APPENDIX G: IMPLEMENTATION PLAN EXECUTIVE SUMMARY & IMPLEMENTATION PLAN TECHNICAL MEMORANDUMS

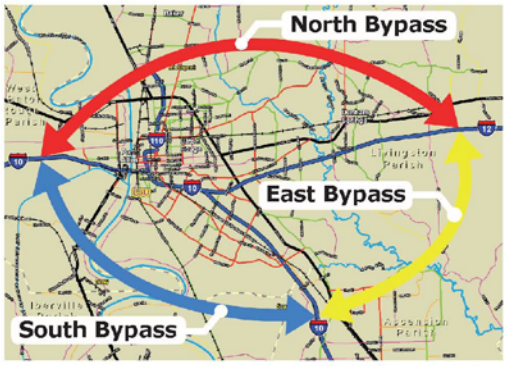
Baton Rouge Loop
Implementation Plan
Executive Summary

July 2008

The Baton Rouge Loop is a proposed free flow toll road around the Baton Rouge metropolitan area. An Implementation Plan to analyze technical, community, and financial factors has been completed that shows the Loop is feasible. This Executive Summary highlights the process and results of the Implementation Plan, and identifies key steps that will move the project forward to opening.

What is the BR Loop?

For many years there has been discussion about the need for bypasses and loops around Baton Rouge. In the 1990s a South Bypass was twice studied. In the early 2000s there was the North Bypass. Planning efforts have been started and stopped, started and stopped. With continued increases in traffic and no alternative routes available, the need for these projects has not subsided, but in fact has steadily increased.



BR Loop Concept Plan

The Baton Rouge Loop will be an 80 to 90 mile long circumferential free-flow toll roadway around Baton Rouge. The purpose of the Loop is to relieve existing congestion on Interstates 10 and 12 and other major arterial corridors in the region by providing an alternate route during peak hours and when these interstates are congested or closed by incidents. As an additional benefit, the Loop will enhance the regional competitiveness and climate for economic development. Improved mobility and enhanced economic development opportunities are powerful quality of life components that will prepare the Baton Rouge region for its growing role as a leading city of the south.

The Loop includes three segments: 1) a north bypass linking I-10 west of the Mississippi River to I-12 in Livingston Parish; 2) a south bypass linking I-10 west of the Mississippi River with I-10 in Ascension Parish; and 3) an east bypass linking I-10 in Ascension Parish with I-12 in Livingston Parish.

The Loop corridor traverses five Parishes in the Baton Rouge region: East Baton Rouge, West Baton Rouge, Livingston, Ascension, and Iberville. The Loop will cross the Mississippi River in two locations – one south of I-10 and Louisiana State University (LSU) and one north of downtown Baton Rouge, either in the existing US 190 bridge corridor or just north of Southern University. The Loop will also cross the Amite River basin in two locations - one north and one south of I-12.

Why Now?

The time is right in the Baton Rouge region to implement the Loop. The right ingredients are in place to overcome the obstacles that have stymied previous loop and bypass planning efforts.

Traffic

With the migration of population in the aftermath of Hurricanes Katrina and Rita to Baton Rouge and along the I-10/I-12 corridors east and west of Baton Rouge, traffic congestion is an even more pressing issue now than it has been in the past. Population forecasts for Baton Rouge have the regional population approaching one million residents in the next 20 years. Population along the 10/12 corridors is expected to grow at a similar rate. The coast-to-coast I-10 corridor is the most important highway in the south and will become even more important (and busy) in the future as the trend of population shifts to the southern United States continues.

Financing

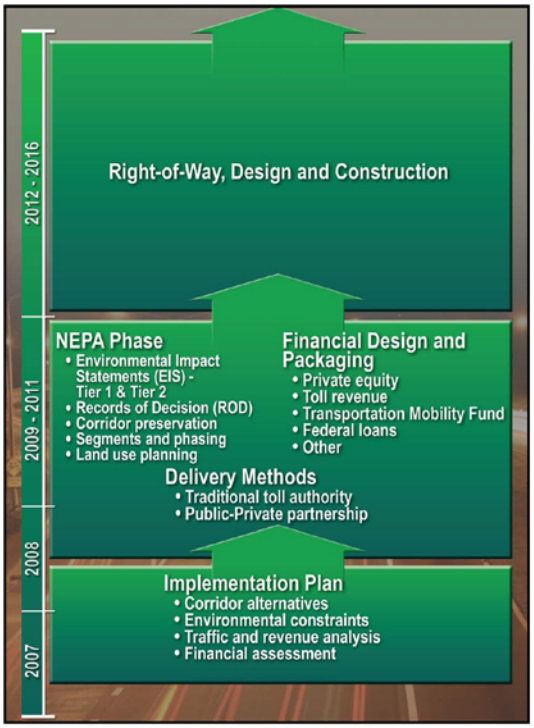
Across the country there is recognition of the shortage of funding for needed transportation improvements. Traditional funding approaches such as the gas tax can no longer support needed improvements, and projects such as the Baton Rouge Loop are not likely to be funded with traditional means. The Louisiana Legislature began to address this in 1997 with passage of statewide toll legislation that enables toll roads such as the Baton Rouge Loop. Since then the Legislature has passed numerous additional pieces of toll-enabling legislation, most significantly in 2006 when the Public Private Partnership (PPP) and Transportation Mobility Fund (TMF) legislation were enacted. The PPP legislation permits, for the first time in Louisiana, the investment of private equity into Louisiana's transportation system. The

(continued bottom of page 2)

Executive Summary
Project Overview

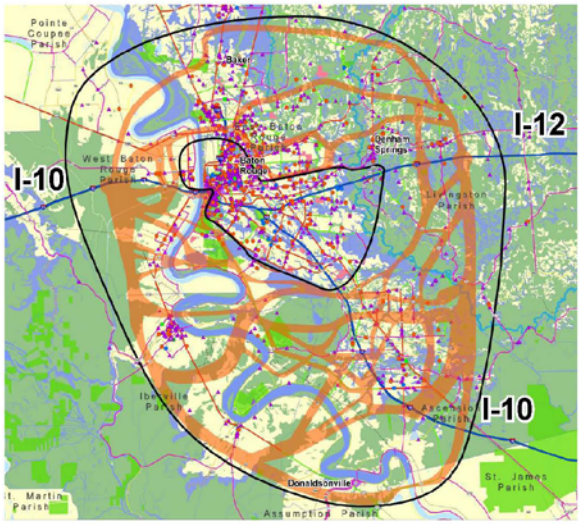
Process Overview & Timeline

The process and timeline for developing the Loop has been broken into three major blocks: 1) Implementation Plan (completed mid-2008); 2) NEPA and finance/ delivery phase; and 3) right-of-way (ROW), design, and construction phase. As shown, the timeline for initial opening is the end of year 2016. While this is a very aggressive schedule, it can be achieved with the focused commitment of the numerous local, state, and federal stakeholders involved in delivering the project.



Corridors

The first step in the process of identifying the route for the Baton Rouge Loop was to establish inner and outer boundaries that would define the project analysis area. The outer boundary was established as the line outside of which the project no longer has a realistic chance of satisfying its primary purpose – to relieve congestion and improve mobility. The inner boundary was set far enough away from the existing I-10 and I-12 corridors so as to provide a new route while avoiding the dense and fully-developed core area of Baton Rouge. Within the inner and outer boundaries, a multitude of potential corridors were developed, as shown on the map below.



BR Loop Initial Corridors for Study

— Project Boundary ■ Initial Corridor

('Why Now' continued from page 1)

TMF legislation leverages new state transportation funding with project-level toll revenues to create a much larger total transportation program than could be delivered by traditional funding. The TMF is intended to fill the funding gap between toll-supported revenues and the cost of a project so that a 100% financing plan is attained. In 2008, additional legislation was passed dedicating a revenue stream into the TMF.

Leadership

The regional leadership dedicated to building the Loop is in place. To begin the process, the East Baton Rouge City-Parish provided funding for the Implementation Plan phase of the project. The leadership provided by Mayor-President Kip Holden, as well as President Mike Grimmer (Livingston), President Tommy Martinez (Ascension), President Riley Berthelot (West Baton Rouge), and President Mitchell Ourso (Iberville) from the four surrounding Parishes has been, and will continue to be, a key for successful project implementation.

Executive Summary
Project Overview

Design Features

For the Implementation Plan phase, major design features of the Loop were identified to meet the purpose and need of the project. These major features include number of lanes (typical section), interchange locations and types, Mississippi River bridges, and right-of-way requirements, impacts, and costs.

Typical Section

The Baton Rouge Loop initially will be constructed as a four lane free-flow facility. The project is planned so that at least two additional lanes, one in each direction, can be added in the median when traffic demands warrant. The proposed typical section also provides space within the right-of-way to add continuous frontage roads where and when needed.

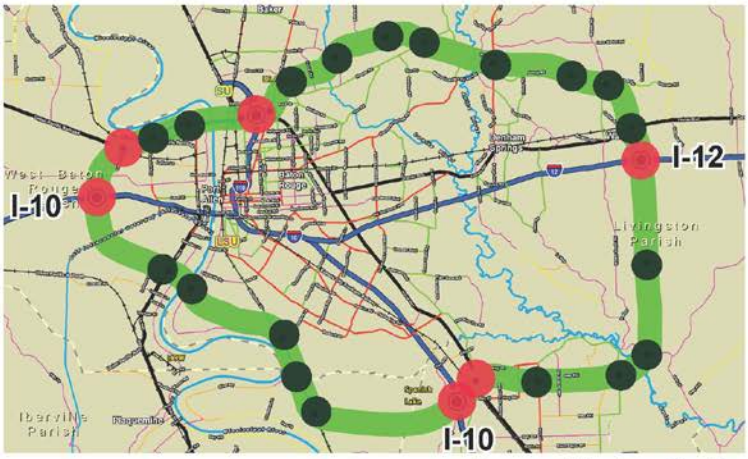
BR Loop Typical Section

Potential shared use with transit systems has been considered in the Implementation Plan. This could include commuter rail in the median or outside of the main lanes, or bus rapid transit. Also, the idea of a bike/walking trail throughout the corridor has been discussed with BREC, the local recreation authority in East Baton Rouge Parish, and with officials in the other four parishes. Context sensitive solutions, such as unique landscaping, lighting, hardscape, cultural identifiers, and joint use activities to integrate the Loop into the surrounding communities, will be utilized throughout the Loop corridor.

The typical section shown is for a four-lane facility with a continuous bike/walking trail.

Interchanges

Interchanges will connect the Loop to the regional transportation grid and provide land use access. Where the Loop crosses I-10, I-110, and I-12 (and perhaps other major US and state highways such as U.S. 190, U.S. 61, and LA 1), the Loop will have system-to-system directional 4-level interchanges. Other interchanges will vary, and will most commonly be diamond-type interchanges. At this planning level of the project, potential interchanges have been identified along the representative Loop corridor as shown below.



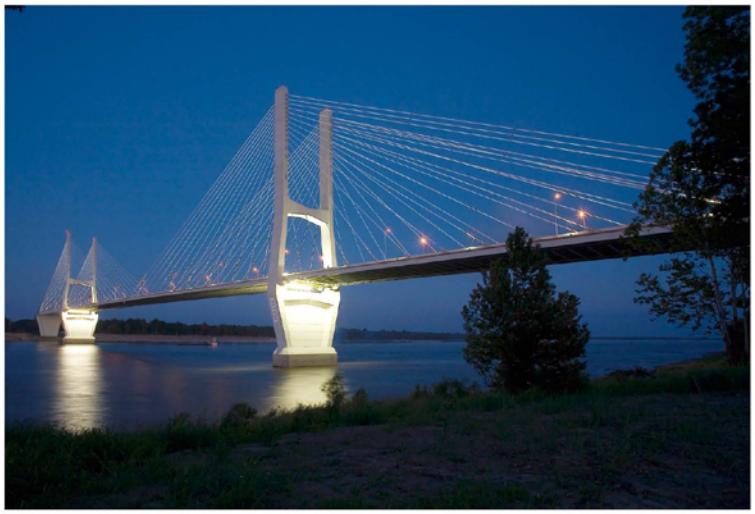
Representative Loop Corridor

System Interchanges Local Interchanges

Executive Summary
Project Overview

Mississippi River Bridges

The Loop crosses the Mississippi River at two locations – one new crossing location south of the existing I-10 bridge at downtown Baton Rouge and one location north of downtown, either in the existing US 190 bridge corridor or just north of Southern University. These river crossings will become landmarks in the community and offer the opportunity to create signature bridges. The U.S. Coast Guard will be an important collaborative agency during subsequent phases of the project. A cable-stayed bridge as shown below may be appropriate in satisfying both cost efficiency and aesthetic interests.



BR Loop Landmark Mississippi River Bridge Concept

Right-of-Way

For the Implementation Plan stage of the project, a 400' wide right-of-way has been utilized throughout the corridor for planning purposes. This width will allow for both additional future travel lanes and frontage roads. In some sections of the corridor, less right-of-way may be desirable to minimize impacts to sensitive features such as wetlands or to minimize displacement impacts. In other sections of the corridor, more right-of-way may be needed to accommodate shared use features such as transit, continuous bike paths, and other features. These details will evolve as the project is further developed.

Environmental Factors

An environmental inventory and analysis (relying on information readily available from GIS and other sources) was performed for the Implementation Plan phase of the Loop. The purpose of the environmental reconnaissance at this stage is to locate sensitive areas such as wetlands, parks, churches, schools, hazardous waste sites, historic sites, and developed areas so that potential corridors can avoid these features. Major existing features within the project limits that are avoided include the Baton Rouge Airport, the Greater Baton Rouge Port, and the main campuses of LSU and Southern University. Environmentally sensitive areas within the Loop boundaries include Spanish Lake and the Amite River floodplain. Complete avoidance of all impacts is not possible; therefore, every effort should be taken in the Environmental Impact Statement (EIS) phases to minimize impacts and mitigate unavoidable impacts.

No fatal flaws that would prohibit project development have been uncovered as a result of the environmental analysis. The Loop Team has initiated an agency involvement plan to provide early notice of the project. In February 2008 the Tier 1 EIS process was formally begun.

Costs

The preliminary estimated implementation cost of the project (in 2008 dollars), including all pre-construction and construction elements, ranges from $3.6 billion to $4.5 billion. The actual implementation cost ultimately will depend on which corridor is selected for the Loop, pre-construction development costs, the design features that are adopted (such as detailed alignment, number of lanes, interchange locations and types, and Mississippi River bridges), and construction costs in effect at the time of construction. The table below provides the preliminary implementation estimates broken out by each of the three individual segments of the Loop (north, south, and east bypasses).

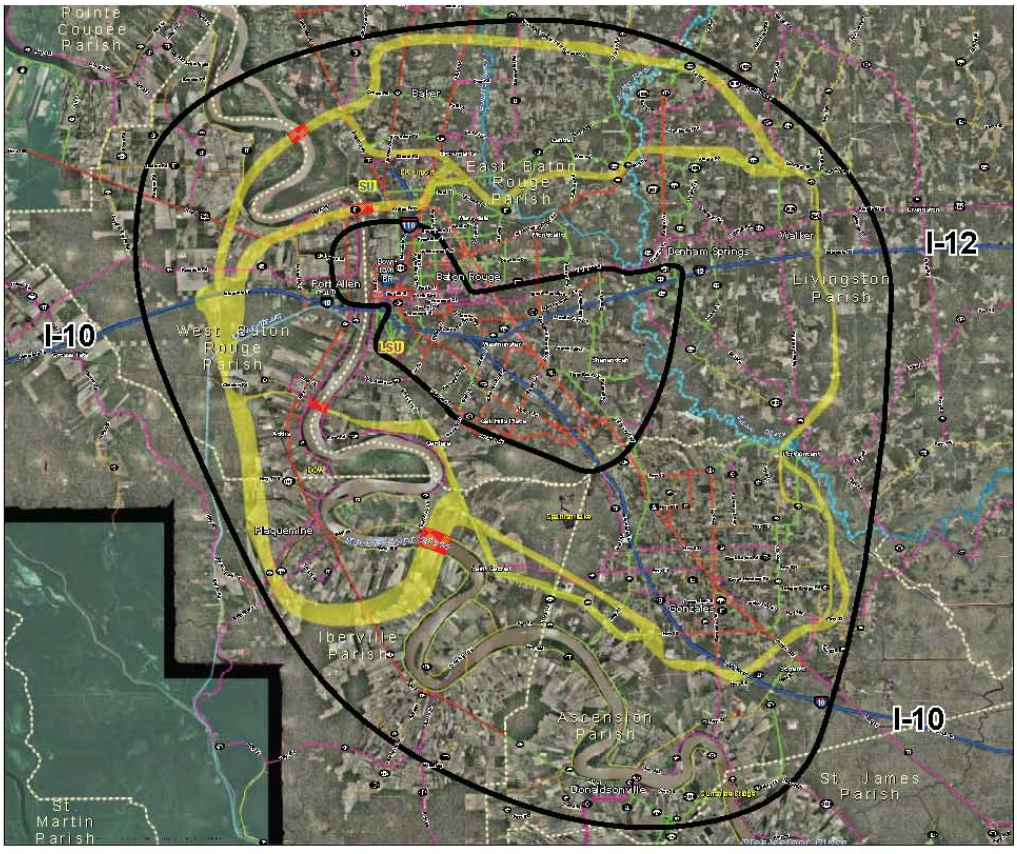
PRELIMINARY DEVELOPMENT COST ESTIMATES				
Bypass	Whole	North	South	East
$ billions (2008)	$3.5-$4.6	$1.5-$1.7	$1.4-$1.6	$0.6-$1.3

Executive Summary
Project Overview

Locally Preferred Corridors

Based on engineering, environmental, agency, community, and finance inputs, the potential corridors identified during the initial stages of the Implementation Plan were refined to a narrow set of locally preferred corridors that will move forward into the Tier 1 EIS phase of the project. These locally preferred corridors, which emerged late in the Implementation Plan phase and continue to be refined, include two potential Mississippi River bridge locations for each of the north and south bypasses. Differing options remain through northern Livingston and East Baton Rouge Parishes, and Iberville and Ascension Parishes between the Mississippi and Amite Rivers. These corridors, shown on the map below, are recommended to advance into the Tier 1 EIS, where other viable options could also be considered.

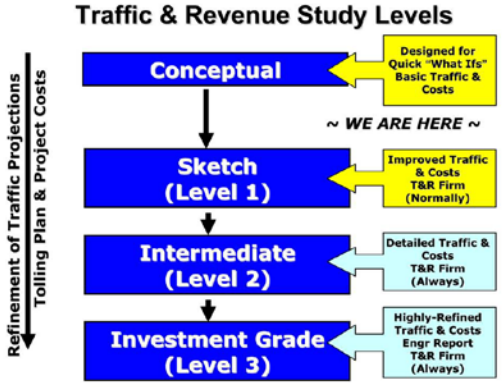
During the corridor development process, several potential spurs were identified that could improve access to the Loop, service to the communities, and increase ridership and associated toll revenues. These spurs, not shown on the map, would also benefit the local roadway network and should be considered more fully in subsequent phases of planning for the Loop.



Executive Summary
Traffic, Revenue, & Phasing

Traffic & Revenue Process

Preliminary traffic and toll revenue estimates performed during this phase of the Loop project represent the early part of a four-stage process. Each subsequent stage will refine the analysis and provide more detail and accuracy to the traffic & revenue estimates. The process is shown below.



Regional Transportation Model

The existing Baton Rouge regional transportation model, originally prepared by the Department of Transportation and Development (DOTD) and Capital Region Planning Commission, has been utilized to perform preliminary estimates of the new Baton Rouge Loop traffic. The regional model was updated post-Katrina to reflect preliminary estimated changes in population and other planning variables. During later stages of the traffic & revenue process, the model will be updated even further and validated by more detailed study.

Traffic Assignments

Traffic assignments on the Loop were made first by modeling the Loop as a toll-free facility (like I-10 and I-12), and then re-running the model as a toll road (to account for a reduction in traffic because some motorists will not want to pay a toll). One key factor that influences the amount of reduction in traffic from a toll-free to a tolled facility is the value-of-time input to the model. Higher value-of-time inputs will yield less reduction in the toll road traffic, reflecting the willingness of motorists to pay to avoid travel delays on the non-tolled congested roadways. Average incomes in Baton Rouge and Louisiana have risen in the last few years, with a result being that value-of-time inputs for the Baton Rouge model are higher than in previous analyses and consistent with other regions that have successful toll road operations.

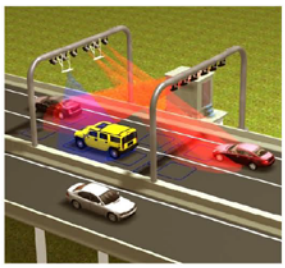
Opening year of the Loop was estimated as 2016 for the analyses. The following maps indicate preliminary average daily estimates for opening year traffic in 2032 using a representative corridor location.

Representative BR Loop - Year 2016

Representative BR Loop - Year 2032

Average Daily Traffic
0-12,000 | 12,001-20,000 | 20,001-28,000 | 28,001-36,000 | 36,001+

Electronic Toll Collection


BR Loop - Open Road Tolling

The Loop will utilize a state-of-the-art tolling system that is fully electronic. This will allow vehicles to travel free-flow at normal highway speeds. No manually-operated cash toll booths will be utilized. Other intelligent transportation system components, (such as dynamic message signing and an advanced traffic management center), will be incorporated into the project.

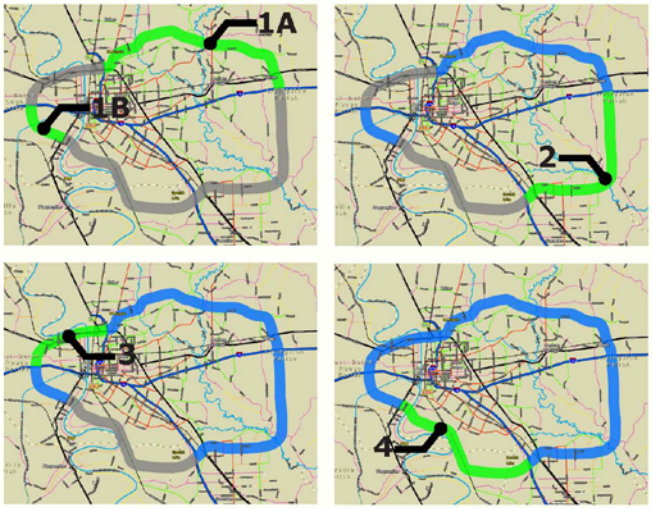
Executive Summary
Traffic, Revenue, & Phasing

Toll Revenues

Toll revenue estimates have been determined based on the Loop traffic assignments discussed previously and a toll rate per mile applied to the traffic. The optimum toll rate if the Loop were to open now is estimated to be $0.15 per mile. A sensitivity analysis shows that this rate will maximize revenue generated by the Loop, although this is a lower rate than other urban toll systems which typically have rates in the range of $0.15 to $0.25 per mile. For the Implementation Plan, the Loop base toll rate has been increased over time based on the Consumer Price Index (CPI) projections to future years of the project.

Potential Phased Implementation

Based on the preliminary results of the finance models and traffic needs (including implementation costs, traffic needs, and toll revenues) the Loop team took an initial look at logical segments of the project that may be staged within a potential phased implementation plan. When all phases are constructed, the Baton Rouge region will have a total loop. Actual phasing of the project will be a function of several variables which are unknown at this time, and thus cannot be specified with certainty this early in the process. These variables include the way the project is delivered (public toll agency or public-private partnership), the specifics of various financing packages, changing traffic needs, agency inputs, and other local factors. Final implementation phasing will be determined during subsequent phases of the project over the next two to four years.



Representative BR Loop - Potential Sequencing Plan

On the maps below, the green color represents a Loop segment in development, the blue represents a segment that has been completed and is open to traffic, and the grey represents future segments of the Loop. A representative corridor location has been used for illustration.

Corridor Preservation

Even under the aggressive project development scenario that is being advanced for the Baton Rouge Loop, it will be approximately three years or more before right-of-way acquisition begins. Also, once underway, it is likely that the Loop will be developed in phases; so the right-of-way acquisition will continue for several years. For these two reasons, it is important to develop and adopt a corridor preservation approach for the project. A corridor preservation plan will facilitate the project development in several ways: 1) it will be a means to ensure that current undeveloped portions of the route(s) that have been selected for the Loop will have the best chance to remain undeveloped; 2) for current developed properties which may be affected by the Loop, it will provide information and processes that allow for orderly planning and adjustments; and 3) it will be an important element of the Record of Decision that is issued by the FHWA and enables the project to move forward.

For the first two items above, a corridor-level framework and goals for corridor preservation will be needed. Once this is developed, the responsibility for implementation of the corridor-level preservation approach will fall to the individual Parishes and municipalities along the route. These local governments will be able to use information campaigns, zoning, and permitting functions as a means to educate potential land developers until such time as rights-of-way are purchased in an orderly manner.

The corridor preservation approach for the Baton Rouge Loop that ultimately is adopted should be developed hand-in-hand with the land use planning component of the project that will be a part of the Tier 1 EIS phase of the project.

Executive Summary
Delivery & Preliminary Finance

Project Delivery Methods

Two primary options are available to finance the project: 1) tax-exempt bond finance (traditional method for toll roads in the United States); and 2) public-private partnership (PPP) (emerging method being utilized in Texas, Virginia, Florida, and other places). Under tax-exempt bond finance, toll collections are used to support municipal bonds, while using PPP the toll revenues are used to repay the private equity investment and other potential funding sources.

There are two delivery agencies in place that can be used for the Baton Rouge Loop. The Capital Area Expressway Authority (CAEA) has been incorporated under the 1997 enabling legislation and is empowered to plan, design, build, and operate the Loop. The CAEA is governed by a Board of Directors consisting of the five Parish Presidents (or their representatives) for the Baton Rouge region and the Secretary of DOTD. The Louisiana Transportation Authority (LTA), created by 2001 legislation, is Louisiana's statewide toll authority and is empowered to implement toll roads statewide and to administer Louisiana's PPP program. The LTA is governed by an 11-member board led by the Governor, leaders from the legislature, cabinet level heads (including DOTD), and others. If the project is financed by traditional methods, the CAEA likely will administer the development and implementation of the project. If the PPP approach is utilized, it is likely the CAEA will work collaboratively with the LTA.

Preliminary Finance Model Inputs

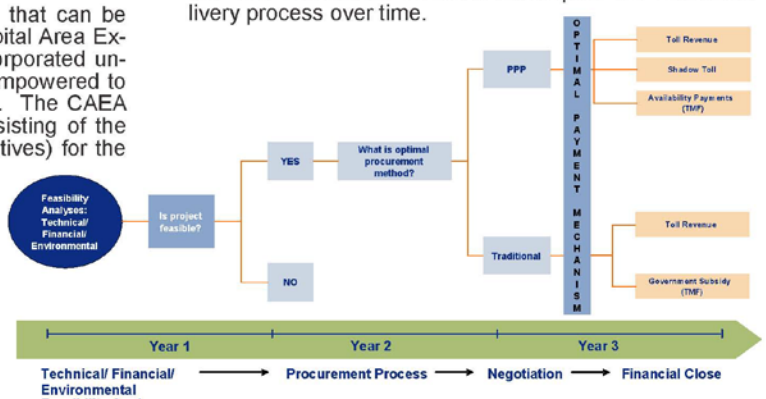
Preliminary finance modeling has been performed to determine the general viability of the Loop and get an estimate of the gap funding that may be required for the project. This preliminary analysis is based on project specific input data from a number of sources:

- Traffic and revenue estimates
- Number of tolling transactions
- Implementation costs (including pre-construction and construction phases)
- Operating costs
- Renewal and replacement costs over time

Other key inputs are market-based, including discount rates and prevailing bond requirements at the time of the bond sales. These have been assumed to be consistent with other recent transactions for the purpose of the preliminary analyses.

Finance & Development Process

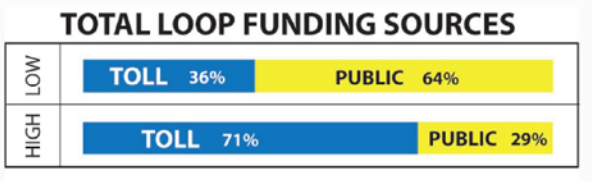
The detailed financial planning process will evolve from the preliminary results presented previously concurrently with the planning phase of the project. As the Tier 1 and Tier 2 EISs are developed over the next two to three years, the traffic & revenue estimates, implementation cost estimates, and assessment of market conditions will continue to be refined. It is planned, that financial closing of the project would occur near the time that the Tier 2 EIS Records of Decision are issued that enable the project to be constructed. The chart below indicates the steps in the finance/delivery process over time.



Preliminary Finance Analysis

Due to the preliminary nature of the data and associated uncertainties at this stage of project development, analyses have been performed for both conservative and optimistic financial cases. These two cases serve as bookends in assessing the financial viability of the Loop at this stage of its project development, with a range of possible actual outcomes in between.

The results of using this approach in analysis of the entire Loop are summarized in the chart below. The low scenario represents the high cost/low traffic case using traditional financing. The high scenario represents the low cost/high traffic case using long-term PPP financing. Individual segments of the Loop will be more fundable by tolls with less reliance on public sources.



Executive Summary
Leadership & Public Outreach

Project Leadership

Executive Committee

The Executive Committee was formed as the management and decision-making body for the BR Loop Implementation Plan. Members of this Committee include the five parish presidents from the Baton Rouge region.

Position	Name
Ascension Parish President	*Tommy Martinez*
East Baton Rouge Mayor-President	*Melvin "Kip" Holden (chairman)*
Iberville Parish President	*J. Mitchell Ourso Jr.*
Livingston Parish President	*Mike Grimmer (vice chairman)*
West Baton Rouge Parish President	*Riley "Pee Wee" Berthelot*

Stakeholder Committee

The Stakeholder Committee represented civic and community stakeholders common to the five parishes as well as specific to each parish. Its members were appointed by the Executive Committee. For full membership, please refer to Technical Memorandum No. 6.

Advisory Committee

The Advisory Committee provided technical assistance, coordinated with appropriate agencies and provided expert advice and counsel to the Executive Committee. Its members were appointed by the Executive Committee. For full membership, please refer to Technical Memorandum No. 6.

Public Involvement

Executive Committee Meetings

The BR Loop Executive Committee held monthly meetings in the Baton Rouge Metropolitan Council Chambers and other locations in Baton Rouge during the Implementation Plan phase of the project. Open to the public and media, these meetings were well-attended and allowed the Project Team to provide updates on the project.

Open House Workshops

Two rounds of open house workshops were held to inform the public about the project and obtain public feedback in identifying constraints and modifying proposed corridors.

The second round of workshops, held in February and March 2008, also served as public scoping meetings for the Tier 1 EIS phase of the project. The Loop Team obtained public comments on the project's purpose and need, range of alternatives considered, corridor alternatives and identification of environmental, socioeconomic and other concerns.

Livingston Parish Open House
Courtesy of The Advocate

Media Participation

The Loop Team held numerous discussions and interviews with the media concerning the BR Loop Implementation Plan and provided full media access to a tour of Texas toll facilities and related meetings with Texas officials.

The Loop Team and BR Loop Executive Committee leadership met with the editorial boards of the Baton Rouge Business Report and The Advocate. Topics discussed included a project overview, the Implementation Plan phase and next steps in the Tier 1 and Tier 2 EIS phases. These publications, as well as local television, provided extensive coverage of the Executive Committee and Open House Meetings.

Texas Toll Tour

The BR Loop Executive Committee, Loop Team members, representatives from FHWA and DOTD, and members of the media participated in a tour of Austin and Dallas, Texas toll facilities during March 6-7, 2008.

The fact-finding mission included tours of two North Texas Tollway Authority (NTTA) facilities and briefings by NTTA executive leadership in Dallas, as well as a driving tour of the Austin toll system and a working session with the Central Texas Regional Mobility Authority (CTRMA). Issues discussed included the NTTA and CTRMA systems, start-up issues, financing strategies and lessons learned.

Executive Summary
Next Steps for Focus

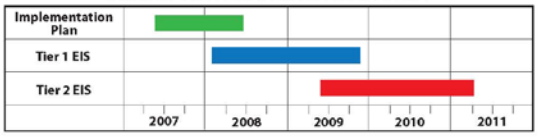
Three steps have been identified as the most important for focus in advancing the Baton Rouge Loop project.

1) Complete the Planning Process

The Tier 1 EIS for the Loop was begun in February 2008 upon issuance of the Notice of Intent. The Tier 1 EIS, scheduled for completion late-2009, will select a single Loop corridor, with a broad band width, that is adopted in a Record of Decision. Funding for completion of the Tier 1 EIS was appropriated by the 2007 State Legislature. After Tier 1, one or more Tier 2 EISs will need to be prepared. Each Tier 2 EIS will develop design details of the Loop (such as precise alignments, interchange locations and types, right-of-way footprints, impacts, and costs) which again will be adopted into one or more Records of Decision. The first Tier 2 EISs are scheduled for completion in the first quarter of 2011. The Tier 2 EISs are not yet funded at the time of this report. The FHWA is the lead federal agency responsible for the EIS process, working with the CAEA as the lead state agency. DOTD will be a high-level partner.

Concurrent with the EIS process, the Metropolitan Planning Organization (MPO) will need to adopt the Loop into the Transportation Improvement Plan and gain Air Quality Conformity. Other actions, such as adoption and execution of a Corridor Preservation Plan, will be needed by the local jurisdictions along the route.

BR LOOP PROJECT DEVELOPMENT PLAN



2) Finance Development

Results of the preliminary finance modeling indicate some level of gap funding will be needed to achieve a 100% financing plan for the Baton Rouge Loop, or individual components of the Loop. The ultimate amount of the gap funding will be contingent on factors such as the ultimately adopted phased implementation plan, delivery method (traditional or PPP), market factors, updated cost and traffic studies, and other factors.

In Louisiana, the Transportation Mobility Fund (TMF) represents the single most likely method to provide the gap funding needed for the project. In the 2008 State Legislature, the TMF was the beneficiary of new legislation providing its first dedicated revenue stream. This is a great start that can provide some of the funding needed for continued planning and design, but will not be sufficient to provide enough gap funding for construction of the total Loop. Consideration for additional dedicated funding for the TMF is warranted.

Also, the finance modeling in the Implementation Plan represents fair estimates of the financial viability of the project. However, the true value of the Loop may best be estimated by the private sector. To determine this value, it is recommended that the Loop be advanced through the "solicited proposal" process as enabled by Louisiana's PPP legislation. This process has not yet been used in Louisiana, so rules will need to be established for advertising, evaluating, and procuring private sector involvement.

3) Prioritize and Get Started

Some sections of the Loop are more financially self-sufficient than others. This greater self-sufficiency means less public gap funding is needed to build a financing plan. Based on the results of the financial modeling and other factors, it is recommended that the first phase of Loop development be established as the North Bypass segment from I-110 to I-12. Identifying the first segment of the entire Loop will provide the focus that is needed to go forward. Once this first segment is sufficiently advanced, other segments of the Loop can follow. Many times, once one or more segments of a total project are open, excess revenues from the open segments(s) can be used to fill the gap on other segments of a project that are needed but less financially self-supporting. This can be the case with the Baton Rouge Loop, with the first completed segment(s) ultimately providing the finance support needed for other segments. While focus is applied to the initial segment(s), implementation of the Corridor Preservation Plan should occur in other segments of the total Loop.

The Loop Team

A series of six technical memorandums have been developed to document the analyses and other activities during the Implementation Plan phase. These technical memorandums cover work in the areas of engineering, environmental, traffic & revenue, financial feasibility, community involvement, and implementation planning. This Executive Summary is based on the contents of these memorandums. The team members developing the Implementation Plan are indicated below:

HNTB ABMB ENGINEERS, INC. URS KPMG MARMILLION/GRAY/SABISTON

10

Baton Rouge Loop
Implementation Plan

Baton Rouge Loop

www.brloop.com

Technical Memorandum No. 1
Corridors, Design Features, & Cost Estimates

July 2008

East Baton Rouge | West Baton Rouge | Livingston Parish | Ascension Parish | Iberville Parish

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Technical Memorandum No. 1
Corridors, Design Features, & Cost Estimates

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East Baton Rouge | West Baton Rouge | Livingston Parish | Ascension Parish | Iberville Parish

FOREWORD

The Baton Rouge Loop will be a free flow toll road around the Baton Rouge metropolitan area. The Implementation Plan phase of project development is the initial part of the process in planning, design, construction, and operations of the new roadway. The Implementation Plan phase is to analyze engineering, environmental, and financial feasibility of the proposed loop as well as solicit public, agency, and political involvement in initial planning for the project. The end result of the Implementation Plan phase is to identify and lay out the process for activities going forward that will lead to opening and operations of the loop.

A series of six technical memorandums have been developed to document the analysis and other activities during the Implementation Plan phase. These technical memorandums present and document work in the areas of engineering, environmental, traffic & revenue, financial feasibility, community involvement, and implementation planning. This technical memorandum is one of the series of six.

The team of planners, engineers, and other specialists developing the Implementation Plan are indicated below:

HNTB ABMB ENGINEERS, INC. URS

KPMG MARMILLION/GRAY/SABISTON

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

Technical Memorandum No. 1 documents the process and findings of the corridor evaluation, design features and conceptual project costs developed for the Loop Implementation Plan.

2. DESIGN FEATURES

In order to provide the highest level of service, the Baton Rouge Loop will be designed as a controlled access free-flow facility. It will meet the standards and guidelines set forth by the American Association of State Highway and Transportation Officials (AASHTO) with consideration given to criteria established by the Louisiana Department of Transportation and Development (LADOTD). Along with design standards, typical sections and the Loop mainline, several features are proposed for the new roadway including: various interchange types; frontage road systems; elevated roadway segments; potential rail corridors; major river crossings; context sensitive elements; electronic tolling systems; and potential rail / commuter corridors.

2.1. Design Standards

The Design Standards proposed for the Loop are shown in Table 2-1 and are primarily based on AASHTO's 2004 publications, *A Policy on Geometric Design of Highways and Streets*, and *Roadside Design Guide* with consideration given to LADOTD *Design Standards for Freeways (2003)*. The table includes criteria for urban and rural sections, as both will be utilized along the route.

Table 2-1. Design Standards

ITEM NO.	ITEM	URBAN	RURAL
1	Design Speed (mph)	60	70
2	Level of Service	C	B
3	Number of Lanes (minimum) [1]	4	4
4	Width of Travel Lanes (ft.)	12	12
5	Width of Shoulders (ft)		
	(a) Inside [2]	6	6
	(b) Outside [3]	10	10
6	Shoulder Type	Paved	Paved
7	Width of Median (minimum) (ft) [1]		
	(a) Depressed (4-lane)	52	52
	(b) Continuous barrier (6 lane) [4]	28	28
8	Fore Slope (vertical : horizontal)	1:6	1:6
9	Back Slope (vertical : horizontal)	1:4	1:4
10	Pavement Cross Slope (%)	2.5	2.5
11	Stopping Sight Distance	570	730
12	Maximum Superelevation (%)	10	10
13	Minimum Radius (ft) [5] (with 10% superelevation)	1,100	1,700
14	Maximum Grade (%) [6]	3	3
15	Minimum Vertical Clearance (ft) [7]	16	16
16	Width of Right-of-Way (ft)		
	(a) Depressed median	See Typ. Sections	See Typ. Sections
	(b) Median barrier	See Typ. Sections	See Typ. Sections
	(c) Minimum from edge of bridge structure [8]	25	25
17	Bridge Design Live Load [9]	LRFD	LRFD
18	Minimum Width of Bridges (face to face of bridge rail at gutter line) (ft)	Roadway Width	Roadway Width
19	Horizontal Clearance (from edge of travel lane) (1:6 Fore Slope) (ft)	32	34

Footnotes

1 Consideration has been given to future addition of 2 lanes (total 6-lane future facility).
2 4 feet to be paved - 10 feet to be paved on 6 lane facilities - 12 feet to be paved on 6 lane facilities with truck DDHV greater than 250.
3 12 feet paved when truck DDHV is greater than 250.
4 For larger medians two barriers may be required. The maximum offset of 15 feet from barrier to edge of travel lane shall not be exceeded.
5 It may be necessary to increase the radius of the curve and/or increase the shoulder width (maximum of 12 feet) to provide adequate stopping sight distance on structure.
6 Grades 1 percent higher may be used in urban areas.
7 An additional 6 inches should be added for additional future surfacing. 17 feet is required for trusses and pedestrian overpasses.
8 In accordance with LADOTD EDSM II.1.1.1.
9 For LRFD and ASD designs a HST - 18 vehicle should be included as one of the live load vehicles.

2.2. Typical Sections

In applying the design standards to this project, several different roadway and bridge sections are used to account for varying conditions encountered along the route. The following typical sections developed for the Loop illustrate how these conditions will be met. These sections are shown in Figures 2-1 through 2-4 and further discussed in the following sections.

- Typical Roadway Sections (4-lane and future 6-lane)
- Typical Sections with Frontage Roads (4-lane and future 6-lane)
- Typical Sections with Viaduct Structure (4-lane and future 6-lane)
- Typical Section with Rail Corridor (4-lane and future 6-lane)

2.3. Loop Mainline

The Loop will initially be constructed as a 4-lane facility. As increase in ridership demands additional capacity, the route will be capable of expanding to 6 lanes by adding a lane in each direction. Provisions for widening the route are incorporated in the proposed typical sections (i.e., right-of-way and median widths allow for additional travel lanes in the median). See Figures 2-1 and 2-2.

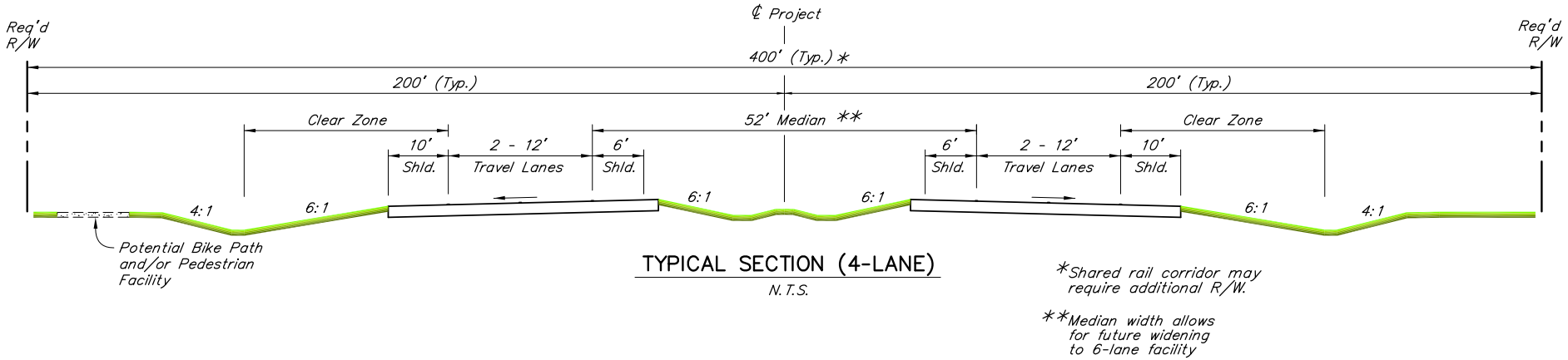
A 400-foot typical right-of-way has been assumed along the entire route to allow for the addition of frontage roads and possibly other amenities such as bike paths, rail corridors, etc. This right-of-way width allows frontage roads to be constructed initially as shown in Figure 2-2, or frontage roads can be constructed at a later date if required. Required right-of-way may be wider than shown in the typical sections depending on the terrain or other topographical features encountered along the route. Additional right-of-way will also be required at interchanges.

2.4. Interchanges

Convenient access is a critical element in maximizing utilization of the Loop. Interchange type and location are key components to achieve this goal. Interchange types proposed for the facility include:

- Diamond Interchange
- Diamond Interchange with Slip Ramps & Frontage Roads
- Fully-directional interchange

Diamond interchanges will be the most common type used and occur where the Loop crosses major routes within the state or federal system. Diamond

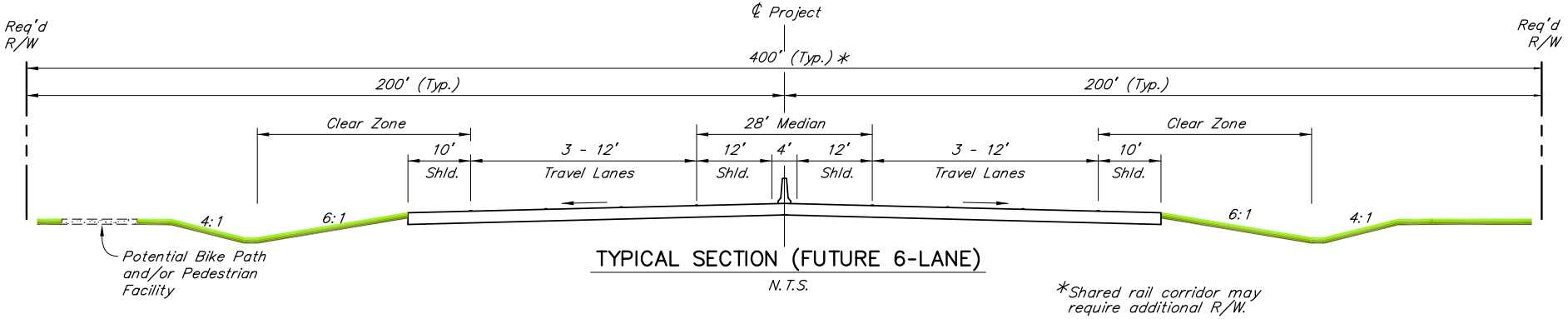


TYPICAL SECTION (4-LANE)

N.T.S.

*Shared rail corridor may require additional R/W.

**Median width allows for future widening to 6-lane facility



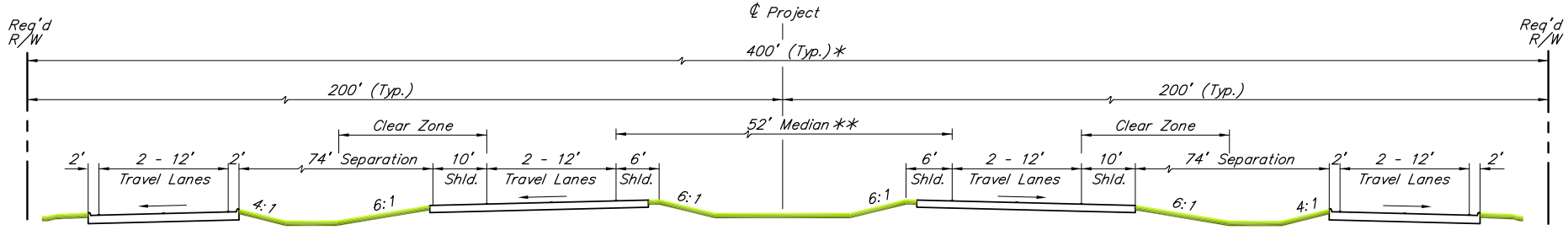
TYPICAL SECTION (FUTURE 6-LANE)

N.T.S.

*Shared rail corridor may require additional R/W.

FIGURE 2-1

TYPICAL ROADWAY SECTIONS (4-LANE & FUTURE 6-LANE)

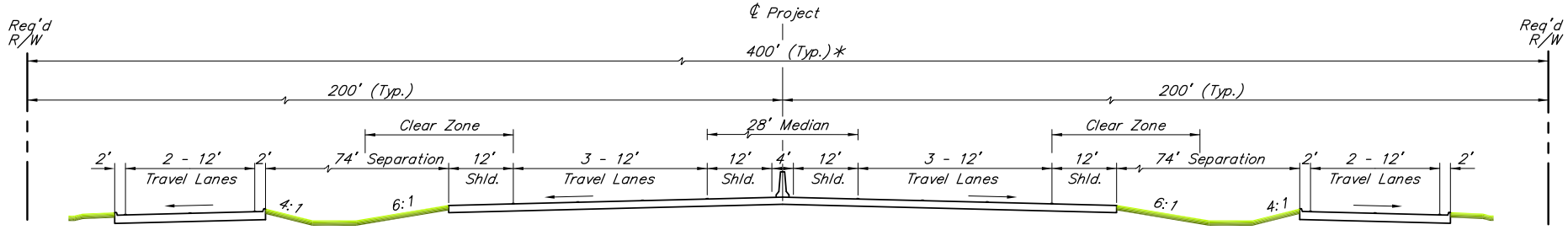


4-LANE WITH FRONTAGE ROADS

N.T.S.

*Shared rail corridor may require additional R/W.

**Median width allows for future widening to 6-lane facility



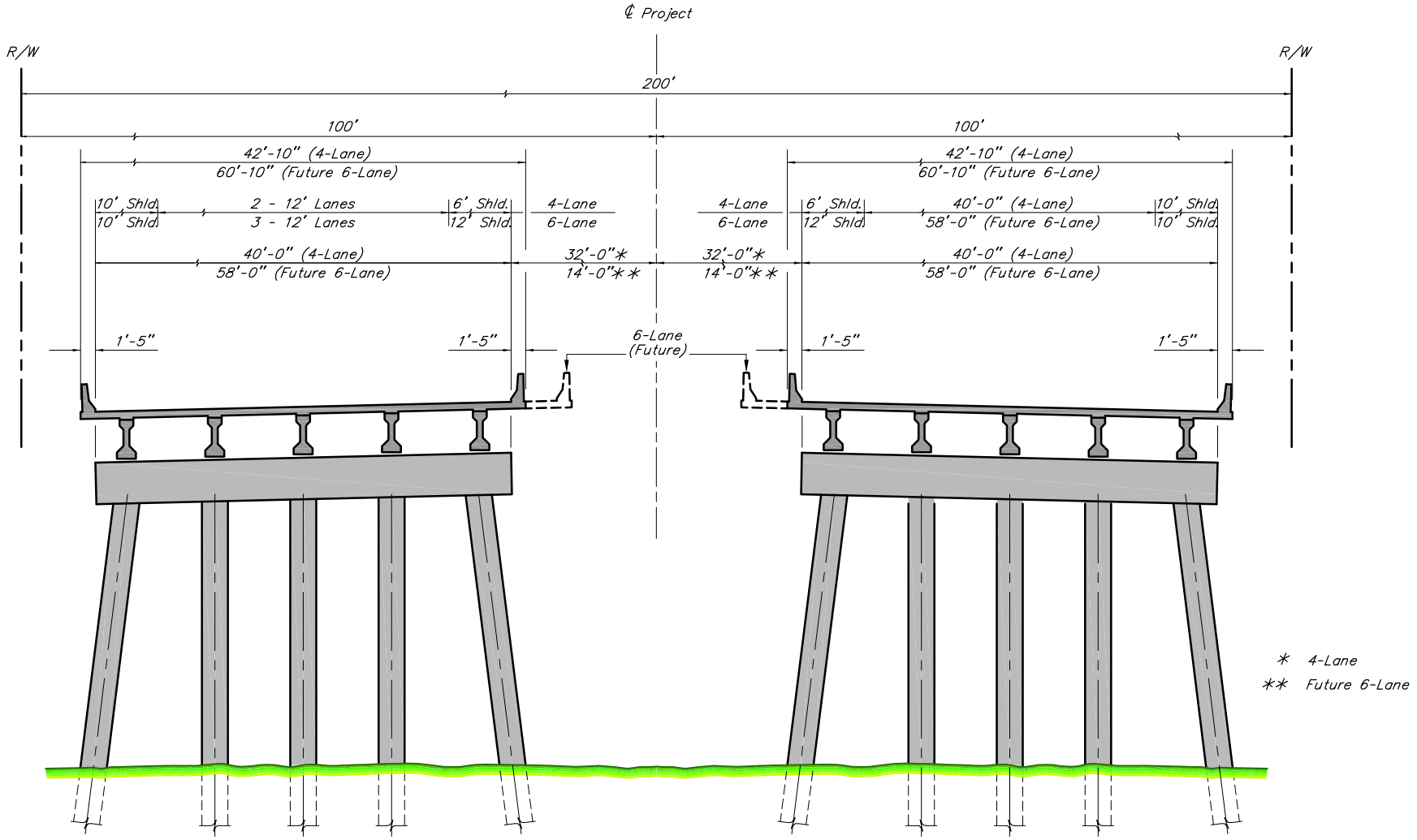
FUTURE 6-LANE WITH FRONTAGE ROADS

N.T.S.

*Shared rail corridor may require additional R/W.

FIGURE 2-2

TYPICAL SECTIONS WITH FRONTAGE ROADS

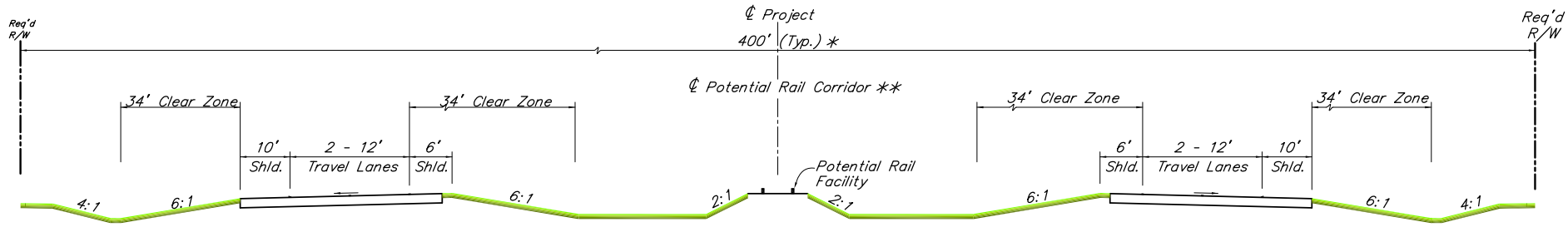


TYPICAL SECTION - VIADUCT STRUCTURE (4-LANE / FUTURE 6-LANE)

N.T.S.

FIGURE 2-3

TYPICAL SECTIONS
VIADUCT STRUCTURE

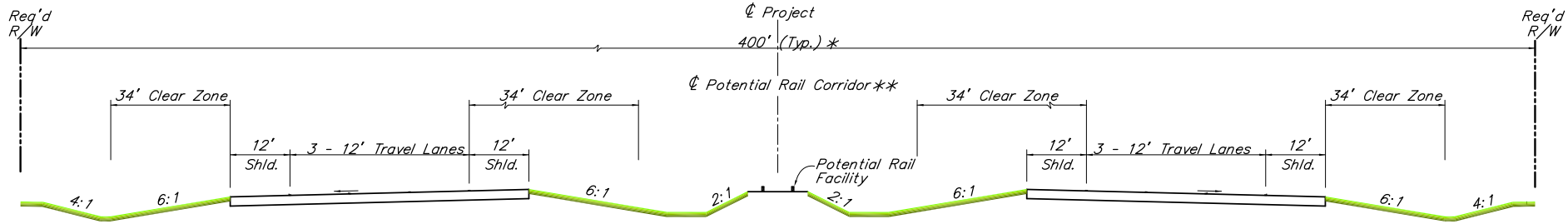


4-LANE WITH RAIL CORRIDOR

N.T.S.

*Frontage road provision may require additional R/W.

**One track shown. Multiple tracks may be required - pending further analysis.



6-LANE WITH RAIL CORRIDOR

N.T.S.

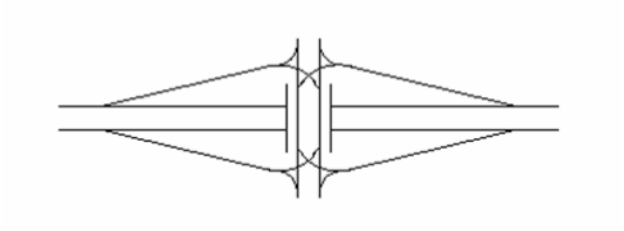
*Frontage road provision may require additional R/W.

**One track shown. Multiple tracks may be required - pending further analysis.

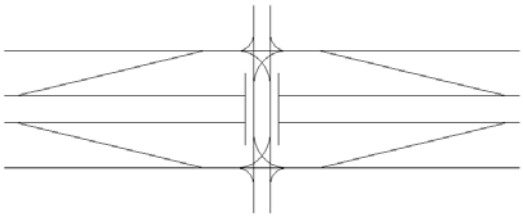
FIGURE 2-4

TYPICAL SECTIONS WITH RAIL CORRIDOR

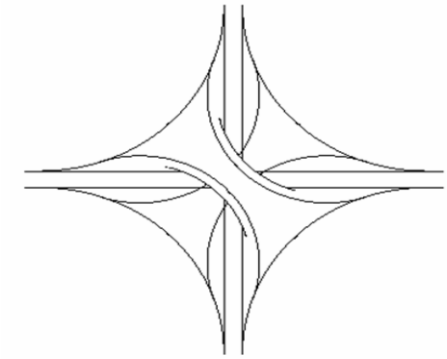
interchanges will also be used in combination with one-way frontage roads at major cross roads. The fully directional system-to-system interchanges occur where the mainline Loop crosses a freeway-type highway such as I-10 or I-12. Sketches of these three interchange types are shown in Figure 2-5.



Diamond Interchange



Diamond Interchange with One-Way Frontage Roads
(Slip Ramps)



Fully Directional Interchange
(4-Level Structure)

Figure 2-5. Typical Interchange Layouts

2.5. Frontage Roads

Several frontage road systems will be applied along the route. In some areas, two-way frontage roads will provide access to adjacent development or bisected properties. In other locations, a new one-way parallel frontage road system with slip ramps and diamond interchanges at major cross streets will be used. Along some existing two-lane routes, a frontage road system will be created by converting the existing two lanes to one-way and constructing a new one-way couplet on the opposite side of the Loop. Slip ramps and diamond interchanges will also be provided for convenient and efficient access to the Loop. Figure 2-5 illustrates a typical one-way frontage road or couplet system with a diamond interchange at the cross road.

2.6. Elevated Roadways

Sections of the route will be elevated above existing terrain within environmentally sensitive areas to reduce the footprint of the roadway and minimize disruption to the natural environment. These viaduct-type structures allow drainage to free-flow and wildlife to pass underneath. Actual structure height above natural ground is dependent on hydraulic and environmental requirements. Figure 2-3 illustrates a typical configuration for these sections.

2.7. Major Bridge Crossings

The route crosses both the Mississippi River and Amite River twice and the Gulf Intracoastal Waterway in order to complete the loop within the Baton Rouge area. The U.S. Coast Guard stipulates that both Mississippi River crossings are required to meet navigation clearances of 133 feet vertical over high water with two channels, one of 750 feet horizontal and two auxiliary channels of 500 feet horizontal. The Gulf Intracoastal Waterway crossing will be required to have a minimum vertical clearance of 125 feet and a minimum horizontal clearance of 73 feet. [1]

The upper Amite River crossing is not within a navigable reach and thus not subject to USCG requirements; however, the lower Amite River crossing may be required to meet certain navigation clearances for recreational vessels. After several inquiries, requirements for the lower Amite crossing have not been confirmed from either the U.S. Coast Guard or LADOTD. Specific criteria will need to be solidified in the next phase of the project for this location. Other design requirements and details at these major crossing locations are discussed in later sections.

[1] http://www.uscg.mil/hq/g-o/g-opt/Clearance.htm#66. The proposed elevations in this document for the Mississippi River bridges meet the total width requirements of 1750 feet; however, the alternatives do not include three separate navigable spans.

Although the primary goal of the project is not to develop a signature structure, it should be noted that bridges of the magnitude required to meet the navigation requirements over the Mississippi River typically become the visual centerpiece of the project. These structures tend to have a signature element about them. It is anticipated that any new structure over the Mississippi River will be a highly visible element of the Loop and, therefore, the effects on the various viewsheds should be considered.

2.8. Context Sensitive Elements

Several features could be incorporated into the Loop facility to provide context sensitive amenities and quality of life enhancements. Potentially, pedestrian and bike paths could be located within the Loop to connect existing public park properties and offer additional recreational opportunities to the region. Typical sections shown in Figure 2-1 illustrate how these can be incorporated along the route. Additional considerations will need to be made at interchanges and other locations.

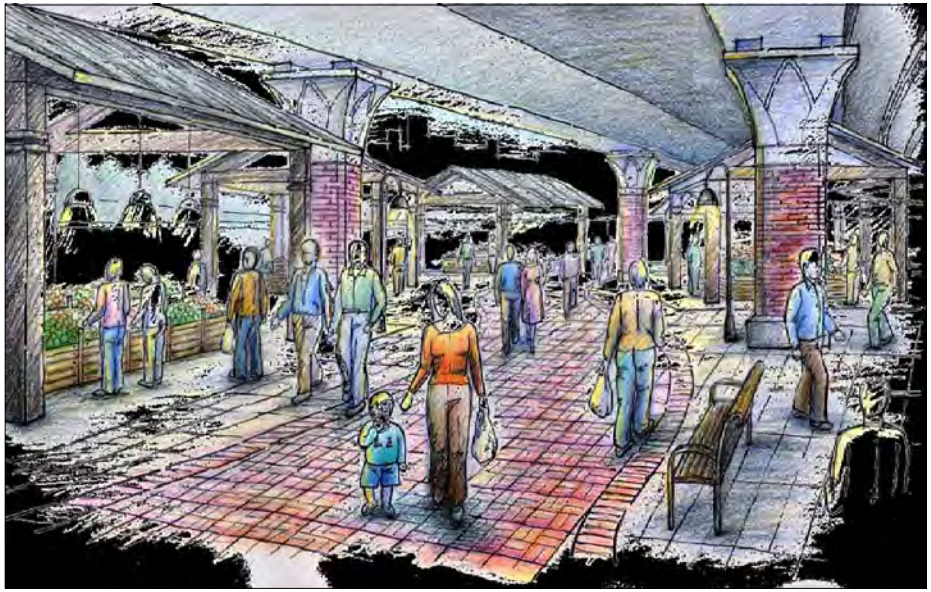
Other visual and aesthetic context sensitive amenities will be included within the project as shown in Figure 2-6. These elements include community utilization under elevated roadway sections, aesthetic treatment of bridges and retaining walls, incorporation of pedestrian and bike paths, etc. Landmark-type structures similar to those shown in Figure 2-7 are possible at the two Mississippi River crossing locations. The types of structures used will be determined by the crossing locations selected. Any of the potential context sensitive amenities could be incorporated with input from appropriate agencies and adjacent constituencies.

2.9. Electronic Toll Collection System

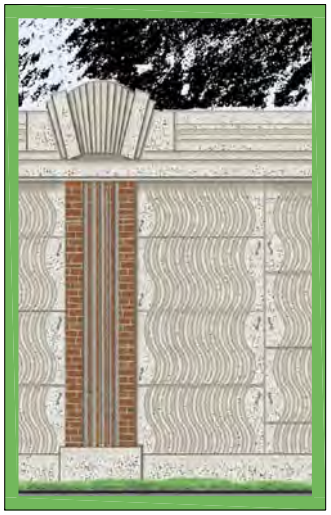
The Loop facility will utilize state-of-the-art tolling systems that are fully electronic. Toll gantries positioned along the mainline and ramp lanes will read “toll tags” within the vehicles and debit customer accounts for toll segments used. This will allow vehicles to travel free flow at normal highway speeds. No manually-operated or cash toll booths will be utilized. Customer service centers and advance kiosks will be strategically positioned to allow patrons to purchase toll credits and obtain information on the Loop route. This type of system represents the state-of-the-art in the tolling industry. It will maximize convenience to customers and will be less expensive to construct and operate than more manual systems.

COLUMN TREATMENTS - LOCAL THEMES

PATH AND STRUCTURAL ENHANCEMENTS



FARMER'S MARKET



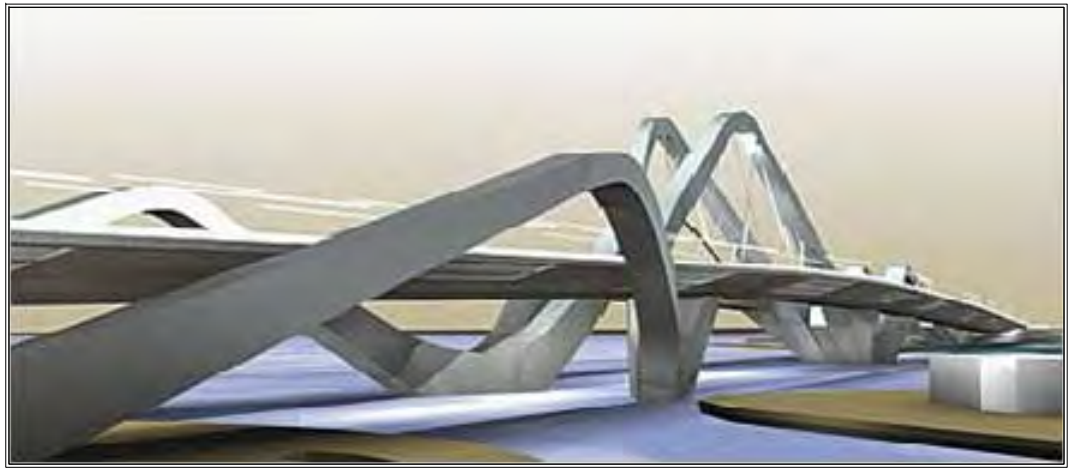
RETAINING WALL FLARE

FIGURE 2-6

POTENTIAL CONTEXT SENSITIVE MEASURES

SIGNATURE BRIDGE

SIGNATURE BRIDGE



SIGNATURE BRIDGE

FIGURE 2-7

POTENTIAL SIGNATURE BRIDGES

2.10. Potential Rail / Commuter Corridors

Within particular segments, the Loop mainline may incorporate provisions for future rail lines or transit operations as shown in Figure 2-4. Additional right-of-way may need to be provided in these areas. Other considerations at bridges, overpasses and interchanges will also need to be determined. Provisions for these type of facilities will significantly influence the typical section and will require intensive investigation in future project phases. These considerations could include freight rail, commuter rail or transit as briefly discussed below.

2.10.1. Freight Rail

Freight rail movements within the rail network for the Baton Rouge area rely on activities in the major rail yards mainly within New Orleans and Shreveport. Figure 2-8 shows the railway routes within the Baton Rouge and New Orleans area.

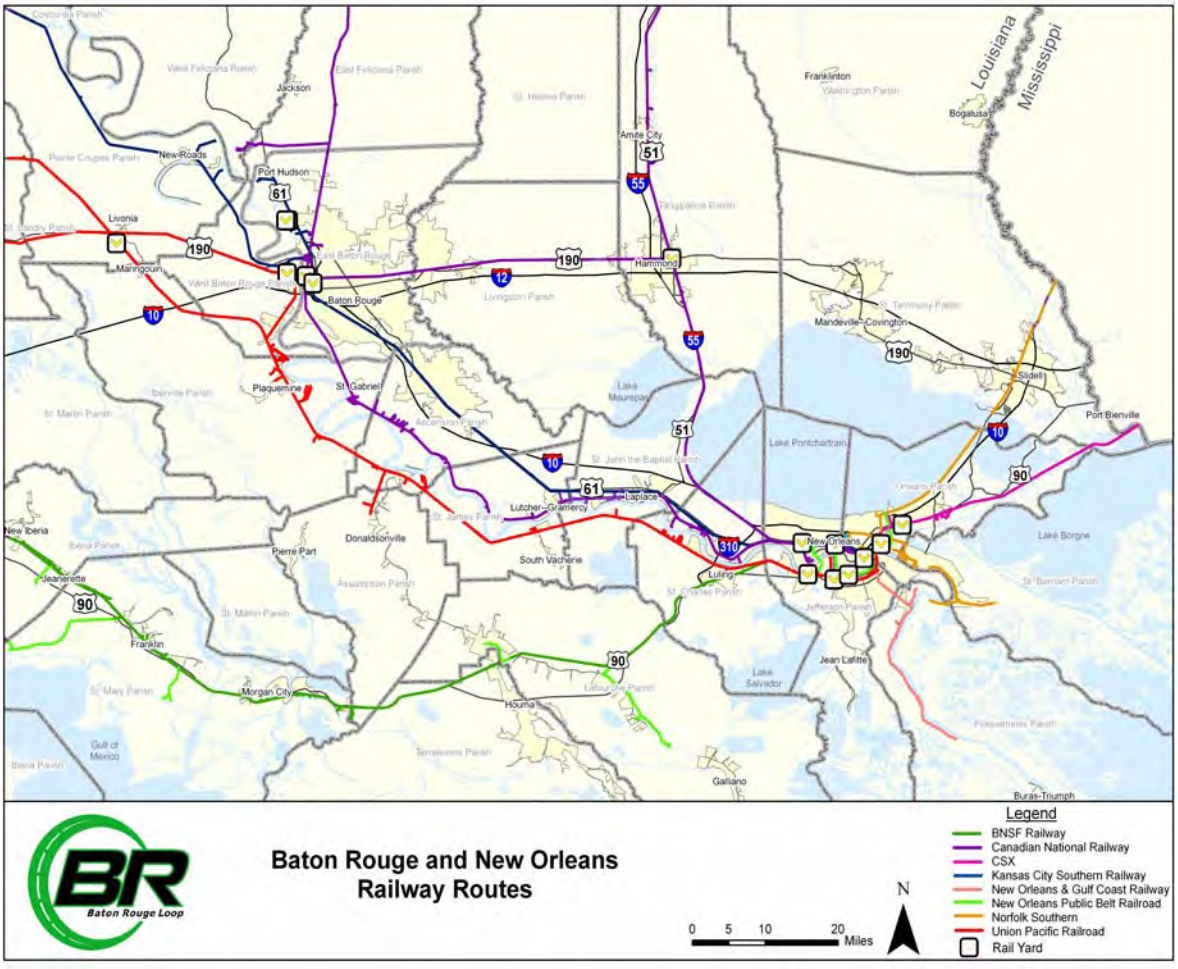


Figure 2-8. Baton Rouge and New Orleans Railway Routes

Existing freight trains in the Baton Rouge and New Orleans area carry freight cars dropped off or picked up at local customer destinations. Many of the trains carry commodities to and from the growing petrochemical industries along the Mississippi River. The traffic is predominately local business for local customers as opposed to through traffic. Regional freight transported by rail cars is typically sorted at one or more of the rail yards in Baton Rouge and New Orleans. Figure 2-9 shows the Post-Katrina train volumes on the Baton Rouge area railway routes.

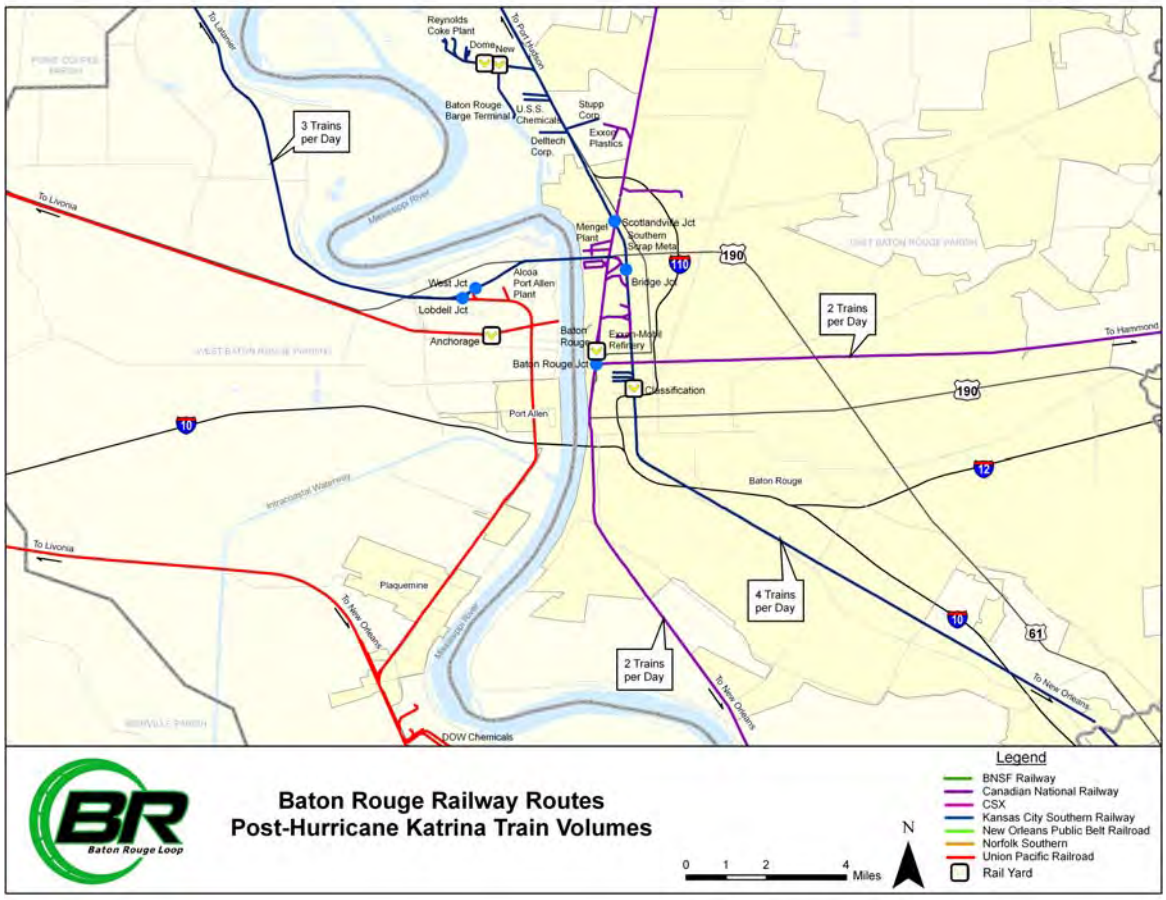


Figure 2-9. Post-Katrina Approximate Train Volumes

Currently, the Baton Rouge area has a relatively low percentage of through-freight movements as compared to the rail traffic that supports local industries. As such, this area may be best suited to consolidating existing rail lines and relocating rail yards to outlying areas away from the city center, provided connectivity to the existing customer base is maintained.

Regionally, a strong infrastructure that supports the movement of freight, either by rail, truck, or barge, is the lifeline of a strong economy promoting economic development that supports population growth. Many of the petrochemical plants in

the Baton Rouge area are hampered by what appears to be a monopoly by the railroads for the movement of their commodity. Higher transportation costs, including increases in fuel prices, are borne by the shipper and could put the Baton Rouge area shippers at a potential competitive disadvantage on their product costs when compared to other regions of the country and even the state.

The existing rail yards within the Baton Rouge area are full, yet poorly configured to meet today's operating measurements that demand reduced yard dwell times. They also have limited space for capacity expansion and are typically co-located in residential or retail locations.

A more comprehensive investigation should be made to determine how potential rail lines within the Loop footprint could interact with the existing rail system to provide mutual benefits and offer opportunities to address long-standing rail issues. Possibilities to feed new or relocated rail yards should also be included in the investigation. Though a new Mississippi River bridge rail crossing would be expensive to construct, it may be the best solution to improved freight rail mobility through the area. A new rail crossing south of the U.S. 190 rail bridge could add to industry growth and increase potential for connectivity between the rail lines on both sides of the Mississippi River. Associated new rail yards, built in out-lying areas, could also help solve bottlenecks associated with train make-up and separate yard functions that support the existing customer base in the area.

2.10.2. Commuter Rail / Transit

There are potentially three alternatives for commuter transit: Light Rail (LRT); Commuter Rail (CR); and Bus Rapid Transit (BRT). Light Rail Transit involves dedicated rights-of-way, and electrification systems that would be more applicable for an inner-city type of service. As such, LRT is not easily adaptable to a loop-type facility and will not be further explored at this time.

Commuter Rail should be considered within the Loop footprint and investigated further. An assessment of the feasibility for commuter rail service in the Baton Rouge region must inevitably be based on defined corridors and under a set of assumed freight rail operating conditions if the concept of shared-use corridors is to be considered. However, the potential for the Loop to support commuter rail can be determined by examining the characteristics of other active commuter systems in the U.S. and contrasting those to the conditions that prevail in the Baton Rouge area.

Viable commuter rail service must be capable of matching or exceeding the overall performance of automobile travel in its cost, accessibility, total commute time, and degree of safety. These features are essentially measures of system performance that distinguish each system and reflect the circumstances in which they operate. By examining the performance of existing commuter rail systems in operation,

strategies and expectations for commuter rail service in Baton Rouge can be formulated in a way that benefits from past experience.

Bus rapid transit (BRT) should also be considered within the Loop footprint and investigated further. BRT provides a higher level of service to commuters than typical bus transportation and utilizes the same infrastructure as regular vehicular traffic. BRT consists of express buses that typically travel between major destinations with limited stops only at park and ride stations. Express buses may run at significantly shorter intervals during commuter rush hours. As BRT is considered for the Loop, a comparison should be made between incorporation of BRT into the Loop versus the existing interstate and highway facilities to determine which system provides the greater benefits to commuters and reduction in traffic congestion.

3. CORRIDOR IDENTIFICATION

The Parish Presidents of Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge have resolved to construct a loop around the greater Baton Rouge area as shown in the Project Area exhibit in Figure 3-1. Connectivity to existing major routes is key to maximizing utilization of the Loop and relieving congestion within the region.

Major arterials that must be traversed or incorporated into the complete Loop project include:

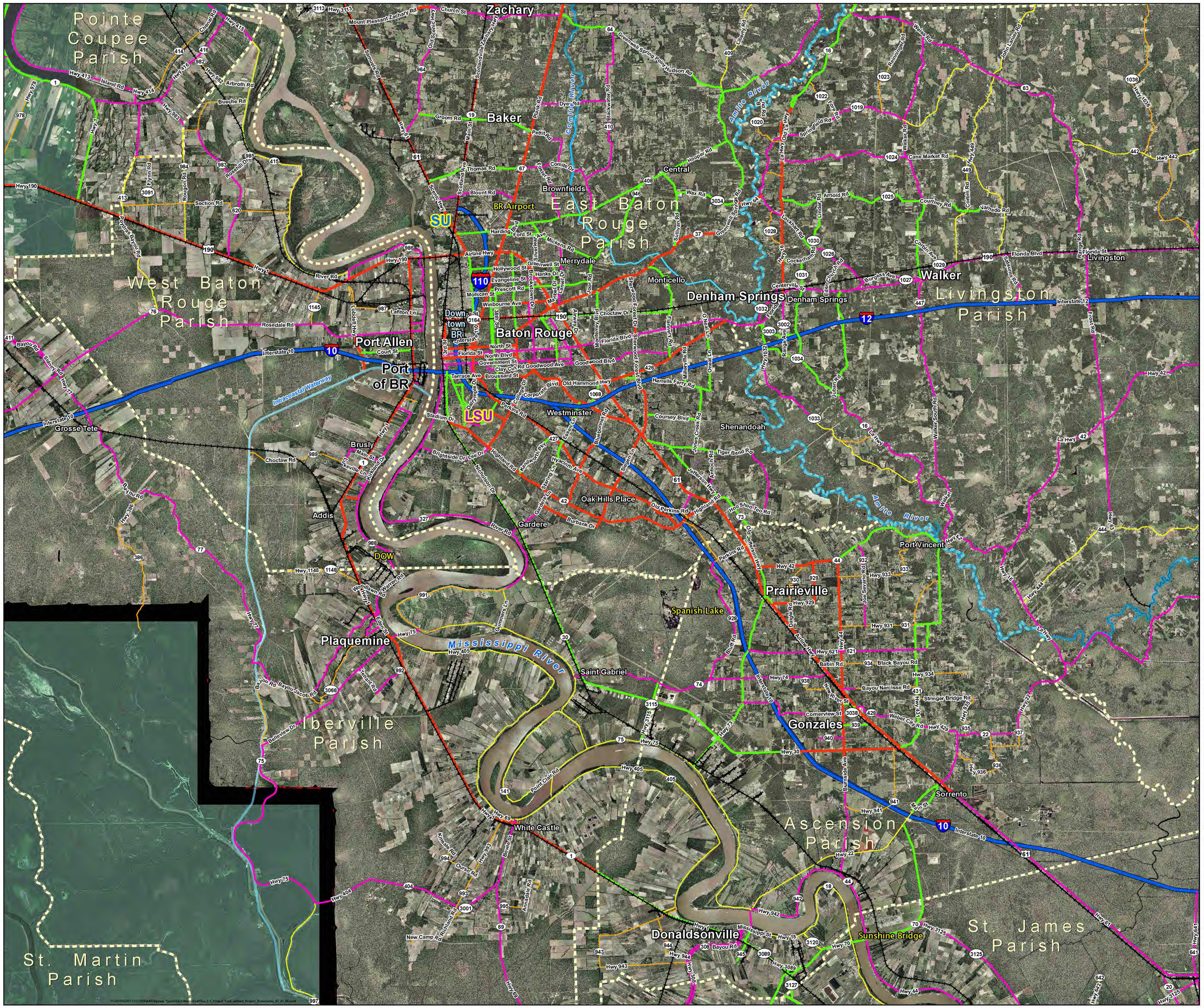
- Interstate 10
- Interstate 12
- Interstate 110
- US 190 (West Baton Rouge Parish)
- Scenic Highway (US 61)
- Airline Highway (US 190)
- Plank Road (LA 67)
- Harding Boulevard / Hooper Road (LA 408)
- Blackwater Road (LA 410)
- Joor Road (LA 946)
- Range Avenue (LA 16)
- Arnold Road (LA 1025)
- Walker Road North (LA 447)
- River Road (LA 327)
- Gardere Lane (LA 327 Spur)
- Bluebonnet Boulevard
- Nicholson Road (LA 30)
- Airline Highway (US 61)
- LA 42
- LA 44
- Walker Road South (LA 447)

3.1. Project Boundaries

Project boundaries have been created to reflect the area within which the project team anticipates finding all reasonable and feasible alternatives, and is based on travel patterns and the location of regional population centers. These boundaries are shown in Figure 3-2.

The outer boundary represents the outside limit that will provide congestion relief within the five-parish region and still potentially generate sufficient tolls to construct the Loop. It incorporates the major urbanized areas that generate the majority of traffic within the five parishes and is approximately 125 miles in length. The northern boundary follows generally along an east-west line north of Baker.

Project Area



Legend

- Rail

Functional Roads

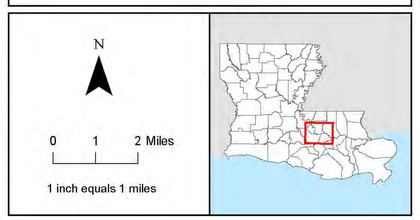
- Principal Arterial Interstate
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

- Parish Boundary

Figure 3-1
Project Area

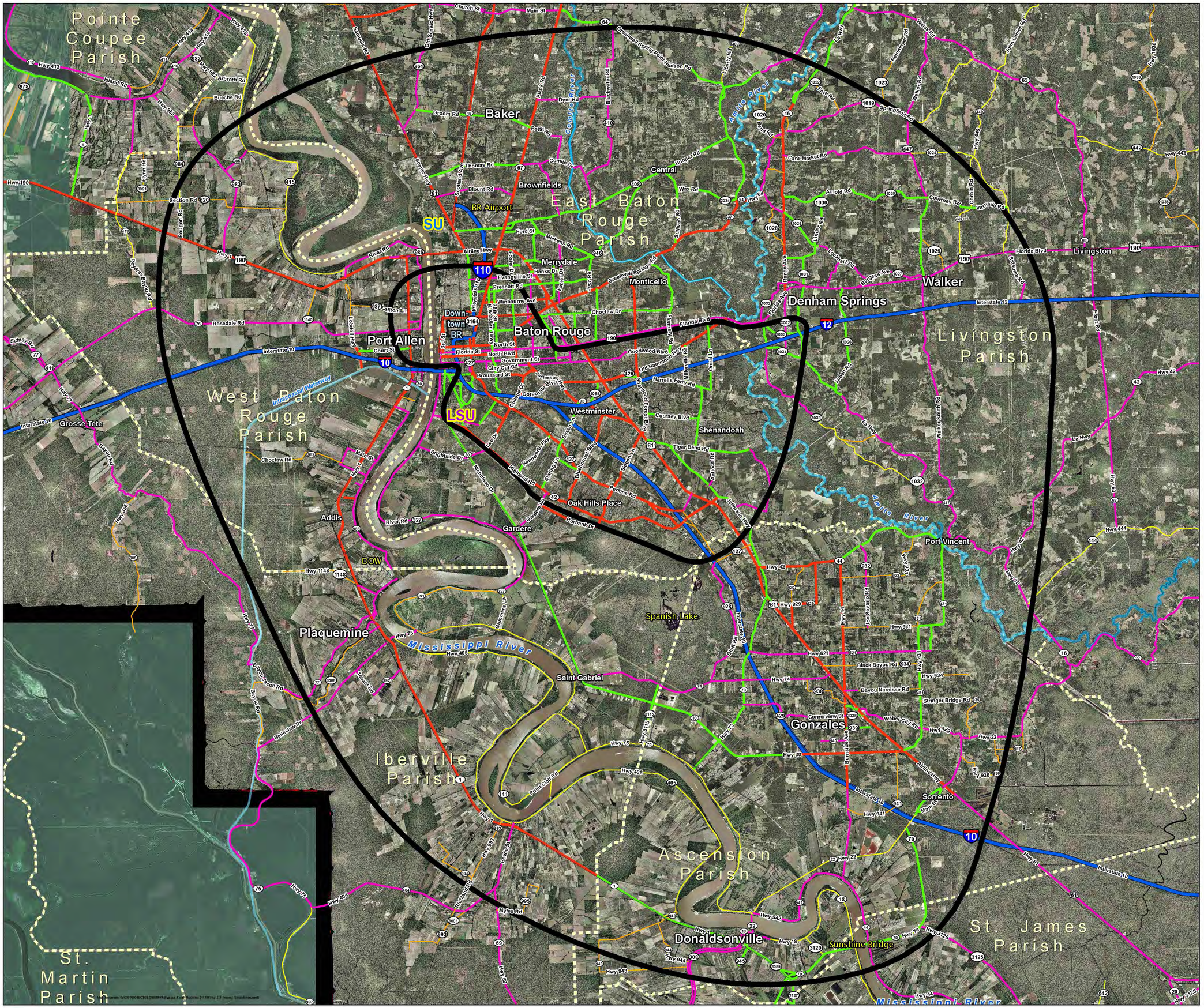
Image Source: USGS, 2006

Location Map



Baton Rouge Loop

Project Boundaries



Legend

- Project Boundaries
- Rail

Functional Roads

- Principal Arterial Interstate
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

- Parish Boundary

Figure 3-2
Project Boundaries

Image Source: USGS, 2006

Location Map

Baton Rouge Loop

The western boundary is located approximately 5 miles west of the LA 415 exit on Interstate 10 in West Baton Rouge Parish, and the eastern boundary is located between the Walker Road and Satsuma / Coyel exit on Interstate 12 in Livingston Parish. The southern boundary incorporates the Sunshine Bridge on LA 70 in Ascension Parish and dips into the northern portion of St. James Parish as it ties with I-10. Because of length, cost, and location, alternatives outside this boundary would result in unreasonable costs when compared to anticipated benefits.

The inner project boundary represents the inside limit at which the Loop could be constructed without causing major disruption to the urbanized centers of the region while minimizing project costs. This limit avoids the highly developed cores of Baton Rouge, Port Allen, and Denham Springs. The limit provides a reasonable spacing from existing I-10 and I-12 to attract traffic and maximize congestion-reduction benefits. The boundary was also set to allow consideration of using existing Mississippi River crossings along US 190 and I-10. The northern boundary is located just south of the existing US 190 Mississippi River crossing, Airline Highway and Florida Boulevard. The western boundary is between LA 1 in Port Allen and LA 415. The eastern boundary is between LA 16 and Juban Road in Livingston Parish. The southern boundary is just north of the I-10 Mississippi River, west of River Road (LA 415), south of Highland Road and ties to I-10 north of Bluff Road in Ascension Parish.

3.2. Major Controlling Elements

Within the project vicinity, several major features influence where potential corridors can be located. These include crossing locations along the Mississippi River and other significant environmental elements as discussed below.

3.2.1. Mississippi River Crossings

The dominant geographic feature within the region is the Mississippi River, which bisects the area into the west and east banks of the Mississippi River. Currently, the Interstate 10 and US 190 bridges and the Sunshine Bridge are the only vehicular bridges over the Mississippi within the project limits. US 190 also provides the only rail crossing over the Mississippi River within the project limits.

This project must cross the Mississippi River twice in order to provide a complete loop within the five parishes. The controlling factor in determining potential corridors for the Loop is locating reaches of the Mississippi River where an acceptable river crossing can occur. Several federal agencies, including the U.S. Coast Guard and U.S. Army Corps of Engineers, along with state agencies and navigation interests must concur on potential river crossing locations. The Coast Guard is primarily responsible for maintaining safe and unobstructed navigation along the river. They provide guidance on locations where the river alignment

and width are conducive to a new bridge crossing. Location of landside development and features also factor into the location of potential river crossings.

Twelve locations were initially identified for new river crossings. These are shown in Figure 3-3 and were derived from initial meetings with the Coast Guard and Corps along with consideration of landside features. Follow-up meetings and additional input from these agencies and other interests further refined the potential crossing locations.

3.2.2. Environmental Features

Technical Memorandum No. 2 was prepared to document the environmental overview for the project area. Several major existing features within the project limits should be avoided when locating potential corridors. These include the Baton Rouge Airport, the Port of Baton Rouge, and the main campuses of LSU and Southern University. These are shown in Figure 3-3.

As discussed in other sections of this report, other significant features to which impacts should be minimized include existing communities, churches, schools, businesses, park properties and historic sites. Environmentally sensitive areas should also be considered, including Spanish Lake, Amite River floodplain, wetlands, and habitat locations. Impacts to these areas should also be minimized as corridors are located.

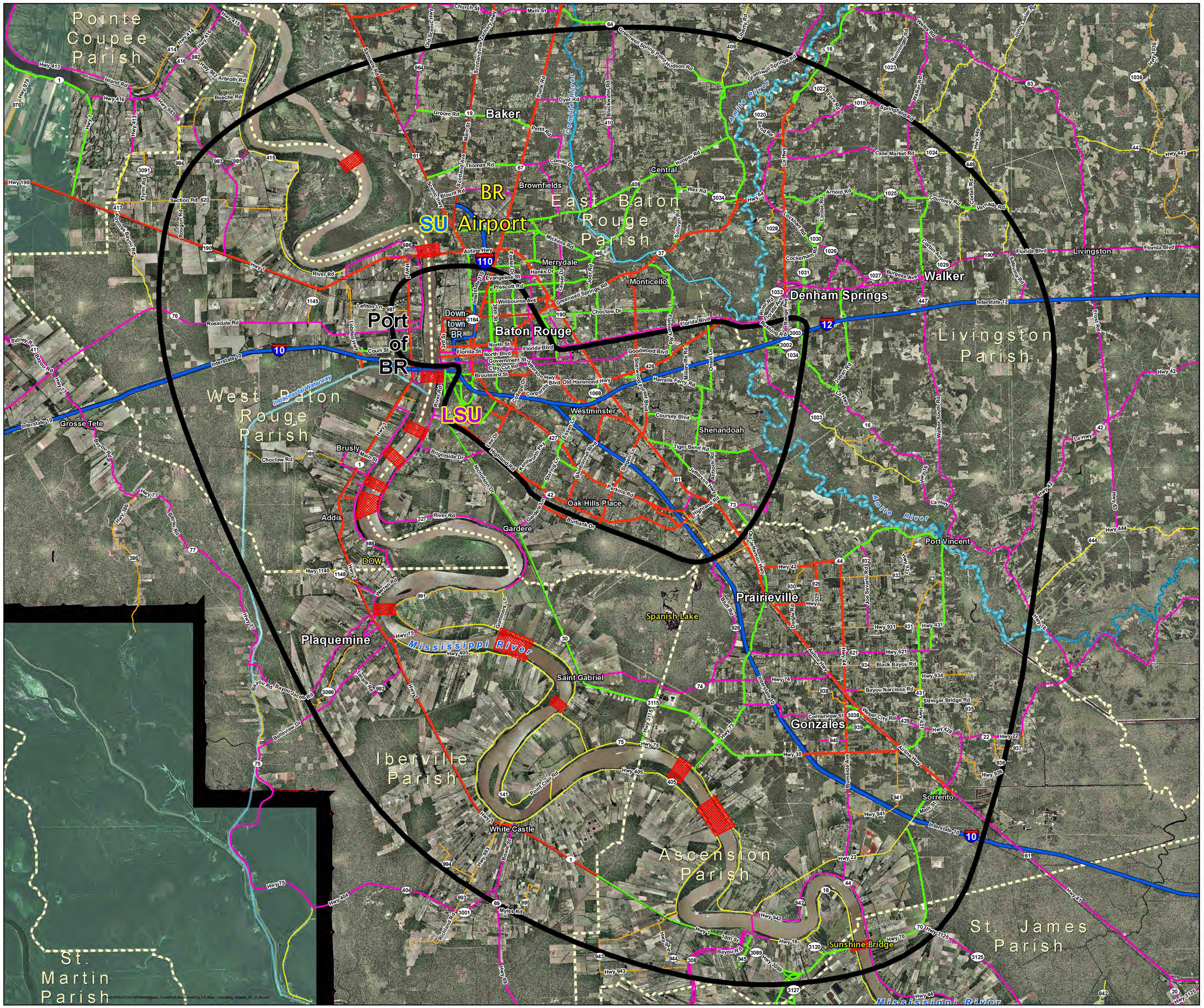
3.3. Potential Alternatives

In order to establish potential corridors within the project boundaries, all feasible and reasonable alternatives for the Loop were located based on an initial and preliminary investigation. Placement of each alignment avoided the major controlling features and was also influenced by other known significant environmental features. Spacing of interchanges along I-10 and I-12, geometric criteria and other engineering considerations also affected locations of the potential alignments. These are shown in Figure 3-4.

3.4. Potential Corridors

Potential corridors were established based on the most reasonable and feasible alignments and from review of previous studies. Several alignments were grouped into a single corridor. Corridor widths were set based on specific environmental and physical constraints. Generally, corridor widths range between 1000 feet to 4000 feet, which will allow flexibility for results from more in-depth investigation. These potential corridors are shown in Figure 3-5.

Major Controlling Features



Legend

- Project Boundaries
- Rail

Functional Roads

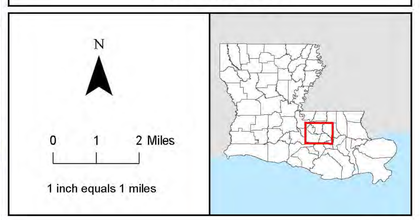
- Principal Arterial Interstate
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

- Potential Mississippi River Crossings
- Parish Boundary

Figure 3-3
Major Controlling Features

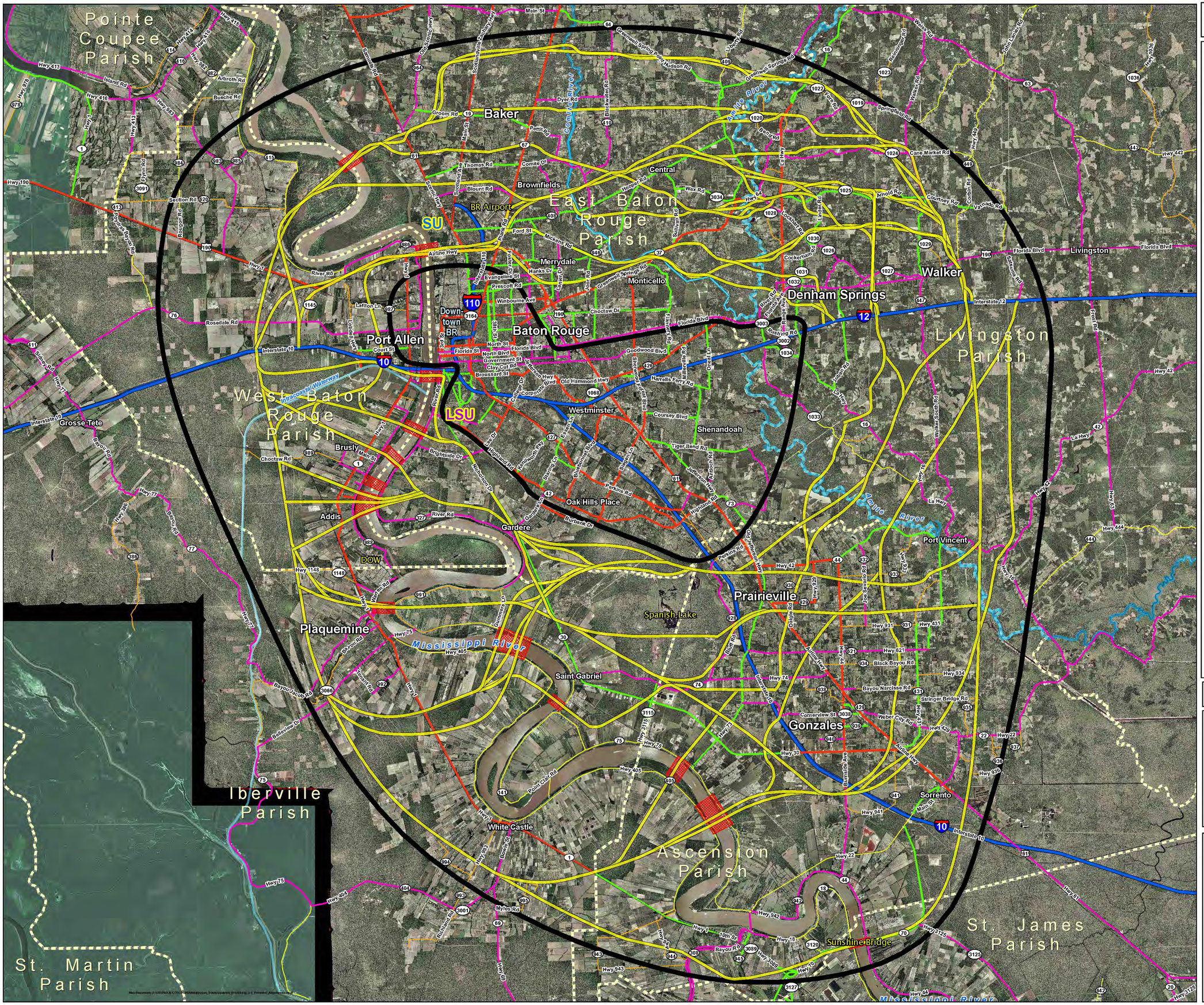
Image Source: USGS, 2006

Location Map



BR Baton Rouge Loop

Potential Alternatives



Legend

- Potential Alternatives
- **Project Boundaries**
- **Rail**

Functional Roads

- Principal Arterial Interstate
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

- **Potential Mississippi River Crossings**
- Parish Boundary

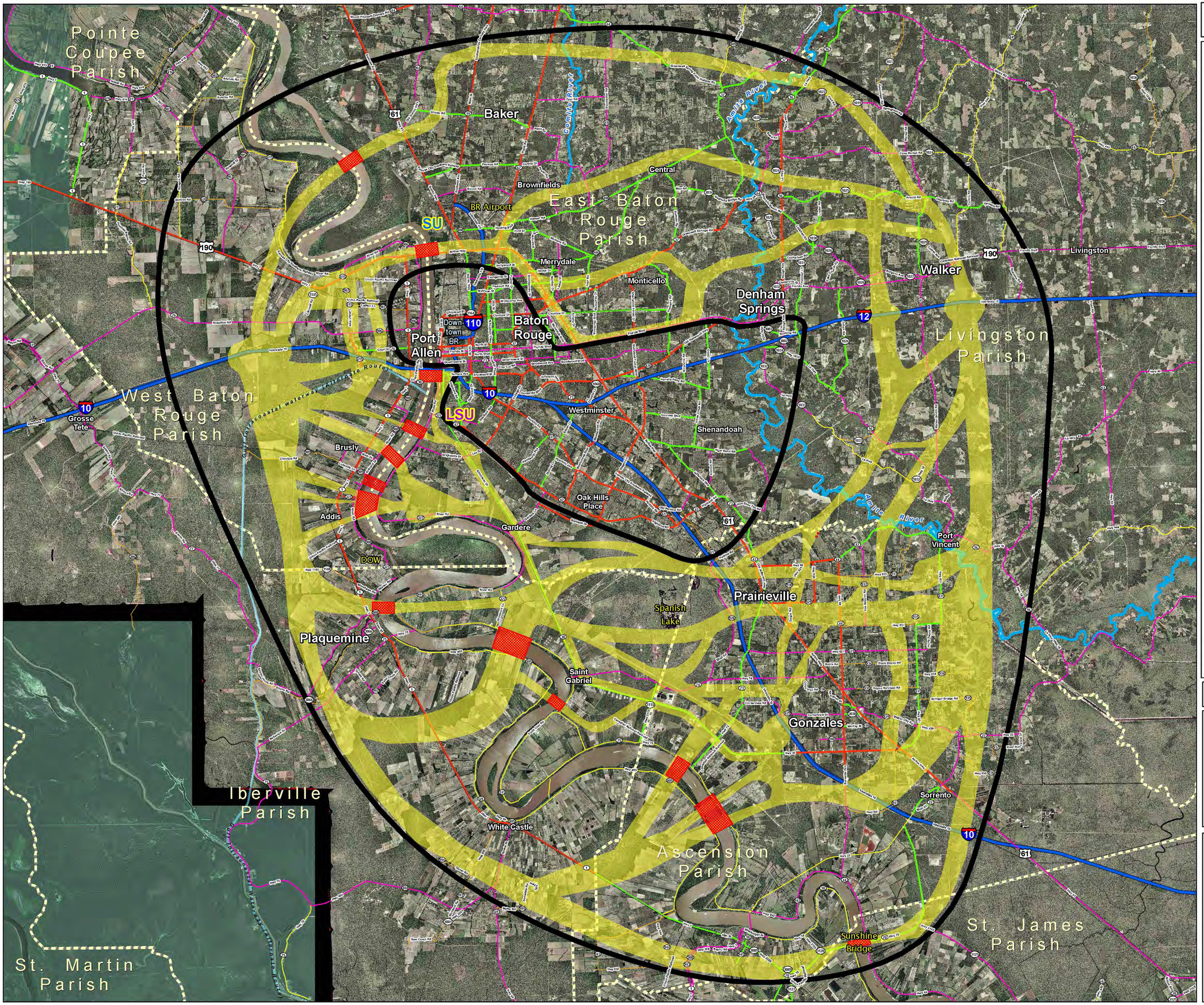
Figure 3-4
Potential Alternatives

Image Source: USGS, 2006

Location Map

BR Baton Rouge Loop

Potential Corridors



Legend

- Project Boundaries
- Railroads

Functional Roads

- Principal Arterial Interstate
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

- Potential Corridor
- Potential Mississippi River Crossings
- Parish Boundary

Figure 3-5
Potential Corridors

Image Source: USGS, 2006

Location Map

BR Baton Rouge Loop

4. CORRIDOR REFINEMENT PROCESS

Refining corridor widths and placement, along with eliminating corridors, requires consideration of several factors. Along with investigating potential Mississippi River crossings, input was obtained from several sources to refine corridor placement and selection. This included input from controlling agencies, consideration of environmental factors, results of traffic modeling, and feedback from citizens and elected officials.

4.1. Mississippi River Crossings

4.1.1. Crossing Locations

Bridge type selection should be based on the least cost that satisfies the conditions for a given site. For a major waterway, site conditions include navigation requirements, foundation requirements, environmental restrictions and public demand. The most economical structure over a navigable waterway is strongly influenced by navigation needs which dictate both the horizontal and vertical clearance requirements of the US Coast Guard. Type selection should be determined by the structure type which satisfies these requirements in the most cost effective manner.

Horizontal navigation clearance requirements are established by the U.S. Coast Guard and typically range from 200 feet to well over 1,000 feet. This report is directed towards those bridges which are required to provide 1,300- to 1,500-foot spans over the navigation channel. This requirement is particularly applicable to the Ohio River and the lower reaches of the Mississippi River. Bridge types which provide these span ranges include the following:

- Continuous steel or concrete cable-stayed bridges
- Continuous steel truss bridges
- Steel suspension bridges

All of the continuous bridges listed above require two, three, or four span arrangements to effectively span the channel whereas the suspension type structures require only one span. Additionally, the ratios of span lengths between the end spans and the main spans differ from bridge type to bridge type and dictate different required lengths to meet the intended spans. Because of these differences, the basic square foot costs of each bridge type should not be used to compare value. The best comparison occurs when the same length of bridge, main span unit type and approach span type, is evaluated for every alternative. All the bridge types listed are equally appropriate for the vertical clearance needs over the Mississippi River and selection of one over another will have a negligible effect on the structure depth or roadway grades.

4.1.2. Utilization of Existing US 190 Mississippi River Bridge

The northernmost existing bridge over the Mississippi River at Baton Rouge carries two railroads and US 190. The structure, designed by the Louisiana Highway Commission and named for the late Governor Huey P. Long, was constructed in 1940. The navigation unit is approximately 3300 feet in length with a navigation channel width of 748 feet. The bridge carries two railroad tracks between the primary trusses and has two roadway lanes cantilevered off each side.

There are two basic alternatives for increasing the capacity at this bridge: widen the existing structure or construct a parallel crossing. Although widening the existing bridge is technologically feasible, this approach needs to be fully evaluated in great detail to determine if it can be considered a practical solution. Several of the issues regarding the two alternatives that need to be further evaluated are briefly discussed below:

- The age and condition of the existing structure. The US 190 Bridge is almost 70 years old and is showing signs of deterioration related to its age and exposure to the elements. Although the bridge could be widened, there is a significant portion of the structure that would remain in place and require some level of rehabilitation at the time of widening and further ongoing maintenance far in excess of that which would be programmed for the early years in the service life of a new structure.

- Traffic Capacity. As noted above, the bridge was opened to rail and highway traffic in 1940 and designed for both rail and highway vehicles and volumes that were significantly lower than the bridge carries today. Further consideration will need to be given to the impact of projected future traffic volumes and rail and highway loads on the existing structure.

- Technology. Current bridge construction technology is such that for spans of upward of 2500 feet, the most cost effective bridge type is the cable-stayed bridge. The cable-stayed bridge is an efficient bridge, carrying tensile forces with high-strength steel cables and compressive forces with steel and concrete. The design of a cable-stayed structure minimizes areas susceptible to collecting debris and trapping water which accelerate deterioration, resulting in a longer theoretical service life. This bridge type has replaced the truss as the favored bridge in this span length.

- Widen by Extending the Floor System. Widening the traffic lanes for the US 190 Bridge could be accomplished either by extending the floor system or by adding parallel trusses and replacing the roadway section. It is our understanding that this bridge has already been widened by approximately four feet. Additional widening to meet current criteria may be possible,

depending upon the capacity of the cantilevered floorbeams and their connections to the existing truss.

- Widen by Adding Trusses. If it were to prove structurally impractical to extend the floor system in order to gain additional width and capacity for the bridge, it is also possible to widen the bridge by installing parallel trusses and modifying the floorbeams to support loads as simple beams rather than as cantilevers. This changes the stress distribution in the floorbeams and can conceivably be used to add additional lanes without significantly influencing the loads on the existing structure.

  This method is being used in New Orleans to widen the Huey P. Long/US 90 bridge. Conceived in the mid-1970s, the plan is to construct parallel trusses with minimal disruption to rail or highway traffic and minimal load influence on the existing trusses. However, this method is expensive and time consuming, requires that the existing bridge foundations be capable of supporting the additional dead and live loads, and requires construction in and around highway, rail and navigation traffic. Once completed, the bridge would be a combination of structures that vary in age by more than seventy years and at some time the age of the original structure will require some additional work in order to extend the service life of that portion of the bridge. Construction costs have risen to over one billion dollars to complete the project, which reiterates the high costs involved with this type of concept.

- Approach Structures. The approach structures will require a significant amount of work as well. However, since these are girder spans, widening or complete superstructure replacement is not the difficult and costly process that widening the truss spans can be.

In spite of these disadvantages, these alternatives may require further study in order to validate the issues noted.

4.1.3. Agency Input

4.1.3.1. New Mississippi River Crossing: Parallel to US 190 Crossing

A new twin structure to the existing US 190 Mississippi River Bridge could be either a new truss span or a modern cable-stayed bridge and could add capacity without significant traffic disruption. Based on preliminary input from the Coast Guard and navigation interests, a new parallel crossing cannot be added north of the existing bridge due to its close proximity to the river bend just north of this site. Further investigation is required to determine if a parallel crossing can be added south of the existing bridge as shown in Figure 4-1. More documentation and coordination is needed for agencies and navigation interests to concur that this can be an acceptable crossing location. Figure 4-2 depicts a potential span arrangement and pier placement for a new parallel crossing just south of the existing US 190 bridge. As shown in Figure 4-2, longer span lengths can be used to reduce the number of piers required and new piers can line up with existing piers to minimize disruption to river navigation.

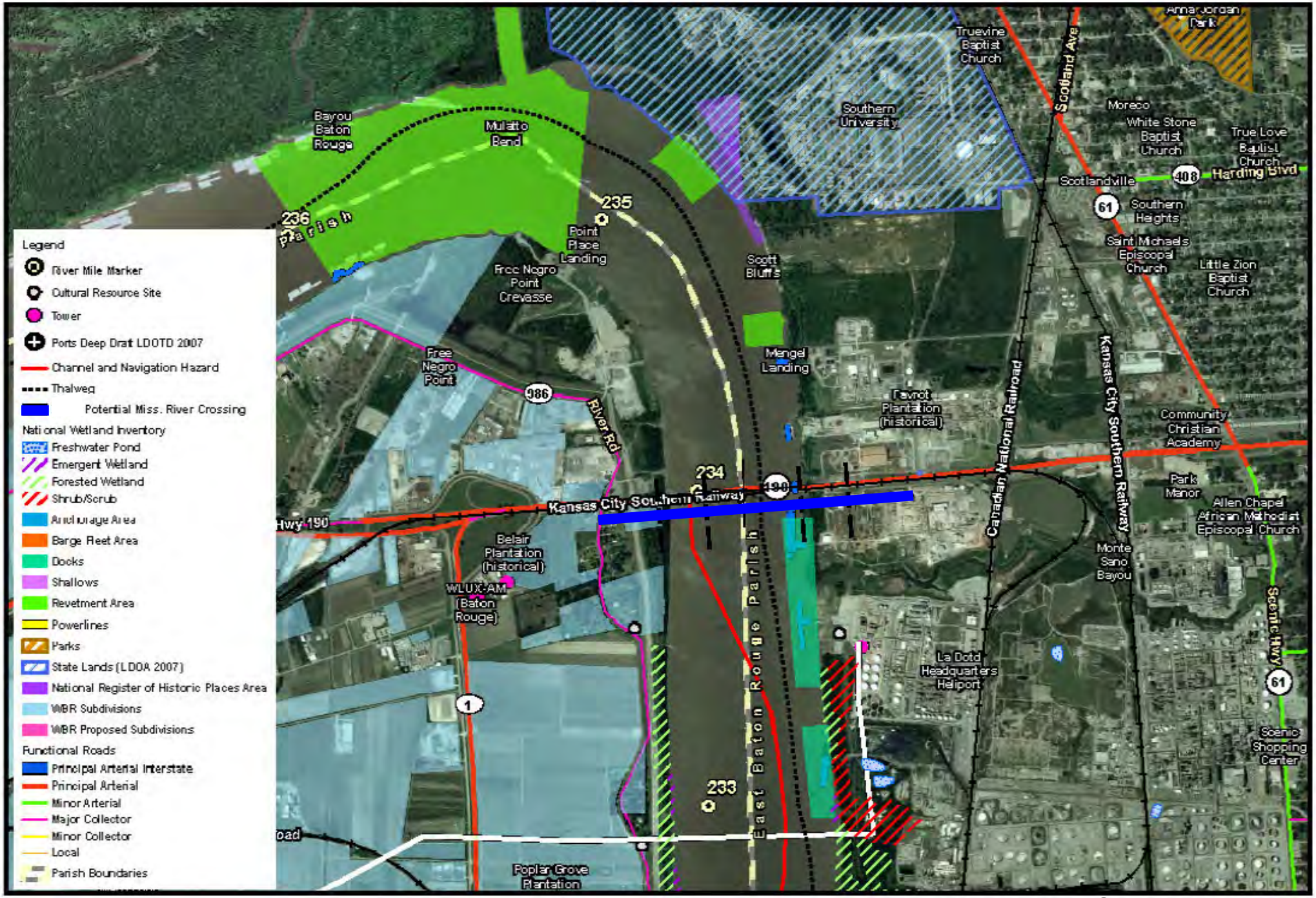
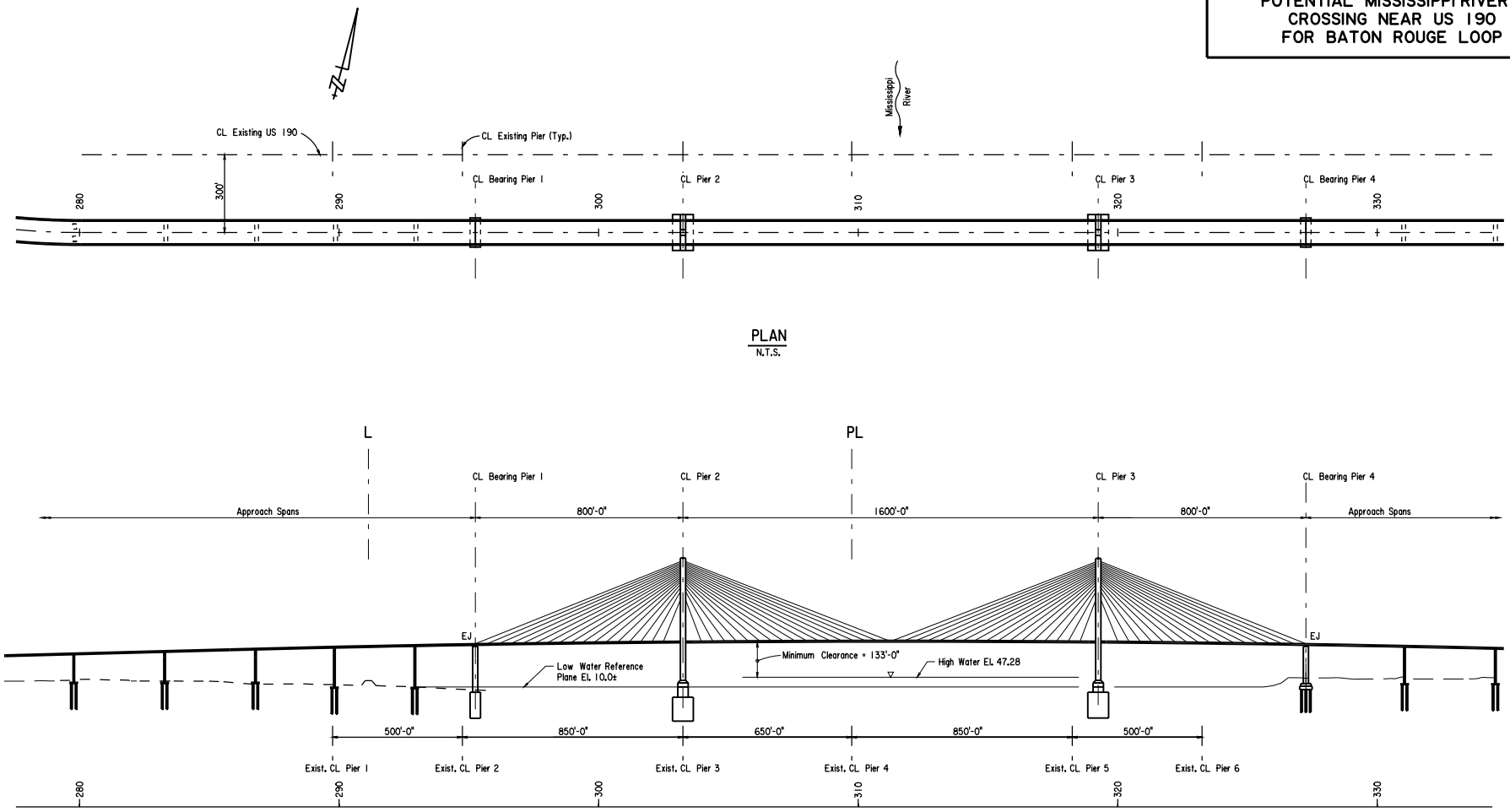


FIGURE 4-1
POTENTIAL MISSISSIPPI RIVER CROSSING NEAR EXISTING US 190 CROSSING

POTENTIAL MISSISSIPPI RIVER CROSSING NEAR US 190 FOR BATON ROUGE LOOP



PLAN
N.T.S.

ELEVATION
N.T.S.

LEGEND

L= Levee
PL = Parish Line
SL = Sailing Line

FIGURE 4-2
3-SPAN CABLE-STAYED ALTERNATIVE
(1600' NAVIGATION SPAN)

4.1.3.2. New Mississippi River Crossings: I-10 to Missouri Bend

A meeting was held with representatives from the US Coast Guard, US Army Corps of Engineers, navigation interests and the project team to discuss potential Mississippi River Crossings between the new I-10 bridge south to the Missouri Bend. Because of the location of existing industries and the Greater Baton Rouge Port, and the entrance to the Intracoastal Waterway, this reach of the river is one of the most active and heavily trafficked sections of the river between Baton Rouge and New Orleans. Several significant constraints are located within this reach as shown on Figure 4-3 that influence the location of potential river crossings. These constraints, along with the proximity of the Missouri Bend, narrowed the potential crossing locations to the lines designated 1 through 5 in Figure 4-3. Crossings above and below these locations were not considered feasible and were eliminated from further consideration.

For the 5 potential crossing locations, a typical bridge section and pier configuration was developed as shown in Figures 4-4 and 4-5. Span arrangements and elevation views for each crossing location were also developed as shown in Figures 4-6 through 4-10. These were reviewed further with the Coast Guard and Corps and their input obtained.

4.1.3.3. Other Potential Mississippi River Crossing Locations

Two other potential Mississippi River crossing locations remain from the original twelve locations initially reviewed with the US Coast Guard. The crossing between Plaquemine and St. Gabriel in Iberville Parish is still considered a viable location. Also, the northernmost crossing located approximately five miles north of the existing US 190 bridge will be carried forward. Both of these will be further investigated and explored with all appropriate agencies and navigation interests in the next phase of the project.

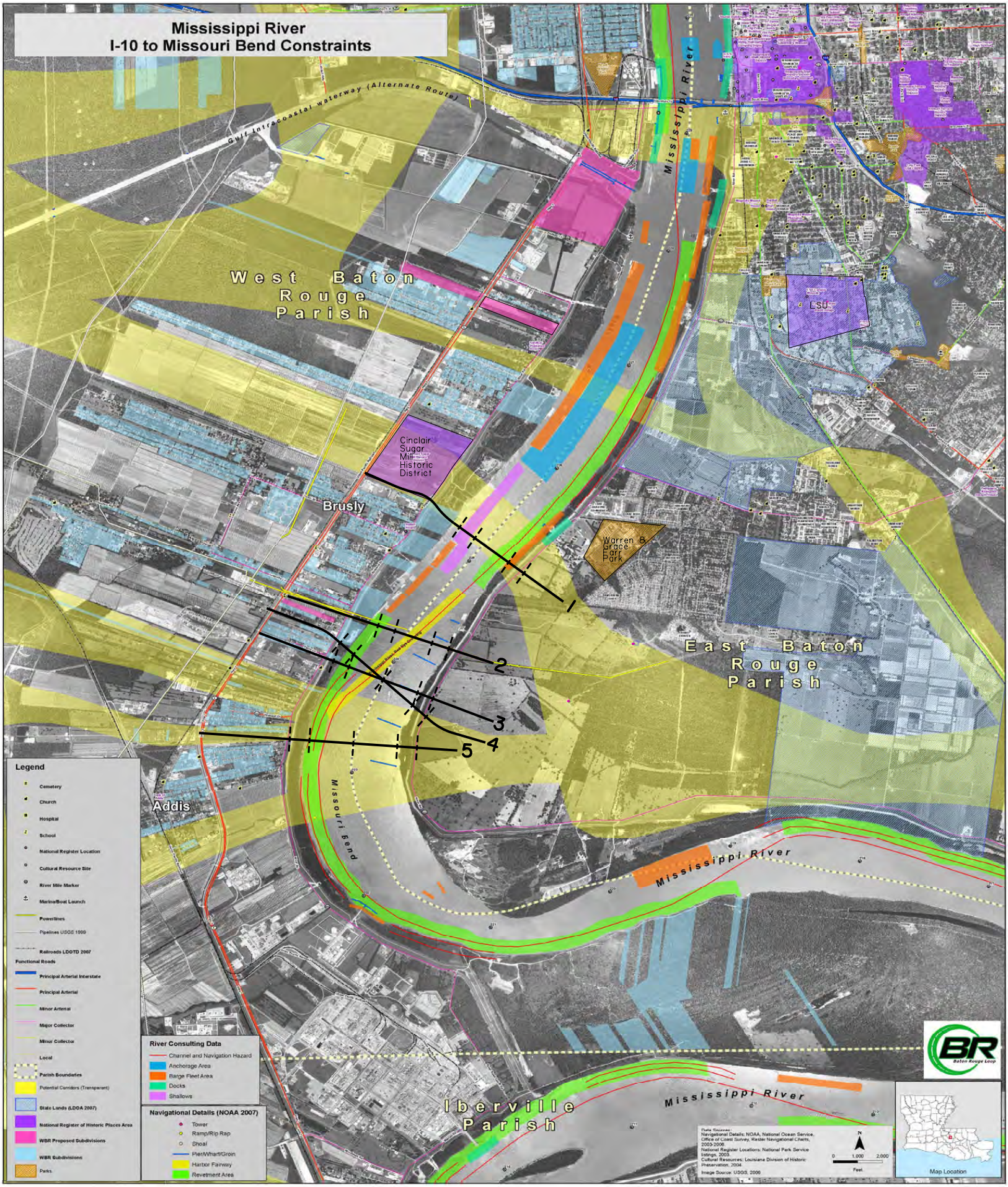
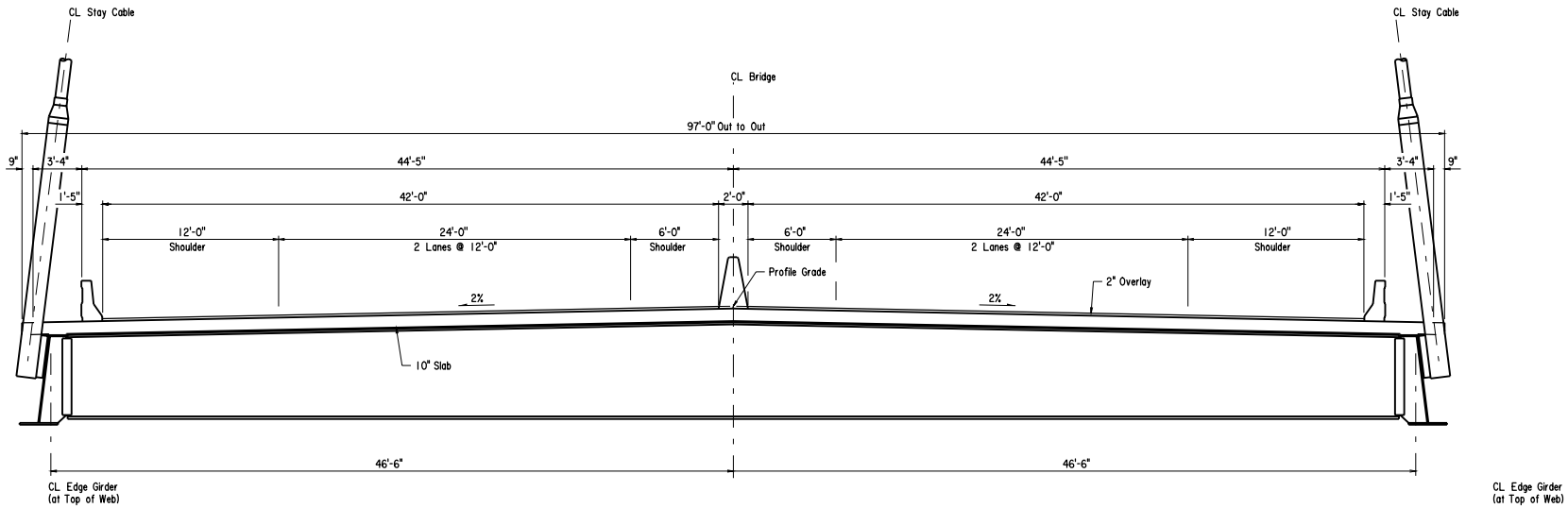


FIGURE 4-3
POTENTIAL MISSISSIPPI RIVER CROSSINGS
NEAR MISSOURI BEND

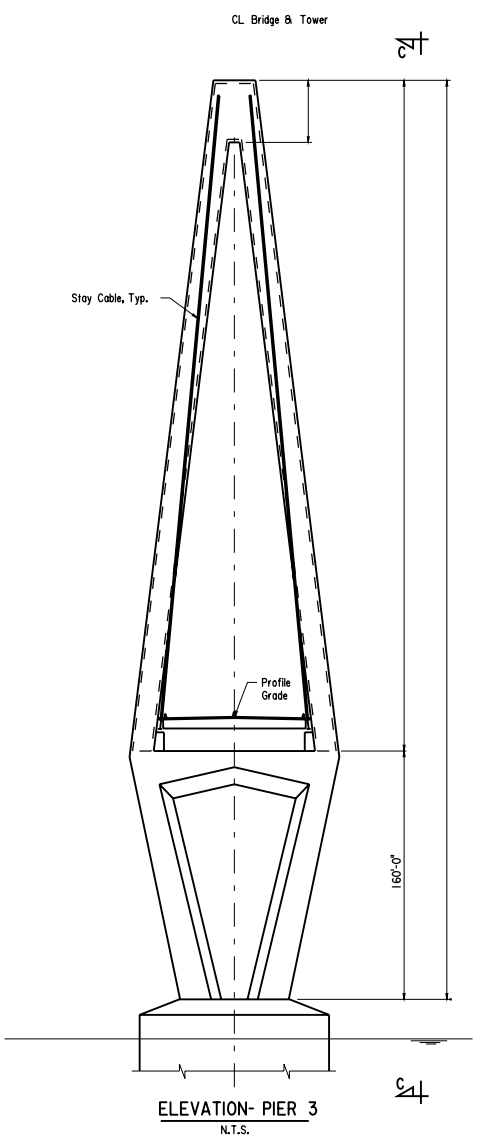
POTENTIAL MISSISSIPPI RIVER
CROSSING
FOR BATON ROUGE LOOP



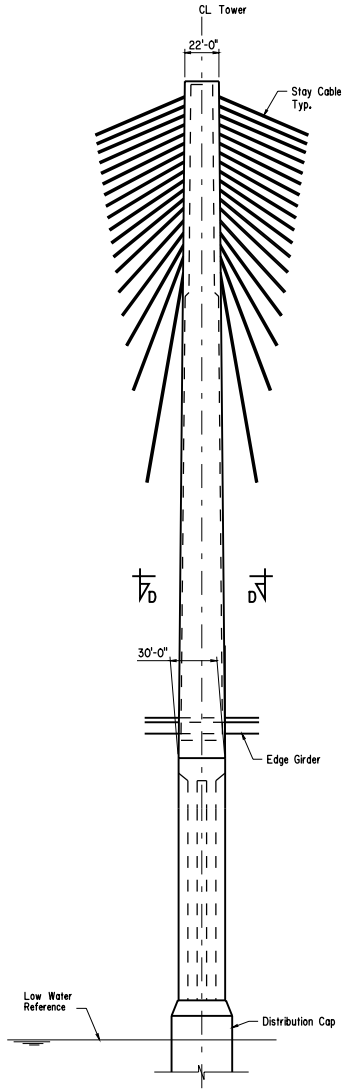
TYPICAL SECTION
N.T.S.

FIGURE 4-4
CABLE-STAYED ALTERNATIVE

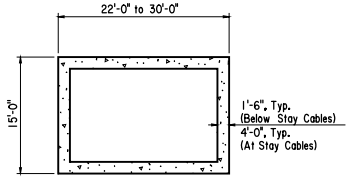
POTENTIAL MISSISSIPPI RIVER CROSSING FOR BATON ROUGE LOOP



ELEVATION- PIER 3
N.T.S.



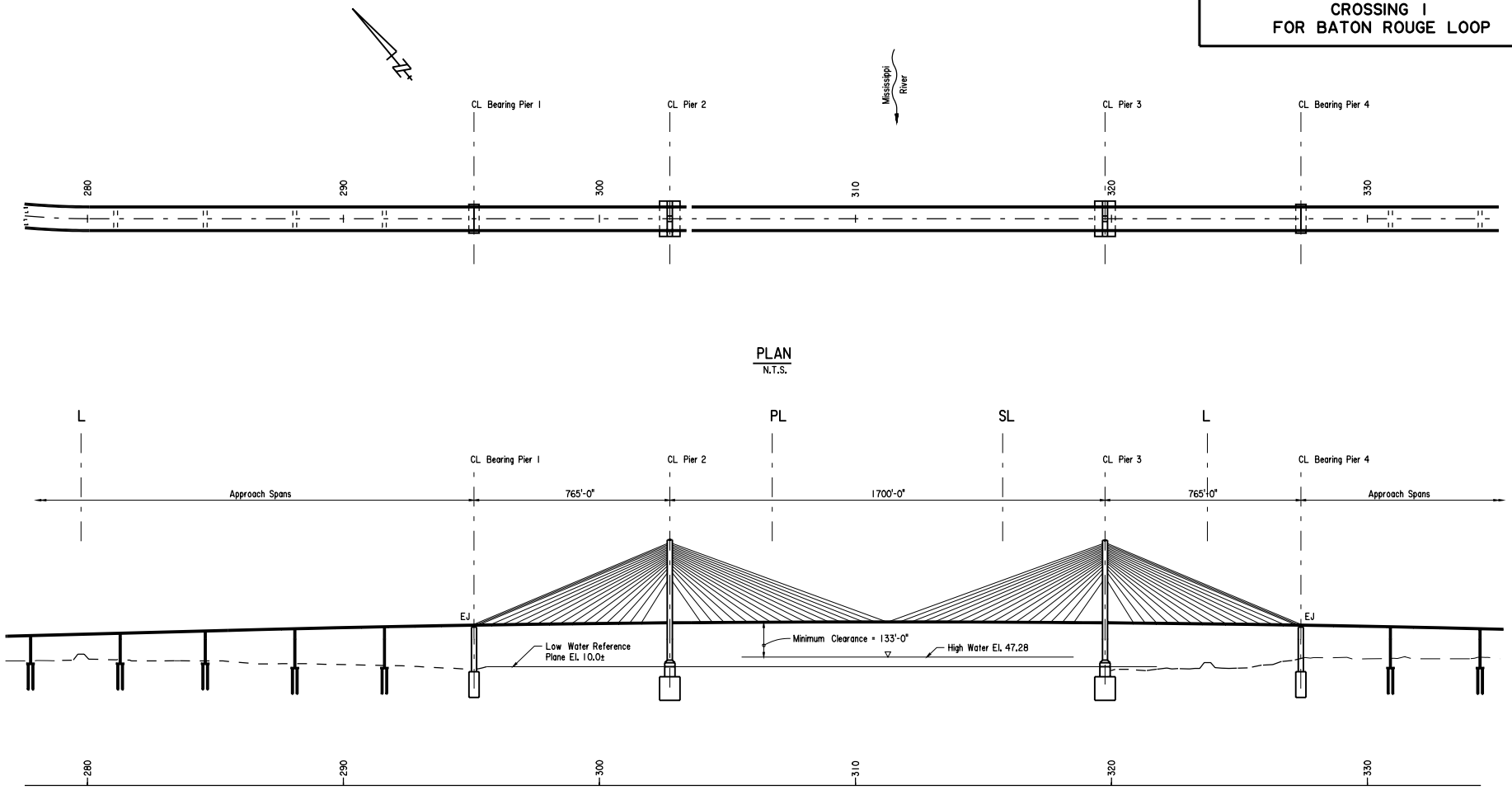
VIEW C-C
N.T.S.



SECTION D-D
N.T.S.

FIGURE 4-5
CABLE-STAYED ALTERNATIVE

POTENTIAL MISSISSIPPI RIVER
CROSSING 1
FOR BATON ROUGE LOOP



PLAN
N.T.S.

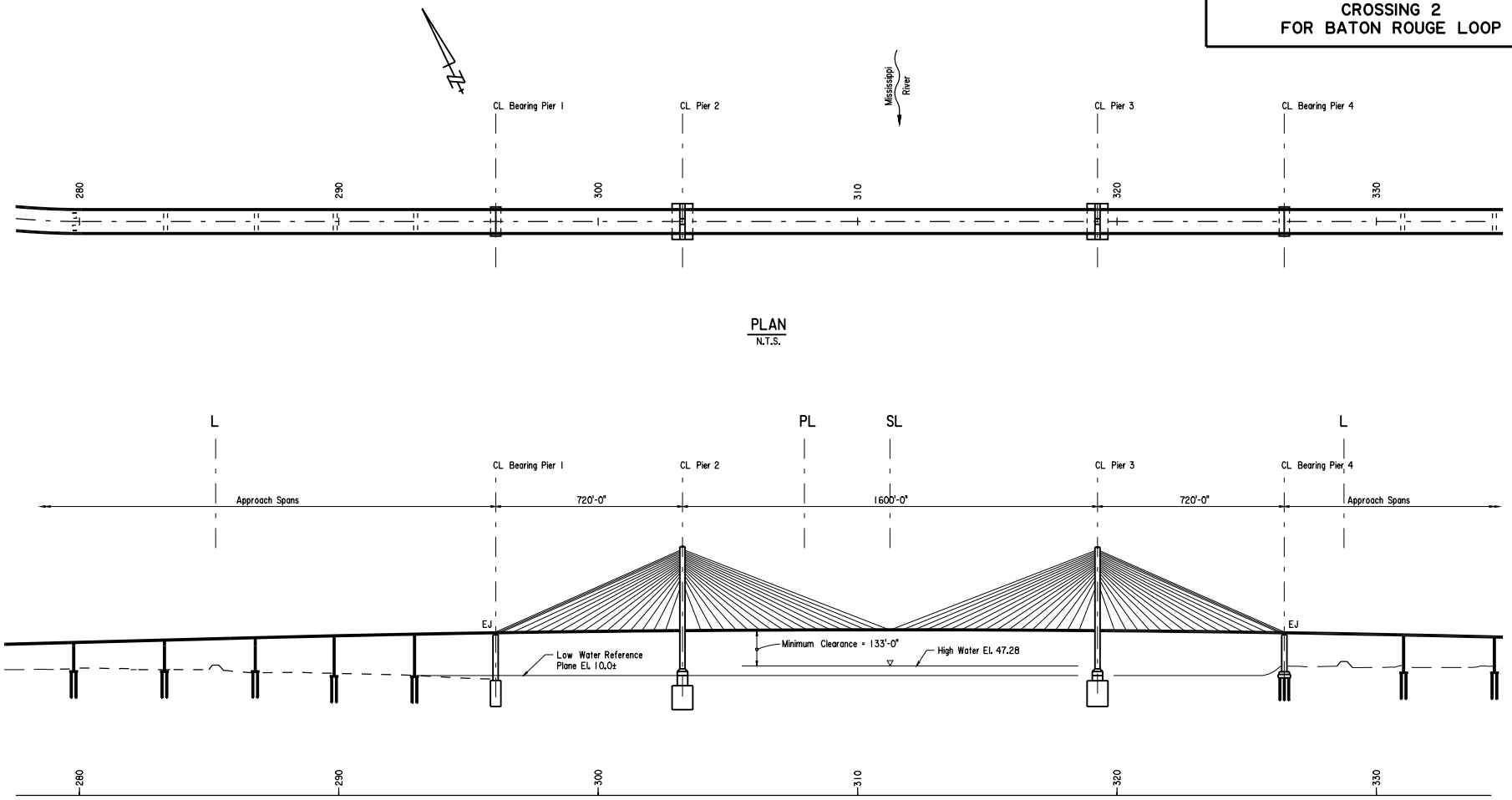
ELEVATION
N.T.S.

LEGEND

L= Levee
PL = Parish Line
SL = Sailing Line

FIGURE 4-6
3-SPAN CABLE-STAYED ALTERNATIVE
(1700' NAVIGATION SPAN)

POTENTIAL MISSISSIPPI RIVER
CROSSING 2
FOR BATON ROUGE LOOP



PLAN
N.T.S.

ELEVATION
N.T.S.

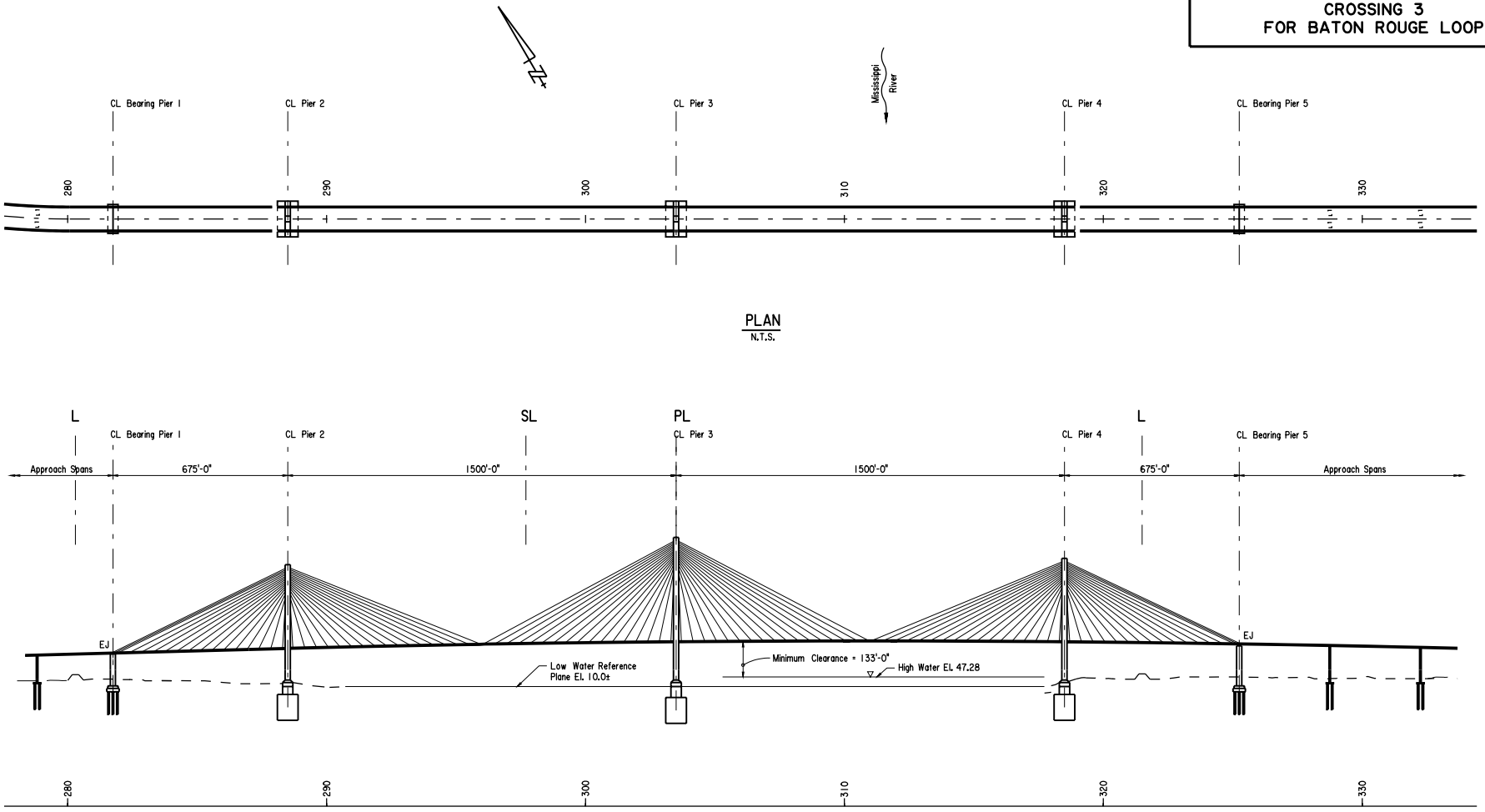
LEGEND

L= Levee
PL = Parish Line
SL = Sailing Line

FIGURE 4-7
3-SPAN CABLE-STAYED ALTERNATIVE
(1600' NAVIGATION SPAN)

USER: tguidry
PLOTTED: 12-MAY-2008 10:29
\\batw00\Jobs\44981_Baton_Rouge_Toll_Loop_Study\cadd\highway\Plan_Shts\14_Exhibits\alt2_cable1-v8_fig_4-7.dgn

POTENTIAL MISSISSIPPI RIVER
CROSSING 3
FOR BATON ROUGE LOOP



PLAN
N.T.S.

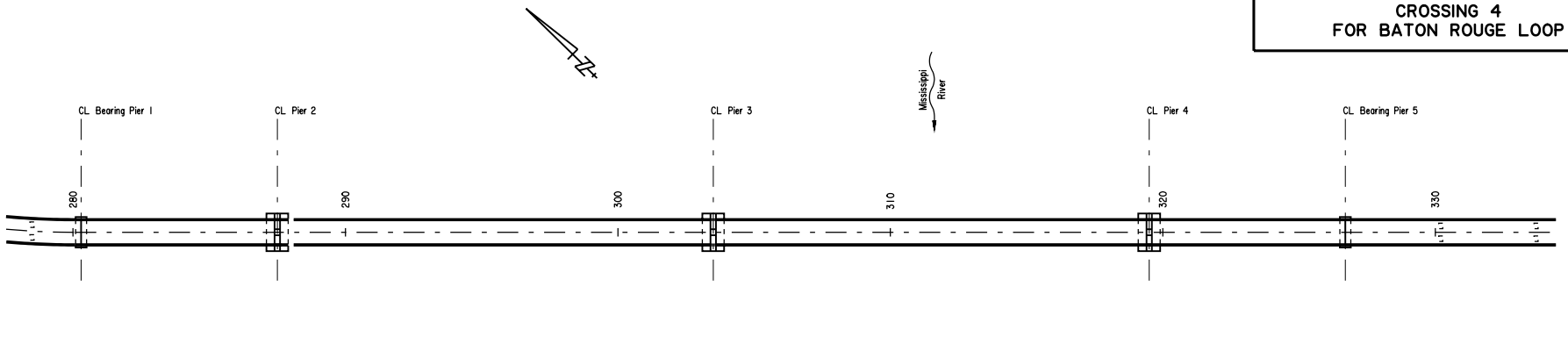
ELEVATION
N.T.S.

LEGEND

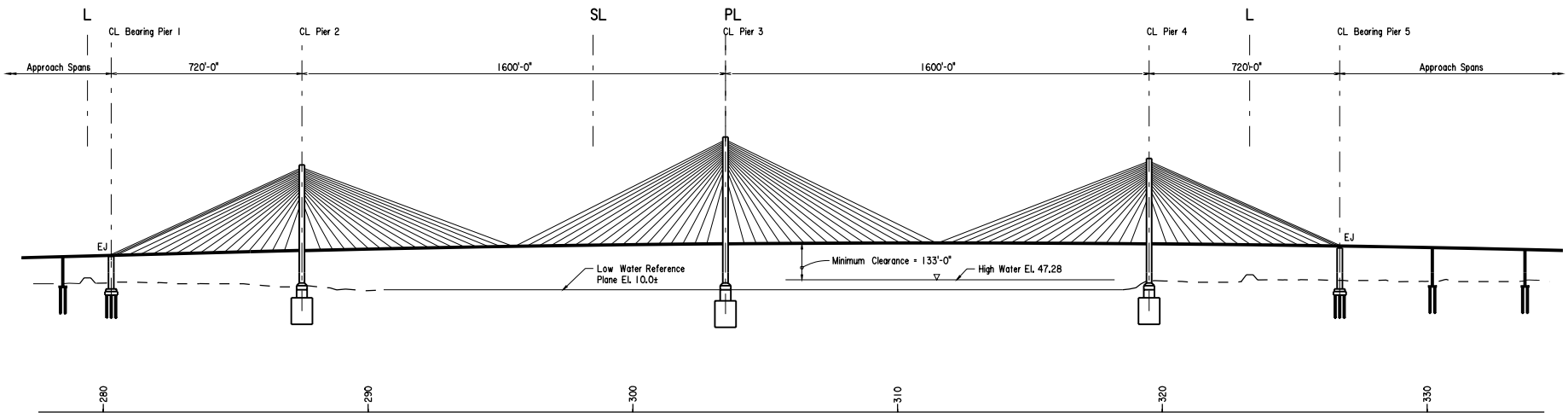
L= Levee
PL = Parish Line
SL = Sailing Line

FIGURE 4-8
4-SPAN CABLE-STAYED ALTERNATIVE
(1500' NAVIGATION SPAN)

POTENTIAL MISSISSIPPI RIVER
CROSSING 4
FOR BATON ROUGE LOOP



PLAN
N.T.S.

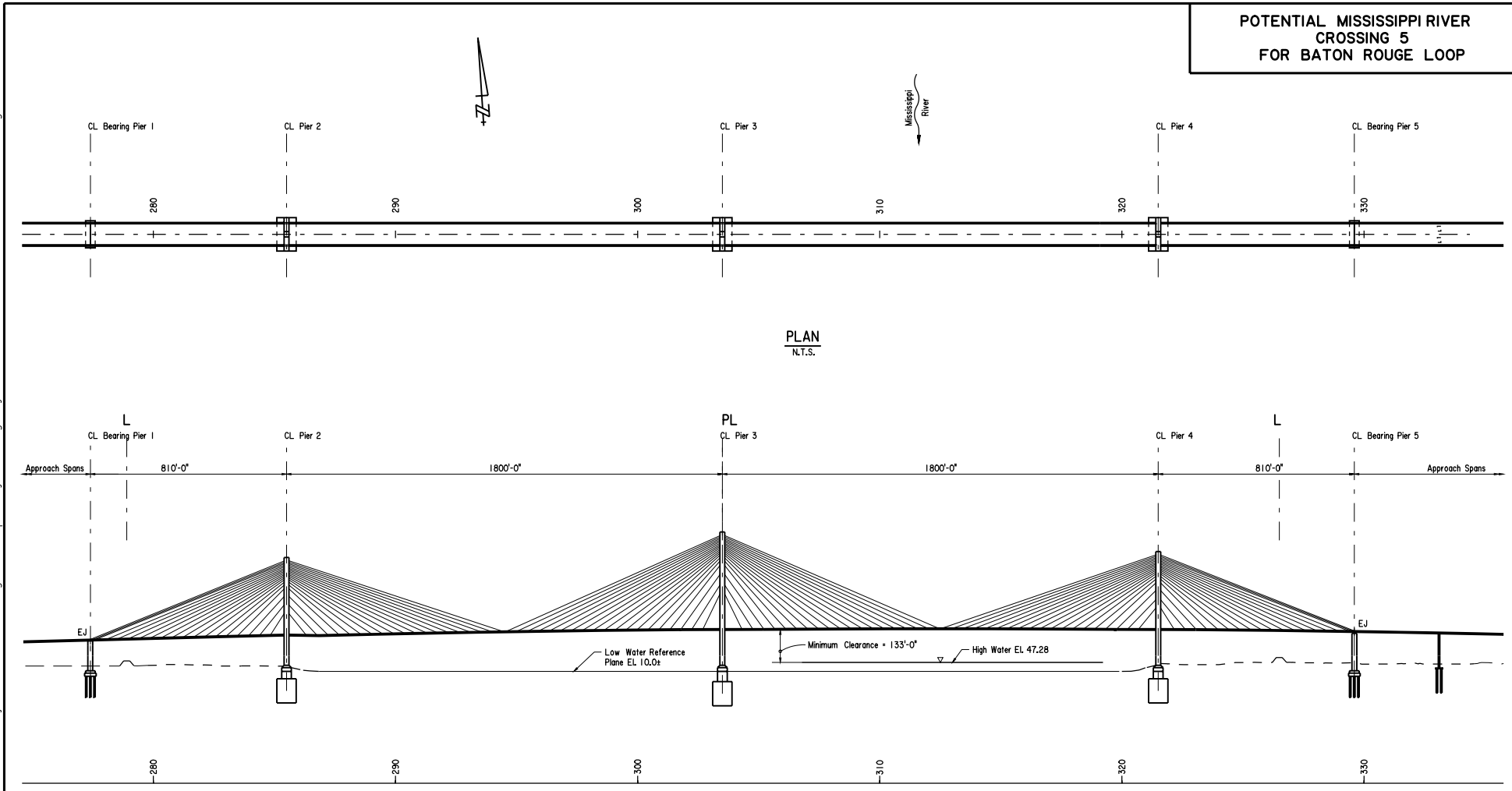


ELEVATION
N.T.S.

LEGEND

L= Levee
PL = Parish Line
SL = Sailing Line

FIGURE 4-9
4-SPAN CABLE-STAYED ALTERNATIVE
(1600' NAVIGATION SPAN)



4.2. Environmental Factors

As discussed in Technical Memorandum No. 2, Environmental Overview, several environmental elements were considered and factored into the corridor refinement process. Corridors were located and refined with consideration of the following environmental concerns:

Human Environmental Considerations:

- Dense Residential Areas, Community Facilities, and Planned Development
- Public Lands, Parks and Recreation Facilities
- National Register of Historic Places Districts and Properties

Physical Environment Considerations:

- Potential Hazardous Materials Sites

Natural Environment Considerations:

- Wetlands
- Potential Rare, Threatened and Endangered Species Habitat
- Floodplains
- Waterbodies

Specific features encountered within corridor segments are discussed and presented in the Corridor Evaluation Matrix section of this report.

4.3. Traffic Results

As discussed in Technical Memorandum No. 3, Preliminary Traffic and Revenue Analyses, traffic and revenue estimates were developed to assess the feasibility of several corridor alternatives. Traffic models were utilized in conducting this analysis. Results from these models were used in the corridor refinement process to both eliminate and refine corridor placement. Since relieving traffic congestion is the foremost goal of this project, corridors have been refined to maximize ridership of the Loop, thereby relieving other existing major roadways. Also, since the Loop will be a toll-funded project, the ability to fund the project is directly related to the volume of traffic attracted to the Loop. Comments on the refinement of specific corridor segments, as related to traffic, can be found in the Corridor Evaluation Matrix section of this report.

4.4. Community Input

As documented in Technical Memorandum No. 6, Public and Agency Outreach, input has been received from several communities through public meetings, correspondence, and other forums. Also, input was also gathered from the Stakeholder, Advisory and Executive Committee members which were made up of

individuals from all five parishes, representing business, public agency, technical and community interests.

Feedback from these sources was crucial in the corridor refinement process. Specific concerns that were addressed can be found in the Corridor Evaluation Matrix section of this report.

4.5. Corridor Refinement Process: 4/17/08

The culmination of the corridor refinement process for the Implementation Plan phase was presented at an Executive Committee meeting on April 17, 2008 and can be seen in Figure 4-11. Corridors shown in red have been eliminated for this phase, while those in yellow are recommended to advance as the locally preferred alternatives. To facilitate tracking the disposition (i.e. eliminated or under consideration) of corridor segments during the refinement process, each segment has been assigned a number as shown in Figure 4-11. These numbers are used in the Corridor Evaluation Matrix to describe the influencing factors encountered within particular corridor segments.

4.6. Corridor Evaluation Matrix

During the process of refining corridor location or eliminating corridor segments, several factors typically entered into the decision-making process. The key factors influencing this process are shown as column headings in the Corridor Evaluation Matrix in Figure 4-12. The matrix summarizes the factors involved in the evaluation of each corridor segment that has been eliminated. A red "X" has been shown in the column for factors that were evaluated to be negative for a particular segment.

A brief description of each evaluation factor in the matrix is given below. Specific reasons why a factor was evaluated to be negative for a segment are listed in the "Comments" column of the matrix.

Evaluation Factors:

Fails to Adequately Relieve Existing Congestion: The primary goal of the project is to relieve traffic congestion. Based on results of the traffic studies performed to date, some segments do not achieve this goal, particularly when compared to the performance of other segments.

Fails to Generate Sufficient Toll Revenue: As a toll-funded project, corridor segments must attract sufficient users to generate the tolls required to pay for the project. This factor is also a result of the traffic analyses performed to date and is typically a close corollary to relieving traffic congestion.

Construction is Cost Prohibitive: Several factors influence whether constructing a given segment is cost prohibitive. These include: additional mileage to construct the corridor; development impacts / costs; environmental impacts / costs; and, utility impacts / costs; etc.

Right-of-Way Cost Prohibitive: Costs of right-of-way become disproportionate along some corridors to the point these costs influence the financial viability of the segment. Premium costs are typically encountered in heavily developed areas where there are impacts to commercial, residential and/or industrial facilities.

Adverse Community Effect / Conflicts with Planned Development: Not all impacts to communities and development can be avoided. However, impacts to existing communities can be overly adverse and disruptive. Additionally, significant development that is planned in an area influences location and refinement of corridors. The goal is to avoid and eliminate as much impact as possible.

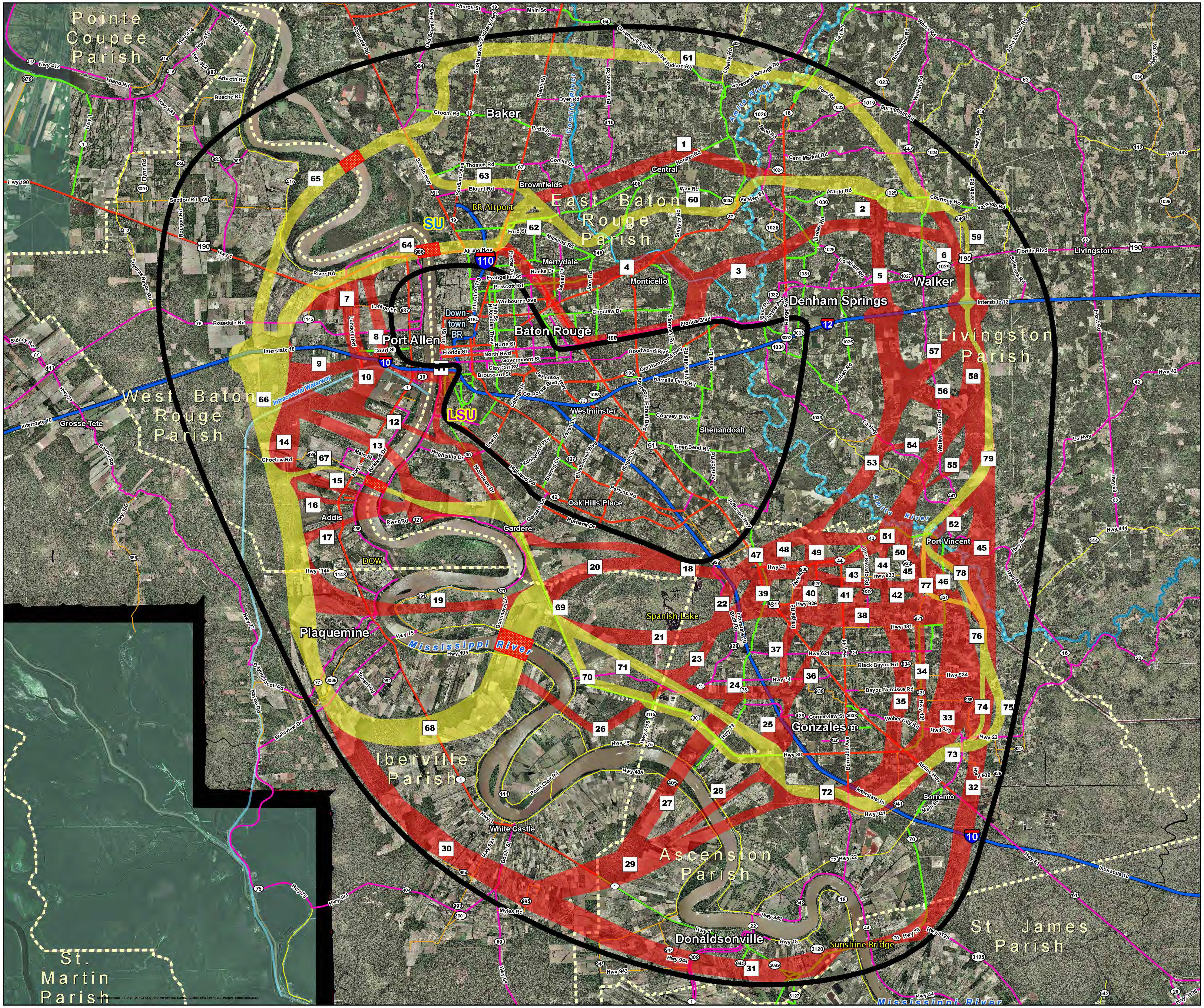
Disproportionate Impacts to Public Properties (Parks, Schools, etc.): Impacts to existing public properties, which include parks, schools, churches, etc., are avoided if possible. Impacts to these facilities may become disproportionate when several properties are clustered together or the property has a unique significance.

Disproportionate Impacts to Wetlands and Floodplains: Given the magnitude and length of the Loop project, completely avoiding wetlands and floodplains is not possible. However, the goal is to minimize impacts to these areas. Impacts may become excessive when contiguous wetlands are bisected if other comparable options are available or impacts to floodplains would create undesirable changes to existing drainage.

Disproportionate Impacts to Other Environmentally Sensitive Areas: Historic, culturally significant, or other environmentally sensitive areas are found throughout the project area. Depending on the designation, the Loop should avoid impacts to these areas if possible.

Unacceptable Impacts to Mississippi River Navigation: Input from the U.S. Coast Guard, U.S. Army Corps of Engineers and river navigation interests is critical in determining if a given location is considered a viable river crossing location. Some locations may not be acceptable due to a variety of factors including: proximity to a bend in the river or the mouth of the Intracoastal Waterway; presence of ship anchorage areas, barge fleeting areas, or docks; or, navigational concerns due to bridge pier placement in relation to the navigational channel.

Corridor Refinement Process - 4/17/08



Legend

1 Corridor Segment Number

Project Boundaries

Rail

Functional Roads

- Principal Arterial Interstate
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

Potential Mississippi River Crossings

Potential Corridor

Eliminated Corridor

Parish Boundary

Figure 4-11
Corridor Refinement Process

Image Source: USGS, 2006

Location Map

N

0 1 2 Miles

1 inch equals 1 miles

Baton Rouge Loop

CORRIDOR EVALUATION MATRIX

SEGMENT NO.	EVALUATION FACTORS									
	Fails To Adequately Relieve Existing Congestion	Fails To Generate Sufficient Toll Revenue	Construction Is Cost Prohibitive	Right-Of-Way Cost Prohibitive	Adverse Community Effect/Conflicts With Planned Development	Disproportionate Impacts To Public Properties (Parks, Schools, Etc.)	Disproportionate Impacts To Wetlands and Floodplains	Disproportionate Impacts To Other Environmentally Sensitive Areas	Unacceptable Impacts To Mississippi River Navigation	Comments
1				X	X	X				Disruptive to planned Central town center and development core
2	X			X	X					Paired with Segment no. 5; high disruption to existing development
3			X							Access & development impacts/costs using Florida/Airline corridor
4				X	X					Access & development impacts/costs using florida/airline corridor
5	X			X	X					Rigid I-10 interchange location creates disruptive community impacts
6				X	X					Less desirable Florida ave. interchange; bisects Walker neighborhoods
7				X	X					Access & development impacts/costs using LA 415 corridor
8				X	X					Undesirable I-10 interchange complications & spacing
9				X	X					Paired with Segment no. 11
10				X	X					Intracostal Waterway complications due to close proximity
11			X	X	X					Impact, complexity and cost to I-10 system and Nicholson corridor
12									X	Based on input from U.S. Coast Guard, Corps & navigation interests
13					X	X		X		Unacceptable impacts to existing National Register Historic Property
14						X				Refined corridor to miss existing development and public works facilities
15			X		X					Impacts to new development & Addis community cohesion
16			X		X					Impacts to new development & Addis community cohesion
17			X						X	Based on input from U.S. Coast Guard, Corps & navigation interests
18				X	X		X	X		Significant floodplain, wetlands & proposed development
19				X	X		X			Historic community & community cohesion
20				X	X		X			Paired with Segment nos. 18 & 19, Impacts to existing development
21					X		X	X		Disruption to Spanish Lake wetlands & environmentally sensitive areas
22				X	X					Disruption to Spanish Lake wetlands & environmentally sensitive areas
23					X		X	X		Disruption to Spanish Lake wetlands & environmentally sensitive areas
24					X					Neighborhood impacts
25	X	X		X	X					Community disruption; paired with Segment nos. 37 & 38
26	X	X		X	X					Low attracted traffic & revenue
27	X	X	X	X						Low attracted traffic & revenue; higher costs due to longer route length
28	X	X	X	X						Low attracted traffic & revenue; higher costs due to longer route length
29	X	X	X	X						Low attracted traffic & revenue; higher costs due to longer route length

CORRIDOR EVALUATION MATRIX

SEGMENT NO.	EVALUATION FACTORS									
	Fails To Adequately Relieve Existing Congestion	Fails To Generate Sufficient Toll Revenue	Construction Is Cost Prohibitive	Right-Of-Way Cost Prohibitive	Adverse Community Effect/Conflicts With Planned Development	Disproportionate Impacts To Public Properties (Parks, Schools, Etc.)	Disproportionate Impacts To Wetlands and Floodplains	Disproportionate Impacts To Other Environmentally Sensitive Areas	Unacceptable Impacts To Mississippi River Navigation	Comments
30	X	X	X							Low attracted traffic & revenue; higher costs due to longer route length
31	X	X	X							Low attracted traffic & revenue; higher costs due to longer route length
32	X	X	X							Low attracted traffic & revenue; higher costs due to longer route length
33				X	X	X				Impacts to St. Amant community & public properties
34				X	X	X				Access & development impacts/costs using LA 431 corridor
35				X	X	X				Impacts to St. Amant community & public properties
36				X	X	X				Impacts to Gonzales community & public properties
37				X	X	X				Impacts to Gonzales community & public properties
38				X	X	X				Impacts to Prairieville/Galvez communities & public properties
39				X	X	X				Impacts to Prairieville community & public properties
40				X	X	X				Impacts to Prairieville community & public properties
41				X	X	X				Impacts to Prairieville community & public properties
42				X	X	X				Impacts to Prairieville/Galvez communities & public properties
43				X	X	X				Impacts to Prairieville/Galvez communities & public properties
44				X	X	X				Impacts to Prairieville/Galvez communities & public properties
45			X		X		X	X		Impacts to Prairieville/Galvez communities & public properties
46				X	X	X				Impacts to Galvez community & proposed school
47				X	X					Impacts to Prairieville community & public properties
48				X	X	X				Impacts to Prairieville/Galvez communities & public properties
49			X		X		X	X		Impacts to Prairieville community & public properties
50					X					Paired with Segment no. 51
51					X	X				Impacts to Ascension & Livingston Parish development
52			X		X		X	X		Refined corridor to minimize impacts to Port Vincent north end community
53	X		X		X		X	X		Impacts to Manchac & Amite wetlands/floodplains & communities
54	X			X	X					Paired with Segment no. 53
55					X					Paired with Segment no. 51
56	X				X					Paired with Segment nos. 53 & 5
57			X		X		X	X		Paired with Segment no. 53
58										Confined corridor width to be within large timber property

4.7. Locally Preferred Corridors

The potential corridors remaining at the conclusion of the corridor refinement process conducted within the Implementation Plan phase can be seen in Figure 4-13. These are considered the locally preferred corridors.

These remaining corridors, shown in yellow, are recommended to be carried forward into the next phase of the project, which will be to obtain environmental clearance for the Loop. During the Tier I Environmental Impact Statement (EIS) phase, these remaining corridors will be reduced to one. This corridor will then be further refined to an alignment and associated right-of-way width within the preferred corridor during the Tier II EIS phase.

4.8. Potential Spurs

During the corridor development process, several potential spurs were identified that could improve access to the Loop, service to the communities, and increase ridership and associated toll revenues. These improvements would also benefit the local roadway network. The potential spurs are shown in Figure 4-14 and listed below:

Spur No. 1: Intermodal access from the Loop to the Greater Baton Rouge Port facilities located along Northline Road.

Spur No. 2: Improved access into and out of Downtown Baton Rouge to the Loop.

Spur No. 3: Improved capacity to LA 42 from LA 44 to the Loop.

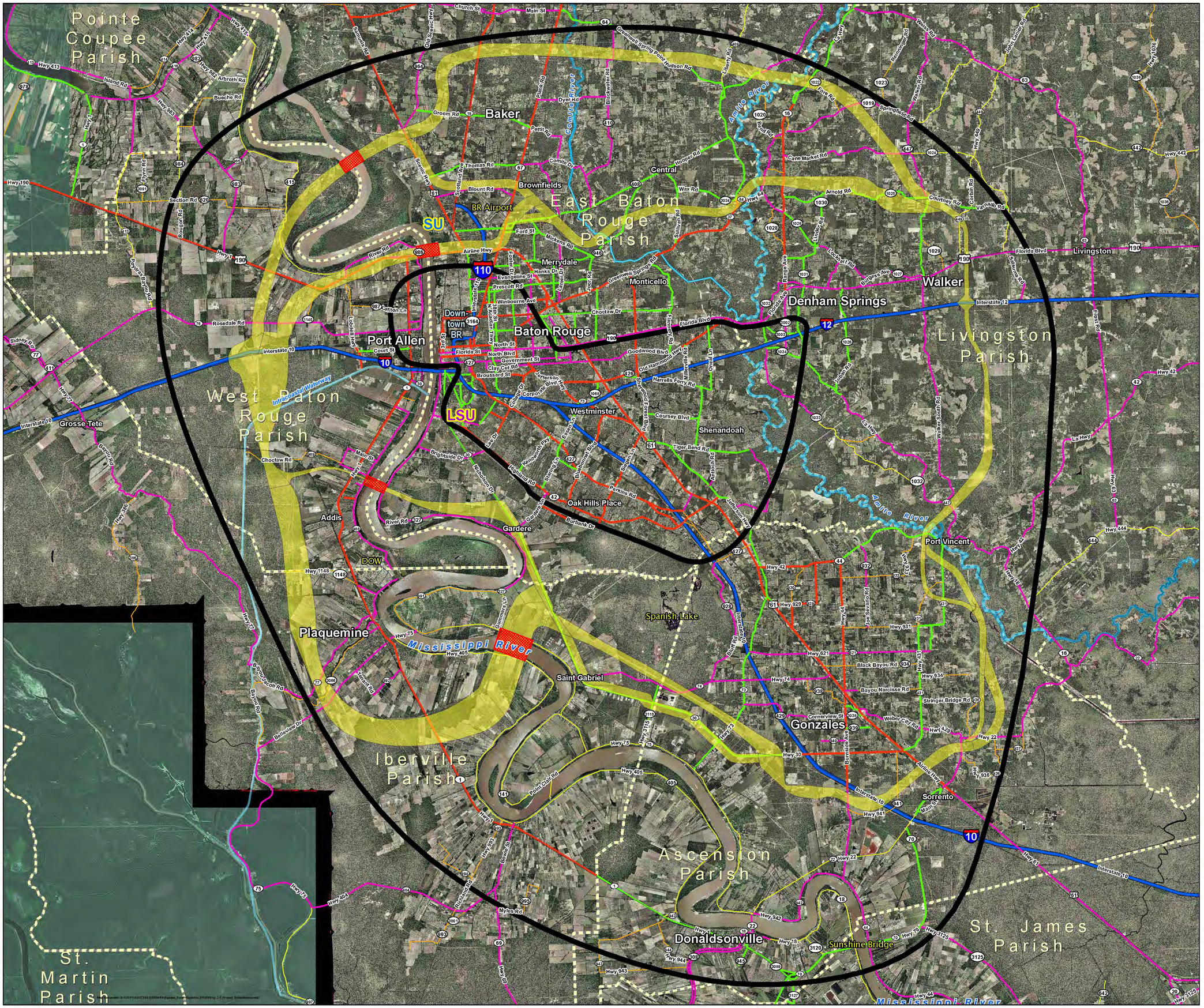
Spur No. 4: Extension of Juban Road from Florida Boulevard to the Loop.

Spur No. 5: Improvements to LA 447, Walker Road North, between Florida and the Loop.

Spur No. 6: A new interchange and access from I-110 and the Baton Rouge Metropolitan Airport.

More refined traffic studies and other analyses will be needed in subsequent phases to verify the benefits of these or other potential spurs. Improvements proposed will also need to be coordinated with state and local agencies.

Locally Preferred Corridors



Legend

- Project Boundaries
- Rail

Functional Roads

- Principal Arterial Interstate
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

- Potential Mississippi River Crossings
- Potential Corridor
- Parish Boundary

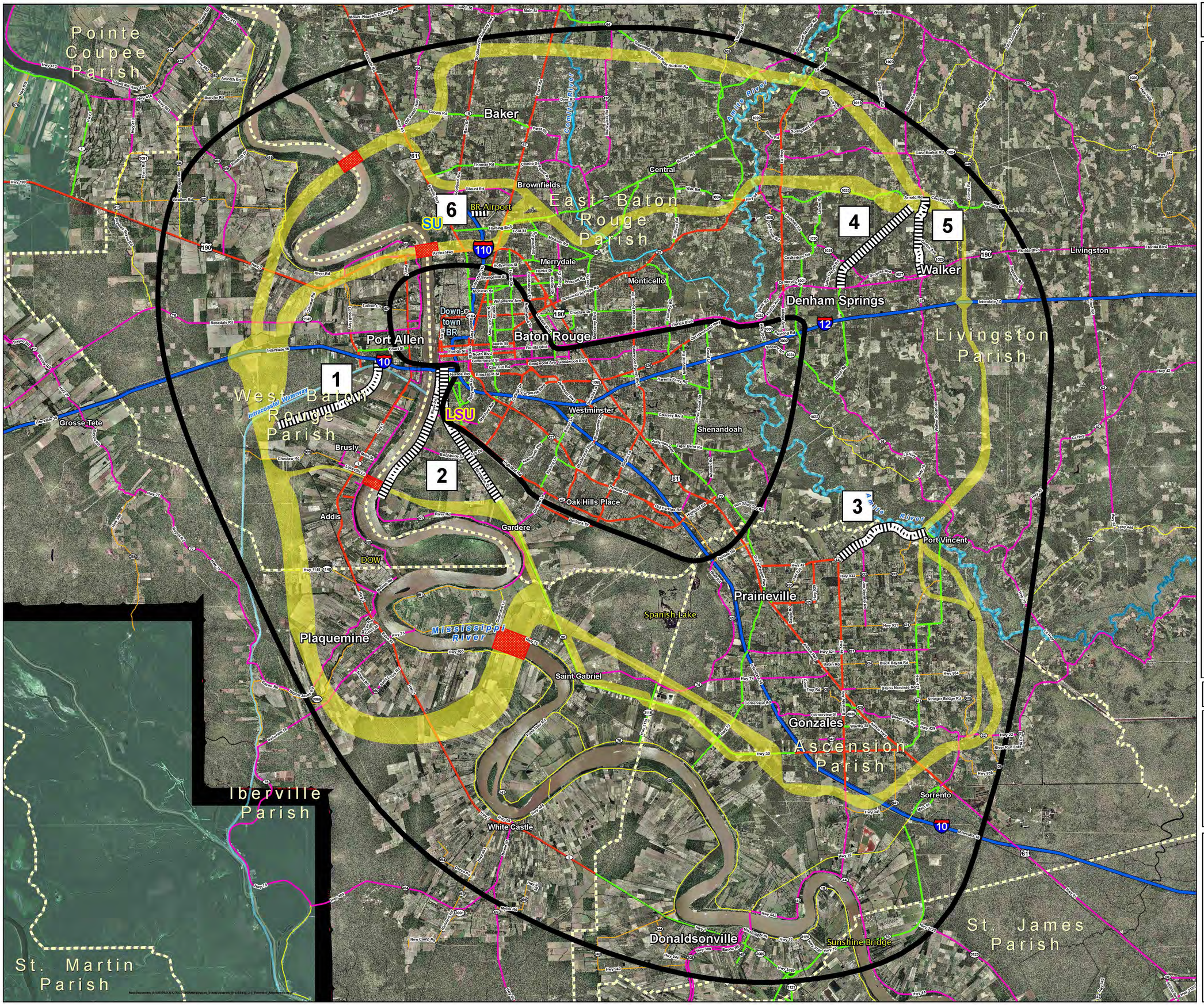
Figure 4-13
Locally Preferred Corridors

Image Source: USGS, 2006

Location Map

BR Baton Rouge Loop

Potential Spurs



Legend

1 — Spur Number

Project Boundaries

Potential Spurs

Rail

Functional Roads

- Principal Arterial Interstate
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

Potential Mississippi River Crossings

Potential Corridor

Parish Boundary

Figure 4-14
Potential Spurs

Image Source: USGS, 2006

Location Map

Baton Rouge Loop

4.9. Segments Requiring Further Consideration

After completion of the Implementation Plan, the project will move into the environmental clearance phase. During this next step, all obligations required by the National Environmental Policy Act (NEPA) will have to be met. In addition to the "locally preferred corridors" discussed in Section 4.2.7, it is recommended that several corridor segments be considered further in the next phase to meet requirements stipulated by NEPA regarding corridor selection. These corridor segments are shown in Figure 4-15. More investigation is warranted within these segments to determine if they could be beneficial to the overall operations and performance of the Loop. These are further described below:

Segment 1: A potential route that interchanges with I-10 at approximately the midpoint of Ascension Parish and utilizes the I-10 route south to the East Bypass I-10 terminus should be considered further. Results of refined traffic analyses in the next phase should be used to initially determine whether this alternate provides substantial traffic benefits. If considered further, other impacts would also need to be quantified.

Segment 2: In the southern portion of Livingston Parish, utilizing a route along an existing utility corridor should be considered further. Impacts to all features should be quantified and evaluated to make a final determination.

Segment 3: Considerable coordination efforts have been ongoing with City officials and planners in the Central area. Further consideration should be given to the possibly of a Loop route north of the planned town square and hub of planned development. Traffic results should be compared with corridors both to the north and south, other impacts quantified, and input from Central officials gathered in order to make a determination.