank system or other offset mechanisms.

The Department of Transportation Act (DOT Act) of 1966 included a special provision, referred to as Section 4(f), which stipulated that the Federal Highway Administration (FHWA) and other DOT agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply:

- ▶ There is no feasible and prudent alternative to the use of land.
- ▶ The action includes all possible planning to minimize harm to the property resulting from use.

SAFETEA-LU made a substantive revision to the 4(f) requirements by simplifying the process. However, the need to identify any obvious constraints or fatal flaws relative to 4(f) properties still exists. When reviewing the list of projects, only one project was identified that had possible minor impacts on a 4(f) property. A section of the North Loop Project runs near Sam Houston State Park.

Since these four projects (North Loop and the three identified above) have been flagged as potential environmental mitigation issues and worthy of further investigation once they reach implementation phase, funding for Environmental Analysis/Environmental Impact

Studies to further review and resolve wetlands and/or flood plains issues was programmed into the Plan as a pre-implementation line item for each.

Air Quality

The Lake Charles Urbanized Area is an attainment area for air quality and recent reports indicate that the area is likely to remain in attainment for the near future. However, the need to be concerned about the production of greenhouse gases remains an issue for all areas of the country. In the transportation system, this need is addressed by the reduction in vehicle miles traveled, idling time, and the improved access to transit and non-motorized modes of transportation. All of these are part of the criteria by which the project selection process was conducted, and no further adjustments were deemed necessary by the Study Team.

Environmental Justice Analysis

The term environmental justice first emerged into the discussion of metropolitan transportation planning in 1994 with the issuance of Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The executive order was based upon Title VI of the Civil Rights Act and required that all federal actions comply with three primary principals. These principles include:

- ▶ To avoid disproportionate adverse effects on minority and low-income populations;

- ▶ To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and
- ▶ To prevent the denial of the benefits of the transportation system to minority and low-income populations.

The passage of the SAFETEA-LU transportation legislation in 2005 specifically codified the environmental justice goal of including low income and minority populations in the decision-making process. Using the guidance contained in the Metropolitan Planning Regulations, the study team incorporated environmental justice considerations into the development of the Lake Charles Urbanized Area 2034 MTP through the following steps.

1. The study team worked with MPO staff to identify and map the locations of minority and low-income populations (see poverty map on following page).
2. Using the MPO's adopted public participation plan as a guide, the study team designed and implemented an early and meaningful public participation program that provided an opportunity for the public to be partners in the planning process.
3. The MTP development was carried out using a scenario based planning process in which the study team worked with the public to develop performance measures that allowed assessment of the outcomes of transportation investments in terms of community values and quality of life impacts.
4. Insured that public transportation providers, upon which the environmental justice community is most dependent, were strong partners in the planning process.

Insert Map

L C Poverty.pdf

5. The plan development process focused on developing a multimodal transportation system that served diverse travel markets and supported the trip purposes of various transportation consumers, including the identified environmental justice population.

Because members of the environmental justice community are not always able to take advantage of opportunities to participate in the planning process and personally articulate their needs, the study team undertook additional consultation efforts and conducted GIS based travel market analysis to assist in identifying potential transportation needs. These efforts included, but were not limited to the following activities:

- ▶ MPO staff maintains, and continues to participate in, an ongoing stakeholder dialogue on transportation and other issues affecting minority, low-income, elderly, the disabled and other disadvantaged populations through its active membership in the Lake Charles Mayor's Committee on Disability.
- ▶ The study team worked with MPO staff to integrate the goals and objectives of the Human Services Transportation Coordination Committee into the plan development process.
- ▶ The study team used GIS analytical tools and resources - including socio-economic data layers from the US Census, transit system route layers from local transit providers, and geographic layers with the locations of major trip destinations for various trip purposes (particularly community travel such as medical trips) - to perform a spatial analysis of the market coverage provided by the current transit systems. This approach

allowed the study team to identify gaps and duplication in current service and to make recommendations regarding future transportation system strategies and investments to address deficiencies in service, particularly with regard to the environmental justice community's travel patterns and needs.

- ▶ As part of the Environmental Mitigation Process, the study team assessed the likely benefits to, and impacts on, the environmental justice community of each of the transportation investments proposed for inclusion in the 2034 MTP. The outcomes of these analyses are summarized in the project description for each project contained in Chapter 7.

Human Service Transportation Coordination Analysis

An analysis was conducted to determine whether the MTP adequately supports the goals and objectives of the regional human services transportation coordination plan. Although this plan covers a much broader geographic area than the MTP, the coordination plan was designed to improve the quality and quantity of services available to the elderly, handicapped and disadvantaged populations of the region. At this time, the coordination process is just beginning and a specific action plan or list of targeted areas of coordination has been adopted. IMCAL does host the planning process and the MPO should continue to look for ways to support future identified coordination activities coming out of this process.

Chapter 6

Financial Analysis and Fiscal Constraint

The Lake Charles Urbanized Area 2034 Metropolitan Transportation Plan is fiscally constrained in compliance with the requirements of SAFETEA-LU and the Metropolitan Planning Regulations. This chapter describes the process of fiscally constraining the project list described in previous chapters. By federal regulation, the final MTP project list must be fiscally constrained. This simply means that, after making projections about future costs and revenues, the anticipated amount of revenue that will be available for transportation projects will be equal to (or greater than) the anticipated cost of the MTP projects.

These costs and revenues also have to take into account the change in the value of the dollar due to inflation. Therefore, project costs are calculated in year-of-expenditure dollars. This means that the cost of the project is calculated based on the value of the dollar in the year that it is spent. For example, if a roadway is overlaid with a new surface in 2009, the work is anticipated to cost \$400,000 per mile to complete the project, but if the project is put off until 2010 the project cost is projected to increase to \$416,000 dollars. This 4% increase in the cost from one year to the next takes into account a 4% inflation rate.

The chapter will explain how the anticipated total program of highway and transit revenues was calculated to be \$500 million and the total program cost (in year-of-expenditure dollars) was calculated to be \$283,828,000 without nonrecurring costs thus making the Lake Charles Urbanized Area 2034 MTP fiscally constrained.

Calculating Revenues

In the Lake Charles Urbanize Area, the amount of state and federal funding for transportation projects is determined by LaDOTD, in consultation with the MPO, on an annual basis. LaDOTD has a statewide pool of transportation funds that is used for doing all small urban transportation projects in the state. The money in this fund is not allocated by any formula; rather it is distributed to best address the unmet needs in any of the six small urban areas (under 200,000 in population) of the state, at the discretion of LaDOTD and in consultation with the small urban MPOs. This means that the actual amount of state and federal funds spent in any single small urban area can vary widely from year to year. For this reason, revenue forecasts are based on averages. First a historic average amount of funding is calculated, and then a future average amount of funding is projected based on these historical trends.

The following describes the step-by-step process by which future revenues for roadways were forecast for the Lake Charles Urbanized Area. Transit project revenues were also forecast, and a description of the process for projecting transit revenues from state and federal sources follows the roadway description.

Step 1 Gather historic data on the amount of money spent on transportation projects constructed in the Lake Charles MPO area over the last twenty eight years.

Data was obtained from LaDOTD on all of the transportation projects that were let in the Lake Charles Urbanized Area over the last 28 years. This data included the type of project (overlay, reconstruction, new construction, etc.) and the actual dollar amount spent on the project. When the project list was summed by year, it gave the total amount of revenue that was available in the Lake Charles Urbanized Area for that year (for small urban areas, the amount of revenue received equals the amount of money available). This resulted in a list of transportation revenues by year (and funding category) for the last 28 years, but the amounts could not be accurately compared until all of the revenue figures were converted into a constant year dollar amount. For the purposes of this study, historical amounts were converted into equivalent 2008 dollars.

Step 2 Convert the dollar costs of the historic projects into 2008 dollars.

The revenue figures for each of the last 28 years were converted into 2008 dollars by applying the federal cost price index (CPI). This resulted in a list of annual revenue amounts, but the revenue figures included both recurring and non-recurring funds.

Step 3 Deduct non-recurring revenue.

Some transportation projects are funded through special programs or as a result of a competitive grant process, these funds are non-recurring funds. In order to accurately project the amount of revenues that can be expected in the future, these non-recurring (or one time) funds were subtracted for each year's total

revenues. The results was a list of annual revenue amounts that included only fund sources that could reasonably be expected to recur in the future.

Step 4 Determine an historic average amount of available revenue.

From this list of annual recurring revenues, an average was calculated in order to establish a baseline for projecting future revenues. The total revenues were summed and divided by the number of years to obtain an historic average of \$11 million per year of revenue that was available to the Lake Charles Urbanized Area over the last 28 years.

Step 5 Project future revenues by year.

Based on this historic average of \$11 million dollars per year in available revenues, an inflation factor of 4% per year (compounded annually) was applied to each year out to the plan horizon year of 2034.

Step 6 Combine the revenue projections into three stages.

As stated earlier, annual transportation revenues in the small urban areas of the state can vary widely. Therefore, revenue projections were calculated for three time periods, or stages. The following table contains the revenue projections for state and federal recurring funds calculated for this MTP.

Stage I	
2009 to 2014	\$75,000,000
Stage II	
2015 to 2024	\$175,000,000
Stage III	
2025 to 2034	\$250,000,000
Total for all Stages	
2009 to 2034	\$500,000,000

Step 7 Adding in Future non-recurring revenues.

The figures in the table above represent recurring revenues. In the case of projects with special dedications of non-recurring funds (such as American Recovery and Reinvestment Act funds) the amount of funding dedicated to individual projects is added on top of the recurring revenue forecast on a case-by-case basis.

Calculating Transit Revenue

Transit revenues were calculated using a process similar to the process described above. Historic funding revenues were obtained from the LaDOTD Public Transportation Section. The historic funding in actual year dollars for the two public transit systems is listed below:

Lake Charles Transit

2004/2005	\$1,221,641
2005/2006	\$1,280,264
2006/2007	\$1,288,281
2007/2008	\$1,341,153
2008/2009	\$1,457,689

Calcasieu Parish PPJ/OCS

2004/2005	\$73,713
2005/2006	\$130,649
2006/2007	\$190,048
2007/2008	\$231,429
2008/2009	\$275,099

These revenue figures were then converted into 2008 dollars by applying the CPI inflation factor.

When these revenues are averaged over the five-year period, they produce an estimate of annualized transit revenues in 2008 dollars. The results of this calculation are shown below.

Average historic transit funding

Lake Charles Transit	\$1,370,127
Calcasieu Parish PPJ/OCS	\$184,933

These two baseline figures were then used to calculate the anticipated transit revenues over the 25-year life of the MTP. The results are listed below.

Year	Lake Charles Transit	Calcasieu Transit
2010-2014	\$8,026,607	\$1,083,390
2015-2024	\$21,646,932	\$2,921,793
2024-2034	\$32,042,752	\$4,324,969
Total	\$61,716,291	\$8,330,152

Calculating Costs

In keeping with SAFETEA-LU guidelines, Cost is defined as the total project cost, which includes: planning elements (e.g. environmental studies and functional studies); engineering costs (e.g. preliminary engineering and design); preconstruction activities (e.g. line and grade studies, right-of-way acquisition and corridor preservation); construction activities; and contingencies.

The following describes the step-by-step process by which the cost of the roadway projects included in the MTP was determined. Transit project costs were calculated in a similar manner, however there is less historic data available. The description of the process for calculating transit costs follows the roadway discussion.

Step 1 Gather historic project costs by type of project.

As stated earlier, data was obtained from LaDOTD on all of the transportation projects that were let in southern Louisiana urban areas over the last 28 years . This data included the type of project (overlay, reconstruction, new construction, etc.) and the actual dollar amount spent on the project. This data was then sorted by project type so that costs could be calculated based on project type.

Step 2 Using 2008 dollars, determine a unit cost per project.

Using the historic cost for each project, translated into 2008 dollars, a unit cost was

calculated for each project. The total project cost was divided by the number of units completed in that project, e.g the number of miles of roadway overlaid or reconstructed, or the number of intersections reconfigured. This calculation resulted in a unit cost per project in 2008 dollars.

Step 3 Determine the average cost per unit in 2008 dollars.

The unit costs within each category of projects was then summed and divided by the number of projects. This calculation resulted in the average historic unit cost per category, as displayed in the table below.

Table 6-1 Typical Improvement Costs by Type

IMPROVEMENT	UNIT	AVERAGE COST PER UNIT
New 4 Lane Freeway	Mile	\$15,500,000
New 2 Lane Roadway	Mile	\$2,250,000
New 4 Lane Arterial	Mile	\$4,250,000
Interstate Widening	Mile	\$8,000,000
Interstate Rehab	Mile	\$900,000
Arterial Widening	Mile	\$4,000,000
One Way Couplet	Mile	\$3,500,000
Center Turn Lane	Mile	\$1,750,000
Reconstruction	Mile	\$2,250,000
Overlay	Mile	\$400,000
ITS	Mile	\$450,000
Intersection Improvement	Each	\$750,000
Interchange Improvement	Each	\$5,250,000
New Interchange	Each	\$22,000,000
Underpass	Each	\$12,000,000
RR Overpass	Each	\$5,800,000

Step 4 Apply historic unit costs to MTP project list to determine construction costs.

A base construction cost was calculated for each project in the MTP project list by multiplying the appropriate average cost per unit by the number of units to be completed in each project. For example, a project that called for overlaying 3 miles of roadway would cost \$1,200,000 (\$400,000 unit cost * 3 units).

Step 5 Calculate the total project cost for each MTP project.

As stated above, SAFETEA-LU requires that the MTP contain a 'total project cost' for each project. In addition to actual construction costs, the following costs were added in order to determine the total cost of each project: planning elements (e.g. environmental studies and functional studies); engineering costs (e.g. preliminary engineering and design); preconstruction activities (e.g. line and grade studies, right-of-way acquisition and corridor preservation); construction activities, and contingencies. Although not all of these costs were appropriate for every project (e.g., right-of-way acquisition may not be necessary for an overlay project), the additional costs average out to be 35% of construction costs. Therefore, a table was created that listed all of the elements of total costs for each project. An example project is listed below:

Project Example: 4 Lane Arterial Widening
3.88 Miles x \$4,000,000 = \$15,520,000

\$15,520,000 construction
+ \$1,552,000 design
+ \$3,880,000 pre-implementation activities
\$20,952,000

Step 6 Calculate Project Costs in Year-of-Expenditure Dollars.

The projects in the Lake Charles Urbanized Area 2034 MTP are scheduled to be completed over the 25-year life of the plan. Many of these projects will take multiple years to complete. Therefore, the total cost for each project was calculated based on the year in which funds were anticipated to be spent to complete that project. The costs calculated in 2008 dollars must be adjusted to account for inflation. Therefore, as projects were assigned to stages of the plan, the total project cost was inflated to the implementation year accordingly. As noted earlier, a 4% annual compounded inflation rate was used.

A project implementation schedule was determined by the Study Team in consultation with LaDOTD and the MPO Policy Committee. This schedule placed projects in one of three stages in correlation with the three stages for which revenues were calculated.

Stage I	2009 to 2014
Stage II	2015 to 2024
Stage III	2025 to 2034
MTP Life	2009 to 2034

Projects in the Transportation Improvement Program were assumed to be reported in total cost and year-of-expenditure dollars because that document has the same requirements for fiscal constraint and has already been adopted by the MPO and the state.

Because of the uncertainty regarding a projects exact year of implementation within stages II and III, an average cost per unit was calculated for each of the two out year stages (using the mid stage year). This resulted in one set of unit

costs for each of those two stages. The unit cost schedule was then applied to projects depending on which stage the project was anticipated for implementation.

Based on this schedule, a total project cost for all roadway projects was calculated for each project in year-of-expenditure dollars. (See table of projects in Appendix C) The cost of all projects was then summed, and the result was \$205,858,000, the anticipated expenditures for all roadway projects over the 25-year life of the MTP.

Calculating Transit Costs.

Transit total project costs were developed in consultation with the transit providers in 2008 dollars. These costs were then inflated to year-of-expenditure dollars using the same 4% compounded inflation rate, as was done for roadway projects. Those total costs equaled \$77,970,000.

Constraining the Plan

The anticipated total program (highway and transit) revenues was calculated to be \$500 million and the total program costs (in year-of-expenditure dollars) was calculated to be \$283,828,000 - thus making the Lake Charles Urbanized Area 2034 MTP fiscally constrained.

Chapter 7

Fiscally Constrained Plan Project Descriptions

The following is a description of the projects that have been included in this fiscally constrained long-range plan. The projects have been grouped into logical categories based on the type of project or the type of transportation deficiency being addressed. In addition to a physical description of the each project, the purpose and need; limits and scope; community issues and concerns; and sources of funding for each category are also included. Projects that add capacity to the system or large projects with the potential for community or regional impacts receive some additional individual discussion.

Widening or Extension of Existing Roadways

Description

Although the primary emphasis of SAFETEA-LU is a focus on maintaining and improving the operation of the existing transportation system, there are situations in which construction of a new roadway or expansion of an existing one is the most logical solution to a transportation problem. New capacity is warranted when it completes a logical component without which the transportation system cannot operate properly; when it eliminates bottlenecks or

safety hazards; or finally, when all reasonable Operations and Management efforts have not proven effective in dealing with the problem.

The projects listed in the table below are typically highway projects that include lane additions in one or more sections or minor extensions to provide better connectivity. For the most part, they are projects of similar scope on minor arterials or on short sections of principal arterials.

Limits and Scope

The limits and scope of each individual project are identified in the project line items shown below.

Purpose and Need

In addition to being necessary to meet the market objectives and travel purposes of consumers, these projects require additional action to meet existing or projected demand due to intense growth in land use in the surrounding areas or to provide alternate access routes to relieve congestion on adjacent arterials.



In the case of the North Loop project, predominant development trends in the study area are moving people to the northeastern portions of the study area. Hurricane impacts

have resulted in new building codes, construction costs, and insurance costs that make property ownership in the south of the study area costly. In addition, since Hurricane Rita many former Cameron Parish residents have moved into Calcasieu Parish due to the hurricane devastation of almost all structures in that parish. Because of this new growth pattern, travelers are already using the three existing roadways that will comprise the North Loop as an ad hoc corridor. However, the inadequate capacity, design cross-sections not intended to serve that market, and geometric deficiencies at transition points, result in congestion and safety issues.

In the case of the Nelson Street Extension, this roadway is an implementation of a proposed NHS connector to provide additional and direct access to the Port of Lake Charles, which is the 11th largest port in terms of total cargo volume in the Continental US.

Community Issues

The primary community issues related to these projects are impacts on adjacent land uses and the potential for increased traffic through adjacent neighborhoods. The MPO will need to work closely with neighborhood groups to address these issues, including exploring alternative solutions.

In the case of the North Loop project, which is proposed in phases, work with developers and land use planners needs to be done to preserve right-of-way, promote synergistic land use development, and mitigate strip development that has a tendency to deteriorate road capacity. At points where the existing roadways need to be connected or realigned for safety and

functionality, consideration needs to be given to avoiding or mitigating potential minor impacts to wetlands and Sam Houston Jones State Park.

In the case of the Nelson Street extension, the existing roadway, although it is a relatively new facility, it is already experiencing congestion. There may need to be an effort to coordinate the implementation of the extension to the port with access management and corridor operational improvements to avoid worsening congestion on the existing roadway.

Financing

Financing for capacity increases depends on the designation of the roadway in question. Roadways on the state system are usually funded with state or federal funds controlled by DOTD and matching state funds. Collectors and arterials off the state system are typically financed with federal formula funds from the statewide Small Urban Pool with local matching funds from the jurisdiction in which the facility is located.

Stage I Projects

Project: US 171 @ You Winn & Gloria Road – This project is an Intersection improvement and realignment that is treated as a capacity increase because of the realignment component. (742-10-0137)

Project: Sale Street Bridge Replacement and widening - This project calls for replacement of the Sale Street Bridge combined with a roadway widening from the bridge near Canal St. to Holly Hill. (742-10-0130)

Project: I-10 Frontage Roads – This project calls for the construction of new I-10 frontage road

turnarounds at Enterprise Blvd and Kirkman St within the limits of the City of Lake Charles. (450-91-0171)

Project: LA 1138-2/Prien Lake Rd – This project calls for the addition of a center left turn lane from Holly Hill to .25 miles east of Nelson Rd. (xxx-xx-xxxx)

Project: I-10 Exit Ramp – This project calls for a new east bound I-10 Exit Ramp at Ryan Street. The project is currently on hold pending negotiations between the City of Lake Charles and LaDOTD. (450-91-0052)

Stage II and III Projects

Project: North Loop / LA 378 - This project calls for the upgrade and connection of several individual, but proximate, roadways into a single facility. Project construction is proposed in three phases:

- ▶ Phase I – Construction of a five (5) lane arterial roadway from John Stine to Phillips.
- ▶ Phase II – Construction of a five (5) lane arterial roadway from Westwood to just south of the West Fork Bridge over the Calcasieu River.

- ▶ Phase III – Construction of a 5 lane arterial roadway from just south of the West Fork of the Calcasieu River to the intersection of LA 378 (Sam Houston Jones Pkwy) and SPUR 378.

The scope of this project will likely also include an environmental analysis (EA) because even though the project uses current roadway alignments it changes footprint and service delivery characteristics of the corridor and may expand the travel purposes and market response to the corridor. Also, there are likely to be some realignment of existing facilities to eliminate safety hazards or improve functionality and flow, which may have minor impacts on adjacent land uses and wetlands.

Project: Nelson Road Extension - This project calls for the construction of four (4) lanes of new roadway from the existing terminus of Nelson Road to provide direct access to the Port of Lake Charles. (000-10-DEMI)

Project: LA 1138-2/Prien Lake Widening – This project calls for the expansion of the existing two (2) lane undivided roadway to a five (5) lane facility (4 through lanes and a continuous left turn lane) from Lake Street to a point one-quarter (1/4) mile east of Nelson Road.

Project: South Beglis Parkway Widening – This project calls for the expansion of the current two (2) lane undivided roadway to a four (4) lane undivided roadway from Interstate Highway 10 to LA 108.

Project: LA 27 Widening – This project calls for widening the existing two (2) lane undivided section of LA 27 from Dave Dugas to LA 108 to a four (4) lane section.



Project: Enterprise Blvd. – This project calls for the extension of Enterprise Boulevard to Fitzenreiter. (xxx-xx-xxxx)

Transportation System Operations and Management

Description

The SAFETEA-LU metropolitan transportation regulations encourage and promote the safe and efficient management and operation of integrated, intermodal surface transportation systems to serve the mobility needs of people and freight and foster economic growth and development. During development of the MTP, the Study Team considered two types of operations and maintenance improvements: 1) projects in those areas where improvements to an intersection could greatly enhance the operational aspects of the system; and 2) those projects where identified constraints associated with some aspect of the proposed project made them poor candidates for capacity increases. Below is a list of projects to address the first instance and proposed studies for likely candidates for corridor operation and management strategies, which address the second.

Limits and Scope

The projects in this section are either intersection improvements, corridor and small area planning, or engineering studies aimed at finding cost effective operation and management alternatives to capital construction. The identified intersection projects are listed first and then the scope of each corridor effort is described in the discussion on the individual corridors.

Purpose and Need

In many cases transportation problems are related to inadequate design or operation of an existing facility and do not require major capacity improvements to address the communities mobility needs. In other cases, the transportation problems may be capacity issues, but the corridor in question defies capacity based solutions due to constraints caused by existing development, sensitive land uses or neighborhood integrity issues. In these cases, a substantial portion of the problem may be addressable through improved operation and management of the transportation system. During development of the Lake Charles Urbanized Area MTP, several corridor locations that were susceptible to this approach were identified.

Community Issues

The intersection projects normally take little time, but exacerbate congestion during construction. Good operations management planning will need to accompany each intersection channelization project to try to maintain adequate flows through the intersection during construction. Regarding the proposed studies, the outcomes of these projects will be of great concern to the community since they will address how the traveling public interacts with certain corridors. Community involvement will need to be a large component of each study.

Financing

Financing for the access management and corridor operations studies described in this section would typically come from FHWA Planning (PL) funds and/or FTA Section 5303 funds administered through the MPO Unified

Planning Work Program (UPWP) in collaboration with DOTD.

Projects

Project: Park Road – This project calls for additional turn lanes at Park Road and Recreation Boulevard. (742-10-0126)

Project: Elliot Road – This project calls for adding turn lanes and signals at the intersection of Elliot Road and Gauthier. (742-10-0114)

Project: I-210 Intersection Improvements – This project calls for improvements to the intersection of the I-210 ramp at Lake Street. (450-30-0078)

Projects: I-210 – This project calls for various ramp and operational changes along I-210 at the interchanges with Nelson Rd, Lake St, Ryan St, and LA 14. (701-65-0710)

Project: Ryan Street Corridor – Ryan Street is a multipurpose corridor serving multiple travel purposes. During the course of each day the corridor experiences heavy journey to work travel during peak periods; community travel in the form of shopping, school and other activities; and goods movement travel related to the intense business activity along the corridor. The

current cross section is predominately four lane undivided principal arterial with strip shopping and other small scale commercial uses that push directly up to the right-of-way line. The presence of this intense development throughout the corridor makes capacity additions prohibitively expensive and destructive of community cohesion. However, a large portion of the delay experienced along Ryan Street is due to turning movements at intersections and conflicts between main-lane traffic and traffic entering and leaving adjacent land uses. Although not necessarily a complete solution to all problems, an access management and operations approach to Ryan Street would provide substantial, cost effective relief that is within the financial and institutional capacity of local jurisdictions.

The MPO proposes to perform an access management / traffic operations study of the corridor to identify a comprehensive approach to improving carrying capacity of the corridor without the need to widen the roadway. Particular attention should be paid to innovative intersection design, smart street concepts and resolution of land use ingress and egress conflicts. In addition, the following two corridors should also be the subject of Access Management Studies.

Project: LA 378 Corridor (Sam Houston Jones Parkway) – This portion of LA 378 from US 171 to SPUR 378 is a five (5) lane corridor through Moss Bluff supporting multiple trip purposes. The corridor is heavily commercialized; is host to both a high school and an elementary school; and serves one of the fastest growing markets in the study area.



Project: Nelson Road Corridor – Although Nelson Road was upgraded from a two lane roadway to a five lane (center left turn lane) facility within the recent past, the corridor is experiencing and will continue to experience congestion at peak times, especially at specific intersection choke points. The corridor is a major north south commute corridor with intense commercial development, two hospitals and many other health related development uses. The commercial activity is projected to continue to expand in the future. It has a large and growing elementary school that has no current options but to use the corridor as a stacking area for school pick up and drop off. At its north end, it has major commercial development along with one casino and another under construction. Its proposed extension to the Port of Lake Charles (see roadway widening and extensions) would benefit from a management and operational study.

Roadway Overlay Projects

Description

Overlay is the process of putting down a thin protective surface (usually asphalt) over a roadway that has begun to deteriorate from traffic and weather exposure, thus preserving the surface, roadway base, and improving drivability.

Limits and Scope

Overlay projects are an ongoing maintenance item and are included in the plan on a recurring basis. Locations are chosen based on data from the DOTD highway needs assessment and from Parish Pavement Management Programs. Because overlay projects are preventative in nature,

identification of projects is a short-term process. In Appendix C, which lists projects in federal aid format, specific sites are identified for the period covered by the Transportation Improvement Program (TIP) where that information was available. For years after those covered in the TIP, only proposed funding allocations are shown. Specific sites are to be determined through the TIP development process on a bi-annual basis.

Purpose and Need

Overlay Projects are a critically important tool in the effort to maintain existing roadways in a condition of peak operating efficiency. These projects are quick and relatively inexpensive, taking only a few weeks or months to complete. More importantly, if maintenance is delayed until the roadbed is seriously deteriorated and reconstruction is required, then the direct construction costs will be as much as six times the cost of a timely overlay - even without adding in the cost in user delay during the lengthier reconstruction process. Overlays are one of the most cost-effective of transportation infrastructure maintenance projects.

Community Issues

Most of the overlay projects in the region are conducted on state routes using federal funds. These funds cannot be used for projects on local streets where the need for pothole repair and overlay is critical. Further, few of the local jurisdictions have any continuing funding for these local projects. However, STP<200K funding can be used for overlays on functionally classified roadways and have been used by several of the local jurisdictions.

Financing

It is anticipated that all of the overlay projects in the Metropolitan Transportation Plan will be funded using federal formula funds with match coming from La DOTD on state routes and from the respective parishes on major roadways that are not state routes. Some roadways may qualify for categorical programs that provide 100% federal funding.

Stage I Projects

Project: US 171 – This project calls for cold plane and overlay of US 171 from US 90 to Conoco Street. (024-01-0050)

Project: LA 27 – This project calls for patch and overlay work on LA 27 from I-10 to US 90. (810-27-0010)

Project: LA 3256 – This project calls for Cold Plane and Overlay work from 0.5 miles north of US 90 to I-10 south service road. (810-15-0014)

Project: LA 384 - This project calls for the overlay of LA 384 (Big Lake Road) from Black Bayou to Gauthier Road. (382-04-0054)

Project: LA 3092 – This project calls for the overlay of Lake Street from LA 384 to a point 0.7 south of LA 384. (810-28-0019)

Project: LA 3092 (Lake Street) – This project calls for the overlay of LA 3092 (Gulf Highway) from Lake Street to LA 385. (810-28-0018)

Project: I-10 Corridor – This project calls for cold plane and overlay of the section of I-10 from the pedestrian overpass to LA 108. (450-91-0173)

Project: I-10 Corridor – This project calls for patch, cold plane, and overlay of I-10 main lanes from Columbia Southern to the Calcasieu River Bridge. (450-91-0165)

Project: John Stine Rd – This project calls for overlaying and widening the existing two lanes from Myrtle Springs to Sampson. (xxx-xx-xxxx)

Project: Myrtle Springs Road – Surface widening and overlay of Myrtle Springs Road. (742-10-0136)

Stage II and III Projects

Stage II and III overlay projects will be identified collaboratively by the MPO and DOTD on a bi-annual basis through the ongoing DOTD Highway Needs Assessment and from parish and city pavement management programs.

Reconstruction / Rehabilitation Projects

Description

Reconstruction involves the demolition of the existing road surface that is beyond repair, re-stabilizing or replacing the roadbed and foundation, and rebuilding the road surface with appropriate materials (e.g. concrete).

Reconstruction is usually undertaken when overlay is inadequate to meet the problem, and further deferral of maintenance would result in the road reaching the limits of drivability.

Limits and Scope

Reconstruction / Rehabilitation Projects can often be lengthy, rivaling the time necessary for actual construction of the road. Most of the

listed projects are anticipated to have relatively short completion times.

Purpose and Need

Because of unstable soil conditions throughout the region, heavily trafficked roadways, particularly those roads that carry a high volume of heavy truck traffic, suffer severe damage under normal wear and tear. The roadways identified in this section have deteriorated beyond the point where simple overlay or light rehabilitation would be useful. Projects are identified from the LaDOTD Highway Needs Assessment and local parish maintenance evaluations.

Community Issues

The primary community issue related to reconstruction projects is the mitigation of construction impacts through use of sound management and operations principles.

Financing

Reconstruction projects are funded from multiple sources as individual construction projects. Most funds come from federal formula funds with state or local match depending upon whether or not the road is on the state maintenance system.

Stage I Projects

Project: Sale Road Bridge – This project calls for reconstruction of the bridge. (742-10-0130)

Project: LA 385 – This project calls for the reconstruction of the roadway at the intersection of LA 385 and LA 1138-2 in Lake Charles. (195-04-0021)

Stage II and III Projects

Stage II and III rehabilitation and reconstruction projects will be identified collaboratively by the MPO and DOTD on a bi-annual basis through the ongoing DOTD Highway Needs Assessment and from parish and city pavement management programs.

Project: J. Bennett Johnston Avenue – This project calls for reconstruction of the roadway and addition of a center left turn lane. (742-10-0125)

Highway Safety / Hazard Eliminations

Description

Safety and Hazard Elimination Projects address several aspects of safety, including accident prevention, crime prevention, accident response, and investigation. The projects in the current plan are mostly low cost efforts to improve visibility at critical locations; provide advisory and warning signs to aid motorists in negotiating difficult or confusing roadway segments; and mechanisms for reducing the delays, congestion, and secondary accident potential after an accident has occurred.

Limits and Scope

Many of the projects that fall in the category deal with either system wide or location specific safety issues. The Motorist Assistance Patrol (MAP) is an example of a system wide safety issue. During reconstruction of I-10 through the City of Lake Charles in the 1990's, traffic on I-10 was rerouted to I-210. The MAP program was implemented to provide roadside motorist assistance issues that, left unattended, could

potentially turn into large incident management issues. Other system wide issues involve evacuation planning. During evacuations, roadways are filled to capacity, usually in one direction. Projects could include various operations management (police support for evacuations) or construction for operations management (installation of contraflow crossovers).

Location specific safety issues include railroad crossings that need signalization or other reconstructive actions.

Purpose and Need

In addition to the obvious financial and human costs of accidents to individuals, the cost to the state and the region from accident claims is excessive. Reducing accident potential is necessary from a risk management standpoint. From a systems standpoint, delays and economic impacts associated with accidents have been identified nationally as one of the most serious impediments to goods movement and other commerce. The economic health of the region is also affected by high insurance rates due to an extraordinary claim rate on auto accidents.

Community Issues

Based on the recent impacts of Hurricanes Rita and Ike, hurricane evacuation is an understandably high priority in the Lake Charles Urbanized area. The MPO works with the Office of Emergency Preparedness (OEP) to address evacuation planning for both hurricane events and industrial incidents.

Financing

Most of the financing for this category of projects comes from either federal interstate

maintenance funds, or from state and local sources.

Stage I Projects

Project: Motorist Assistance Patrol – This project is an ongoing DOTD initiative to provide assistance to motorists in the case of a breakdown or accident along the I-10 and I-210 corridors. The goal of the program is to enhance public safety and mitigate incident related traffic delay. (737-97-0021)

Project: LA 397 RR Crossing – This project calls for pipe replacement and Railroad crossing safety improvements. (193-31-xxxx)

Project: LA 385 Intersection Improvements – This project calls for safety related improvements at the intersection of Ryan and McNeese. (LA 384 and LA 385). (195-04-0029)

Project: I-10 – This project will provide new signing along the I-10 corridor from LA 1256 to the west end of the Calcasieu River Bridge. (450-91-0149)

Stage II and III Projects

These projects will be decided cooperatively between DOTD, the MPO, and local authorities.

Transit System Maintenance and Optimization

Description

This section describes the various transit projects, initiatives and strategies included in the fiscally constrained plan to support operation of area transit service. Services are provided through several operators including urban area

fixed route service provided by Lake Charles Transit Service; rural transit service provided by Calcasieu Parish Public Transit; and additional transit service for the elderly and persons with disabilities provided by the Calcasieu Association for Retarded Citizens (CARC)

Limits and Scope:

Transit initiatives provided for in the fiscally constrained plan include capital assistance for replacement of buses and maintenance of facilities; rural and urban operating funds to support current transit service; and some strategic service expansions and planning funds to assist with service improvements and regional coordination.

Purpose and Need

Both the public participation process and the geographic information system (GIS) analysis of the transit system indicated significant system gaps in market coverage and inefficient duplications in service delivery. Of particular concern were deficiencies in the transit system's ability to support the journey-to-work purpose for employment at the Casinos, the airport and industrial sites, particularly those on the west side of the Calcasieu River.

Although the individual transit agencies, supported by this plan, are taking steps to address some of these issues by extension or expansion of service within their service areas, the inter-jurisdictional issues still need to be addressed through regional coordination. At present, unincorporated areas of the region that are considered urban areas and incorporated areas outside of the City of Lake Charles have little transit service available to meet their travel needs.

There is a need for both expanded transit market coverage and expanded service hours to make transit a viable transportation choice for journey-to-work and community travel.

Community Issues

Primary community issues are related to the gaps in transit service, particularly in unincorporated urban areas and the lack of connectivity to major destinations including the airport.

Participants in the public participation process also cited reliability and hours of service issues related to using transit for journey-to-work and other time sensitive destinations.

Financing

Transit improvements are financed through a combination of Federal Transit Administration (FTA) funding programs including Section 5311 rural operating and capital assistance, Section 5307 Small Urban operating and capital assistance, Section 5317 Job Access / Reverse Commute program funding and Section 5316 New Freedom funding.

Stage I, II and III Projects

Project: Bus replacement – This item calls for strategic bus replacement to maintain the required rolling stock to support the current transit service plan for the various providers as well as to insure that transit patrons have a comfortable, reliable and safe travel experience. This item also includes capital assistance through the 5310 program supporting transit service for the elderly and persons with disabilities.

Project: Operating Assistance – The fiscally constrained plan includes operating assistance

for both the urban fixed route and rural transit services being provided in the study area. The MPO will also work with the DOTD public transportation section to secure supplemental operating funds to support the need for strategic service expansions proposed by the transit providers (see JARC item below)

Project: Job Access / Reverse Commute Plan –
The transit deficiency analysis and public participation process identified gaps in transit system journey-to-work market coverage. The Federal Transit Administration Job Access / Reverse Commute program provides funds to address journey-to-work issues and many of the service elements needed to address the problem in the Lake Charles Urbanized area are eligible for operating and capital assistance under this program. To that end, the MPO will work with DOTD public transportation section to prepare a job access / reverse commute plan for the study area, a precursor to applying for JARC funding.

Project: Regional Transit Authority Feasibility –
Many of the issues related to gaps and duplication in service relate to jurisdictional or programmatic boundaries that act as obstacles to coordination among the transit providers. To this end, planning funds are identified in the fiscally constrained plan that the MPO can use to work with transit operators and local and regional policy makers to evaluate the efficacy of establishing a regional transit authority (RTA) to promote improved transit connectivity across jurisdictional lines, and to make transfer activity as safe and efficient as possible. The long-range goal is to foster the development of a truly regional system that provides transit patrons a seamless ride whatever their destination.

Environmental Assessments

Description

Environmental Studies are planning efforts carried out under guidance from the National Environmental Policy Act (NEPA). In the context of transportation policy and planning, the NEPA process is designed to help a community create a climate for open public dialogue using objective technical data in order to reach a consensus on the most environmentally sound and cost effective means of accomplishing community goals in a transportation corridor. Environmental Impact Studies consider multiple alternative travel modes at varying expenditure levels and attempts to build a community consensus on a preferred alternative.

Limits and Scope

In the current plan, there are only two corridors (I-10 Calcasieu River Bridge and the North Loop/LA 378) that have been programmed for Environmental Assessment under the NEPA process. However, environmental studies may be necessary for several other projects and the potential cost of those studies has been included in the estimate of total project cost discussed in Chapter 6.

Purpose and Need

Each of the corridors for which an EA is being considered has exhibited significant, long term, traffic problems or some other deficiency in transportation service.

Financing

Financing for Environmental Studies typically comes from the same funding category e.g.

(Federal Bridge Replacement, STP Flex funds) as that of the proposed implementation project.

Stage I Projects

Project: I-10 Calcasieu River Bridge – This project calls for a feasibility study and environmental analysis of the replacement of the I-10 Calcasieu River Bridge. (700-10-0115)

Project: North Loop/LA 378 – This project calls for the environmental assessment of the feasibility of completing the North Loop on LA 378 between John Stine Rd and SPUR 378. (xxx-xx-xxxx)

Transportation Enhancements

Description

SAFETEA-LU sets aside a percentage of the formula funds allocated to each state for use on projects that improve the functionality of non-motorized modes such as bicycles and pedestrians as well as improve the aesthetic appearance of roadways and other transportation facilities. These projects are developed primarily by citizens' groups and proposed for funding by LaDOTD from the available enhancement funds on a competitive basis. The MPO assists with project identification and development.

Limits and Scope

Transportation enhancement projects include bike paths and sidewalks, landscaping, transit shelters and passenger facilities and other amenities that support quality of life and non-motorized travel objectives. In addition, the MTP includes support for projects

related to the National Trails Program and Federal National Recreational Trails Program.

Purpose and Need

One of the major criticisms of transportation system growth is that the transportation infrastructure is highly detrimental to the quality of life in the neighborhoods and sub-communities impacted by a facility, but the benefits of that facility often flow to other stakeholders.

Community Issues

The enhancement program is a major tool for promoting non-motorized travel that reduces VMT, improves air quality and promotes quality of life. The enhancement program has strong advocates among the transit, bicycling and wheelchair communities, and neighborhood and business organizations. The Enhancement Program is not popular with highway traditionalists who feel it takes away from road projects needed for economic productivity of the highway system. This is currently a minority position, however, and the enhancement program is a popular component of SAFETEA-LU.

Financing

The projects listed in this category are funded on a 95% federal, 5% local basis with the match coming from the sponsor (e.g. the local parish or city) or from the community organization proposing the work. Some projects that are not successful in the competition for enhancement funds, especially strong projects that were eliminated strictly on the basis of funding availability, may still be eligible for funding with regular STP formula funds.

Transportation System Preservation

Description

Transportation System Preservation Projects are miscellaneous interventions to perform preventive or corrective maintenance on the existing transportation system. They generally do not involve capacity increases or changes to the character of the roadway.

Limits and Scope

Limits and scope are described in the discussion on each individual project.

Purpose and Need

Preventive and corrective maintenance on existing roadways is important because if maintenance is deferred, the increase in cost for full reconstruction can be geometrically larger than the cost of early intervention. National statistics have shown that a delay of one year in performing needed maintenance can increase the cost of the repair six-fold.

Community Issues

Although preventive maintenance has been identified as a high priority, it has been noted on numerous occasions by policy makers and the general public that maintenance needs far exceed the available budget.

Financing

Transportation System Preservation projects are funded from multiple sources as individual construction projects. Most funds come from federal formula funds with state or local match depending upon whether or not the road is on the state maintenance system.

Stage I Projects

Project: LA 27 Bridge repair – this project calls for repair of bridge joints on the LA 27 Bridge at I-10 (031-04-0048)

Project: I-210 Signing – This project calls for repair / replacement of various signs along I-210 from I-10 East to I-10 West (450-30-0069)

Project: I-10 and I-210 Corridors – This project calls for repair of embankment slides at 23 various locations along I-10 and I-1210. (450-91-0124)

Project: LA 397 – This project calls for pipe replacement and safety improvements at the intersection of LA 397 and the RR crossing. (193-31-xxxx)

Stage II and III Projects

Stage II and III transportation system preservation projects will be identified collaboratively by the MPO and DOTD on a bi-annual basis through the ongoing DOTD Highway Needs Assessment and from parish and city pavement management programs.

Bridge Replacement / Inspection

Description

Bridge replacement is a specific SAFETEA-LU funding category that is administered by LaDOTD. The projects are identified primarily through the DOTD preventive maintenance program. Many of the items identified are funding categories that will be applied to multiple bridges for either inspections or a particular repair.

Purpose and Need

With several nationally publicized and tragic structure failures defining the debate, bridge maintenance and safety has been identified as one of the most significant infrastructure challenges facing transportation planners. The ages and particularly high number of bridges in the Lake Charles Urbanized area make the problem even greater.

Limits and Scope

Limits and scope are described in the discussion on each individual project.

Community Issues

When bridges are being repaired, they significantly disrupt traffic flow on major arteries. Efforts must be made in the construction plan to provide adequate operation and management planning and resources to maintain corridor capacity and mitigate disruptions to the transportation market shed. Because of the dense development around bridges in this area, and the scarcity of alternate routes, land use and environmental impacts are often of critical concern.

Due to its strategic importance to the I-10 trade and hurricane evacuation corridor, the largest of the planned bridge replacements, the I-10 Calcasieu River Bridge, also warrants careful consideration of operation and management efforts to support the Interstate 10 corridor's critical role in meeting travel demand and maintaining traffic flow during the construction phase of the project. To this end, IMCAL will continue to work with local jurisdictions, the Office of Emergency Preparedness, and DOTD

to mitigate construction related delay and market disruptions.

Financing

Most of the funding for this category comes from federal bridge replacement funds provided under SAFETEA-LU with some supplement from other state and federal sources.

Stage I Projects

Project: US 90 – This project calls for the replacement of the bridge over I-10 ramps at Lockmoor. (003-04-0064)

Project: LA 378 @ Indian Bayou Bridge – This project calls for the replacement of the bridge on LA 378 at Indian Bayou. (810-33-0002)

Project: LA 385 @ Coulee Bridge - This project calls for the replacement of the LA 385 Coulee Bridge. (195-04-0026)

Project I-210 Bridge Piers – This project calls for inspection, rehabilitation and protection of I-210 Prien Lake bridge piers. (450-30-0076)

Project: I-10 @ LA 27 – This project calls for the repair or replacement of bridge joints on the I-10 Bridge crossing LA 27. (450-91-0172)

Stage II and III Projects

Stage II and III bridge replacement and inspection projects will be identified collaboratively by the MPO and DOTD on a bi-annual basis through the ongoing DOTD Highway Needs Assessment and from parish and city pavement management programs.

American Recovery and Reinvestment Act Projects

The American Recovery and Reinvestment Act (ARRA) of 2009 (i.e., the Federal Economic Stimulus Bill), provides \$9,625,693 million in highway funding and \$2,063,000 million in transit funding for the Lake Charles Area. The projects approved for funding have been included in the Fiscally Constrained Plan, but represent a non-recurring source of revenue.

Project: I-210 – Calcasieu River Bridge to I-10 east interchange. This project calls for the asphaltic concrete overlay and patching of the bridge. (450-30-0085)

Project: Parish Road – This project calls for the road widening with curb and gutter between Ruth and Eva. (742-10-0134)

Project: Broad Street – This project calls for an overlay of Broad St from Enterprise Blvd to I-210. (xxx-xx-xxxx)

Project: Weaver Rd – This project calls for an overlay of Weaver Rd from Sale to Ham Reid. (xxx-xx-xxxx)

Project: Hodges Street – This project calls for an overlay of Hodges St from Seventh St to S. RR Ave. (xxx-xx-xxxx)

Project: W. McNeese Street – This project calls for an overlay of W. McNeese St from Weaver to Nelson. (xxx-xx-xxxx)

Project: N. Shattuck – This project calls for an overlay of N. Shattuck from Broad St to Moeling. (xxx-xx-xxxx)

Public Review and Comment

On July 16, 2009, the MPO Technical Advisory Committee met to review the draft MTP and voted to recommend the document to the Policy Committee for approval. The MPO Transportation Policy Committee met on July 17, 2009 and voted to release the document for a final public review and comment period. The TPC also voted to adopt the document following the comment period barring any significant comments.

The final review and comment period for the MTP was held during late July and early August 2009. The final public meeting to solicit any comments was held on August 4, 2009. During that comment period and final public hearing, no significant public comments were received and the document was adopted on August 4, 2009.



Appendix A

Lake Charles Urbanized Area Metropolitan Planning Organization

Transportation Policy Committee

And

Technical Advisory Committee

Transportation Policy Committee

Honorable Dan Cupit, Mayor
City of Westlake

Mr. Bobby Hennigan, District 7 Administrator
LA Department of Transportation & Development

Honorable Ron LeLeux, Mayor
City of Sulphur

Honorable Randy Roach, Mayor
City of Lake Charles

Mr. James J. Vickers, Director of Planning
Calcasieu Parish

(Ex-officio)

Mr. Tony Ogboli, Transportation Planner
FTA – Region VI

Ms. Genevieve Smith, Transportation Planner
FHWA – Louisiana Division Office

Technical Advisory Committee

Mr. Heath Allen, Manager
Lake Charles Regional Airport Authority

Mr. Donald Brinkman, Director of Engineering & Construction
Port of Lake Charles

Mr. Dan Broussard
LADOTD Planning Section

Mr. John Bruce, Director of Public Works
City of Sulphur

Mr. John Cordone, City Administrator
City of Lake Charles

Mr. Bobby Hennigan, District 7 Administrator
LA Department of Transportation & Development

Ms. Michelle Horne, Urban Planner
LADOTD Public Transportation

Mr. Randy Robb, Manager
Chennault Industrial Airpark Authority

Mr. Gary Williams, Streets Superintendent
City of Westlake

Mr. James J. Vickers, Director of Planning
Calcasieu Parish

(Ex-officio)

Mr. Tony Ogboli, Transportation Planner
FTA – Region VI

Ms. Genevieve Smith, Transportation Planner
FHWA – Louisiana Division Office

Appendix B

Abbreviations and Funding Categories

Abbreviations

FHWA	Federal Highway Administration
FTA	Federal Transit Administration
LaDOTD	Louisiana Department of Transportation and Development
SAFETEA-LU	Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users
TEA-21	Transportation Equity Act for the 21 st Century
ADT	Average Daily Traffic
CBD	Central Business District
IMCAL	Imperial Calcasieu Regional Planning and Development Commission
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
TIP	Transportation Improvement Program
NHS	National Highway System
STP	Surface Transportation Program
TAC	Technical Advisory Committee
TPC	Transportation Policy Committee

Funding Categories

STP < 200k - Urban Areas with population under 200,000 Formula Funds, SAFETEA-LU

DEMO - Congressionally Earmarked Demonstration Project Direct Federal Appropriation

ENH - Enhancements, SAFETEA-LU

FBR - Federal Bridge Replacement, SAFETEA-LU

IM - Interstate Maintenance, SAFETEA-LU

NHS - National Highway System, SAFETEA-LU

OLY - Overlay, SAFETEA-LU

State Bonds – (STCASH) Capital Outlay Bonding Program, La. Bond Debt

Appendix C

Financially Constrained Projects FY 09 (Aug – Sept 09)

Financially Constrained Projects FY 10 (09-10)

Financially Constrained Projects FY 11 (10-11)

Financially Constrained Projects FY 12 (11-12)

Financially Constrained Projects FY 13 (12-13)

Financially Constrained Projects FY 14 (13-14)

Map of Stage I Projects

Financially Constrained Projects Stage II FY 15-24

Map of Stage II Projects

Financially Constrained Projects Stage III FY 25-34

Map of Stage III Projects

Financially Unconstrained Needs Project Listing

Map of Financially Unconstrained Needs Projects

Locally Funded Regionally Significant Project Listing

Stage I Transit Element FY 10 (09-10)

Stage I Transit Element FY 11 (10-11)

Stage I Transit Element FY 12 (11-12)

Stage I Transit Element FY 13 (12-13)

Stage I Transit Element FY 14 (13-14)

Stage II Transit Element FY 15-24

Stage III Transit Element FY 25-34

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
024-01-0050	US 171	US 171 from US 90 to Conoco Street	cold plane and overlay	E-C	1,442	1,154	NHS
810-27-0010	LA 27	I-10 to US 90	patch and overlay	C	2,295	1,836	STPFLEX
450-30-0085	I-210	Calcasieu River Bridge to I-10 East Interchange	asphaltic concrete overlay and patching		20,000	20,000	ARRA
737-97-0021	MAP	Motor Assistance Patrol	motorist assistance in case of breakdown or accident		184		Local and DOTD
Line Item	Pvmt Preventive Maint.	Pavement Preventive Maintenance	Microsurfacing/Reseal	C	5	4	STPFLEX
Line Item	RR Crossing Imp.	Railroad Xing Improvements	RR Safety Projects	C	100	80	STPFLEX
Line Item	STP Enh. Prgm	Misc. STP Enhancement Program	Fed Enhancement Program	C	75	60	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	C	5	4	STPHAZ
Line Item	Bridge Prev. Maint.	Bridge Preventive Maintenance	Bridge Preventive Maintenance	C	75	60	FBRON
Line Item	Bridge Paint. Prgm	Bridge Painting Program	Painting Misc. Sites	C	1	1	STPFLEX
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	R/W	0.5	0.4	STPHAZ
Line Item	Demo Projects	Various Demo Projects	Demo Projects	R/W	1	0.8	DEMO
Line Item	Various	Engr., Right of Way, & Utilities Increase ROW and Utility Cost	Line Item for Cat. Exclusion Projects	R/W	75	60	FBRON
Line Item	Overlay	Statewide Overlay	Line Item for Asphalt & PCCP Overlay	C	60	48	NHS
Line Item	Overlay	Statewide Overlay	Line item for Asphalt & PCCP Overlay	C	150	120	STPFLEX

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
Line Item	STP Enh. Prgm	Misc STP Enhancement Program	Fed. Enhancement Program	E	2	2	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Program	Federal Hazard Elimination Program	E	3	2.4	STPHAZ
Line Item	Various	Engr, Right of way & Utilities	Line Item for Cat. Exclusion Projects	E	20	16	FRBON
Line Item	Off Sys. Bridge Replacmt.	Off System Bridge Replacement	Off System Bridge Program	C	100	80	FBROFF
					Total FY 09 (Aug – Sept '09)	24,594	23,528
					Total STP<200k	0	0
					Total Nonrecurring	20,000	20,000

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
195-04-0021	LA 385	LA 385 @ LA 11382-2 (Ryan @ Prien)	Intersection improvement	RW / U	1,200	960	CMAQ
742-10-0126	Park Road	Park Rd @ Recreation Blvd.	Add turn lane	RW / C	856	685	STP < 200k
450-91-0173	I-10	Pedestrian overpass to LA 108	cold plane and overlay		2,400	2,160	IM
450-91-0149	I-10	LA 1256 to the west end of the Calcasieu River Bridge	Signing (LA 108-PPG Dr.)	C	1,215	1,094	IM
742-10-0114	Elliot Rd @ Gauthier	Elliot Rd @ Gauthier	Turn lane and signal	RW / C	1,950	1,560	STP < 200K = 1,600 CMAQ = 350
742-10-0137	US 171	You Winn / Gloria Road @ US 171	Intersection improvement and realignment	E-C	1,470	1,176	STP < 200k
742-10-0130	Sale Street	Bridge near Canal St to Holly Hill	Bridge replacement and roadway widening	E-C	3,500	2,640	STP < 200k
xxx-xx-xxxx	LA 1138-2/Prien Lake Rd	Holly Hill Rd to .25 miles east of Nelson	add center left turn lane	E-C	4,000	3,200	DEMO
701-65-0710	I-210	Exit 4 Nelson Road (4.3S)	Close median on Nelson Rd near Wal-Mart and San Bernardo left turn lane improvements	E-C	100		STCASH / STP
701-65-0710	I-210	Exit 4 Nelson Road (4.3S)	Left turn lane on EB Prien Lake	E-C	345		STCASH / STP
701-65-0710	I-210	Exit 5 Lake St (5.1S)	Right turn lane on SB Lake St	E-C	335		STCASH / STP
701-65-0710	I-210	Exit 5 Lake St (5.2S)	Left turn lane on EB off ramp	E-C	300		STCASH / STP
701-65-0710	I-210	Exit 5 Lake St (5.3S)	Reconfigure intersection control at EB on ramp terminal	E-C	5		STCASH / STP

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
701-65-0710	I-210	Exit 6A Ryan St (6A.2S)	Left turn lane on WB off ramp	E-C	320		STCASH / STP
701-65-0710	I-210	Exit 6A Ryan St (6A.3S)	Reconfigure intersection control at EB off ramp terminal	E-C	10		STCASH / STP
701-65-0710	I-210	Exit 6A Ryan St (6A.4S)	Reconfigure intersection control at EB on ramp terminal	E-C	5		STCASH / STP
701-65-0710	I-210	Exit 6B Ryan St (6B.1S)	Left turn lane on WB off ramp	E-C	300		STCASH / STP
701-65-0710	I-210	Exit 6B Ryan St (6B.2S)	College St WB approach improvements at Kirkman St	E-C	220		STCASH / STP
701-65-0710	I-210	Exit 6B Ryan St (6B.3S)	Reconfigure intersection control at EB off ramp terminal	E-C	10		STCASH / STP
701-65-0710	I-210	Exit 6B Ryan St (6B.4S)	Reconfigure intersection control at EB on ramp terminal	E-C	5		STCASH / STP
701-65-0710	I-210	Exit 8 LA 14 (8.1S)	Right turn lane onto SB LA 17 and Prien Lake Rd	E-C	375		STCASH / STP
701-65-0710	I-210	Exit 8 LA 14 (8.2S)	Reconfigure intersection control and add left turn lane at WB on ramp terminal	E-C	290		STCASH / STP
701-65-0710	I-210	Exit 8 LA 14 (8.3S)	Exclusive right turn lane on EB Prien Lake and LA 14	E-C	330		STCASH / STP
701-65-0710	I-210	Exit 8 LA 14 (8.4S)	Reconfigure intersection control at WB off ramp terminal	E-C	5		STCASH / STP
701-65-0710	I-210	Exit 8 LA 14 (8.5S)	Overhead directional sign on EB off ramp	E-C	40		STCASH / STP

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
701-65-0710	I-210	Exit 8 LA 14 (8.6S)	EB on ramp connection from E. Prien Lake Rd	E-C	920		STCASH / STP
737-97-0021	MAP	Motor Assistance Patrol	motorist assistance in case of breakdown or accident		184		Local and DOTD
450-91-0171	I-10 Frontage	Enterprise and Kirkman St (w/in LC city limits) FAP IM-TCSP-1009(511)	Construction of new turnarounds	E-C	2,500	2,000	DEMO / IM
382-04-0054	LA 384	LA 384 (Big Lake Rd) from Black Bayou to Gauthier Rd	overlay	E-C	2,023	1,618	STPFLEX
450-30-0076	I-210	Lake Prien Bridge Piers	inspection and rehabilitation and protection of bridge piers	E-C	28,327	22,662	FBRON
810-28-0019	LA 3092	LA 3092 (Lake St) from LA 384 to a point 0.7 miles south of LA 384	overlay	C	172		ER 100
XXX-XX-XXXX	North Loop / LA 378	John Stine to LA 378 @ SPUR 378	Widening to 5 lane arterial (environmental study)	ENV	412		STCASH
742-10-0134	Parish Road	Ruth to Eva	Widen w/curb and gutter	C	3,900	3,900	ARRA
xxx-xx-xxx	Broad Street	Enterprise Blvd to I-210	Overlay	C	1,980	1,980	ARRA
xxx-xx-xxx	N. Shattuck	Broad to Moeling	Concrete reconstruction	C	732	732	ARRA
xxx-xx-xxx	Weaver Rd	Sale to Ham Reid	Overlay	C	974	974	ARRA
xxx-xx-xxx	Hodges St	Seventh St to South RR Ave.	Overlay	C	539	539	ARRA
xxx-xx-xxx	W. McNeese St	Weaver to Nelson	Overlay	C	491	491	ARRA
737-97-0021	MAP	Motor Assistance Patrol	motorist assistance in case of breakdown or accident		184		Local and DOTD
Line Item	Pvmt Preventive Maint.	Pavement Preventive Maintenance	Microsurfacing/Reseal	C	5	4	STPFLEX
Line Item	RR Crossing Imp.	Railroad Xing Improvements	RR Safety Projects	C	100	80	STPFLEX
Line Item	STP Enh. Prgm	Misc. STP Enhancement Program	Fed Enhancement Program	C	75	60	STPENH

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	C	5	4	STPHAZ
Line Item	Bridge Prev. Maint.	Bridge Preventive Maintenance	Bridge Preventive Maintenance	C	75	60	FBRON
Line Item	Bridge Paint. Prgm	Bridge Painting Program	Painting Misc. Sites	C	1	1	STPFLEX
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	R/W	0.5	0.4	STPHAZ
Line Item	Demo Projects	Various Demo Projects	Demo Projects	R/W	1	0.8	DEMO
Line Item	Various	Engr., Right of Way, & Utilities Increase ROW and Utility Cost	Line Item for Cat. Exclusion Projects	R/W	75	60	FBRON
Line Item	Overlay	Statewide Overlay	Line Item for Asphalt & PCCP Overlay	C	60	48	NHS
Line Item	Overlay	Statewide Overlay	Line item for Asphalt & PCCP Overlay	C	150	120	STPFLEX
Line Item	STP Enh. Prgm	Misc STP Enhancement Program	Fed. Enhancement Program	E	2	2	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Program	Federal Hazard Elimination Program	E	3	2.4	STPHAZ
Line Item	Various	Engr, Right of way & Utilities	Line Item for Cat. Exclusion Projects	E	20	16	FRBON
Line Item	Off Sys. Bridge Replacmt.	Off System Bridge Replacement	Off System Bridge Program	C	100	80	FBROFF
Total FY 2010					59,596	45,708	
Total STP<200k					7,426	6,101	
Total ARRA					8,616	8,616	
Total Other Nonrecurring					30,827	24,662	

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
195-04-0021	LA 385	LA 385 @ LA 11382-2 (Ryan @ Prien)	Intersection improvement	C	2,700	2,160	CMAQ
195-04-0026	LA 385	Coulee Bridge	Bridge replacement	E-C	1,320	1,056	FBRON
450-91-0165	I-10	Columbia Southern to the Calcasieu River	patch, cold plane, and overlay	E-C	3,038	2,734	IM
450-30-0069	I-210	from I-10 East to I-10 West	repair / replacement of various signs along I-210 corridor		4,000	3,600	IM
810-28-0018	LA 3092	LA 3092 West to LA 385	overlay		400	320	STPFLEX
193-31	LA 397	LA 397 @ RR Crossing	pipe replacement and safety improvements	C	9		STCASH
700-10-0115	I-10 Bridge	Over Calcasieu River	feasibility study and environmental analysis	Pre-C	1,000		
450-91-0124	I-10 & I-210	I-10 and 1-210 Corridors	repair of embankment slides at 23 locations		1,400		
737-97-0021	MAP	Motor Assistance Patrol	motorist assistance in case of breakdown or accident		184		Local and DOTD
Line Item	Pvmt Preventive Maint.	Pavement Preventive Maintenance	Microsurfacing/Reseal	C	5	4	STPFLEX
Line Item	RR Crossing Imp.	Railroad Xing Improvements	RR Safety Projects	C	100	80	STPFLEX
Line Item	STP Enh. Prgm	Misc. STP Enhancement Program	Fed Enhancement Program	C	75	60	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	C	5	4	STPHAZ
Line Item	Bridge Prev. Maint.	Bridge Preventive Maintenance	Bridge Preventive Maintenance	C	75	60	FBRON
Line Item	Bridge Paint. Prgm	Bridge Painting Program	Painting Misc. Sites	C	1	1	STPFLEX

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	R/W	0.5	0.4	STPHAZ
Line Item	Demo Projects	Various Demo Projects	Demo Projects	R/W	1	0.8	DEMO
Line Item	Various	Engr., Right of Way, & Utilities Increase ROW and Utility Cost	Line Item for Cat. Exclusion Projects	R/W	75	60	FBRON
Line Item	Overlay	Statewide Overlay	Line Item for Asphalt & PCCP Overlay	C	60	48	NHS
Line Item	Overlay	Statewide Overlay	Line item for Asphalt & PCCP Overlay	C	150	120	STPFLEX
Line Item	STP Enh. Prgm	Misc STP Enhancement Program	Fed. Enhancement Program	E	2	2	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Program	Federal Hazard Elimination Program	E	3	2.4	STPHAZ
Line Item	Various	Engr, Right of way & Utilities	Line Item for Cat. Exclusion Projects	E	20	16	FRBON
Line Item	Off Sys. Bridge Replacmt.	Off System Bridge Replacement	Off System Bridge Program	C	100	80	FBROFF
Total FY 2011					12,024	8,248	
Total STP<200k					0	0	
Total ARRA					0	0	
Total Other Nonrecurring					2,700	2,160	

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
450-91-0052	I-10	I-10 @ Ryan Street	New eastbound exit ramp	C	10,900	8,720	NHS & DEMO
195-04-0029	LA 385	LA 384 @ LA 385 (Ryan @ McNeese)	Intersection improvement repair/replacement of bridge joints	E-C	1,825	1,460	STPHAZ
031-04-0048	LA 27	LA 27 Bridge @ I-10			253	202	FBRON
810-33-0002	LA 378	Indian Bayou Bridge and Approaches	Bridge replacement	E-C	2,183	1,746	FBRON
450-91-0172	I-10	I-10 @ LA 27 Bridge	repair or replacement of bridge joints		779	623	FBRON
810-15-0014	LA 3256	0.5 miles north of US 90 to I-10 south service road	overlay	C	1,875	1,500	NFA
737-97-0021	MAP	Motor Assistance Patrol	motorist assistance in case of breakdown or accident		184		Local and DOTD
Line Item	Pvmt Preventive Maint.	Pavement Preventive Maintenance	Microsurfacing/Reseal	C	5	4	STPFLEX
Line Item	RR Crossing Imp.	Railroad Xing Improvements	RR Safety Projects	C	100	80	STPFLEX
Line Item	STP Enh. Prgm	Misc. STP Enhancement Program	Fed Enhancement Program	C	75	60	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	C	5	4	STPHAZ
Line Item	Bridge Prev. Maint.	Bridge Preventive Maintenance	Bridge Preventive Maintenance	C	75	60	FBRON
Line Item	Bridge Paint. Prgm	Bridge Painting Program	Painting Misc. Sites	C	1	1	STPFLEX
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	R/W	0.5	0.4	STPHAZ

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
Line Item	Demo Projects	Various Demo Projects	Demo Projects	R/W	1	0.8	DEMO
Line Item	Various	Engr., Right of Way, & Utilities Increase ROW and Utility Cost	Line Item for Cat. Exclusion Projects	R/W	75	60	FBRON
Line Item	Overlay	Statewide Overlay	Line Item for Asphalt & PCCP Overlay	C	60	48	NHS
Line Item	Overlay	Statewide Overlay	Line item for Asphalt & PCCP Overlay	C	150	120	STPFLEX
Line Item	STP Enh. Prgm	Misc STP Enhancement Program	Fed. Enhancement Program	E	2	2	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Program	Federal Hazard Elimination Program	E	3	2.4	STPHAZ
Line Item	Various	Engr, Right of way & Utilities	Line Item for Cat. Exclusion Projects	E	20	16	FRBON
Line Item	Off Sys. Bridge Replacmt.	Off System Bridge Replacement	Off System Bridge Program	C	100	80	FBROFF
Total FY 2012					18,672	14,790	
Total STP<200k					0	0	
Total ARRA					0	0	
Total Other Nonrecurring					10,900	8,720	

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
450-30-0078	I-210	I-210 @ Lake St.	Intersection improvements / ramp improvements	E-C	4,800	3,840	NHS & STGEN
xxx-xx-xxxx	John Stine Rd	Myrtle Springs to Sampson	overlay and widen	E-C	5,500	4,400	STP < 200k
737-97-0021	MAP	Motor Assistance Patrol	motorist assistance in case of breakdown or accident		184		Local and DOTD
Line Item	Pvmt Preventive Maint.	Pavement Preventive Maintenance	Microsurfacing/Reseal	C	5	4	STPFLEX
Line Item	RR Crossing Imp.	Railroad Xing Improvements	RR Safety Projects	C	100	80	STPFLEX
Line Item	STP Enh. Prgm	Misc. STP Enhancement Program	Fed Enhancement Program	C	75	60	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	C	5	4	STPHAZ
Line Item	Bridge Prev. Maint.	Bridge Preventive Maintenance	Bridge Preventive Maintenance	C	75	60	FBRON
Line Item	Bridge Paint. Prgm	Bridge Painting Program	Painting Misc. Sites	C	1	1	STPFLEX
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	R/W	0.5	0.4	STPHAZ
Line Item	Demo Projects	Various Demo Projects	Demo Projects	R/W	1	0.8	DEMO
Line Item	Various	Engr., Right of Way, & Utilities Increase ROW and Utility Cost	Line Item for Cat. Exclusion Projects	R/W	75	60	FBRON
Line Item	Overlay	Statewide Overlay	Line Item for Asphalt & PCCP Overlay	C	60	48	NHS
Line Item	Overlay	Statewide Overlay	Line item for Asphalt & PCCP Overlay	C	150	120	STPFLEX
Line Item	STP Enh. Prgm	Misc STP Enhancement Program	Fed. Enhancement Program	E	2	2	STPENH

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
Line Item	Various	Engr, Right of way & Utilities	Line Item for Cat. Exclusion Projects	E	20	16	FRBON
Line Item	Off Sys. Bridge Replacmt.	Off System Bridge Replacement	Off System Bridge Program	C	100	80	FBROFF
Total FY 2013					11,157	8,778	
Total STP<200k					5,500	4,400	
Total ARRA					0	0	
Total Other Nonrecurring					0	0	

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
742-10-0136	Myrtle Springs Road	Houston River Rd north 1.4 miles to entrance on west side of Whispering Woods Subdivision	Surface widening and overlay	E-C	1,582	1,265	STP < 200k
003-04-0064	US 90	Bridge over 1-10 ramps @ Lockmoor	Bridge replacement	E-C	12,248	9,798	FBRON
737-97-0021	MAP	Motor Assistance Patrol	motorist assistance in case of breakdown or accident		184		Local and DOTD
Line Item	Pvmt Preventive Maint.	Pavement Preventive Maintenance	Microsurfacing/Reseal	C	5	4	STPFLEX
Line Item	RR Crossing Imp.	Railroad Xing Improvements	RR Safety Projects	C	100	80	STPFLEX
Line Item	STP Enh. Prgm	Misc. STP Enhancement Program	Fed Enhancement Program	C	75	60	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	C	5	4	STPHAZ
Line Item	Bridge Prev. Maint.	Bridge Preventive Maintenance	Bridge Preventive Maintenance	C	75	60	FBRON
Line Item	Bridge Paint. Prgm	Bridge Painting Program	Painting Misc. Sites	C	1	1	STPFLEX
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	R/W	0.5	0.4	STPHAZ
Line Item	Demo Projects	Various Demo Projects	Demo Projects	R/W	1	0.8	DEMO
Line Item	Various	Engr., Right of Way, & Utilities Increase ROW and Utility Cost	Line Item for Cat. Exclusion Projects	R/W	75	60	FBRON
Line Item	Overlay	Statewide Overlay	Line Item for Asphalt & PCCP Overlay	C	60	48	NHS
Line Item	Overlay	Statewide Overlay	Line item for Asphalt & PCCP Overlay	C	150	120	STPFLEX
Line Item	STP Enh. Prgm	Misc STP Enhancement Program	Fed. Enhancement Program	E	2	2	STPENH

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Program	Federal Hazard Elimination Program	E	3	2.4	STPHAZ
Line Item	Various	Engr, Right of way & Utilities	Line Item for Cat. Exclusion Projects	E	20	16	FRBON
Line Item	Off Sys. Bridge Replacmt.	Off System Bridge Replacement	Off System Bridge Program	C	100	80	FBROFF
Total FY 2014					14,686	11,602	
Total STP<200k					1,582	1,265	
Total ARRA					0	0	
Total Other Nonrecurring					12,248	9,798	
End of Stage I (FY 09-14)							
Stage I Total					116,134	89,126	
Stage I STP<200k					14,508	11,766	
Stage I ARRA					8,616	8,616	
Stage I Other Nonrecurring					56,675	45,340	
Total without nonrecurring					50,843		
Available funding in Stage I					75,000		

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
742-10-0125	J. Bennett Johnston Ave	Broad St to Merganser St.	reconstruction of roadway and addition of center left turn lane	E-C	12,636	10,109	STP < 200k
XXX-XX-XXXX	North Loop / LA 378	John Stine to Phillips	Widening to 5 lane arterial	E-C	11,638	9,311	STP < 200k
XXX-XX-XXXX	North Loop / LA 378	Just south of West Fork Bridge to the intersection of LA 378 (Sam Houston Jones Pkwy) and SPUR 378	Widening to 5 lane arterial	E-C	16,934	13,547	STP < 200k
XXX-XX-XXXX	LA 1138-2/Prien Lake	From Lake St to 1/4 mile east of Nelson	5 lanes	E-C	6,620	5,296	STP < 200k
000-10-DEM1	Nelson Road Extension	From existing terminus to Port of Lake Charles (Sallier)	New 4 lane road and bridge	E-C	43,105	38,794	DEMO & Other
737-97-0021	MAP	Motor Assistance Patrol	motorist assistance in case of breakdown or accident		2,833		Local and DOTD
Line Item	Pvmt Preventive Maint.	Pavement Preventive Maintenance	Microsurfacing/Reseal	C	77	62	STPFLEX
Line Item	RR Crossing Imp.	Railroad Xing Improvements	RR Safety Projects	C	1,539	1,232	STPFLEX
Line Item	STP Enh. Prgm	Misc. STP Enhancement Program	Fed Enhancement Program	C	1,155	924	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	C	77	62	STPHAZ
Line Item	Bridge Prev. Maint.	Bridge Preventive Maintenance	Bridge Preventive Maintenance	C	1,155	924	FBRON
Line Item	Bridge Paint. Prgm	Bridge Painting Program	Painting Misc. Sites	C	15	12	STPFLEX
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	R/W	8	6	STPHAZ

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
Line Item	Demo Projects	Various Demo Projects	Demo Projects	R/W	15	12	DEMO
Line Item	Various	Engr., Right of Way, & Utilities Increase ROW and Utility Cost	Line Item for Cat. Exclusion Projects	R/W	1,155	924	FBRON
Line Item	Overlay	Statewide Overlay	Line Item for Asphalt & PCCP Overlay	C	924	739	NHS
Line Item	Overlay	Statewide Overlay	Line item for Asphalt & PCCP Overlay	C	2,309	1,847	STPFLEX
Line Item	STP Enh. Prgm	Misc STP Enhancement Program	Fed. Enhancement Program	E	31	25	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Program	Federal Hazard Elimination Program	E	46	37	STPHAZ
Line Item	Various	Engr, Right of way & Utilities	Line Item for Cat. Exclusion Projects	E	308	246	FRBON
Line Item	Off Sys. Bridge Replacmt.	Off System Bridge Replacement	Off System Bridge Program	C	1,539	1,232	FBROFF
Stage II Total					104,118	85,339	
Stage II STP<200k					47,828	38,262	
Stage II ARRA					0	0	
Stage II Other Nonrecurring					43,105	38,794	
Total without nonrecurring					61,013		
Available funding Stage II					175,000		

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
XXX-XX-XXXX	North Loop / LA 378	Westwood/Phillips to just south of the West Fork Bridge over the Calcasieu River	Widening to 5 lane arterial	E-C	15,382	12,305	STP < 200k
XXX-XX-XXXX	S Beglis Pkwy	I-10 to LA 108	widen 2 to 4 Lanes	E-C	25,226	20,181	STP < 200k
XXX-XX-XXXX	LA 27	Dave Dugas to LA 108	widen 2 to 4 Lanes	E-C	12,305	9,844	STP < 200k
XXX-XX-XXXX	Enterprise Blvd	Overpass to Moeling/Fitzenreiter	New Rd	E-C	21,571	17,257	STP < 200k = 19,900 / Local = 1,671
737-97-0021	MAP	Motor Assistance Patrol	motorist assistance in case of breakdown or accident		4,193		Local and DOTD
Line Item	Pvmt Preventive Maint.	Pavement Preventive Maintenance	Microsurfacing/Reseal	C	114	91	STPFLEX
Line Item	RR Crossing Imp.	Railroad Xing Improvements	RR Safety Projects	C	2,279	1,823	STPFLEX
Line Item	STP Enh. Prgm	Misc. STP Enhancement Program	Fed Enhancement Program	C	1,709	1,367	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	C	114	91	STPHAZ
Line Item	Bridge Prev. Maint.	Bridge Preventive Maintenance	Bridge Preventive Maintenance	C	1,709	1,367	FBRON
Line Item	Bridge Paint. Prgm	Bridge Painting Program	Painting Misc. Sites	C	23	18	STPFLEX
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Projects	Federal Hazard Elimination Program	R/W	11	9	STPHAZ
Line Item	Demo Projects	Various Demo Projects	Demo Projects	R/W	23	18	DEMO
Line Item	Various	Engr., Right of Way, & Utilities Increase ROW and Utility Cost	Line Item for Cat. Exclusion Projects	R/W	1,709	1,367	FBRON

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
Line Item	Overlay	Statewide Overlay	Line Item for Asphalt & PCCP Overlay	C	1,367	1,094	NHS
Line Item	Overlay	Statewide Overlay	Line item for Asphalt & PCCP Overlay	C	3,418	2,735	STPFLEX
Line Item	STP Enh. Prgm	Misc STP Enhancement Program	Fed. Enhancement Program	E	46	36	STPENH
Line Item	Haz. Elimination Prgm	Misc. Hazard Elimination Program	Federal Hazard Elimination Program	E	68	55	STPHAZ
Line Item	Various	Engr, Right of way & Utilities	Line Item for Cat. Exclusion Projects	E	456	365	FRBON
Line Item	Off Sys. Bridge Replacmt.	Off System Bridge Replacement	Off System Bridge Program	C	2,279	1,823	FBROFF
Stage III Total					94,001	71,847	
Stage III STP<200k					72,813	62,230	
Stage III ARRA					0	0	
Stage III Other Nonrecurring					0	0	
Total without nonrecurring					94,001		
Available funding Stage II					250,000		
Total Plan without nonrecurring					205,858		
Total Plan with nonrecurring					314,253		
Total Plan Available					500,000		

Project No.	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Federal Share (000)	Fund Source
701-65-0710	I-210	Various locations along corridor	various improvements	C	100,000		
810-12-	LA 378	LA 378 @ RR Crossing (in Westlake)	grade separation	C	103,000		NFI
700-10-0115	I-10	Calcasieu River Bridge	Bridge replacement	C	350,000		
	Ryan St	Prien Lake to Sale	5 Lanes	E-C	5,400		
	US 90	PPG Rd to Post Oak	4 Lanes	E-C	20,952		
	Country Club	Big Lake to West Jefferson	5 Lanes	E-C	22,410		
	Sale Rd	Lake to Common	Turn Lane	E-C	2,598		
	Hwy 108 Ext	OST to Houston River Rd	New Rd	E-C	10,175		
	Ryan St	Sale to McNeese	5 Lanes	E-C	2,700		
	Pete Seay	Pete Seay at I-10	Interchange	E-C	9,000		
	Ruth St	I-10 to LA 108	4 Lanes	E-C	11,556		
	Pete Seay	LA 27 to Pete Seay	New Frtg	E-C	11,250		
	Ryan St	12th to Prien Lake	5 Lanes	E-C	5,400		
	Ryan St	Clarence to 12th	5 Lanes	E-C	4,050		
	N Perkins Ferry	LA 378 to US 171	4 Lanes	E-C	36,990		
	Big Lake Rd	Country Club to Gauthier	4 Lanes	E-C	10,800		
	12 St	Ryan to 1st Ave	Turn Lane	E-C	2,362		
	Common St	Prien Lake to Alamo	Turn Lane	E-C	826		
	Nelson Rd	Gauthier to Tank Farm	4 Lanes	E-C	5,400		
	Common St	12th to Prien Lake	4 Lanes	E-C	5,400		
	Ernest St	Glenn to 18th	Turn Lane	E-C	354		

Est. Construct Yr	Route - Project Name	Project Description / Limits	Proposed Improvement	Work Phase	Est. Cost (000)	Fund Source
FY 10	Lake St	Sale to McNeese	4 Lanes	E-C	2,700	Lake Charles CIP
FY 10	Lake St	McNeese to University	4 Lanes	E-C	2,700	Lake Charles CIP
FY 10	Red Davis Rd Ext	Lake to Common	New Rd	E-C	3,341	Parish CIP
FY 10	Gillis Cutoff Ext	N Perkins Ferry to Hickory Branch	New Rd	E-C	3,796	Parish CIP
FY 10	Corbina Rd Ext	LA 14 to E Prien Lake	New Rd	E-C	8,505	Parish CIP
FY 14	Sale Rd	Weaver to Prien Lake	Turn Lane	E-C	1,225	Lake Charles CIP
FY 16	Ihles	From Sales to Country Club	4 Lanes	E-C	5,670	Lake Charles CIP
FY 16	Elliot	Country Club to Ham Reid	4 Lanes	E-C	5,400	Lake Charles CIP
FY 25	Carlyss Dr Ext	LA 1256 to LA 27	New Rd	E-C	3,189	Parish CIP
FY 25	Ham Reid Rd Ext	LA 384 to Elliot	New Rd	E-C	3,037	Parish CIP

Project No.	Project Name	Proposed Improvement	Est. Cost (000)	Federal Share (000)	Match in (000)	Funding Source: FTA
LA 90-X221	City of Lake Charles Transit	Operating 50/50	600	300	300	Section 5307
LA 90-X221	City of Lake Charles Transit	Planning 80/20	1,440	1,200	240	Section 5307
LA 86-X001	Calcasieu PPJ	Operating 50/50	594	297	297	Section 5311
LA 37-X025	Calcasieu PPJ	JARC 50/50	88	44	44	Section 5316
LA96-X005	City of Lake Charles Transit	Capital Expenditures	2,063	2,063		ARRA
LA96-X005	Calcasieu PPJ	Vans, Cameras, Generator, Washer	374	374		ARRA
LAXX-XXXX	City of Lake Charles Transit	Bus Replacement (hybrid)	590	472	118	Section 5307
LINE	Elderly and Disabled	Capital Expenditures	80	64	16	Section 5310 (16B2)
Total FY 2010			5,829	4,814	1,015	
Total Minus ARRA			3,392	2,377		

Project No.	Project Name	Proposed Improvement	Est. Cost (000)	Federal Share (000)	Match in (000)	Funding Source: FTA
LA 90-X221	City of Lake Charles Transit	Operating 50/50	600	300	300	Section 5307
LA 90-X221	City of Lake Charles Transit	Planning 80/20	1,440	1,200	240	Section 5307
LA 86-X001	Calcasieu PPJ	Operating 50/50	594	297	297	Section 5311
LA 37-X025	Calcasieu PPJ	JARC 50/50	88	44	44	Section 5316
LINE	Elderly and Disabled	Capital Expenditures	80	64	16	Section 5310 (16B2)
Total FY 2011			2,802	1,905	897	

Project No.	Project Name	Proposed Improvement	Est. Cost (000)	Federal Share (000)	Match in (000)	Funding Source: FTA
LA 90-X221	City of Lake Charles Transit	Operating 50/50	600	300	300	Section 5307
LA 90-X221	City of Lake Charles Transit	Planning 80/20	1,440	1,200	240	Section 5307
LA 86-X001	Calcasieu PPJ	Operating 50/50	594	297	297	Section 5311
LA 37-X025	Calcasieu PPJ	JARC 50/50	88	44	44	Section 5316
LINE	Elderly and Disabled	Capital Expenditures	80	64	16	Section 5310 (16B2)
Total FY 2011			2,802	1,905	897	

Project No.	Project Name	Proposed Improvement	Est. Cost (000)	Federal Share (000)	Match in (000)	Funding Source: FTA
LA 90-X221	City of Lake Charles Transit	Operating 50/50	600	300	300	Section 5307
LA 90-X221	City of Lake Charles Transit	Planning 80/20	1,440	1,200	240	Section 5307
LA 86-X001	Calcasieu PPJ	Operating 50/50	594	297	297	Section 5311
LA 37-X025	Calcasieu PPJ	JARC 50/50	88	44	44	Section 5316
LINE	Elderly and Disabled	Capital Expenditures	80	64	16	Section 5310 (16B2)
Total FY 2011			2,802	1,905	897	

Project No.	Project Name	Proposed Improvement	Est. Cost (000)	Federal Share (000)	Match in (000)	Funding Source: FTA
LA 90-X221	City of Lake Charles Transit	Operating 50/50	600	300	300	Section 5307
LA 90-X221	City of Lake Charles Transit	Planning 80/20	1,440	1,200	240	Section 5307
LA 86-X001	Calcasieu PPJ	Operating 50/50	594	297	297	Section 5311
LA 37-X025	Calcasieu PPJ	JARC 50/50	88	44	44	Section 5316
LINE	Elderly and Disabled	Capital Expenditures	80	64	16	Section 5310 (16B2)
Total FY 2011			2,802	1,905	897	

Project No.	Project Name	Proposed Improvement	Est. Cost (000)	Federal Share (000)	Match in (000)	Funding Source: FTA
LINE	City of Lake Charles Transit	Operating / Planning	21,646			Section 5307
LINE	Calcasieu PPJ	Operating 50/50	2,021			Section 5311
Total Stage I FY 15-24			24,567			

Project No.	Project Name	Proposed Improvement	Est. Cost (000)	Federal Share (000)	Match in (000)	Funding Source: FTA
LINE	City of Lake Charles Transit	Operating / Planning	32,042			Section 5307
LINE	Calcasieu PPJ	Operating 50/50	4,324			Section 5311
Total Stage I FY 15-24			36,366			
Total Stages I, II and III			77,970			



751 Bayou Pines East, Suite M
Lake Charles, LA 70601
Phone (337) 310-7020



120 West Pujco Street
Lake Charles, LA 70602
Phone (337) 433-1771