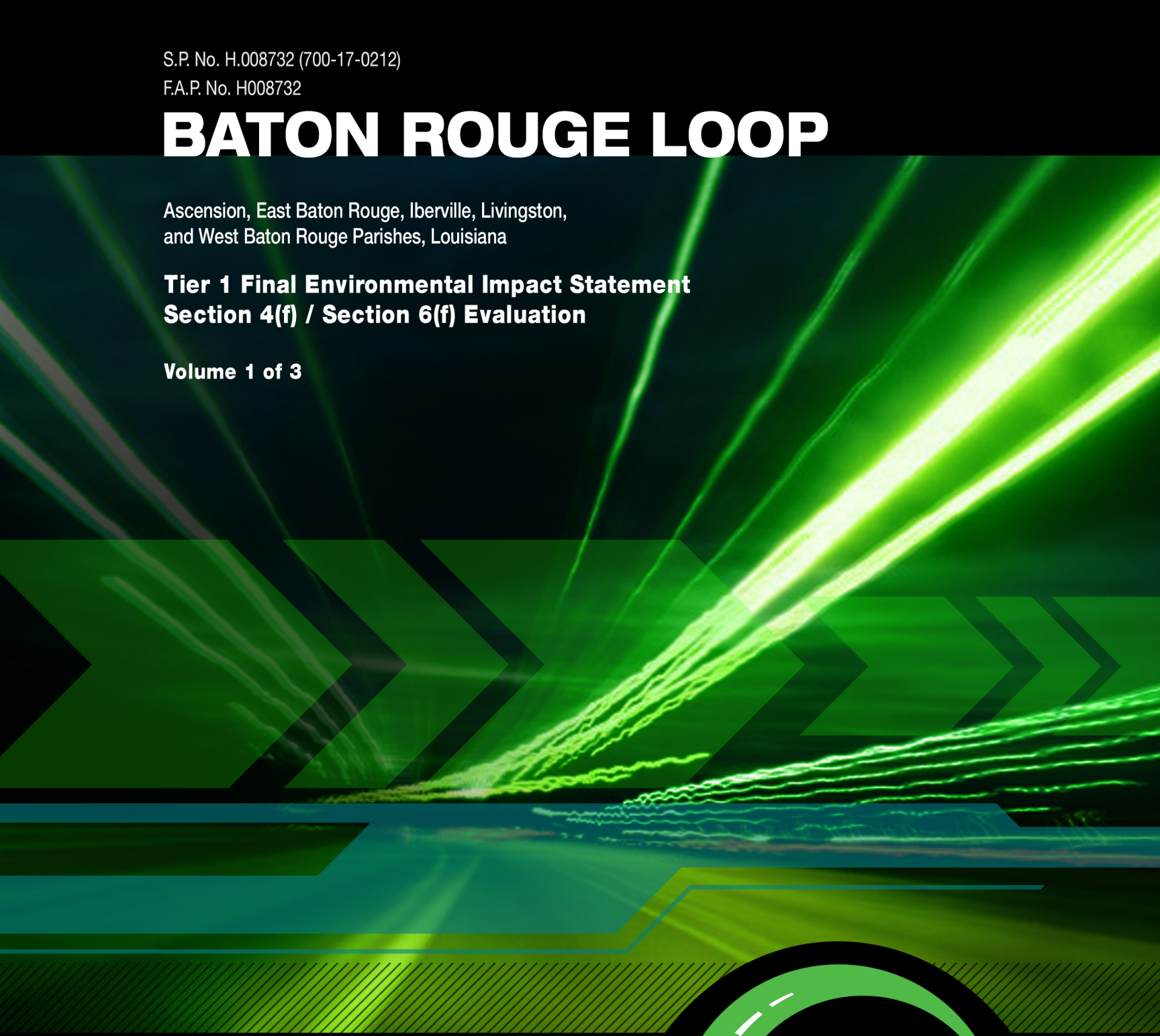
S.P. No. H.008732 (700-17-0212)
F.A.P. No. H008732

BATON ROUGE LOOP

Ascension, East Baton Rouge, Iberville, Livingston,
and West Baton Rouge Parishes, Louisiana

Tier 1 Final Environmental Impact Statement
Section 4(f) / Section 6(f) Evaluation

Volume 1 of 3



U.S. Department of Transportation Federal Highway Administration,
Louisiana Department of Transportation and Development, and
Capital Area Expressway Authority

Cooperating Agencies:
U.S. Army Corps of Engineers, New Orleans District
U.S. Coast Guard, 8th Coast Guard District

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Tier 1 Final Environmental Impact Statement

Section 4 (f) and 6(f) Evaluation

Submitted pursuant to: 42 U.S.C. 4332 (2) (c) and 49 U.S.C. 303

By the

U.S. Department of Transportation Federal Highway Administration, Louisiana Department of Transportation and Development, and Capital Area Expressway Authority

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Volume 1 of 3

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Date of Approval

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Capital Area Expressway Authority

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This is a Tier 1 Final Environmental Impact Statement addressing corridor alternatives for a circumferential controlled access free-flow toll roadway around Baton Rouge, Louisiana with two new Mississippi River crossings. The proposed facility would initially be four lanes with the capability to expand to six lanes within an average 400' right-of-way. The proposed Baton Rouge Loop would connect I-12 east of Baton Rouge east of Walker to I-10 west of Baton Rouge, I-10 west of Baton Rouge to I-10 south of Baton Rouge, and I-10 south of Baton Rouge to I-12 east of Walker. The document also includes the Section 4(f) and 6(f) Evaluation.

Comments on this Tier 1 Final EIS/Section 4(f) and 6(f) Evaluation will be accepted in writing until February 15, 2016. Comments should be sent to the Capital Area Expressway Authority (CAEA) c/o Raul Regis, P.E. at HNTB Corporation, 10000 Perkins Rowe, Suite 640, Baton Rouge, LA 70810.

A Project Technical File with support technical documents is located at HNTB Corporation, 10000 Perkins Rowe, Suite 640, Baton Rouge, LA 70810. The Technical File is open for review by appointment Tuesday, Wednesday, and Thursday from 9am to 4pm through March 16, 2016. Copies of the documents are available for a nominal fee payable in cash. Call Raul Regis at 225-368-2800 to schedule an appointment.

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EXECUTIVE SUMMARY

DESCRIPTION OF PROPOSED PROJECT

The Capital Area Expressway Authority (CAEA) with the Federal Highway Administration (FHWA) as lead Federal agency, and the Louisiana Department of Transportation and Development (LADOTD) as lead state agency, is proposing the development of the Baton Rouge Loop toll facility. The Baton Rouge Loop is proposed as a 90 to 105 mile long circumferential controlled access free-flow toll roadway around Baton Rouge, Louisiana, with two new Mississippi River crossings. The proposed Project is located in the parishes of Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge.

The proposed Baton Rouge Loop would connect Interstate Highway 12 (I-12) east of Baton Rouge east of Walker to Interstate 10 (I-10) west of Baton Rouge, I-10 west of Baton Rouge to I-10 south of Baton Rouge, and I-10 south of Baton Rouge to I-12 east of Walker. Major interchanges are proposed at I-10, I-110, and I-12, and possibly U.S. 190, U.S. 61, and LA 1. Interchanges would also be provided at other state and local roadway locations as warranted.

The Baton Rouge Loop would initially be constructed as a four-lane facility, two 12-foot lanes each direction, with the ability to add at least two additional lanes, in the median when traffic demands warrant. The proposed typical roadway section would also provide space within the average 400-foot right-of-way to add continuous frontage roads, if needed, with bike paths and transit potentially sharing the footprint.

The intent of the Project is to:

- Reduce congestion and delay on I-10, I-12 and other major arterial corridors,
- Expand roadway capacity,
- Address future travel demand,
- Enhance regional roadway and transportation network connectivity, and
- Improve the safe movement of people and goods within and through the five-parish project area.

As a precursor to this Tier 1 Environmental Impact Statement (EIS), an Implementation Plan was prepared. The Implementation Plan was the outcome of a resolution by the Parish Presidents of Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge to construct a loop around the greater Baton Rouge area. The Implementation Plan established a project boundary and study area, reviewed potential project financing and financial feasibility, analyzed potential traffic volumes, and identified corridor alternatives to be advanced into this Tier 1 EIS. Details of the Implementation Plan work are discussed in Chapter 2. A copy of the Executive Summary and the Technical Memorandums from the Implementation Plan are included in Appendix G.

TIERED ENVIRONMENTAL DOCUMENTATION

Consultation with FHWA, LADOTD, and resource agencies determined that because of the location of the Baton Rouge Loop and the proposed build action there was a likelihood of significant environmental impacts. Because of this potential significant affect on the environment, the National Environmental Policy Act (NEPA) requires Federal agencies to prepare environmental impact statements.

Tier 1 and Tier 2 Approach

For large, complex transportation projects, NEPA studies using the tiering of EISs is allowed under Council on Environmental Quality regulation (40 CFR 1502.20 and 1508.28) and FHWA regulation (23 CFR 771.111g). Additionally, FHWA regulation 23 CFR 774.7(e) allows for Section 4(f) approval to involve different levels of detail in a tiered EIS. Using a tiered approach, the first tier EIS focuses on broad issues such as general location, environmental resource presence, and land use implications of the alternatives on a corridor level. The second tier NEPA document addresses site-specific details on project impacts, costs, corridor preservation, and mitigation measures. In addition to the federal regulations cited above, procedures as outlined in the Transportation Research Board's *Guidelines on the Use of Tiered Envornmental Impact Statements for Transportation Projects* were utilized in the preparation of this Tier 1 EIS.

During the early stages of the Implementation Plan, major constraints were identified that influenced the location and shape of the original corridors that were developed. These major controlling constraints included: large-scale contiguous environmental resources, large public facilities, along with other local features such as existing communities, churches, schools, parks, historic sites, etc. These factored into the corridor refinement process along with locations of potential Mississippi River crossings, existing interstate connections, and input from public agencies, public officials, and the general public. Multiple corridors resulted from the corridor refinement process and advanced from the Implementation Plan for further consideration in the Tier I EIS.

The Tier 1 EIS process will narrow the potential corridors to one preferred corridor, which will vary in width from hundreds of feet to several thousand feet. The Tier 1 EIS provides for corridor level analysis. Final alignment and interchange configurations will have to be determined during the Tier 2 EIS .

After the Tier 1 EIS process, a Tier 2 EIS will be performed on a Loop segment of independent utility considered to be viable. As other Loop segments are identified, an independent Tier 2 EIS will be performed on each individual segment as well. Interchange Justification Reports will be completed during the Tier 2 EIS phase for segments with proposed interchanges to the existing interstate system. Approval of each Tier 2 EIS segment will be contingent on approval by FHWA for proposed access points to the interstate within that segment. If a preferred Loop / interstate interchange location creates the need for improvements to the existing interstate system, costs for those improvements will

be borne by and included in construction of the Loop project.

At a later date, if an interchange that will pass engineering and operations requirements within the boundaries of the Tier 1 EIS corridor cannot be approved through an Interchange Justification Report (IJR), a supplement to the Tier 1 EIS will have to be undertaken prior to completion of any Tier 2 EIS. The Tier 1 and Tier 2 phases are described more fully in *Figure ES-1*.

This Tier 1 Final EIS is produced in three volumes. Volume 1 contains the study documentation and analysis; Volume 2 contains supplemental information as appendices for Volume 1; and Volume 3 contains larger scale mapping exhibits to support Volume 1.

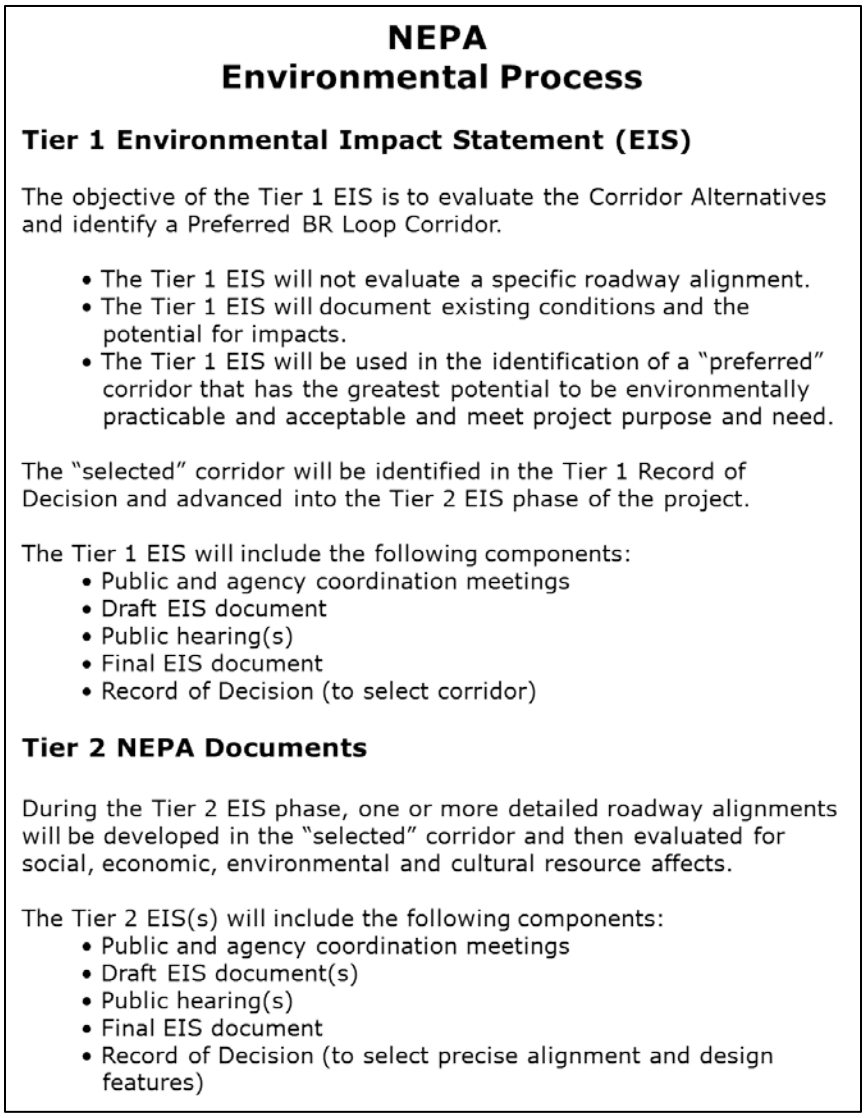


Figure ES–1: NEPA Tiered Environmental Process

ALTERNATIVES CONSIDERED

Alternatives considered in this Tier 1 EIS include the No-Build Alternative and the Build Alternative.

The No-Build Alternative is considered to be the transportation system as it currently exists in the Baton Rouge Loop study area plus those transportation system enhancements, excluding the Baton Rouge Loop, included in the:

- Capital Region Planning Commission (MPO) Transportation Improvement Program (TIP) Fiscal Years 2009 – 2013,
- Statewide Transportation Improvement Program (STIP), and
- Baton Rouge Metropolitan Area Transportation Plan Update, 2004, Financially Constrained Plan, Stage I, II, and III 2004 – 2029, Modified January 2006.

In addition, the No-Build Alternative includes various projects under development within the Baton Rouge Loop project boundaries and were assumed to be constructed prior to the Baton Rouge Loop. These additional projects are summarized below.

- There are more than 20 capacity improvement projects in the MPO TIP. In the STIP, eleven projects have a capacity improvement component. The transportation projects in the “long-range” plan include capacity enhancement projects, but these projects may not be implemented for many years into the future, with implementation being limited by the availability of funding.
- I-10 and I-12 in the east sections have recently been widened to six lanes. In addition, East Baton Rouge City-Parish has a Parish-wide program of roadway improvements called the Green Light Program currently in progress. Several, but not all, of the 47 Green Light Plan projects are included in the TIP and STIP. The No–Build Alternative partially meets the purpose and need of the project but is carried into the document in accordance with NEPA.
- It is noted that the East Baton Rouge Parish Comprehensive Plan, FUTURE BR, Transportation Plan recognizes the northern corridor of the Baton Rouge Loop as one of the projects identified to reduce regional traffic congestion.

The Build Alternative consists of the Corridor Alternatives in three Baton Rouge Loop Units. Units are a specific geographic region of the Project study area. The three Project units are the North Unit, South Unit, and East Unit. The North Unit is north of I-12 east of Baton Rouge east of Walker to I-10 west of Baton Rouge, the South Unit is from I-10 west of Baton Rouge to I-10 south of Baton Rouge, and the East Unit is from I-10 south of Baton Rouge to I-12 east of Walker.

In each Unit there are various smaller areas called corridor sections (sections). Sections combine to form multiple Corridor Alternatives (alternatives) in each Unit. *Figure ES-2* provides an overview of the Project area and Units, and the corridor sections that combine to form alternatives. Descriptions of the alternatives considered are in Chapter 2.

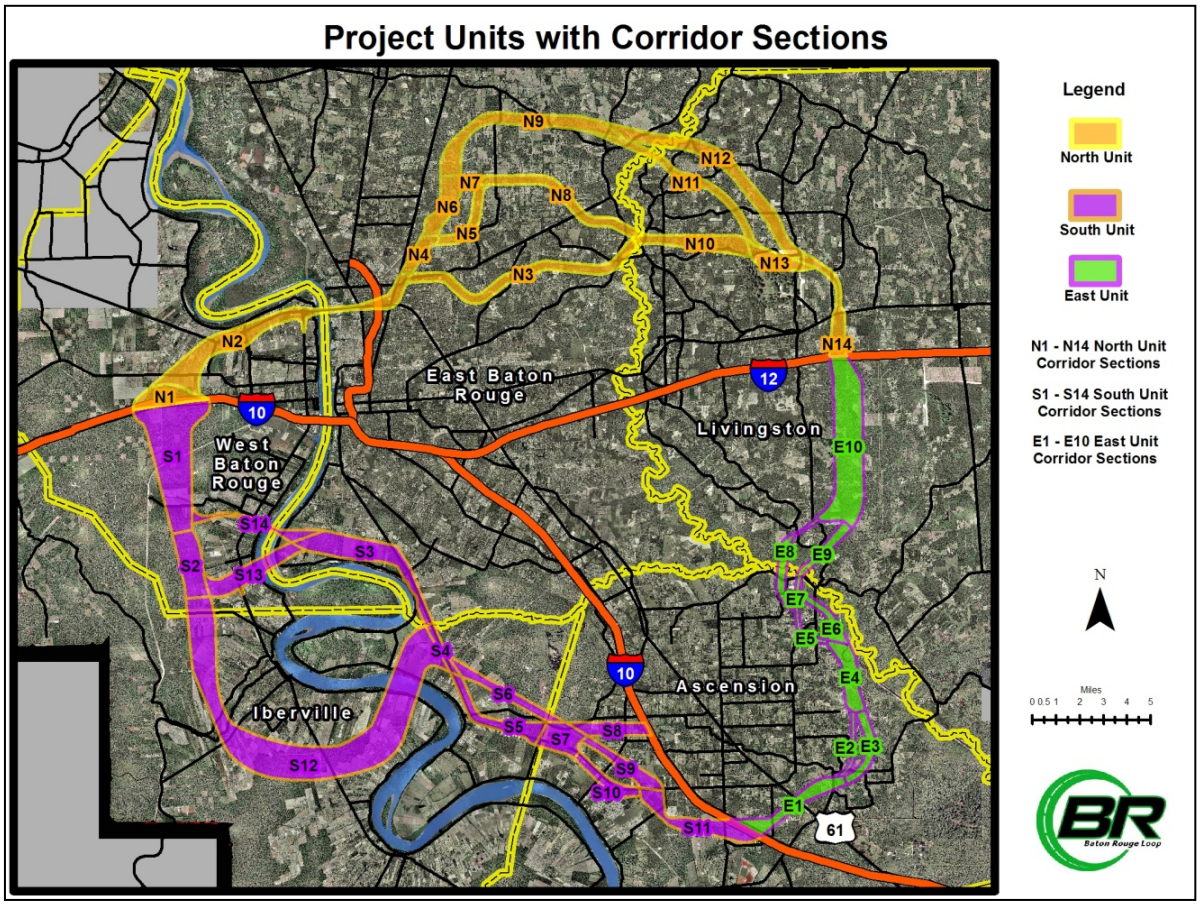


Figure ES–2: Baton Rouge Loop Project Units with Corridor Sections

ENVIRONMENTAL INVESTIGATION SUMMARY

The Baton Rouge Loop Tier 1 EIS documents the investigation of the Build Alternative which consist of the thirty - one (31) Corridor Alternatives in the three Baton Rouge Loop Units. Unit corridor sections and Corridor Alternatives were evaluated for the presence of environmental resources, land use, and demographic and socioeconomic composition. The purpose of the study is to identify a Baton Rouge Loop Corridor, composed of a combined North Unit Corridor Alternative, a South Unit Corridor Alternative, and East Unit Corridor Alternative.

For purposes of the Tier 1 EIS, certain areas of study were deferred to Tier 2. The studies conducted for the Tier 1 EIS were determined to be those with the greatest potential for impact, or public, stakeholder and agency concern. Areas addressed in the Tier 1 EIS are:

- Land Cover
- Prime Farmland Soils
- Socioeconomics
- Environmental Justice
- Parks, Recreation Areas, Wildlife Refuges, Community Facilities
- Cultural Resources
- Section 4(f) / Section 6 (f) Resources
- Traffic and Transportation
- Toll Economic Feasibility
- Air Quality
- Floodplains
- Water Bodies
- Wetlands
- Navigation & Navigable Waters
- Threatened or Endangered Species
- Waste Sites, and
- Indirect and Cumulative Impacts.

Tier 1 EIS resource data collection and evaluation was performed on a desktop basis using existing published data and reports, internet site information, and GIS data. Field investigations and surveys were not conducted for this Tier 1 EIS. This ***Tier 1 EIS provides*** an inventory of resources as ***an order of magnitude of potential impacts*** that may result from the proposed Project in the Corridor Alternatives in each Unit. As the study progresses to Tier 2 and specific alignments are developed, the actual impacts of the proposed project can be determined and assessed at a more refined level.

Even at this level of analysis, it is reasonable to anticipate that the Baton Rouge Loop Project has the potential to have an adverse impact on various resources. These resources include:

- Wetlands
- Agricultural land
- Floodplains

Within each Unit Corridor Alternative, the location of the future alternative alignments, to be identified in the Tier 2 EIS, would determine the actual significance of impacts.

ENGINEERING, TRAFFIC, AND PRELIMINARY COST ESTIMATE

Part of the work performed for the Tier 1 EIS included traffic studies, preliminary cost estimates, and river crossing modeling with navigation simulation. Traffic analysis, using 2032 as the build out year, indicates that in general the Baton Rouge Loop would have a positive impact on regional traffic congestion and vehicle hours travelled. Chapter 2 provides the vehicle hour traveled (VHT) and vehicle speed for each scenario analyzed.

Engineering and/ or environmental areas of concern common to all thirty-one (31) Unit Corridor Alternatives include wetlands, floodplains, and prime farmland . In addition for the North and South Unit Corridor Alternatives, the Mississippi River crossing location and associated navigation feasibility was an issue of concern.

Preliminary capital cost estimates were developed for each Unit Corridor Alternative using a “representative cost alignment”. Chapter 2 provides a summary table of preliminary capital cost by Unit Corridor Alternative and Appendix B includes a preliminary capital cost estimate summary table for each Unit Corridor Alternative.

Cost estimates include construction costs for roadway, frontage roads (as applicable), major and minor bridges, and interchanges. Other costs include ITS, electronic tolling equipment, landscaping, customer service centers, right-of-way, mitigation (wetland, waste site, noise, other), utility relocation, legal fees, engineering/architectural services, administrative support, construction support services, and a project contingency.

The preliminary capital cost estimate, in millions of 2008 dollars for the proposed Baton Rouge Loop is between $4,049M and $4,877M. Preliminary capital cost estimates for individual Corridor Alternatives range from $1,674M - $1,807M for the North Unit; $1,406M – $1,843M for the South Unit, and $969M - $1,227M for the East Unit.

FINANCING AND DELIVERY

The Baton Rouge Loop would be operated as a toll road, with collected toll revenues used to capitalize construction of the project and to fund operations and maintenance of the facility. The CAEA is the regional Baton Rouge toll agency that would own and be responsible for the planning, design, construction, and operation of the Baton Rouge Loop.

Pursuant to 23 USC Section 129(a)(2), toll facilities may be publicly owned or may be privately owned if the public authority with jurisdiction over the highway, bridge, tunnel, or approach has entered into a contract with one or more private persons to design, finance, construct, and operate the facility; and the public authority will be responsible for complying with all applicable requirements of this title with respect to the facility.

Additionally, pursuant to 23 USC Section 129(a)(3), if federal-aid highway funds are used for construction of, or improvements to, a toll facility or the approach to a toll facility, or if a state plans to reconstruct and convert a free highway, bridge, or tunnel previously constructed with federal-aid highway funds to a toll facility, a toll agreement would be required. The toll agreement would be executed between the FHWA, State DOT, and the toll authority.

The toll agreement must require that all toll revenues are first used for any of the following: debt service; reasonable return on private investment; and operation and maintenance, including reconstructing, resurfacing, restoring, and rehabilitating work. The toll agreement may also contain a provision regarding the use of any toll revenues not needed for the uses mentioned above. Decisions regarding the amount of tolls charged are made by the toll authority under state law.

Louisiana Legislature Revised Statues 48 § 2020 – 2037 outline the statutory authority for the creation, organization and operation of a toll authority. These Revised Statutes demonstrating the authority for the CAEA, as well as the CAEA Articles of Incorporation (June 14, 2004) and Reinstatement (August 15, 2007) and an Amendment to the Articles of Incorporation (May 6, 2008) are provided in Appendix F (pages F-12 though F-46).

The CAEA was initially established and governed by a Board consisting of five regional Parish Presidents and the LADOTD Secretary. In 2010, three of the Parish Presidents (Ascension, Iberville, and Livingston) elected to resign from the CAEA for varying reasons. Since the noted resignations, the CAEA is governed by the remaining two Parish Presidents (East Baton Rouge and West Baton Rouge) and the LADOTD Secretary. Prior to the construction of any portion of the project, the CAEA will be reconstituted to include a minimum of one member from each political subdivision included within the route of the Loop.

Methods available for delivery of the project under existing Louisiana statues are: 1) traditional toll road; and 2) public-private partnership. Financing for traditional toll roads relies on municipal bonds backed by toll revenues. In many instances public funding (i.e. gap funding) is needed to fill the gap between project costs and toll bond financing to complete a total finance package. For traditional toll road development, the CAEA would be responsible for day-to-day operations of the facility. The public-private partnership method relies on capitalization of the project by private sector concessionaires who also would operate the project under a long-term lease.

Preliminary analyses indicate that toll revenues can support development of the Baton Rouge Loop to varying degrees. Previously conducted studies indicate that if the entire project is built at one time, tolls may be expected to finance between 29% and 64% of the project costs, depending on market conditions at the time of financial close and the development method chosen for implementation. Any "gap funding" that may be needed, if tolls do not cover 100% of cost, would have to come from other sources such as the state's Transportation Mobility Fund that was set up for such purpose. This is the same finance model used in other state's for new start and reconfiguration projects. The idea is to minimize the public subsidy from traditional funding sources while maximizing the direct user fee, thereby leveraging scarce public funds to finance needed mega-projects that otherwise may never be built.

It is expected, however, that individual sections of the Baton Rouge Loop will be developed under a staged implementation plan, where pieces are constructed and opened to traffic over time. Based on current needs and traffic conditions, a likely candidate for the first section for implementation has been identified as the section of the North Unit from I-110 in East Baton Rouge Parish to I-12 in Livingston Parish, approximately 25 miles in length. Preliminary analyses indicates that this section has a high potential to be largely financed by toll revenue using the public-private partnership delivery method. Final decisions on the delivery method and detailed finance plans will be developed concurrent with the Tier 2 EIS.

BATON ROUGE LOOP CORRIDORS

Based on an evaluation of capital cost, traffic, environmental resources, and agency and public input a Preferred Baton Rouge Loop Corridor with 4 options in the southern unit has been identified in the Tier 1 EIS.

For the North Unit, Corridor Alternative NA is recommended as the Preferred Corridor. In the South Unit, four Corridor Alternative SB, SF, SNand SR are recommended as the Preferred Corridors. For the East Unit, Corridor Alternative EAis recommended as preferred corridor. The Preferred Corridor(s) for each corridor section is shown in *Figure ES-3*. Chapter 5 provides further information and the evaluation processes used to determine the Preferred Corridor Alternatives for each Unit.

Following the publication of the Tier 1 FEIS and the FEIS public comment period, FHWA will identify a "Selected Corridor" within the Record of Decision. The Selected Corridor will be advanced into the Tier 2 EIS phase of project development. The Selected Corridor will be identified after considering public and agency input and recommendations of the CAEA, and after refining inputs to the evaluation matrices presented in Chapter 5. During the Tier 2 EIS phase, one or more roadway alignments will be developed within the Selected Baton Rouge Loop Corridor, and individual projects within a Unit or Units will be designed to the level necessary to support Tier 2 evaluation. The Tier 2 NEPA process will evaluate and document social, economic, land use, environmental, financial feasibility, and cultural resource effects of indivdual segments (projects) of the overall Baton Rouge Loop.

Actual right of way acquisiton for this project will not occur until successful completion of the Tier 2 NEPA process and funding is secured. Corridor preservation is considered an important component of the project in order to facilitate staged development over time, if needed, and to inform potentially affected property owners. Corridor preservation will be considered more specifically during the Tier 2 NEPA phase as detailed alignments are developed, as committed in Section 6.5.

PREFERRED CORRIDOR ALTERNATIVE

Based on an evaluation of capital cost, traffic improvements, engineering factors, potential environmental resource impacts, agency and public input, and project objectives the Project Team is recommending a single Preferred Corridor Alternative for the north and east units and four (4) Preferred Corridor Alternatives for the south unit. The Preferred Corridors are listed below along with the corresponding corridor sections for each:

<u>North Unit</u>

Corridor Alternative NA (Sections N1, N2, N3, N10, N13, N14)

<u>South Unit</u>

Corridor Alternative SB (Sections S1, S14, S3, S4, S5, S7, S8)

Corridor Alternative SF (Sections S1, S14, S3, S4, S5, S7, S10, S11)

Corridor Alternative SN (Sections S1, S2, S13, S3, S4, S5, S7, S8)

Corridor Alternative SR (Sections S1, S2, S13, S3, S4, S5, S7, S10, S11)

<u>East Unit</u>

Corridor Alternative EA (Sections E1, E2, E4, E5, E8, E10)

Figure ES-3 identifies the Preferred Corridor Alternatives for the three units. For a summary of the evaluation parameters considered for the Preferred Corridor Alternatives is presented in Chapter 5.

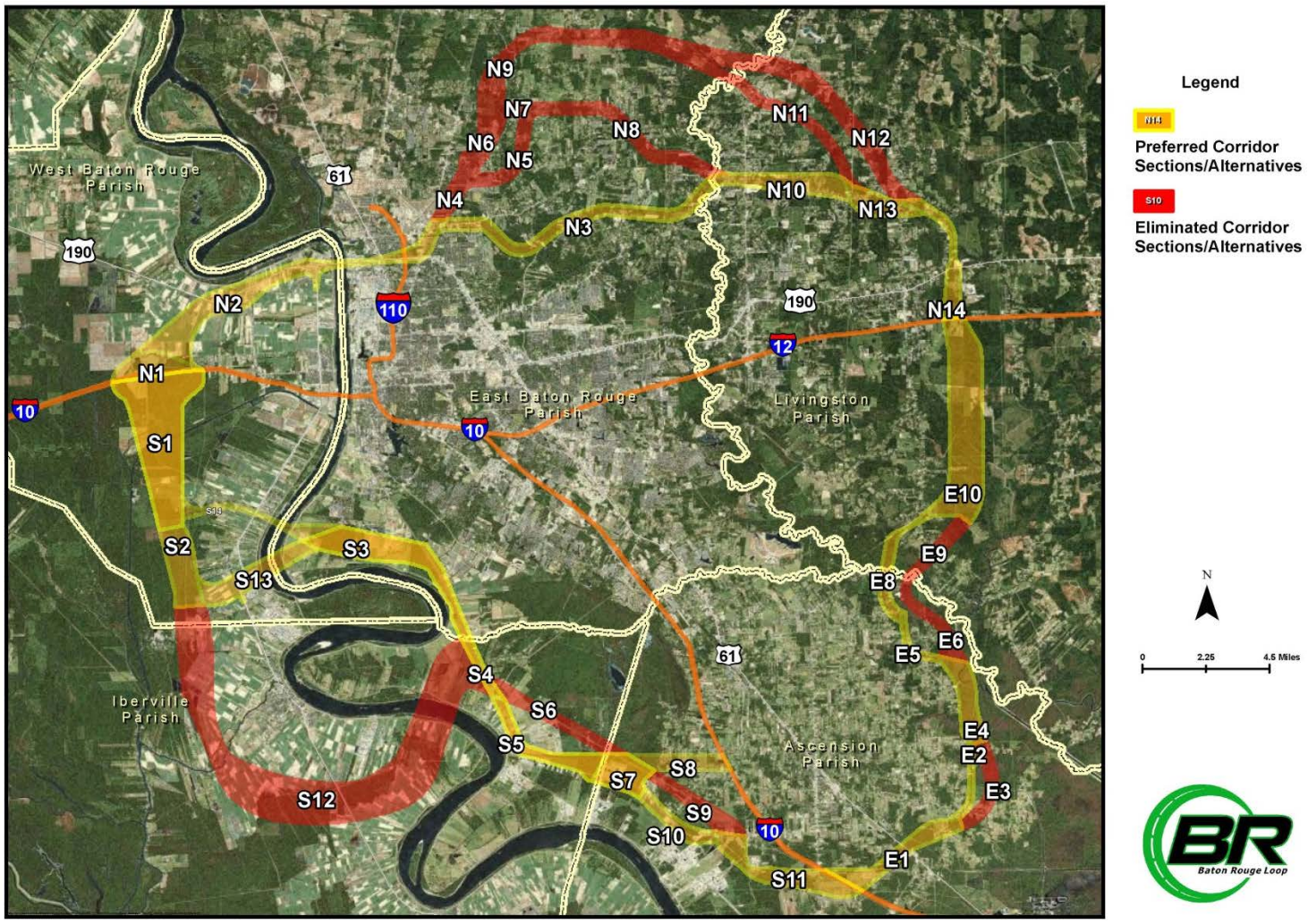


Figure ES-3: Preferred Project Unit Corridor Sections / Alternatives

NEXT ACTION

Following the Tier 1 FEIS public comment period, a Record of Decision (ROD) will be prepared to document the decision of a Selected Corridor Alternative and provide commitments and mitigation measures.

Chapter 1. PROJECT DESCRIPTION/PURPOSE AND NEED

1.1. Project Description

The Baton Rouge Loop is proposed as a 90 to 105 mile long circumferential controlled access free-flow toll roadway around Greater Baton Rouge, Louisiana with two new Mississippi River crossings. The proposed Project is located in the parishes of Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge.

The proposed Baton Rouge Loop would connect Interstate Highway (I) 12 east of Baton Rouge east of Walker to I-10 west of Baton Rouge, I-10 west of Baton Rouge to I-10 south of Baton Rouge, and I-10 south of Baton Rouge to I-12 east of Walker. Major interchanges are proposed at I-10, I-110, and I-12, and possibly U.S. 190, U.S. 61, and LA 1. Interchanges would also be provided at other state and local roadway locations as warranted.

The proposed Baton Rouge Loop would include two new Mississippi River crossings, one immediately south of the existing US 190 bridge, and the second south of the existing I-10 bridge.

The Baton Rouge Loop would initially be constructed as a four-lane facility, two 12-foot lanes each direction, with the ability to add at least two additional lanes, in the median when traffic demands warrant. The proposed typical roadway section would also provide space within the average 400' right-of-way to add continuous frontage roads, if needed, with bike paths and transit potentially sharing the footprint. It is anticipated that project construction would be accomplished in phases.

To assist in the Tier 1 EIS evaluation and documentation, the Project study area was defined to specific geographic regions called Units.

The three Project units are the North Unit, South Unit, and East Unit. The North Unit is north of I-12 east of Baton Rouge east of Walker to I-10 west of Baton Rouge, the South Unit is from I-10 west of Baton Rouge to I-10 south of Baton Rouge, and the East Unit is from I-10 south of Baton Rouge to I-12 east of Walker.

Although the Baton Rouge Loop is a circumferential roadway, each of the three Units has established independent utility and can function on its own, without further construction of adjacent units. These three units have the following corridor level logical termini:

- North Unit: 1-10 in West Baton Rouge Parish as the western logical terminus and 1-12 in Livingston Parish as the eastern logical terminus
- South Unit: I-10 in West Baton Rouge Parish as the western logical terminus and I-10 in Ascension Parish as the eastern logical terminus
- Eastern Unit: I-12 in Livingston Parish as the northern logical terminus and I-10 in Ascension Parish as the southern logical terminus.

In each Unit there are various smaller areas called corridor sections (sections). Sections combine to form multiple Corridor Alternatives (alternatives) in each Unit. *Exhibits 2-1*, *2-2, and 2-3* in Volume 3 show the North Unit, South Unit and East Unit and the specific Unit corridor sections.

1.2. Environmental Study Documentation

Consultation with the Federal Highway Administration (FHWA), Louisiana Department of Transportation and Development (LADOTD), and resource agencies determined that because of the location of the Baton Rouge Loop Corridor Alternatives and the proposed build action there was a likelihood of significant environmental impacts. Because of this potential significant effect on the environment, the National Environmental Policy Act (NEPA) requires the preparation of an environmental impact statement (EIS) for the proposed project.

For large complex transportation projects, NEPA studies using the tiering of EISs are allowed under Council on Environmental Quality (CEQ) regulation (40 CFR 1502.20 and 1508.28) and FHWA regulation (23 CFR 771.111g). Using a tiered approach, the first tier EIS focuses on broad issues such as general location, environmental resource presence, and land use implications of the major alternatives. The second tier NEPA document addresses alignment specific details on project impacts, costs, and mitigation measures.

In addition to NEPA, the Tier 1 EIS also addresses resources subject to regulation under:

- Clean Water Act Section 404 (Wetlands)
- Executive Order 11990 (Preservation of Wetlands)
- Rivers and Harbors Act of 1899 Sections 9 and 10 (Navigable Waterways)
- Clean Air Act (Air Quality)
- Executive Order 12898 (Environmental Justice)
- National Historic Preservation Act of 1966 Section 106 (Historic Properties)
- U.S. Department of Transportation Act of 1966 Section 4(f) (Parks, Recreation, Refuges, Eligible Archaeological Sites and Historic Properties);
- Land and Water Conservation Fund Act of 1965 Section 6(f)(3) (Parks and Recreation areas)
- Farmland Protection Policy Act (Prime Farmlands)
- Threatened and Endangered Species Act Section 7
- Executive Order 11988, Floodplain Management (Floodplains)
- United States Department of Transportation 5650.2, Floodplain Management and Protection
- Resource Conservation and Recovery Act of 1976 (Waste Sites)

- Comprehensive Environmental Response, Compensation and Liability Act (Waste Sites)

The Baton Rouge Loop Tier 1 EIS examines the No-Build Alternative and the Build Alternative that is composed of thirty-one (31) Corridor Alternatives in the three geographic Units. This Tier 1 EIS does not authorize construction, and it does not authorize the acquisition of right-of-way. The intent of the Tier 1 EIS is to present a Preferred Baton Rouge Loop Corridor(s), composed of preferred Unit Corridor Alternatives from the North, South, and East Units. The Preferred Unit Corridor Alternative(s) will be considered as part of the overall Baton Rouge Selected Unit Corridor Alternative, which will be identified in a Tier 1 Record of Decision (ROD). The Selected Baton Rouge Loop Corridor will be the study area for one or more Baton Rouge Loop Tier 2 EISs.

The Baton Rouge Loop Tier 2 EISs will focus on roadway alignments and facilities within the Selected Baton Rouge Loop Corridor to develop refined project details and potential impacts. For each Tier 2 EIS, the document will identify a preferred alternative alignment and facility design. A Tier 2 Record of Decision would document the selected alternative alignment in each Tier 2 EIS. This would then allow for further advancement of the Project including engineering design, construction authorization and right-of-way acquisition.

1.3. Purpose and Need

1.3.1. Project Purpose

The intent of the Baton Rouge Loop is to provide an alternate route for motorists to:

- Reduce existing traffic congestion and delay on Interstates 10 and 12 and other major arterial corridors;
- Reduce future traffic congestion and delay on Interstates 10 and 12 and other major arterial corridors;
- Expand roadway capacity;
- Enhance regional roadway and transportation freeway /toll road connectivity;
- Increase capacity and connectivity across the Mississippi River within the five-parish area; and
- Implement a sustainable, long term funded tolled facility around Baton Rouge generated from local legislation and in accordance with planning authority.

1.3.2. Need for the Project

Stress on the current roadways system in the five–parish region provides the context for the need for the Baton Rouge Loop.

- Traffic congestion and delays have steadily increased over the past 15 years, especially after Hurricane Katrina.

  The City of Baton Rouge and surrounding areas have experienced severe traffic congestion on local segments of interstate highways as well as connecting principal arterials for some time. The frequency and duration of backups and

travel delays have been steadily worsening over roughly the past 15 years a result of regional growth and development, but also due to physical deficiencies of existing critical roadways as well as issues related to connectivity and access. Traffic volumes resulting from new development have exceeded the capacities of major highways under peak hour conditions since the early 1990s. By 1998, it was recognized that this situation was extending for longer periods each day beyond the morning and evening peak hours (Rust Environment & Infrastructure, Inc., 1998). Compounding the problem, the Baton Rouge regional population increased by nearly ten percent between 2000 and July 2006, including an influx of roughly 235,000 in 2005 following Hurricane Katrina (see the *Traffic and Revenue Technical Memorandum* prepared for this project and Appendix A for additional discussion of population changes). It has been estimated that 25,000-50,000 evacuees have remained in the Baton Rouge region, producing a permanent increase of 30-45 percent in traffic volumes beyond the increases that were expected due solely to continuation of the pre-Katrina growth trends (Capital Region Planning Commission, 2007).

Connectivity is another factor that compounds regional traffic problems. There are no circumferential principal arterials serving the Baton Rouge metropolitan area. Residents and businesses in West Baton Rouge, East Baton Rouge, Iberville, Livingston, and Ascension Parishes are unable to efficiently access the regional transportation system. As development continues to expand in these areas, increasing travel demand coupled with the lack of connectivity is compounding the problem of reduced operational efficiency of the entire roadway network by spreading congestion to other major and minor arterials and secondary roads. Access limitations and connectivity issues also derive from the limitations caused by the two existing Mississippi River crossings in the study area, which are discussed further below.

Traffic operating conditions on a lane or roadway can be described in terms of levels of service (LOS), which can be used as a measure of congestion. LOS is an indicator of the effect of several traffic flow parameters, including operating speed, travel time and delay, interruptions to traffic flow, freedom to maneuver, driver comfort and convenience, and, indirectly, safety and operating costs. LOS is comprised of six categories ranging from A (free flow) to F (serious congestion). In congested urban areas, LOS D represents acceptable operating conditions, although LOS C is desirable.

LOS conditions on I-10 and I-12 for both the morning and evening peak hours were analyzed for the Baton Rouge Loop project using the Capital Region Planning Commission regional transportation model, as detailed in the *Traffic and Revenue Technical Memorandum* (2011). Existing conditions (2004) and projections for 2009 and 2032. Future years took into account planned improvements to both these roadways. LOS conditions are presented below for roadway sections in the study area in Table 1.1 for I-12 and in Table 1.2 for I-10.

Table 1.1 Peak Period Level of Service Conditions in the Study Area for I-12								
Location and Direction			2004		2009		2032	
			AM	PM	AM	PM	AM	PM
I-12 EB	I-10	Essen Lane (LA 3064)	C	E	C	D	C	D
I-12 EB	Essen Lane (LA 3064)	Jefferson Hwy (LA 73)	C	D	C	E	D	E
I-12 EB	Jefferson Hwy (LA 73)	Airline Highway (US 61)	C	E	C	E	D	E
I-12 EB	Airline Highway (US 61)	Sherwood Forest Blvd	C	E	C	E	D	E
I-12 EB	Sherwood Forest Blvd	Millerville Road	C	E	C	E	C	E
I-12 EB	Millerville Road	O'Neal Lane	B	D	C	E	C	E
I-12 EB	O'Neal Lane	Range Ave. (LA 3002)	C	E	C	E	C	E
I-12 EB	Range Ave. (LA 3002)	Juban Road	C	D	C	E	C	E
I-12 EB	Juban Road	Walker South Road	C	D	C	D	C	D
I-12 EB	Walker South Road	Satsuma Road	B	C	B	C	D	E
I-12 EB	Satsuma Road	S. Frost Road (LA 63)	B	B	B	B	C	D
I-12 WB	I-10	Essen Lane (LA 3064)	E	D	E	D	E	D
I-12 WB	Essen Lane (LA 3064)	Jefferson Hwy (LA 73)	D	C	E	C	E	D
I-12 WB	Jefferson Hwy (LA 73)	Airline Highway (US 61)	E	D	E	D	E	D
I-12 WB	Airline Highway (US 61)	Sherwood Forest Blvd	E	D	E	D	E	D
I-12 WB	Sherwood Forest Blvd	Millerville Road	E	C	E	D	E	D
I-12 WB	Millerville Road	O'Neal Lane	D	C	E	C	E	D
I-12 WB	O'Neal Lane	Range Ave. (LA 3002)	E	D	E	D	E	D
I-12 WB	Range Ave. (LA 3002)	Juban Road	D	C	E	C	E	C
I-12 WB	Juban Road	Walker South Road	D	C	D	C	D	C
I-12 WB	Walker South Road	Satsuma Road	C	B	C	C	E	D
I-12 WB	Satsuma Road	S. Frost Road (LA 63)	B	B	B	B	C	C

Table 1.2 Peak Period Level of Service Conditions in the Study Area for I-10								
Location and Direction			2004		2009		2032	
			AM	PM	AM	PM	AM	PM
I-10 WB	Lobdell Hwy. (LA 415)	LA 1	C	C	C	D	D	E
I-10 WB	LA 1	Highland Road	D	D	D	E	E	E
I-10 WB	Highland Rd	I-110	C	C	C	D	E	E
I-10 WB	I-110	Dalrymple Drive	E	E	E	E	E	E
I-10 WB	Dalrymple Drive	Perkins Road	E	E	E	E	E	E
I-10 WB	Perkins Road	Acadian Thruway	E	D	E	E	E	E
I-10 WB	Acadian Thruway	College Drive	E	D	E	D	E	E
I-10 WB	College Drive	I-12	D	D	E	D	E	D
I-10 WB	Merge with I-12	Essen Lane	D	D	D	D	E	D
I-10 WB	Essen Lane	Bluebonnett Blvd	E	E	E	E	E	E
I-10 WB	Bluebonnett Blvd	Siegen Lane	E	E	E	D	E	D
I-10 WB	Siegen Lane	Highland Road	E	D	E	D	E	C
I-10 WB	Highland Road	LA 73	D	C	E	C	E	D
I-10 WB	LA 73	LA 30	C	C	C	C	E	D

Table 1.2 Peak Period Level of Service Conditions in the Study Area for I-10								
Location and Direction			2004		2009		2032	
			AM	PM	AM	PM	AM	PM
I-10 WB	LA 30	LA 44	C	B	C	C	E	D
I-10 WB	LA 22	Airline Hwy (US 61)	B	B	B	B	C	C
I-10 WB	Airline Hwy (US 61)	LA 641	A	A	B	B	C	B
I-10 EB	Lobdell Hwy (LA 415)	LA 1	C	C	C	D	D	E
I-10 EB	LA 1	Highland Road	D	D	D	D	E	E
I-10 EB	Highland Road	I-110	C	C	C	D	D	E
I-10 EB	I-110	Dalrymple Drive	E	E	E	E	E	E
I-10 EB	Dalrymple Drive	Perkins Road	E	E	E	E	E	E
I-10 EB	Perkins Road	Acadian Thruway	D	E	D	E	D	E
I-10 EB	Acadian Thruway	College Drive	D	E	D	E	D	E
I-10 EB	College Drive	I-12	E	E	D	E	E	E
I-10 EB	I-12	Essen Lane (LA 3064)	D	D	D	D	E	E
I-10 EB	Essen Lane (LA 3064)	Bluebonnett Blvd	E	E	E	E	D	E
I-10 EB	Bluebonnett Blvd	Siegen Lane	D	E	D	E	C	D
I-10 EB	Siegen Lane	Highland Road	C	E	C	E	C	D
I-10 EB	Highland Road	LA 73	C	D	C	E	D	E
I-10 EB	LA 73	LA 30	C	C	C	C	D	E
I-10 EB	LA 30	LA 44	B	C	C	C	D	E
I-10 EB	LA 22	Airline Hwy (US 61)	A	B	B	B	C	C
I-10 EB	Airline Hwy (US 61)	LA 641	A	A	B	B	B	C

As can be seen from the data in the tables, many sections of both I-12 and I-10 in the study area operated at LOS D or E under existing (2004) conditions, which represented undesirable levels of traffic congestion. In addition, although data for 2005 were not evaluated as part of this study, it was evident that LOS conditions throughout the study area deteriorated sharply one year later with the substantial increase in regional population resulting from Hurricane Katrina. By 2032, traffic volumes are expected to increase 28%-29% on I-12 and roughly 32% on I-10 compared to 2004 volumes, which will result in further deterioration in LOS conditions in spite of currently planned improvements to both interstate highways, as shown in the tables. Additional analysis is presented in the *Traffic and Revenue Technical Memorandum* (2011).

A national study of interstate freight movement on the entire length of I-10 from Florida to California identified the urban section of this interstate in the Baton Rouge vicinity as a major impediment to safe and efficient traffic operations and recommended that improvements be made (including adding capacity) to enhance freight movement (Wilbur Smith Associates, 2003). In general, year 2000 data indicated that truck traffic comprised 14% of the total traffic flow on I-10 in the Baton Rouge area, that the highway operated at LOS E and F during the peak period, and that truck traffic contributed significantly to these deficiencies. The study also indicated that eastbound I-10 east of the Mississippi River bridge routinely experiences serious congestion due to geometrical as well as traffic considerations and represented a major bottleneck affecting freight movement. In addition, projections to the year 2025 indicated that more sections of I-10 and I-12 will

experience worsening LOS and that poor LOS conditions would exist even without the contribution of heavy truck traffic.). Information on current and projected traffic operational deficiencies on I-10 from this study is presented in Appendix A of this Final EIS.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) described the importance of freight movement to the national interest and specified that a National Freight Network will be established to identify portions of the U.S. transportation system that play the most significant role in freight transportation. As part of this effort, USDOT was given responsibility for designation of a Primary Freight Network (PFN) comprised of those elements of the highway system that play the most critical role in the movement of freight. MAP-21 also required the USDOT to assist the states in directing resources to improve the performance of highways comprising the PFN to improve the efficiency of freight movement. Both I-10 and I-12 in the Baton Rouge vicinity have been included in the draft PFN. This designation, when finalized, will bolster recognition of the national importance of these highways to freight movement and will add impetus to the need for congestion relief to expedite freight movement. A notice announcing the draft PFN and a request for comments was published in the Federal Register on November 19, 2013 (78 FR 69520) and the comment period closed on February 15, 2014.

- Traffic flow is restricted at the I-10 and US 190 Mississippi River Bridge crossings, and convenient alternative crossings do not exist.
  - The two currently operational alternative structure crossings of the Mississippi River are located at Donaldsonville, LA which is 33 aerial miles south of the I-10 bridge and at New Roads, LA which opened in 2011 and is located 21 aerial miles north of the US 190 bridge and 25 aerial miles north of the I-10 bridge.
  - Plaquemine Ferry, the only ferry currently serving the Baton Rouge Loop study area, has been sporadic in its reliability and operation due to river and weather conditions and/or mechanical conditions. White Castle Ferry used to serve the Baton Rouge Loop study area, but has been permanently closed as of September 21, 2013.
- Additional crossings are needed over the Mississippi River:
  - To increase capacity and improve connectivity between the east and west banks of the river,
  - To provide alternative routes for emergency evacuation and emergency response incidents, and
  - To allow for redundancies for the two aging existing river crossings.
- Lack of convenient alternative routes and system connectivity forces local traffic onto I-10 and I-12, increasing congestion.

The following need was identified after the Public Hearing held in December 2011.

- Revenues needed for the long-term funding and sustainability of a route around Baton Rouge that aligns with local legislation and planning authority.

Tolling as a need for the Project was established based on regulations and case studies presented by Chief Counsel D.J. Gribbin in the memorandum: *NEPA Analysis of Toll Roads (October 2004)*. The memorandum states that

a toll road can be part of a project's Purpose and Need when it is determined that "the need for a toll road came out of the transportation planning process or another similar process."

The tolled Baton Rouge Loop Project was created and fostered by planning of the state government via the LADOTD and the local metropolitan planning organization, Capital Regional Planning Commission (CRPC). In March 2004, CRPC, in conjunction with LADOTD, launched a feasibility study for *The North Bypass for Baton Rouge, Louisiana*. The North Bypass Project, which connected I-110 to I-12, had been included in the Long Range Statewide Transportation Plan, but was unfunded at the time. Due to that need, the feasibility study was based on constructing a tolled facility for the bypass. Later in 2008, the *Baton Rouge Loop Implementation Plan* built on that planning work and included similar corridors studied for the North Bypass in the northeast quadrant of the full Baton Rouge Loop route.

In addition, the shortage of funding needed for transportation improvements in Louisiana prompted the consideration of alternative funding approaches. In 1997, the Louisiana legislature passed statewide toll legislation that enables toll roads such as the Baton Rouge Loop. In 2004, the Capital Region Expressway Authority (CAEA) was formed as a transportation authority under the 1997 legislation and created the Baton Rouge Loop as a tolled project. Since 1997, additional pieces of toll-enabling legislation were passed, including the 2006 enactment of Public Private Partnership (PPP) and Transportation Mobility Fund (TMF) legislation. The PPP legislation permits the investment of private equity into Louisiana's transportation system. The TMF legislation leverages new state transportation funding with project-level toll revenues to create a larger total transportation program than could be delivered by traditional funding. In 2008, additional legislation was passed dedicating a revenue stream into the TMF.

Furthermore, and in accordance with precedence discussed in the *NEPA Analysis of Toll Roads* memorandum, tolling as a need corresponds with the following goal of the Baton Rouge Metropolitan Transportation Plan (MTP) 2037 (June 2013):

> *Increase(ing) the potential benefits to be derived from expenditure of scarce public resources by developing projects capable of attracting private-sector investment and broad community support.*

Additional information and data supporting Project Need is contained in Appendix A and includes discussions on the following:

- Regional population and traffic growth
- The National I-10 Freight Corridor Study
- Comparisons of connectivity at major river crossings in Louisiana
- I-12 Incident Data
- Regional public opinion polls

Also, Table 2.41, Project Study Area 2032 Average Daily Two-Way Interstate Highways Traffic Volumes, found in Chapter 2 supports the project need.

1.4. Conclusion

Based on the available information there is a need for an alternative traffic route in the five-parish Baton Rouge Loop Project area to assist in alleviating existing and future traffic delays and congestion. This alternative route is also needed to enhance regional transportation network connectivity, and improve the safe movement of people and goods within and through the five-parish Baton Rouge Loop Project area.

A revised East Baton Rouge Parish Comprehensive Plan, called FUTURE BR, was updated and approved in 2011 for the region. It is noted that the FUTURE BR Transportation Plan recognizes the northern corridor of the Baton Rouge Loop as one of the projects identified to reduce regional traffic congestion.

CHAPTER 2 ALTERNATIVES CONSIDERED

2.1. Development

A highway loop system for Baton Rouge to supplement I-10 and I-12 has been discussed for decades and studied extensively, first in the mid-1990s, again in the late 1990s for a southern bypass and most recently in 2004 for a northern bypass.

In 2007, the Parish Presidents of Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge resolved to construct a loop around the greater Baton Rouge area. To accomplish this, East Baton Rouge Parish funded the Baton Rouge Loop Implementation Plan. A series of six technical memorandums were 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 and revenue, financial feasibility, community involvement, and implementation planning. An Executive Summary was also developed and summarizes the content of these memorandums. The project team members developing the Implementation Plan were BR Loop Executive Committee (currently called the CAEA), HNTB Corporation, Stantec Inc. (formerly ABMB Engineers, Inc.), URS Corporation, KPMG, and Marmillion/Gray.

The Implementation Plan Executive Summary is presented in Appendix G and the electronic files of the six technical memorandums are contained on a CD within the same Appendix.

During the later stages of the Implementation Plan, the Capital Area Expressway Authority (CAEA) was formed under 1997 Louisiana enabling legislation. The CAEA was initially established and governed by a Board consisting of five regional Parish Presidents and the LADOTD Secretary. In 2010, three of the Parish Presidents (Ascension, Iberville, and Livingston) elected to resign from the CAEA for varying reasons. The CAEA is now governed by the remaining two Parish Presidents (East Baton Rouge and West Baton Rouge) and the LADOTD Secretary. Prior to the construction of any portion of the project, the CAEA will be reconstituted to include a minimum of one member from each political subdivision included within the route of the Loop.

2.2. Implementation Plan

2.2.1. Project Boundaries – Implementation Plan

An initial step in the development of the Implementation Plan was the determination of project boundaries. Project boundaries were created to reflect the area within which the Project Team anticipated identifying alternative routes for the highway loop system based on travel patterns and the location of regional population centers. The Implementation Plan project boundaries are shown in *Figure 2-1.*

The outer boundary represented the outside limit that would provide congestion relief within the five-parish region and still potentially generate sufficient tolls to fund construction of the Project. It incorporated the major urbanized areas that generate

the majority of traffic within the five-parishes. Because of length, cost, and location, alternatives outside this boundary would likely result in unreasonable costs when compared to anticipated ridership.

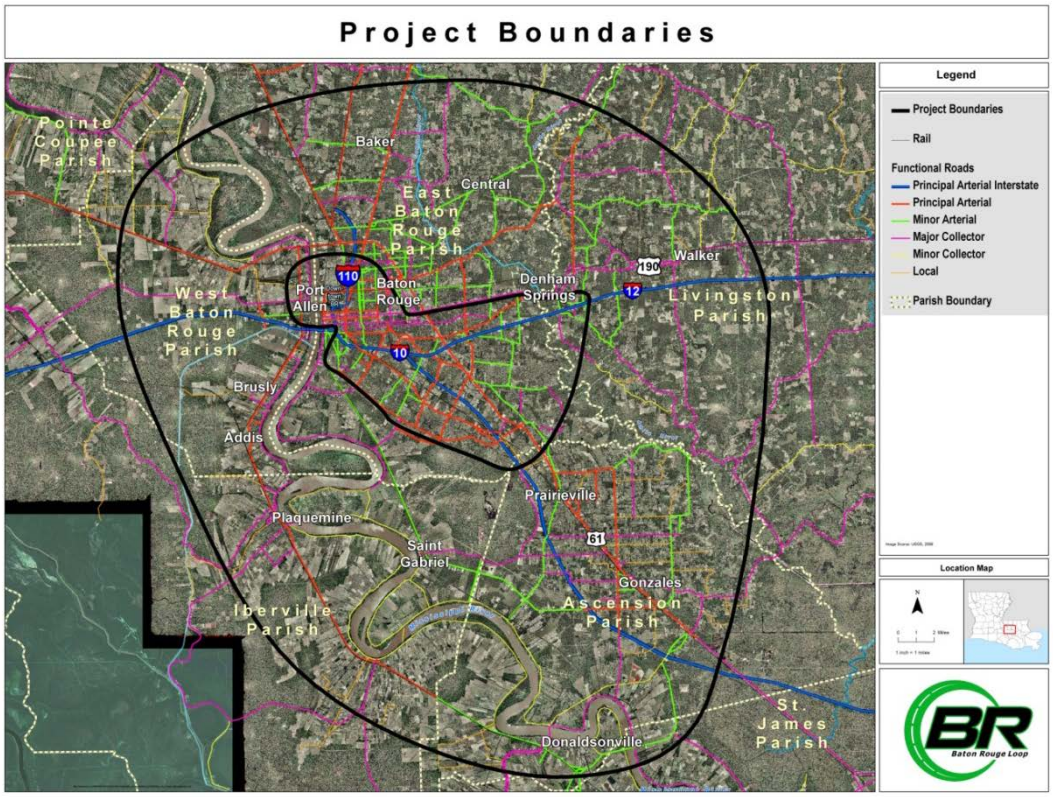


Figure 2-1: Implementation Plan Boundary Map

The inner project boundary represented the inside limit at which the Project 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 and provides a reasonable spacing from existing I-10 and I-12 to attract traffic and maximize congestion-reduction benefits. The boundary was also established to allow consideration of using the existing Mississippi River crossings along US 190 and I-10.

2.2.2. Corridor Alternatives - Implementation Plan

2.2.2.1. Major Controlling Constraints – Implementation Plan

Within the established project boundaries, major constraining factors that influence the location of a major transportation facility like the Loop were identified. The most significant and challenging of these is the Mississippi River as it divides the 5-parish region along the entire length of the project area. The Mississippi River must be crossed twice in order to provide a complete loop within the region and meet the purpose and need for the project. As a result, reasonable and feasible potential crossing locations were determined in concurrence with the USCG, USACE, and

other state agencies and navigational interests. Fourteen (14) crossing locations were identified as shown in *Figure 2.2*.

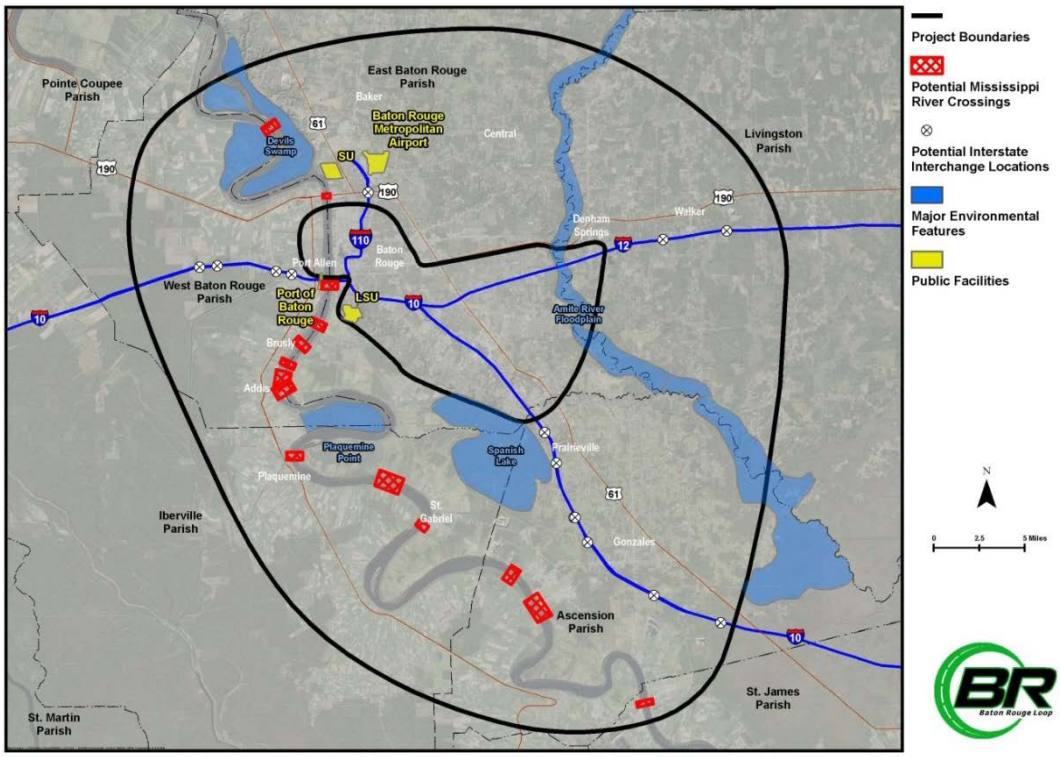


Figure 2-2: Implementation Plan Major Controlling Factors

In order for the proposed Loop project to link to the existing interstate network, potential connection points to the existing system were also identified. New access or interchanges to the existing interstate system must meet interchange spacing requirements as regulated by FHWA. Potential interchange locations along the existing interstate system were identified that would meet this criteria and are shown in *Figure 2.2*.

Major public facilities and contiguous large-scale sensitive environmental features were also identified in the project area that needed to be avoided to the extent practicable. A listing of all the major controlling constraints integrated into the project investigation included:

- Topographic / Engineering Features
  - Mississippi River Crossing Locations
  - Connections to Existing Interstates
- Major Public Facilities
  - Louisiana State University Campus
  - Southern University Campus
  - Greater Baton Rouge Airport
    - Port of Greater Baton Rouge
- Contiguous Large-Scale Sensitive Environmental Features

- Mississippi River Wetlands & Floodplains
- Amite River Wetlands & Floodplains
- Spanish Lake Wetlands and Drainage Basin

2.2.2.2. Initial Corridor Alternatives – Implementation Plan

Based on the identified initial major controlling constraints, reasonable and feasible alignments within the project area were identified. Wide corridor bands were then created by combining several adjacent potential alignments with the corridor shapes influenced by the location of the environmental and physical constraints. Generally, corridor widths ranged between 1000 to 4000 feet. In total seventy-nine (79) corridor alternatives were initially identified for the Baton Rouge Loop as shown in *Figure 2-3*.

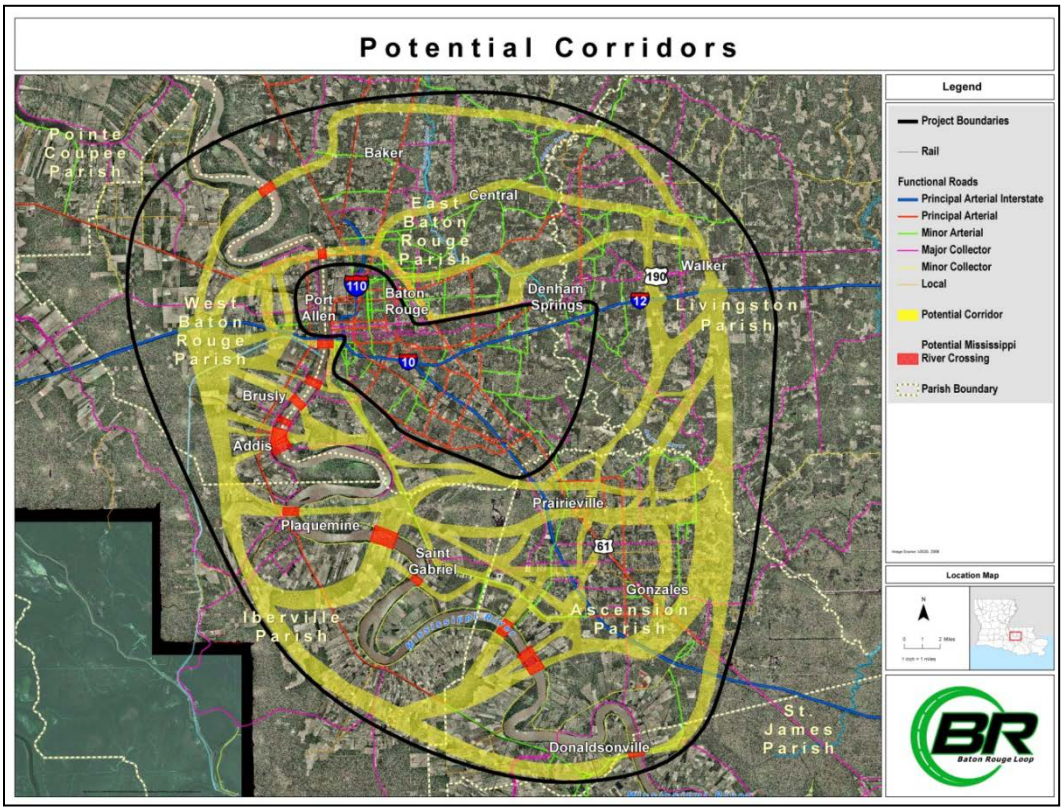


Figure 2-3: Implementation Plan Potential Corridor Alternatives

2.2.2.3. Corridor Refinement Process

Refining corridor widths and placement, along with the elimination of corridors, was an iterative process that required consideration and evaluation of several factors. These included: continued input from engineering analyses and traffic modeling and feedback from resource/regulatory agencies, the public and elected officials. Also, a more stringent screening evaluation of constraints mapping was developed using GIS in collaboration with the Project Team's extensive knowledge of the study area to identify avoidance and/or minimization areas related to human, natural and physical environments.

An exhaustive search was performed to obtain all GIS spatial analysis data for the study area, including geographic boundaries and terrain, municipal and community features, environmental resources, socioeconomic data, etc.

The Project Team coordinated with numerous resource and regulatory agencies to obtain all relevant spatial data. A complete listing of all GIS data and data sources is provided in Section 2.1 (pages 2-6 through 2-8) of the Implementation Plan, Technical Memorandum No. 2. Once the data was obtained, it was used to develop the constraints mapping, thereby identifying avoidance and/or minimization areas relating to the human, natural, and physical environments necessary for screening of the corridor alternatives. The areas of environmental concern mapped within the Implementation Plan, are shown in Technical Memorandum No. 2 (see *Figures 2-1 through 2-8*) and included:

- Dense residential areas, community facilities, and planned development;
- Public lands, parks, and recreation facilities;
- National Register of Historic Places Districts and Properties;
- Potential hazardous materials sites;
- Wetlands;
- Potential Rare, Threatened and Endangered Species Habitat;
- Floodplains; and
- Water bodies.

Valuable insight about the study area, including constraining elements, was also gathered through various outreach efforts. These outreach efforts are detailed in the Implementation Plan, Technical Memorandum No. 6, Public & Agency Outreach. In summary, an Executive Committee (Parish Presidents), a Stakeholder Committee (civic and community leaders), and an Advisory Committee (technical experts appointed by the Executive Committee) met regularly throughout the corridor development process to provide input relative to the corridor alternative screening efforts. Additionally, open houses were held to inform the public about the project and obtain input in identifying constraints and modifying proposed corridors. The Project Team also held several small group meetings upon request by civic and other interested parties and individual meetings as requested/needed to inform key individuals or stakeholders.

As part of the coordination and consultation process, an Agency Outreach & Coordination Guide was created to facilitate and document how coordination would occur between the Project Team and agencies. Agency coordination efforts are detailed in Section 5 of the Implementation Plan, Technical Memorandum No. 6 and Chapter 7 and Appendix E of the Tier 1 EIS. Multiple agency coordination meetings were held throughout the corridor screening process with the FHWA, LADOTD, the United States Army Corp of Engineers (USACE), and the United States Coast Guard (USCG). In March 2009 and July 2009, agency coordination meetings were conducted to provide project updates and solicit input on the corridor alternative screening and refinement process. A live GIS demonstration explaining the screening process and rationale for the development of various corridor alternatives was presented at the March 2009 meeting. Additionally, agencies were invited to comment on the proposed range of alternatives and the overall screening approach. Agencies represented at the March 2009 and/or July 2009 meetings included the Louisiana Department of Wildlife and Fisheries (LDWF), Environmental Protection

Agency (EPA), U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS), U.S. Geological Survey Louisiana Water Science Center (USGS LWSC), Department of Natural Resources Coastal Management Division (DNR CMD), Department of Environmental Quality Office of Environmental Assistance (DEQ OEA), etc. The meeting minutes from the March 2009 and July 2009 agency coordination meetings, including the complete list of agency attendees, are provided within Appendix E of the Tier 1 EIS.

Additionally, traffic models were utilized in the corridor refinement process to both eliminate and refine corridor placements. Because relieving traffic congestion is the foremost goal of this project, corridors were refined to maximize ridership of the Loop, thereby relieving other existing major roadways. Also, because the Loop would be a toll-funded project, the ability to finance the project is directly related to the volume of traffic attracted to the Loop.

2.2.2.4. Corridor Evaluation and Identification

An evaluation and screening process was developed for the potential corridor alternatives in order to determine which alternatives to eliminate and those to carry forward into the Tier I EIS. Several evaluation factors were determined and are more fully discussed in the Implementation Plan, Technical Memorandum No. 1. Listed below is a summary of the factors that were applied to each corridor segment:

- Ability to Adequately Relieve Existing Congestion: The primary purpose of the project is to relieve traffic congestion. Based on results of the traffic studies performed to date, some segments do not achieve this purpose, particularly when compared to other segments.
- Ability 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 a result of the traffic analyses and is typically a close corollary to relieving traffic congestion.
- Construction Cost: 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: 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.
- Community Impacts / Conflicts with Planned Development: Not all impacts to communities and development can be avoided. However, some corridor 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.
- 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.

- Impacts to Wetlands and Floodplains: Given the magnitude and length of the 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.
- 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 Project should avoid impacts to these areas if possible.
- Impacts to Mississippi River Navigation: Input from the Coast Guard, Corps of Engineers, and river navigation interests is critical in determining 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, docks; or, navigational concerns due to bridge pier placement in relation to the navigational channel.

In applying the corridor evaluation factors to the potential alternatives, several corridor segments were eliminated as shown in red in *Figure 2-4*. These results were also included in a Corridor Evaluation Matrix, which is presented as *Figure 4-12* of Implementation Plan, Technical Memorandum No. 1. Within the Corridor Evaluation Matrix, a red "X" was shown in the column where factors were considered to be negative for a particular segment. The following is a summary of the corridor evaluation results shown in *Figure 2-4*:

- Corridors connecting to the four southernmost bridge crossing locations were not feasible and were eliminated because they attracted low traffic volumes, generated low toll revenue and resulted in higher costs due to the longer route lengths.
- Corridors near the Port of Baton Rouge were eliminated due to the close proximity of the locks connecting the Mississippi River to the Intracoastal Canal Waterway due to navigation concerns expressed by the U.S. Coast Guard, Corps of Engineers and navigation interests. Two more potential Mississippi River crossings were eliminated on the west bank of the river due to potential impacts to historic features near Brusly and downtown Plaquemine. Corridors at the west end of the I-10 Mississippi River Bridge were eliminated due to complications with creating interchanges or connections to major feeder roadways.
- Corridors along Airline Highway and Florida Boulevard were not feasible due to impacts to access and development impacts and costs in these highly developed corridors. A middle corridor through the city of Central was eliminated due to the conflict with a planned town square north of Hooper Road.
- Routes crossing through the core of the Spanish Lake drainage basin were eliminated due to impacts to wetlands and other natural resources. A corridor adjacent to a major powerline within the southern portion of the drainage basin was left to further evaluate impacts during the Tier I EIS.
- Corridors within the heart of Ascension Parish were eliminated due to prohibitive right-of-way costs, impacts to public properties, and bisecting communities such as Prairieville, Gonzales, Galvez, and St. Amant.

- Other corridors on the east bank of the Comite River in southern Livingston Parish were eliminated due to impacts to wetlands and other environmentally sensitive areas and disruption to Port Vincent and French Settlement communities.

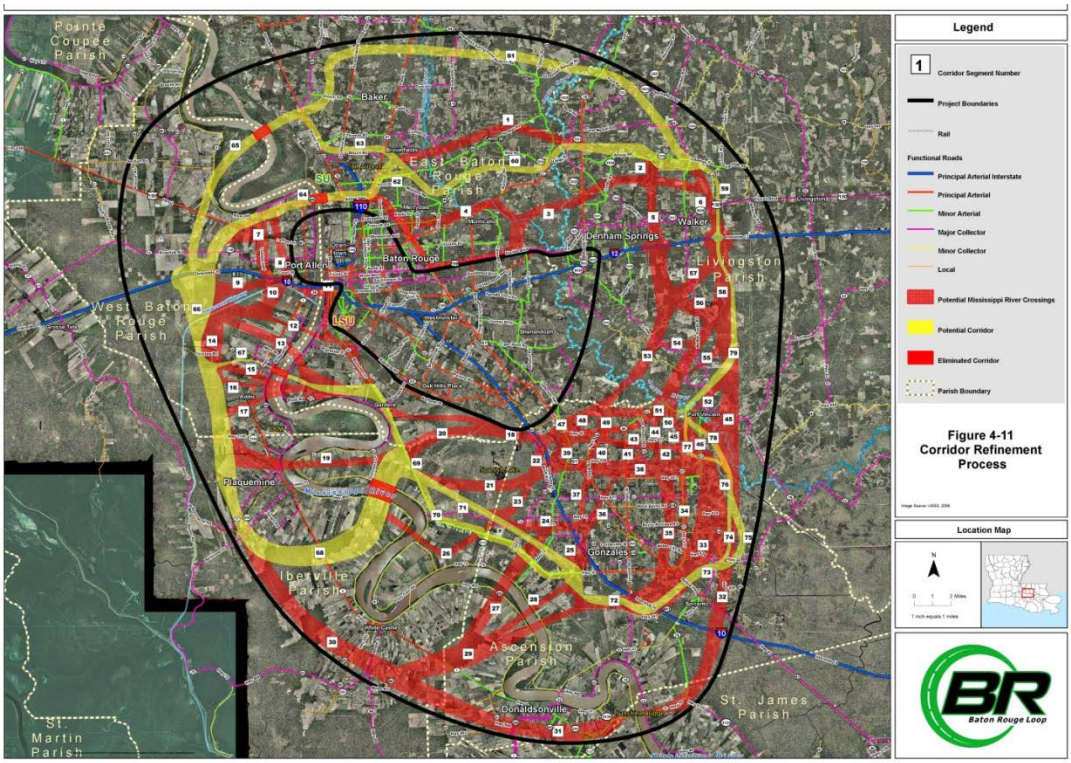


Figure 2–4: Implementation Plan Refined Corridors

Based on these results, the Project Team was able to identify the combination of corridor segments having the fewest negative impacts. Additional corridor alternatives were added during the latter stage of the Implementation Plan after further engineering refinement and agency and public input determined them to be feasible and relevant to advance. A summary of all potential corridor alternatives advanced to the Tier 1 EIS phase of the project is shown in *Figure* 2–5.

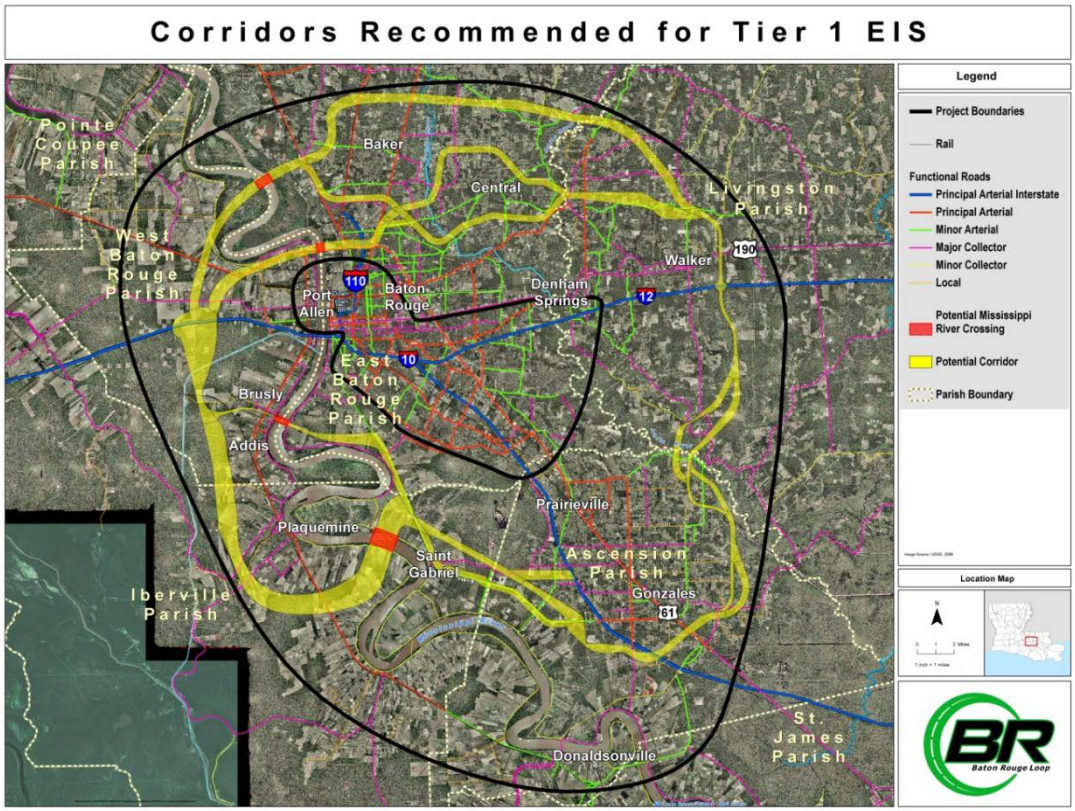


Figure 2–5: Corridor Alternatives Advanced to Tier 1 EIS

2.3. Transit Alternative(s)

Transit options were examined in terms of their ability to satisfy the components of the project purpose and need. A transit alternative could involve one or a combination of several technologies including rubber-tired, predominantly fossil-fuel powered options (e.g. bus rapid transit [BRT] and traditional bus service), and fixed guideway options (e.g. light rail transit [LRT] and commuter rail). As discussed elsewhere in this EIS, limited bus service in East Baton Rouge Parish provided by the Capital Area Transit System (CATS) is the only transit service in the Baton Rouge Loop project area; there is currently no public transit service in Livingston, Iberville, or Ascension Parishes. Consequently, a transit alternative would primarily involve implementation of new service rather than expansion of existing service. There are numerous options for a transit alternative, including, for example, a loop system following the alignment of the highway corridor that could serve as a collector, possibly using LRT or commuter rail technologies, which could then c
passengers into connecting transit services such as buses, BRT, or, possibly
for transport to final destinations in Baton Rouge or towns near the route. Al
transit alternative could consist of a series of park-and-ride lots at interchanges or points of congestion on interstates and/or major arterials with direct transit service between these lots and downtown or major suburban destinations but without service extending along the length of the project corridor.

In general, and as defined by the purpose and need (Section 1.3), the Baton Rouge Loop has been proposed to remedy problems in the Baton Rouge regional roadway network relating to existing and future congestion and delay, roadway capacity, and connectivity. It is also intended to eliminate existing choke points at the Mississippi River by providing additional needed crossings that would expand capacity and improve daily traffic flow on a large portion of the regional roadway network. It has been concluded that a transit alternative could partially satisfy some elements of the project purpose and need in specific, limited portions of the project area. However, on a regional level, transit would not offer an effective solution for the widespread problems that the Loop concept was formulated to address, as discussed below.

In regard to reducing existing and future congestion and delay on I-10, I-12, and major arterial highways, experience in other areas of the U.S. has shown that, even under optimum conditions, the potential effects of transit on reducing roadway congestion is minimal. Bus and rail improvements were shown to have low to medium effectiveness (defined as a ten percent or less impact on congestion levels) at the area wide (city or metropolitan area) level, and there is some dispute regarding whether transit services provide much congestion relief at all at the local level (Cambridge Systematics, Inc. and Resource Systems Group, Inc., 2008; Duranton, Giles and Matthew Turner, 2009). In addition, it is generally recognized that transit systems must serve areas with high densities of potential passengers (e.g. urban or suburban areas with high population densities and/or concentrations of activity centers such as employment or retail destinations) to generate ridership that could noticeably affect congestion levels (Federal Transit Administration, 2009; Institute of Transportation Engineers, 1989). Even if a transit alternative could maximize ridership from mode shift patrons, it would still have to attract the majority of its ridership from other sources of commuters if it is to survive in the long term. Existing development patterns in the project corridor would not act as a source for this needed patronage. Land in the North, South, and East Units is sparsely developed, with wetlands and agricultural lands comprising the predominant land uses, as detailed in Chapter 3.0. This is not by chance; that is, the potential corridor segments were chosen to minimize impacts of new highway construction on developed land and on potential commercial and residential relocations. As a result, the lack of development and low population density would limit the ability of a transit alternative along the Loop alignment to attract the ridership levels needed to succeed in the long term.

Given the high traffic volumes and severe levels of congestion that currently exist on I-12, I-10, and major arterials in the project area, a transit alternative cannot reasonably be expected to divert a sufficient number of motorists to cause an appreciable improvement in roadway traffic flow and operations. In regard to future congestion, 2032 traffic volumes on I-12 and I-10 are predicted to increase by approximately 29 percent and 32 percent, respectively, over 2004 volumes (see Chapter 2.0). As discussed above, a transit alternative would likely not be an effective solution for reducing existing congestion, and, as a result, would also not represent a remedy for the substantial increases in traffic volumes expected in the future.

In regard to expanding roadway capacity, another purpose of the proposed project, a transit alternative would have no effect since any proposed transit system would

likely operate either within shared lanes of existing roadways or within its own exclusive guideway that would be inaccessible to motor vehicles. A transit alternative would also have no direct effects on improving the movement of goods and services as specified in the purpose and need since transit would not provide a means for conveying service providers or for transporting freight and other cargo. If transit is implemented at the local level at one or more locations in the project corridor, it could provide some minor congestion relief that, in turn, could indirectly benefit movement of goods and services by improving commercial vehicle flow, but these effects would likely be minimal.

A stand-alone transit alternative would also not support the project goal to provide increased capacity and connectivity of the transportation system across the Mississippi River within the five-parish region. One or more bridges that would only allow access for transit vehicles would not enhance connectivity between roadway networks on opposite sides of the river, and there would be no associated increase in capacity.

Although a transit alternative would not satisfy the project purpose and need if implemented along the entire 90- to 105-mile long project corridor, transit may offer a partial solution to congestion at specific locations within the corridor. The effectiveness of transit options at these locations would depend on many factors that affect ridership, including the distance and travel time to desirable destinations, the efficiency of the service provided, and other convenience factors. In addition, although frequently discounted as a stand-alone alternative to highway construction projects, transit can provide benefits for congestion reduction if included as one component of a larger congestion management strategy. Additional analysis would have to be performed to determine if such a role exists for transit services to compliment development of the Baton Rouge Loop project. Should such a determination be made in the future and as to accommodate potential future transit needs, a 400 foot right-of-way is assumed for the proposed Baton Rouge Loop, which would allow for the addition of mass transit options such as a dedicated bus lane or LRT.

2.4. Tier 1 EIS

The Tier 1 EIS was initiated in 2008; see Notice of Intent Appendix E. The alternatives considered in this Tier 1 EIS are the No-Build Alternative (Section 2.4.1) and the Build Alternative (Section 2.4.2).

2.4.1. No-Build Alternative

The No-Build Alternative consists of taking no action to build a toll roadway in the Baton Rouge Loop study area. The No-Build Alternative is considered to be the transportation system as it currently exists in the Baton Rouge Loop study area plus those transportation system enhancements, excluding the Baton Rouge Loop, included in the:

- Capital Region Planning Commission (MPO) Transportation Improvement Program (TIP) Fiscal Years 2008 – 2013,
- Statewide Transportation Improvement Program (STIP) 2007 - 2012, and

- Baton Rouge Metropolitan Area Transportation Plan Update, 2004, Financially Constrained Plan, Stage I, II, and III 2004 – 2029, Modified January 2006

The MPO TIP in Section 2.1.1 Financial Constraint states:

"The projects contained in the Transportation Improvement Program (TIP) (FY 2006-FY 2009) are derived from the area's overall 25-year transportation plan. Both the TIP and MTP have been financially constrained to reflect realistic and available levels of project funding."

"Projects shown in the TIP for advancement were fully discussed with the MPO Transportation Policy Committee members and the Louisiana Department of Transportation and Development prior to placement in the TIP. Only projects that were mutually agreed upon with LADOTD as to overall merit and funding availability were selected for TIP and State TIP inclusion."

"In addition, SAFETEA-LU provided $24.2 billion for state demonstration (high priority) projects, which was approximately 9.9 % of the guaranteed spending. The Baton Rouge MPO area received over $49.9 million for fifteen projects. A certain percentage was allowed to be spent each year, as prescribed by SAFETEA-LU."

"Those projects identified for National Highway System (NHS) funding are part of LADOTD's priority program and have been included by the CRPC acting in its capacity as MPO for the Baton Rouge Metropolitan Area. The NHS funds shown in the TIP are directed toward improving the traffic problems on Airline Highway and I-10. Projects shown for ">200K" funding are also financially constrained, reflecting the annual attributable amount, approximately $8.0 million plus 20% local (non-federal match)".

The MPO TIP financially constrained roadway projects for 2009 – 2013 are shown in the tables in Appendix C. Of these projects, over 20 have a capacity improvement.

Section 2.3.1 The Need for Additional Revenue of the MPO TIP states:

"During the development of the PLAN, it was projected that adequate funds would not be available to implement all the programs and projects that were proposed for Baton Rouge. At this time there are a number of projects that have been proposed for which there is not sufficient available funding for implementation."

As shown in the Unmet Needs table from the TIP (Appendix C) there is $348,013,000 in unmet project funding.

Of the MPO projects in the STIP, eleven have a capacity improvement component, as shown in the tables in Appendix C.

The transportation projects in the "long – range" plan include capacity enhancement projects but these projects will not be implemented for many years into the future and implementation will be limited by the availability of funding.

In general, the transportation improvement projects in the MPO TIP and the STIP are non – capacity improvement projects, signalization, intersection improvements, ITS, etc. As such, they do little to improve capacity and alleviate traffic congestion. The "No – Build" Alternative does not fully meet the purpose and need of the project but is carried into the document as a baseline.

2.4.2. Build Alternative

The Baton Rouge Loop Implementation Plan identified and advanced what were referred to as “corridor alternatives” and “Corridors Recommended for Tier 1 EIS”. These components became Unit corridor sections, as described in Section 1.2, for this Tier 1 EIS.

During the period from the start of the EIS process through the release of the Draft EIS, the sections and corridor alternatives have changed. These changes or modifications resulted from public, stakeholder, and agency input, engineering refinements and environmental analysis.

In the South Unit, this consisted of the addition of three new sections including an additional Mississippi River crossing, the splitting of five sections into seven sections and eleven section modifications.

In the East Unit, this consisted of the addition of a new section, and the modification of seven sections.

For the North Unit, this consisted of three new section additions, modification of six sections, and the elimination of three complete sections and one-half of another, including the northern river crossing. The section eliminations were based on several factors:

- High potential impacts to wetlands along the Mississippi River levees;
- Low Average Daily Traffic (ADT) and projected toll revenue generation; and
- Projected cost for alternatives using the north river crossing to be $200 - $500 million higher than alternatives using the southern river crossing resulting from the wider Mississippi river reach, longer bridge length and the longer overall corridor length.

These modifications resulted in thirty-eight corridor sections yielding thirty-one Corridor Alternatives in the three Units. One of the outcomes of these modifications was there are portions of the Loop where only one corridor exists, including most of the locations where the Loop will connect with the existing interstate system.

In the North Unit, fourteen corridor sections, N1 - N14, form five Corridor Alternatives, NA to NE (*Table 2.1a)*. Sections shaded are common to all corridor alternatives within the North Unit. *Exhibit 2-1*, Volume 3 shows the North Unit and its corridor sections.

Table 2.1a North Unit Corridor Alternatives by Corridor Section

Unit	Corridor Alternative	Corridor Sections								
North	NA	N1	N2	N3				N10	N13	N14
	NB	N1	N2	N4	N5		N8	N10	N13	N14
	NC	N1	N2	N4	N6	N7	N8	N10	N13	N14
	ND	N1	N2	N4	N6	N9		N11	N13	N14
	NE	N1	N2	N4	N6	N9		N12		N14

In the South Unit, fourteen corridor sections, S1 – S14, form eighteen Corridor Alternatives, SA – SR (Table 2.1b). Sections shaded are common to all corridor alternatives within the South Unit. Exhibit 2-2, Volume 3 shows the South Unit and its corridor sections.

Table 2.1b South Unit Corridor Alternatives by Corridor Section										
Unit	Corridor Alternative	Corridor Sections								
South	SA	S1	S14	S3	S4	S6	S7	S8		
	SB	S1	S14	S3	S4	S5	S7	S8		
	SC	S1	S14	S3	S4	S6	S7	S9	S11	
	SD	S1	S14	S3	S4	S5	S7	S9	S11	
	SE	S1	S14	S3	S4	S6	S7	S10	S11	
	SF	S1	S14	S3	S4	S5	S7	S10	S11	
	SG	S1	S2	S12	S4	S6	S7	S8		
	SH	S1	S2	S12	S4	S5	S7	S8		
	SI	S1	S2	S12	S4	S6	S7	S9	S11	
	SJ	S1	S2	S12	S4	S5	S7	S9	S11	
	SK	S1	S2	S12	S4	S6	S7	S10	S11	
	SL	S1	S2	S12	S4	S5	S7	S10	S11	
	SM	S1	S2	S13	S3	S4	S6	S7	S8	
	SN	S1	S2	S13	S3	S4	S5	S7	S8	
	SO	S1	S2	S13	S3	S4	S6	S7	S9	S11
	SP	S1	S2	S13	S3	S4	S6	S7	S10	S11
	SQ	S1	S2	S13	S3	S4	S5	S7	S9	S11
	SR	S1	S2	S13	S3	S4	S5	S7	S10	S11

In the East Unit, ten corridor sections, E1 – E10, form eight Corridor Alternatives, EA – EH (Table 2.1c). Sections shaded are common to all corridor alternatives within the East Unit. Exhibit 2-3, Volume 3 shows the East Unit and its corridor sections.

Table 2.1c East Unit Corridor Alternatives by Corridor Section								
Unit	Corridor Alternative	Corridor Sections						
East	EA	E1	E2	E4	E5	E8		E10
	EB	E1	E2	E4	E5	E7	E9	E10
	EC	E1	E2	E4	E6	E7	E8	E10
	ED	E1	E2	E4	E6	E9		E10
	EE	E1	E3	E4	E5	E8		E10
	EF	E1	E3	E4	E5	E7	E9	E10
	EG	E1	E3	E4	E6	E7	E8	E10
	EH	E1	E3	E4	E6	E9		E10

Figure 2-6 shows the three Project Units with the thirty - eight corridor sections.

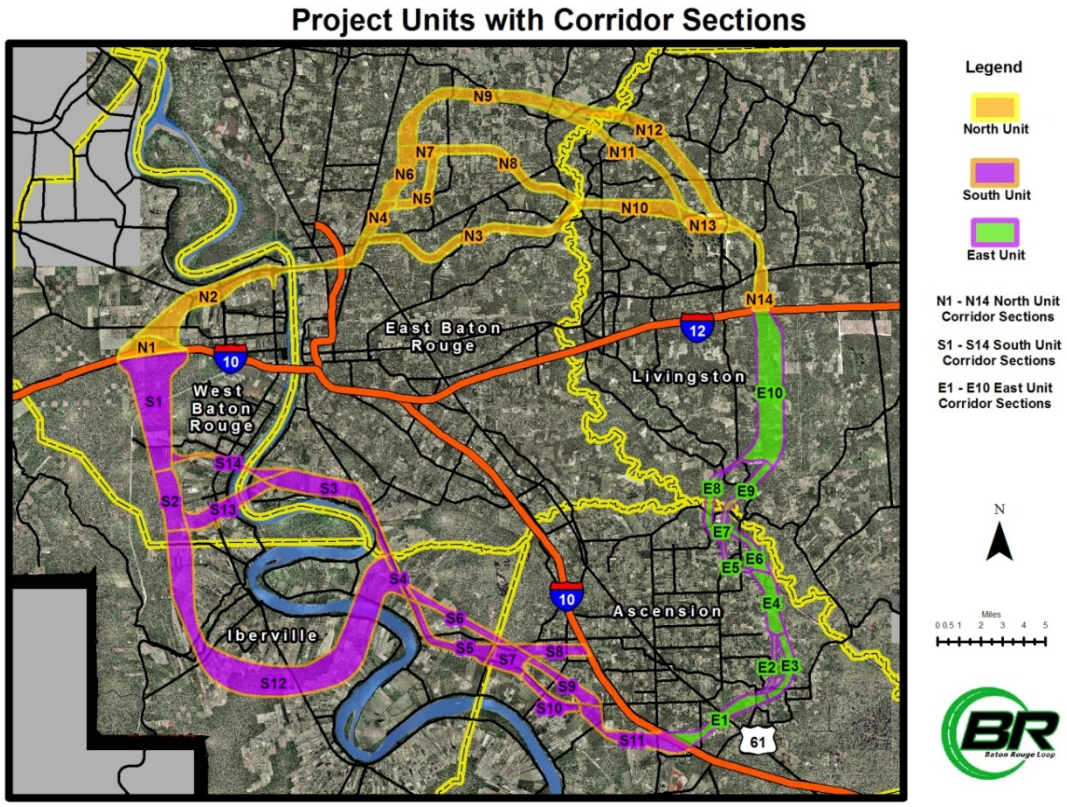


Figure 2-6: Project Units with Corridor Sections

2.5. Design Features

2.5.1. Design Standards

In order to provide the highest level of service, the Baton Rouge Loop would be designed as a controlled access free-flow facility. It would meet the freeway guidelines set forth by the American Association of State Highway and Transportation Officials (AASHTO) with consideration given to design standards established by the LADOTD. These criteria provide a summary of methodology and standards used in the preliminary construction cost estimates. As design progresses, adjustments approved by FHWA and LADOTD can be made to meet LADOTD and AASHTO design standard preferences / guidelines.

The design standards proposed for the Project are shown in Table 2.2 and are primarily based on AASHTO's 2011 publications, A Policy on Geometric Design of Highways and Streets, and Roadside Design Guide with consideration given to LADOTD Design Standards for Freeways (2009). The table includes criteria for urban and rural sections, as both will be utilized along the route.

2.5.2. Typical Roadway Sections

The Project would initially be constructed as a 4-lane facility. As ridership increases and additional capacity is needed, the road would be capable of expanding to six lanes by adding a lane in each direction in the median. Provisions for widening are

incorporated in the proposed typical sections (i.e., right-of-way and median widths allow for additional travel lanes). See *Figure 2-7* and *Figure 2-8*.

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, etc. This right-of-way width allows frontage roads to be constructed initially as shown in *Figure 2-8* or frontage roads can be constructed later if required as shown in *Figure 2-7*. 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 would also be required at interchanges. The addition of bike paths and/or rail within the right-of-way will be explored in the Tier 2 EIS phase based on agency guidance and funding opportunities.

2.5.3. Elevated Roadways

Sections of the route would be elevated above existing terrain in 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 2-9* illustrates a typical configuration for these sections.

Table 2.2 Design Standards

ITEM NO.	ITEM	URBAN	RURAL
1	Design Speed (mph)	60	70
2	Level of Service[1, 2]	C	B
3	Number of Lanes (minimum) [3]	4	4
4	Width of Travel Lanes (ft.)	12	12
5	Width of Shoulders (ft)		
	(a) Inside [4]	6	6
	(b) Outside [5]	10	10
6	Shoulder Type	Paved	Paved
7	Width of Median (minimum) (ft) [6]		
	(a) Depressed (4-lane)	52	52
	(b) Continuous barrier (6 lane)	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) [7] (with 10% superelevation)	1,100	1,700
14	Maximum Grade (%) [8]	3	3
15	Minimum Vertical Clearance (ft) [9]	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 [10]	25	25
17	Bridge Design Live Load [11]	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: LOS D can be used in heavily developed urban areas.

2: LOS C can be used in urban areas.

3: Consideration has been given to future addition of 2 lanes (total 6-lane future facility).

4: 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.

5: 12 feet paved when truck DDHV is greater than 250.

6: 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.

7: 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.

8: Grades 1 percent higher may be used in urban areas.

9: An additional 6 inches should be added for additional future surfacing. 17 feet is required for trusses and pedestrian overpasses.

10: In accordance with LADOTD EDSM II.1.1.1.

11: For LRFD and ASD designs a HST - 18 vehicle should be included as one of the live load vehicles.

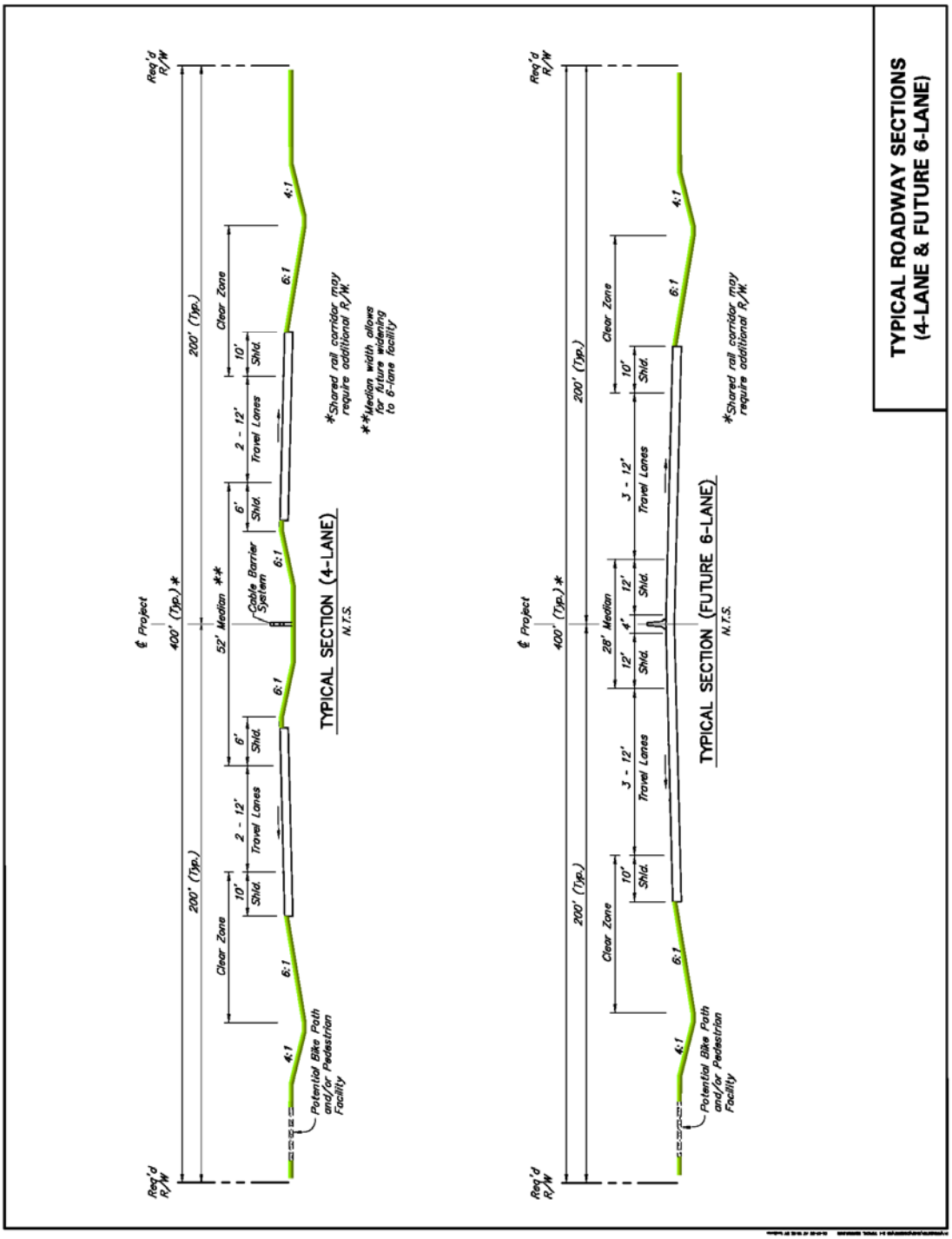


Figure 2-7: Typical Roadway Section

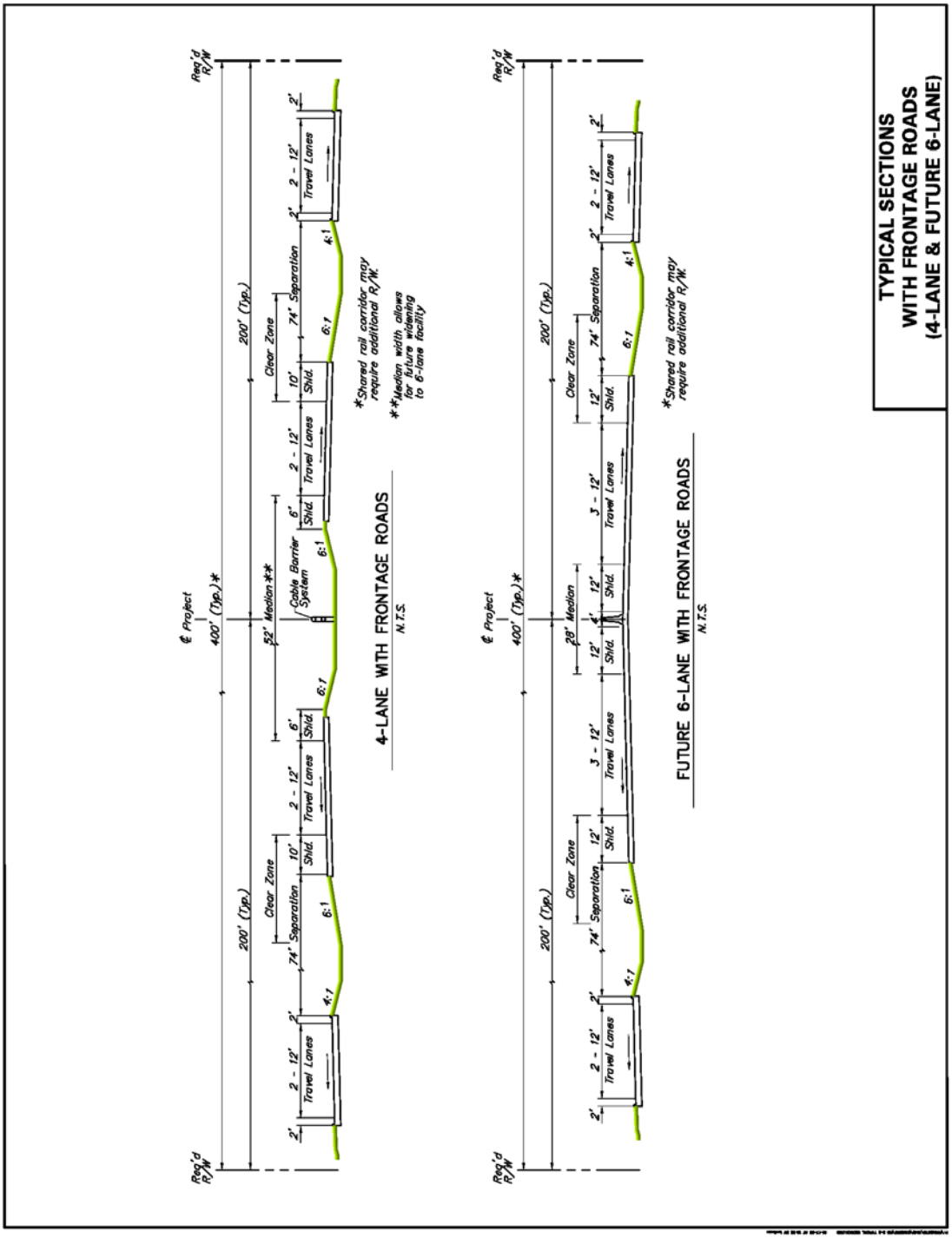


Figure 2-8: Typical Section with Frontage Roads

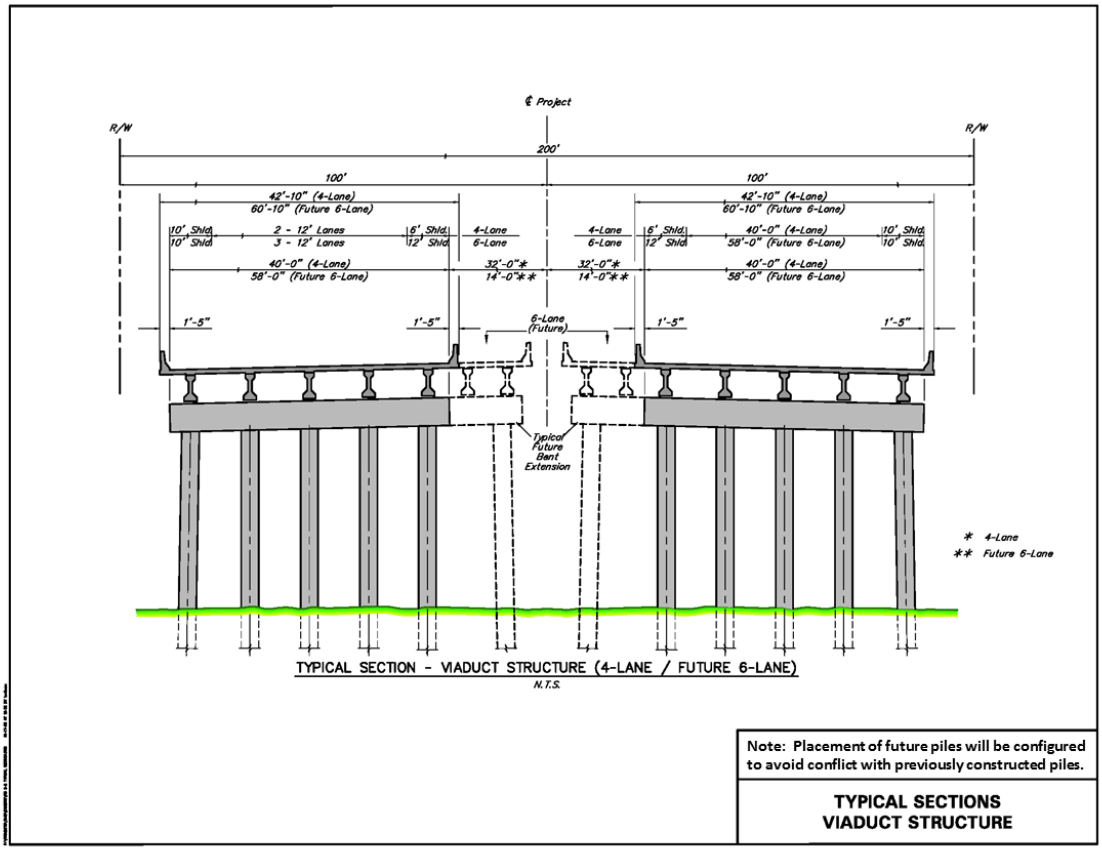


Figure 2-9: Typical Section Viaduct Structure

2.5.4. Typical Interchange

Convenient connection to the existing road network is a critical element in maximizing utilization of the Project. Interchange type and location are key components to achieve this goal. Interchange types proposed include:

- Diamond interchange
- Diamond interchange with slip ramps and frontage roads
- Fully-directional interchange

Diamond interchanges would be the most common type used and occur where the project crosses major state or federal highways. Diamond interchanges would also be used in combination with one-way frontage roads at major crossroads where necessary. *Figure 2-10* shows the three interchange types.

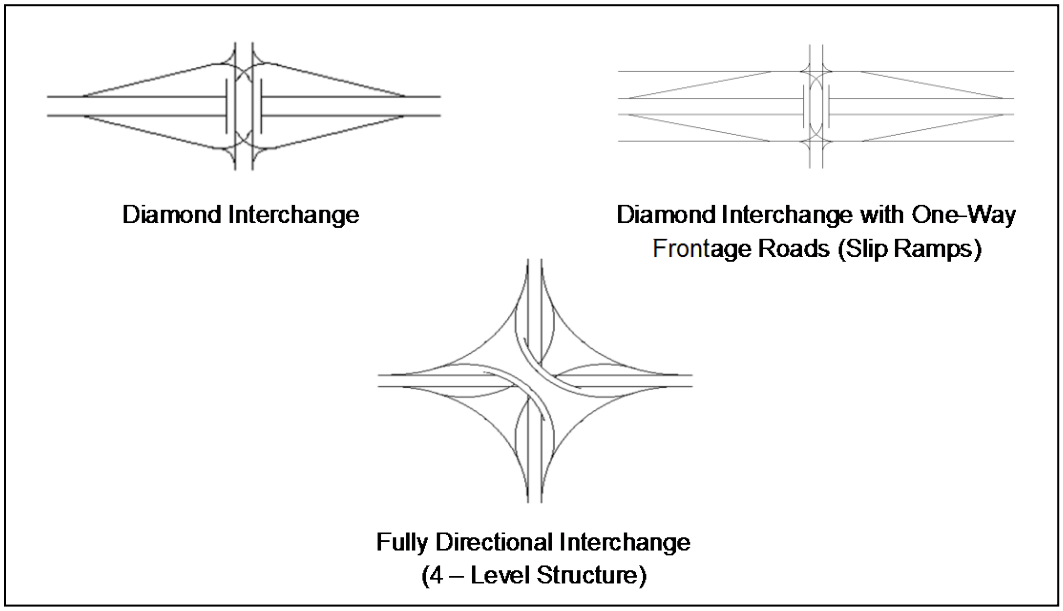


Figure 2-10: Typical Interchange Types

2.5.4.1. Interchange Locations

Interchanges would connect the project to the regional transportation system grid and provide property access. Where the project crosses I-10, I-110, and I-12 there would be, fully directional system-to-system four-level interchanges. Other interchanges would vary, and would usually be diamond-type. Potential interchange locations have been identified in each corridor section as shown in *Figure 2-11*. Potential interchange locations for the North, South, and East Units are shown in T*ables 2.3, 2.4, and 2.5* in Appendix B.

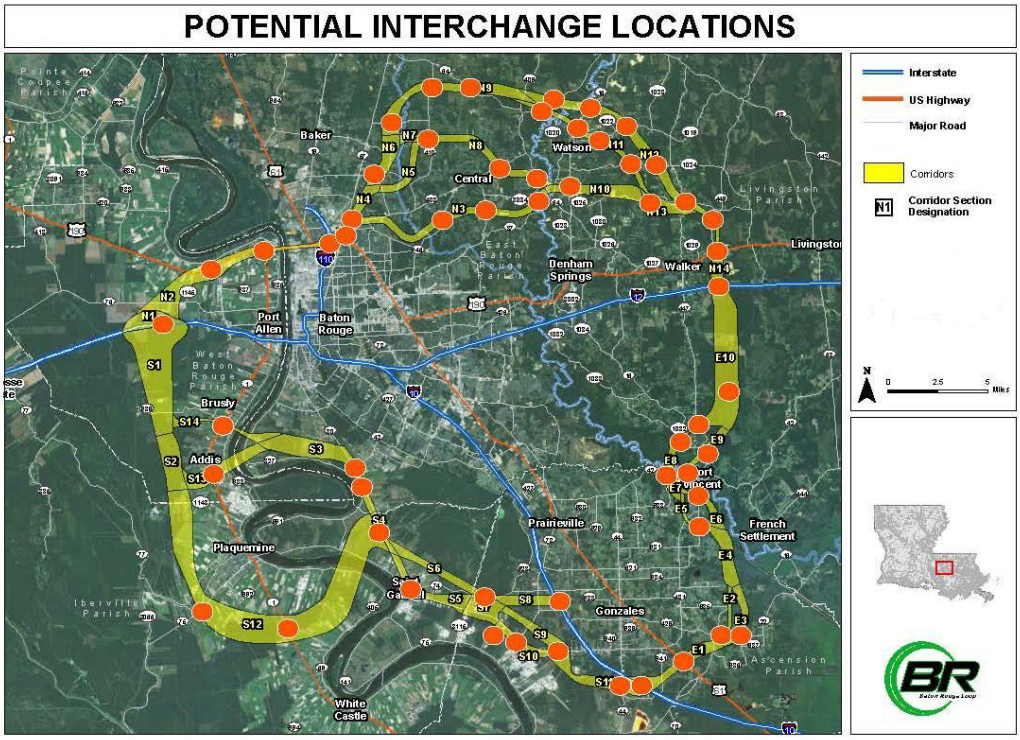


Figure 2-11: Potential Interchange Locations

2.5.4.2. System to System Interchanges

As shown in *Figure 2-11*, five potential connections to the existing interstate system have been identified within the 5-parish area as listed below:

- I-10 in West Baton Rouge Parish
- I-12 in Livingston Parish
- I-10 in Ascension Parish (2 potential locations)
- Existing I-110 / US 90 interchange

An Overview Memorandum of the "Potential System-to-System Interchange Locations" has been prepared for the project and documents the spacing of system-to-system interchanges within the proposed corridor alternatives. As presented in the memorandum, a fully-directional system-to-system interchange will be provided for each of the locations listed above satisfying AASHTO interchange spacing guidelines. All traffic movements will be provided at each interchange and the safety and flow of traffic on the existing interstate system will not be adversely impacted. During later stages of project development, an Interchange Justification Report will be developed and then reviewed and potentially approved, if determined satisfactory, by FHWA and LADOTD for each interchange location within the interstate system. For more detailed information on the interchange spacing for system-to-system interchanges please refer to the Overview Memorandum within the Project Technical File.

The Tier 1 EIS process will narrow the potential corridors to one preferred corridor, which will vary in width from a few hundred feet to several thousand feet. The Tier

1 EIS provides for corridor level analysis, final alignment and interchange configurations for all interchanges will be completed during the Tier 2 EIS phase.

After the Tier 1 EIS process, a Tier 2 EIS will be performed on the Loop segment of independent utility considered to be the most viable. As other Loop segments are identified, an independent Tier 2 EIS will be performed on each individual segment as well. Interchange Justification Reports will be completed during the Tier 2 EIS phase for segments with proposed interchanges to the existing interstate system. Approval of each Tier 2 EIS segment will be contingent on approval by FHWA for proposed access points to the interstate within that segment. If a preferred Loop / interstate interchange location creates the need for improvements to the existing interstate system, costs for those improvements will be borne by and included in construction of the Loop project.

At a later date, if an interchange that will pass engineering and operations requirements within the boundaries of the Tier 1 EIS corridor cannot be approved through an Interchange Justification Report (IJR), a supplement to the Tier 1 EIS will have to be undertaken prior to completion of any Tier 2 EIS.

2.5.5. Mississippi River Bridges

The Project would require two Mississippi River bridges at four potential crossing locations. A single North Unit Mississippi River crossing in section N2 is common to all North Unit alternatives. The three South Unit Mississippi River crossings are in sections S12, S13, and S14. Each of the three South Unit crossings is common to six of the eighteen South Unit alternatives. A description of each crossing location and the associated bridge type is located in Chapter 3 in Section 3.13.

A Mississippi River crossing location map is shown in *Figure 2-12.* Plan and elevation views of the four bridge crossings are in Appendix B *Figures 2-13 a/b, 2-14 a/b, 2-15 a/b, and 2-16 a/b.*

2.6. Project Costs

2.6.1. Capital Costs

Project preliminary capital costs were estimated based on 2008 LADOTD unit price data. Following Hurricane Katrina, construction and real estate related costs increased dramatically. Recently, cost increases have moderated and a downward trend of unit prices is occurring.

Preliminary capital cost estimates for each Unit Corridor Alternative were developed based on a “representative cost alignment”. Cost estimates include roadway, frontage roads (as applicable), major and minor bridges, and interchanges. An asphalt roadway section has been assumed for all roadways. Other costs include Intelligent Transportation System (ITS), electronic tolling equipment, landscaping, customer service centers, right-of-way, mitigation (wetland, waste site, noise, other), utility relocation, engineering/architectural services, legal fees, administrative support, construction support services, and project contingency. *Table 2.6* shows the total capital cost estimate for each alternative.

The preliminary capital cost estimate, in millions of 2008 dollars for the proposed Baton Rouge Loop is between $4,049M and $4,877M. Preliminary capital cost estimates for individual Corridor Alternatives range from $1,674M - $1,807M for the North Unit; $1,406M – $1,843M for the South Unit, and $969M - $1,227M for the East Unit.

For the North Unit, alternative NA has the lowest capital cost and ND the highest with approximately an 8% cost difference. In the South Unit, alternative SL has the lowest capital cost and alternative SP the highest with a 31% variation. Within the East Unit, alternative EB has the lowest capital cost and EG the highest with a 26.6% cost difference. In the North Unit, capital cost variants are related directly to the length of the representative cost alignment. Capital cost differences in the South Unit alternatives are related to multiple factors including Mississippi River crossing location, and the mix of urban/rural roadway. East Unit capital cost differences are primarily related to the number of minor bridges and the amount of elevated roadway.

Table 2.7 – Table 2.37 in Appendix B provide detailed cost information for each Unit Corridor Alternative. A Preliminary Estimated Cost Technical Memorandum is located in the Project Technical File. While costs shown in these tables assume asphalt pavement for all roadways, a comparative cost analysis was performed using concrete pavement in the urban areas and asphalt pavement in the rural areas. This comparative analysis revealed that costs for the combination concrete/asphalt pavement are generally 3.5% higher for the North Units, 5.8% higher for the South Units and 2.0% higher for the East Units.

Table 2.6 Baton Rouge Loop Corridor Alternative Preliminary Capital Cost

Unit	Corridor Alternative	Length (Mi)	Cost $M [1,2]
North	NA	35.0	$ 1,673.6
	NB	37.2	$ 1,732.8
	NC	36.9	$ 1,730.9
	ND	40.2	$ 1,807.1
	NE	40.1	$ 1,782.5
South	SA	29.1	$ 1,612.4
	SB	30.0	$ 1,577.8
	SC	36.0	$ 1,649.6
	SD	36.9	$ 1,615.6
	SE	36.1	$ 1,665.3
	SF	36.4	$ 1,444.9

Table 2.6 Baton Rouge Loop Corridor Alternative Preliminary Capital Cost

Unit	Corridor Alternative	Length (Mi)	Cost $M [1,2]
	SG	38.3	$ 1,561.7
	SH	39.1	$ 1,495.8
	SI	44.7	$ 1,596.5
	SJ	45.6	$ 1,577.2
	SK	44.5	$ 1,612.2
	SL	45.1	$ 1,406.2
	SM	30.7	$ 1,791.1
	SN	31.6	$ 1,756.5
	SO	37.6	$ 1,828.5
	SP	37.5	$ 1,843.1
	SQ	38.5	$ 1,794.5
	SR	38.0	$ 1,623.7
East	EA	25.0	$ 1,000.6
	EB	24.4	$ 969.2
	EC	24.9	$ 1,071.1
	ED	23.8	$ 1,045.4
	EE	26.1	$ 1,157.4
	EF	25.5	$ 1,126.0
	EG	25.8	$ 1,227.1
	EH	24.7	$ 1,201.4
Lowest Cost 3 Corridor Alternative		NA-SL-EB	$ 4,049.0
Highest Cost 3 Corridor Alternative		ND-SP-EG	$ 4,877.0

1. Preliminary capital cost estimate in millions of 2008 dollars.
2. Asphalt roadway section assumed for all roadways.

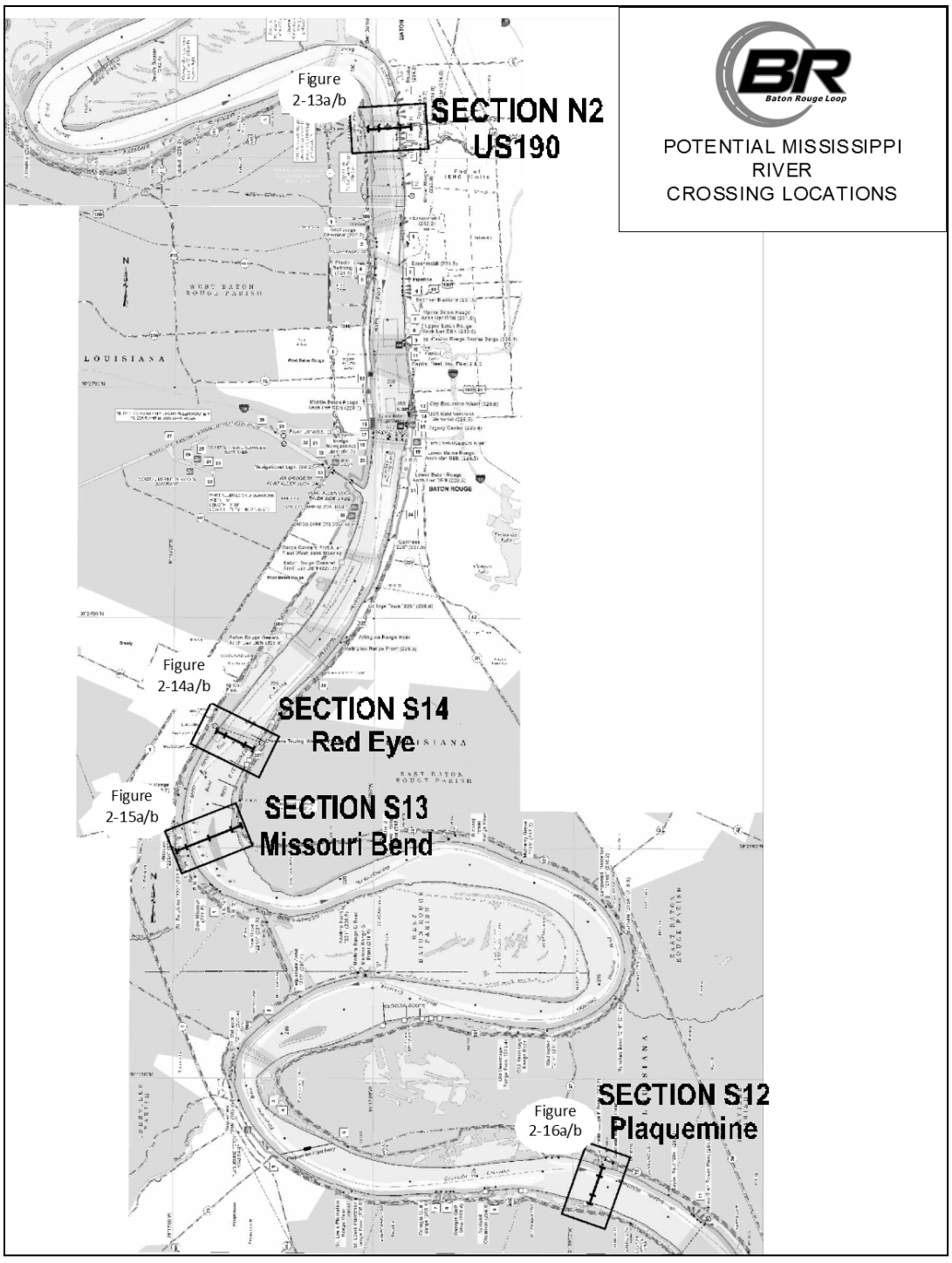


Figure 2-12: Potential Mississippi River Bridge Crossing Locations

2.7. Operations and Maintenance Cost

O&M costs are the continual costs of operation and maintenance of the toll road system. These costs are the annual revenue needed to operate and maintain the proposed toll road.

Preliminary estimates of Baton Rouge Loop operations and maintenance (O&M) costs were developed to assist with the preliminary traffic and revenue estimates for the project. The estimate includes maintenance cost information developed during the Implementation Plan phase of the project, (Baton Rouge Loop Implementation Plan, Technical Memorandum No.4. Preliminary Finance Assessment), as well as information on similar operating toll way systems in neighboring states and Project Team experience on other toll studies. The annual O&M cost estimates considered the following categories:

Administration – Costs associated with toll authority staff and activities, public relations, communications, salaries, and materials/supplies.

Facility Maintenance – Costs associated with the upkeep of the tollway pavement and roadside, including sign and guardrail repair, mowing, minor bridge repair, and pavement repairs. The costs to maintain the toll facility were developed as an annual cost per mile.

Toll Collection/Enforcement – Costs directly incurred in the fare collection process, including toll authority staff and related expenses. Toll collection costs are directly proportional to the toll collection staffing labor requirements. Toll collection/enforcement staff was assumed to include one manager, two supervisors, and six service associates per customer service center using an 8-hour shift per workday.

Enforcement and Safety - This includes patrol operating at various times throughout the week, including weekdays, weeknights, and weekends. It also includes vehicle operation and maintenance costs.

Customer Service Center – Annual costs associated with a Customer Service Center for customers of the toll facility. Supplies for the Customer Service Center are covered within Administration. ETC software and hardware needs are covered within the capital costs.

Insurance – Annual costs to insure the toll facility including facility, liability, and business interruption insurance.

Utilities – Annual costs associated with the utilities for the toll system.

Operations and maintenance cost estimates, including routine and major maintenance, will be re-evaluated and refined in the Tier 2 phase in conjunction with more detailed development scenarios and finance plans.

2.8. Traffic

Transportation and traffic impact analyses for the No-Build Alternative and Build Alternatives utilized information from the MPO's regional model, and traffic counts collected in 2004. To reflect post-Katrina impacts, the MPO updated the model in

2009 using revised socioeconomic data. The most current MPO regional travel demand model will be utilized in the Tier 2 phase.

The MPO regional model attempts to predict and simulate detailed travel patterns for every individual residing inside the study area over a 24-hour period. The model uses digitized networks and demographic data, along with trip generation, trip distribution, mode choice, time of day travel, and trip assignment data to simulate travel patterns. The model is maintained and applied with TransCAD, software used in transportation planning and the modeling field.

The study area for the transportation analysis covers most of East Baton Rouge, West Baton Rouge, Livingston, and Ascension Parishes, and part of Iberville Parish. The area is generally bounded by: I-10 at Wilbert Road (west of the Mississippi River) to the west, I-12 at LA 1024 (S. Satsuma Road) to the east, I-10 at LA 22 (John Leblanc Blvd.) to the south, and LA 64 to the north.

2.8.1. Existing Transportation Network and Traffic Volumes

There are three interstate highways in the study area: I-10, I-12, and I-110. I-10 is the primary route for west – southeast trips; it is a major transcontinental interstate highway through New Orleans and Baton Rouge. I-12 is a controlled access interstate highway that runs east west in the eastern side of the study area. It starts in Baton Rouge at I-10, and travels along the North Shore of Lake Pontchartrain. I-110 is an 8.9-mile spur route in Baton Rouge, running from I-10 in the city's downtown area north to US Highway 61 and the Baton Rouge Metropolitan Airport. General patterns on these major highways include:

On I-12, mainline daily traffic volumes range between 91,000 vehicles per day (vpd) and 116,500 vpd between I-10 and Millerville Road, and then volume steadily decreases to a low of about 43,000 vpd east of Walker South Road;

On I-10, traffic volumes range from 134,000 vpd to more than 164,000 vpd east of College Drive;

On I-10, traffic volumes in the southern area drop to about 29,000 to 38,700 vpd between LA30 and LA 641 in Ascension Parish;

On I-110, traffic volumes in the southern area, south of Hollywood Street, range between 87,000 and 84,000 vpd which is higher than the northern area of 49,000 vpd; and

On US-61 (Airline Highway), traffic steadily decreases from about 46,000 vpd at Goodwood Blvd. to a low of about 9,000 vpd at LA 431 in Ascension Parish.

2.8.2. No-Build Alternative

Traffic forecasts were developed for the study area to cover a planning period through the project Design Year 2032. Intermediate model years from the MPO model include 2009, 2012, and 2022. Future traffic volumes for the No-Build scenario were analyzed. The analysis is based on the MPO's regional model, which assumes that I-12, between O'Neal Lane and Walker South Road, and I-10, between Essen Lane and Highland Road, would be expanded in all scenarios of future years from 2012. This expansion has no significant impact on the 2032 traffic

volumes. Thus, while these improvements would help to increase the capacity on the roadways, their impact on traffic congestion is likely to be minimal due to increased traffic forecasted for the study area as summarized below:

Compared to the 2004 traffic volumes, future eastbound traffic volumes on I-12 are estimated to increase: 7.9% for 2009, and 29.1% for 2032.

Westbound traffic volumes on I-12 are estimated to increase 7.8% for 2009, and 28.3% for 2032.

On I-10, eastbound traffic is estimated to increase, 6.2% for 2009, and 31.8% for 2032.

I-10 westbound traffic is similar to eastbound: 6.1% for 2009 and 32.4% for 2032.

2.8.3. Build Alternative

Four tolled traffic-modeling scenarios were identified that are representative of all possible Project build alternatives. The scenarios are described below and shown in *Figures 2-17 – 2-20*.

Base Loop: Utilizes the southernmost route within the City of Central (Alternative NA) , the Missouri Bend crossing (section S14) of the Mississippi River, and Alternative EA in the East Unit;

Plaquemine Crossing: In this scenario, the North Unit and East Unit routes are the same as the Base Loop. However, the South Unit route utilizes the Mississippi River crossing south of Plaquemine, LA (section S12);

I-10 Connection: Same as the Base Loop, except the southernmost route shifts north to tie in to I-10 near LA 30 (section S8). I-10 would be utilized as the Baton Rouge Loop from this location to roughly LA 941 where it would continue northward on a new East Unit alternative. For the portion of I-10 utilized as part of the Baton Rouge Loop, it is assumed the interstate would be widened from 4 lanes to 6 lanes;

Northern Central: In this scenario, the routes utilized in the East Unit and South Unit, are the same routes modeled for the Base Loop. However, the North Unit route utilizes the northernmost route within the City of Central (Alternative NE).

Table 2.38 illustrates how all Unit Corridor Alternatives are represented in one or more of the modeling scenarios.

Table 2.38 Unit Corridor Alternatives Traffic Modeling Scenario

Corridor Alternative by Unit	Traffic Modeling Scenario			
	Base Loop	Plaquemine Crossing	I-10 Connection	Northern Central
North Unit				
NA	X	X	X	
NB	*	*	*	*
NC	*	*	*	*
ND				X
NE				X
South Unit				
SA	X		X	X
SB	X		X	X
SC	X			X
SD	X			X
SE	X			X
SF	X			X
SG		X		
SH		X		
SI		X		
SJ		X		
SK		X		
SL		X		
SM	X		X	X
SN	X		X	X
SO	X			X
SP	X			X
SQ	X			X
SR	X			X
East Unit				
EA	X	X	X	X
EB	X	X	X	X
EC	X	X	X	X
ED	X	X	X	X
EE	X	X	X	X
EF	X	X	X	X
EG	X	X	X	X
EH	X	X	X	X

* Data interpolated between Base Loop scenario and Northern Central scenario

Alternative not modeled in scenario.

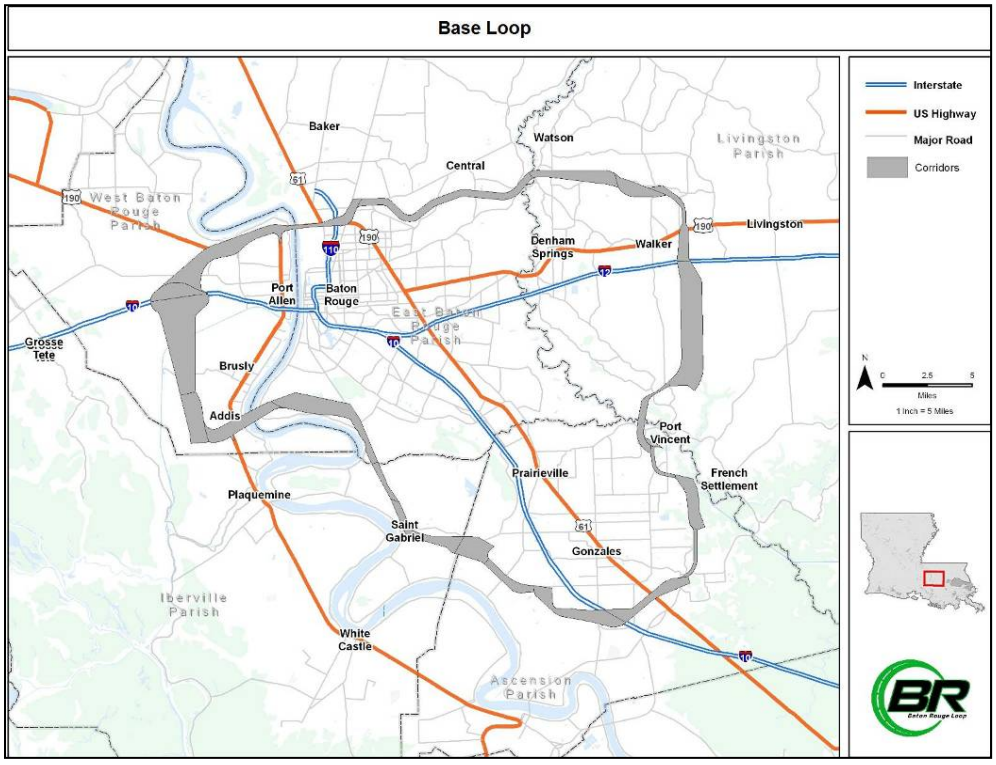


Figure 2-17: Base Loop Modeling Scenario

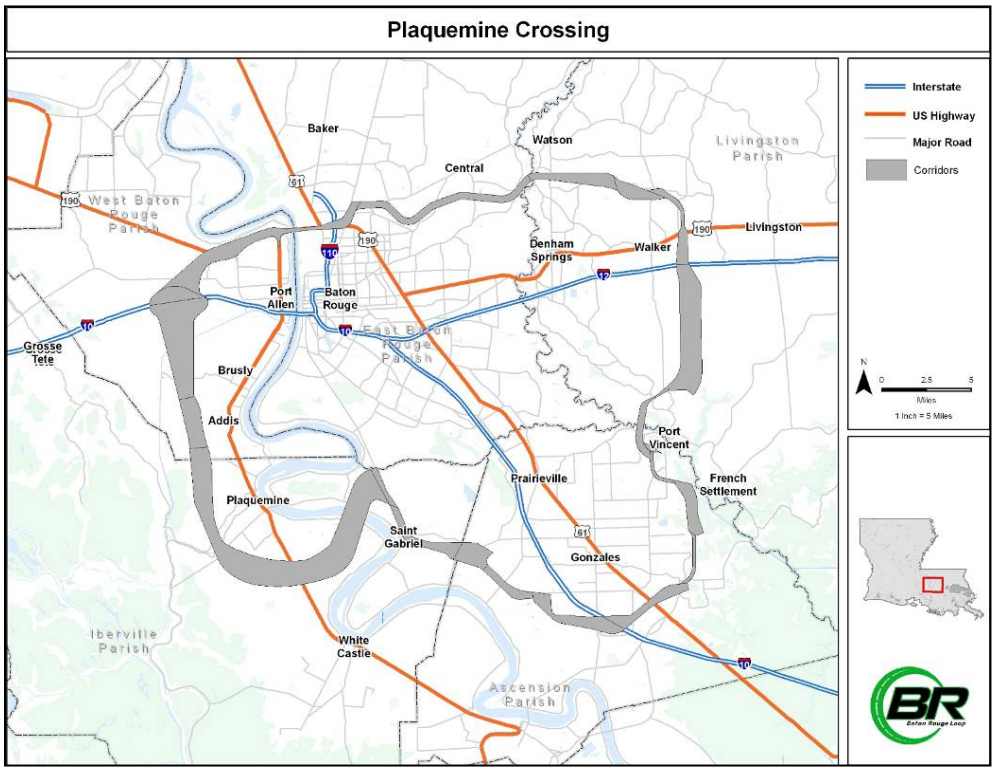


Figure 2-18: Plaquemine Crossing Modeling Scenario

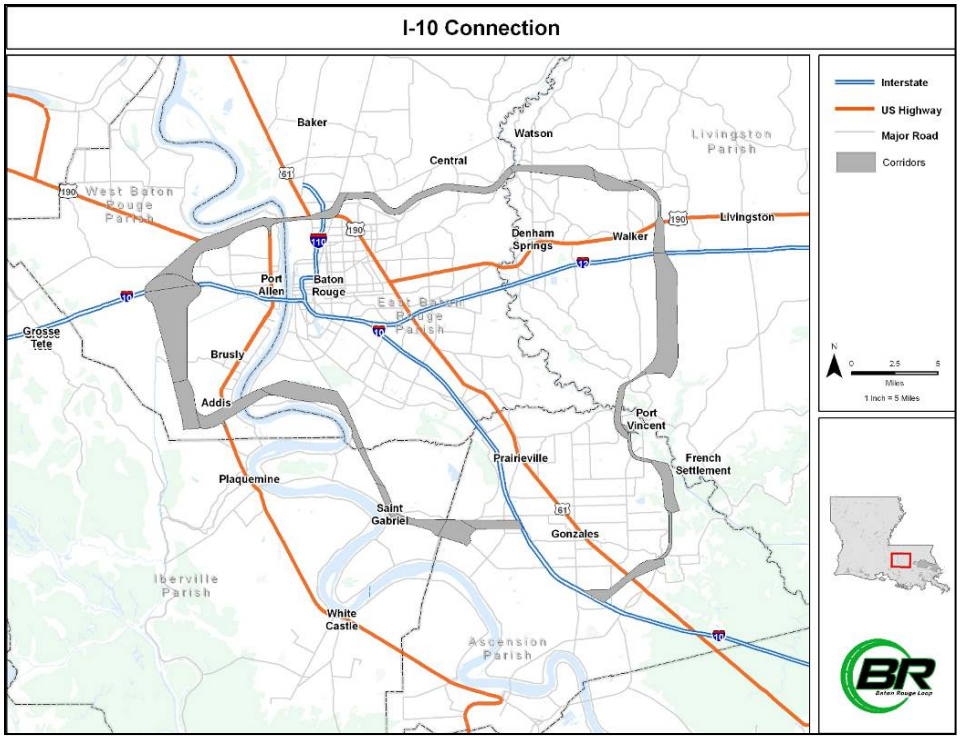


Figure 2-19: I-10 Connection Modeling Scenario

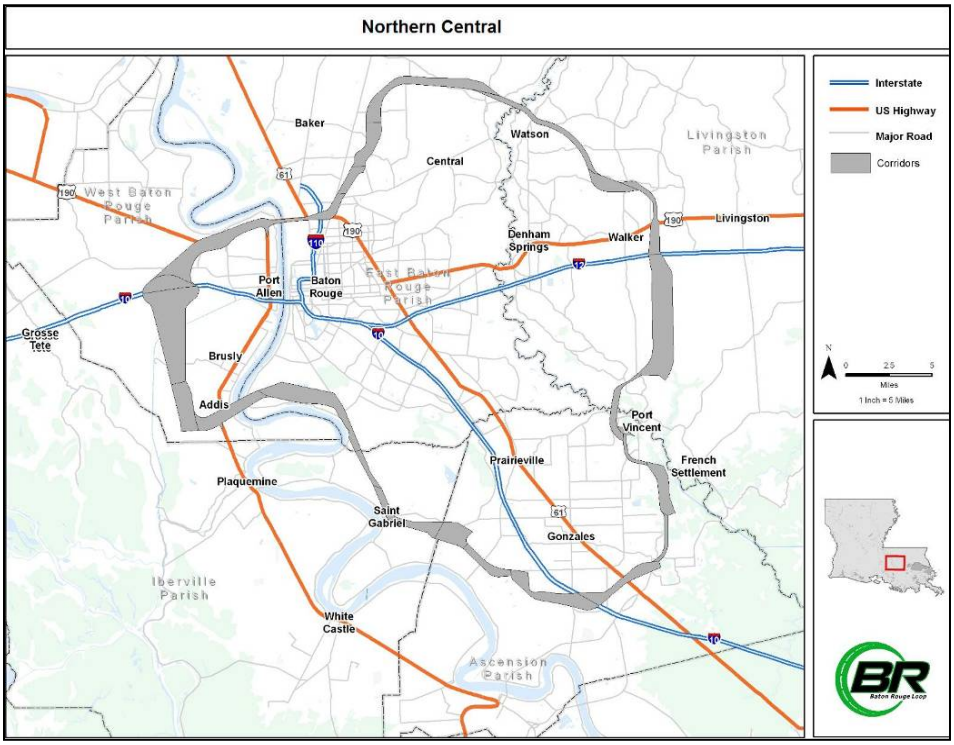


Figure 2-20: Northern Central Modeling Scenario

Table 2.39 Daily Systemwide VMT and VHT 2032			
Modeling Scenario	Daily VMT (mile)	Daily VHT (hour)	Average Speed (mph)
No Build	26,443,660	869,712	30.41
No-Toll (Base Loop)	28,506,360	840,906	33.9
Tolled Alternatives			
Base Loop	27,365,083	864,466	31.66
Plaquemine Crossing	27,463,870	871,211	31.52
I-10 Connection	27,405,027	862,985	31.76
Northern Central	27,370,430	864,482	31.66

2.8.4. VMT and VHT Review

In *Table 2.39*, system wide Vehicle Miles Traveled (VMT), Vehicle Hours Traveled (VHT), and average travel speeds are presented for each modeling scenario. VMT is a unit of measure that expresses the number of miles traveled by vehicles (e.g., cars, vans, trucks), regardless of the number of persons in the vehicle. VHT represents the number of hours a person spends traveling. All VMT, VHT, and travel speed information was collected on a link-by-link basis and then summed or averaged for system-wide totals or averages.

2.8.5. Future Year Traffic Estimates

Future year traffic volumes are summarized for 2032 in *Table 2.40*. In order to estimate the impact of the proposed Baton Rouge Loop, the model results for the 2032 Toll Free scenario using the Base Loop were compared to the model results of the tolled scenario for each of the four models. *Exhibit 2-4* Future Traffic Volumes in Volume 3 shows the location of roadways in *Table 2.40.*

Table 2.41 depicts the impacts of the opening of the Baton Rouge Loop at key locations on interstate highways in the study area. As can be seen from the table, the Baton Rouge Loop has an impact on most sections of the adjacent highways. Some of the traffic modeling scenarios indicates a reduction in traffic volumes of up to 19% in some areas. The Baton Rouge Loop would give highway users the opportunity to bypass the congestion that would occur on other surface roadways throughout the study area.

Exhibit 2-5 Future Interstate Traffic Volumes in Volume 3 shows the location of the segments in *Table 2-41*.

The Traffic and Revenue Technical Memorandum providing additional information is in the Project Technical File.

Table 2.40 Baton Rouge Loop Average Daily Two-Way Traffic Volumes 2032

Route	Segment		Traffic Modeling Scenario				
	From	To	Toll Free	Base Loop	Plaquemine Crossing	I-10 Connection	Northern Central
North Unit	Rosedale Road	US190 & LA1	59,808	28,806	27,429	28,831	27,797
	N. River Road	US61 (Scenic Highway)	84,518	56,631	57,353	56,892	55,268
	Lovett Road	Sullivan Road	78,172	46,093	46,603	45,946	N/A
	Greenwell Spring Road	LA 16	88,560	57,437	58,169	58,021	N/A
	Dyer Road	Blackwater Road	N/A	N/A	N/A	N/A	27,340
	LA 409	LA 37	N/A	N/A	N/A	N/A	36,202
	Duff Road	Walker North Road	64,790	25,339	25,332	25,249	19,047
	South of Florida Blvd		71,061	35,582	35,392	35,382	35,637
South Unit	West of I-10 (between LA3115 and LA73)		41,425	7,191	5,934	21,410	7,187
	LA 3115	LA 74	56,497	26,761	23,598	21,407	26,791
	Bayou Paul Lane	Bluebonnet Blvd	60,878	20,873	N/A	20,575	20,497
	River Crossing between LA 327 & LA 1 in West Baton Rouge		59,064	38,883	22,589	38,947	39,158
	Choctaw Road	Rosedale Road	44,232	14,344	0	14,378	14,035
East Unit	North of Hood Road		47,710	21,344	22,522	22,160	21,687
	LA 42	LA 16	49,408	35,655	35,694	35,596	36,315
	LA 431	LA 22	24,499	6,698	6,882	6,489	6722
	Airline Highway	I-10	22,745	7,380	7,306	8,963	7,542

Table 2.41 Project Study Area 2032 Average Daily Two-Way Interstate Highways Traffic Volumes

Route	Segment		Traffic Modeling Scenarios					
	From	To	No-Build	Toll Free	Base Loop	Plaquemine Crossing	I-10 Connection	Northern Central
I-12	Jefferson Highway (LA 73)	Airline Highway (US 61)	128,893	117,423	125,571	126,038	124,213	126,248
	Sherwood Forest Blvd	Millerville Rd	127,223	110,363	120,163	120,350	119,316	123,112
	O'Neal Lane	S. Range Road	128,570	91,570	107,596	107,912	107,359	113,142
	Juban Rd	Walker South Rd	107,074	83,789	97,658	98,066	97,358	100,126
I-10	Baton Rouge Loop	Lobdell Highway	57,073	40,846	60,142	64,763	60,077	60,137
	LA 1	Highland Rd / Nicholson Dr (on I-10 Bridge)	171,145	109,616	138,104	146,819	138,010	139,180
	I-110	Dalrymple Drive	156,701	132,916	147,177	152,184	148,406	150,251
	College Drive	I-12	208,396	185,151	199,908	203,820	200,097	201,037
	Bluebonnet Blvd	Siegen Lane	106,210	95,139	104,462	105,534	104,881	104,350
	Highland Road	LA 73	90,913	75,308	86,530	89,053	87,470	87,142
	LA 30	LA 44	82,450	61,904	79,741	80,560	92,195	80,142
	LA 22	Airline Hwy (US 61)	55,822	56,713	55,548	55,305	57,231	55,713
I-110	North St	Spanish Town Road	98,357	99,927	95,469	95,028	97,553	95,854
	Mohican St.	Evangeline St.	101,719	109,110	107,065	106,637	107,497	104,557
	Fairchild St.	Baker Rd.	75,048	76,580	76,817	76,914	76,848	74,443

2.9. Toll Revenue

It is assumed that an Electronic Toll Collection (ETC) only option would be provided from the beginning of toll operation. ETC, also referred to as Open Road Tolling, is the collection of tolls on toll roads without the use of tollbooths.

For the analysis, the assumed base year toll rate is $0.15 per mile. The traffic models also assume periodic toll increases at the same rate as inflation, so toll rates are constant, maintaining the same level as the base year. To reflect this, toll revenues were increased by 2.5 percent per year. For the horizon year 2032, toll revenues are shown for the four modeling scenarios in *Table 2.42.*

Table 2.42 Estimated Annual Revenue by Modeling Scenario 2032

Alternative	Estimated Annual Revenue ($2009 in 000's)	Scenario Length (mile)	Estimated Annual Revenue Per Mile ($2009 in 000's)
Base Loop	$142,224	98	$1,446
Plaquemine Crossing	$127,477	104	$1,231
I-10 Connection	$140,876	90	$1,565
Northern Central	$141,250	104	$1,360

From the table it can be seen that total projected annual revenue generation for the project is essentially equal for three of the modeling scenarios with the Plaquemine Crossing scenario exhibiting about 10% less total revenue generation. On an annual per mile basis, the range is appreciably different with the shortest length scenario exhibiting the best revenue and the two longest scenarios the least revenue per mile.

Additional information used in the development of this section can be found in the Implementation Plan Executive Summary in Appendix G and the Implementation Plan Preliminary Traffic & Revenue Technical Memorandum in the Project Technical file.

2.10. Finance and Delivery

There currently is no funding for right-of-way or construction of the Loop in the MPO Metropolitan Transportation Plan. The north bypass of the Loop is identified in the 2003 Statewide Transportation Plan, in priority Category B. the discussion below relates to project development as a toll road.

2.10.1. 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), an emerging method being utilized in Texas, Virginia, and Florida amongst other places. In the first case, the toll collections are used to support the revenue bonds while in the second case the toll revenues are used to repay the private equity investment and potentially other funding sources.

Two delivery agencies can be used for the Baton Rouge Loop Project. The CAEA was incorporated under the 1997 enabling legislation and is empowered to plan, design, build, and operate the Project. The CAEA was initially established and governed by a Board consisting of five regional Parish Presidents and the LADOTD Secretary. In 2010, three of the Parish Presidents (Ascension, Iberville, and Livingston) elected to resign from the CAEA for varying reasons. Since the noted resignations, the CAEA is governed by the remaining two Parish Presidents (East Baton Rouge and West Baton Rouge) and the LADOTD Secretary. Prior to the construction of any portion of the project, the CAEA will be reconstituted to include a minimum of one member from each political subdivision included within the route of the Loop.

The Louisiana Transportation Authority (LTA), created by 2001 legislation, is Louisiana's statewide toll authority and is empowered to implement toll roads statewide. The LTA is governed by an 11-member board lead by the Governor, leaders from the legislature, cabinet level heads (including LADOTD), and others. If the project were financed by traditional methods, the CAEA would likely fully administer the development and implementation of the project. If the PPP approach were utilized, the CAEA would probably work collaboratively with the LTA.

Additional information used in the development of this section can be found in the Implementation Plan Executive Summary in Appendix G, and the Implementation Plan Preliminary Traffic & Revenue Technical Memorandum and Implementation Plan Preliminary Finance Assessment Technical Memorandum contained on the CD in Appendix G.

2.10.2. Preliminary Finance Model Inputs

Preliminary finance modeling has been performed to determine the general viability of the project and begin to identify potential 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

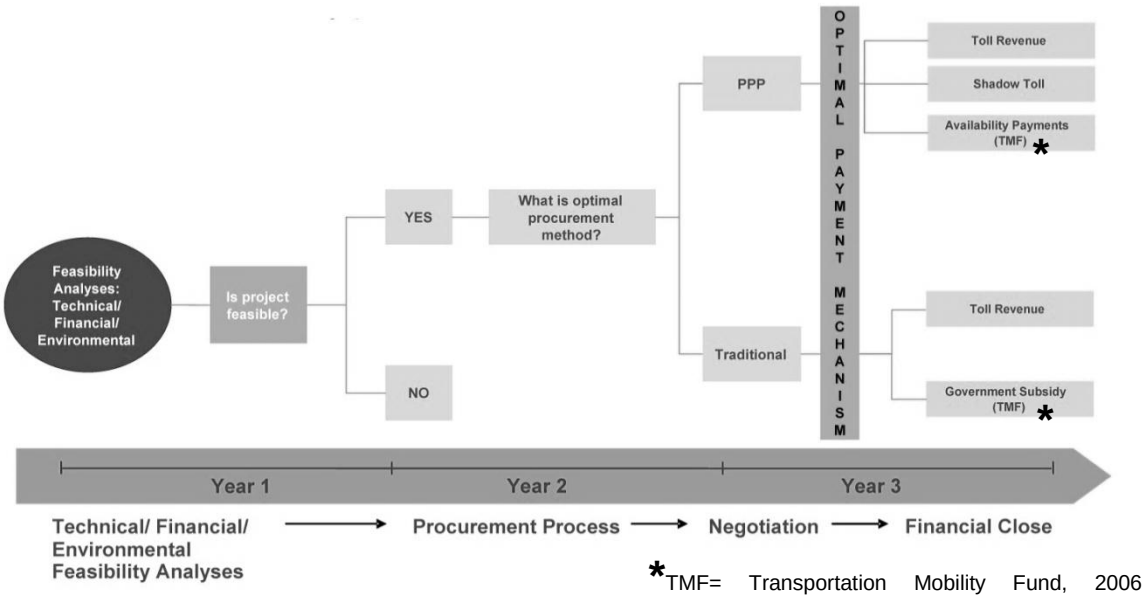
Other key inputs are market based including discount rates and prevailing bond requirements at the time of sale. These have been assumed consistent with other recent transactions for the purpose of the preliminary analyses.

Additional information used in the development of this section can be found in the Implementation Plan Executive Summary in Appendix G, and the Implementation Plan Preliminary Finance Assessment Technical Memorandum contained on the CD in Appendix G.

2.10.3. Finance and Development Process

The detailed financial planning process would evolve from the preliminary results presented above concurrently with the planning phase of the project. As Tier 2 EISs are developed over the next several years, so would a continued refinement of the traffic and revenue estimates, implementation cost estimates, and the market conditions. It is planned that financial closing of the project would occur at the same time as the Tier 2 EIS Records of Decision are issued that enable the project to be constructed. *Figure 2-21* below indicates the steps in the finance/delivery process over time.

Additional information used in the development of this section can be found in the Implementation Plan Executive Summary in Appendix G, and the Implementation Plan Preliminary Finance Assessment Technical Memorandum contained on the CD in Appendix G.



*TMF= Transportation Mobility Fund, 2006 Louisiana Legislation for toll road gap funding

Figure 2-21: Finance/Delivery Process

2.10.4. Preliminary Finance Analysis

Due to the preliminary nature of the data and associated uncertainties at this stage of project development, analyses were conducted during the Implementation Plan stage for both conservative and optimistic financial cases. These two cases serve as upper and lower boundaries in assessing the financial viability of the Project at this stage of development, with a range of possible actual outcomes in between.

The results of using this approach in analysis of the entire Baton Rouge Loop are summarized in *Figure 2-22*. 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 project would be more fundable by tolls with less reliance on public sources.

Additional information used in the development of this section can be found in the Implementation Plan Executive Summary in Appendix G, and the Implementation Plan Preliminary Finance Assessment Technical Memorandum contained on the CD in Appendix G.

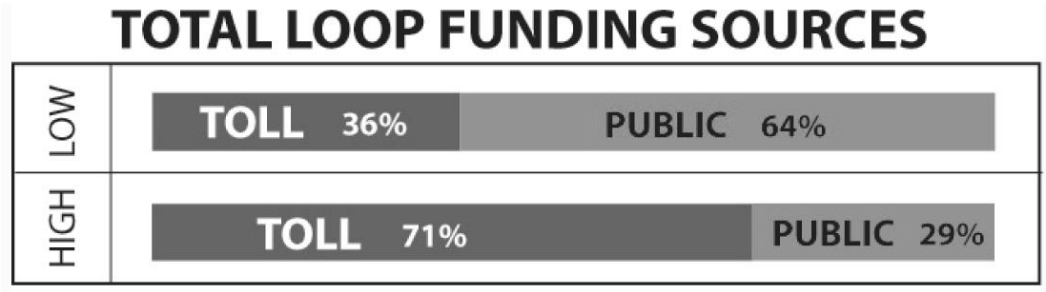


Figure 2-22: Baton Rouge Loop Funding Sources

2.10.5. Project Phasing

It is expected that individual sections of the Baton Rouge Loop will be developed under a staged implementation plan, where pieces are constructed and opened to traffic over time.

Based on current needs and traffic conditions, a likely candidate for the first section for implementation has been identified as the section of the North Unit from I-110 in East Baton Rouge Parish to I-12 in Livingston Parish, approximately 25 miles in length. Preliminary analyses indicates that this section has a high potential to be fully financed by toll revenue using the public-private partnership delivery method. Final decisions on the chosen delivery method and detailed finance plans will be developed concurrent with the Tier 2 EIS on the first section of the Project chosen for development.

Additional information used in the development of this section can be found in the Implementation Plan Executive Summary in Appendix G, and the Implementation Plan Processes & Mechanisms for Implementation Technical Memorandum on CD in Appendix G.

Chapter 3. PROJECT ENVIRONMENT – RESOURCES & POTENTIAL IMPACTS

The information in this chapter provides the basis for a comparison of the Build Alternative (Corridor Alternatives) in each of the three Baton Rouge Loop Units.

Unit Corridor Alternatives by corridor section are shown in Chapter 2 in *Table 2.1a, Table 2.1b*, and *Table 2.1c*.

To provide consistency, analysis was performed on a Unit-by-Unit basis. Within each Unit, resources were inventoried by corridor section then by Corridor Alternative.

The No-Build Alternative is carried into the study as a baseline for establishing the potential environmental consequences of the Build Corridor Alternatives.

For purposes of the Baton Rouge Loop Tier 1 EIS, environmental resource data collection and evaluation was done on a desktop basis using existing published data and reports, internet site information, and GIS data. No field studies or surveys were conducted. Specific data sources are referenced in Chapter 3 and reference data sources are shown in Appendix F. A Project Technical File with support technical documents is located at HNTB Corporation, 10000 Perkins Rowe, Suite 640, Baton Rouge, LA 70810. The Technical File is open for review by appointment Tuesday, Wednesday, and Thursday from 9am to 4pm. Copies of the documents are available for a nominal fee payable in cash. Call Suzanne McCain at 225 368-2800 to schedule an appointment.

This Tier 1 EIS provides an inventory of resources to support an order of magnitude evaluation of potential impacts that may result from the proposed Project and the Corridor Alternatives in each Unit. Because the Corridor Sections that comprise the various Corridor Alternatives consist of differing area lengths and widths, it was decided during the early stages of the project that potenial resource impacts would be represented more accurately by the percent of the total acreages. As the study progresses to Tier 2 and specific alignments are developed, the actual impacts of the proposed project would be determined and assessed at a more refined level.

Environmental resources not present in the Baton Rouge Loop study area are National Natural Landmarks.

3.1. Land Cover

3.1.1. Setting

The Baton Rouge Loop Project area exhibits diverse land cover/land use. Ascension Parish, in both the South and East Unit, through the central and north central area has a mixture of heavy development along major roadways (I-10, US 61, LA 42, and LA 44) with low and medium density development and cultivated/grasslands/pastures radiating outward. Wetlands dominate the

south/southeast and east edge of the parish with a large area west of I-10 and east of currently developed land bordering the Amite River. Cultivated land with pockets of mixed intensity development occurs adjacent to the Mississippi River.

East Baton Rouge Parish in the North Unit and South Unit displays solid development in the southern half of the parish from the Mississippi River to the parish line in the east. The north half of the parish shows substantial development west of the Comite River in Baker and Zachary with ongoing development in the Central area. West of the Comite River and north of the pocket development in Central, the parish has substantial wetlands, forest, and cultivated land.

Iberville Parish in the South Unit is a predominantly rural parish with the majority of the parish covered with wetlands from the west parish line to about five miles west of the Mississippi River. Near the Mississippi River, the land is dominated by agricultural/cultivated land with development adjacent to the river.

Livingston Parish in both the East and North Units is primarily a rural parish. The area south of I-12 is dominated by wetlands interspersed with scrub/shrub land and low intensity development along roadways. North of I-12 land cover is similar with the exception of major development near I-12 in Livingston, Walker, and Denham Springs.

West Baton Rouge Parish is primarily rural with development occurring near the Mississippi River and along LA 1 and I-10. The remainder of the parish land cover is a split between wetlands and agricultural/cultivated land. *Exhibit 3-1* in Volume 3 shows land cover for the Project area.

3.1.2. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to land cover. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, would potentially result in land cover impacts.

3.1.3. Build Alternative

National Oceanic and Atmospheric Administration (NOAA) 2005 land cover data are the basis for the North Unit, South Unit, and East Unit analysis. Land cover in the data set is defined based on nineteen land cover classifications. Land cover was defined for each Unit section and alternative as acreage by classification then converted to a percent of overall section or alternative acreage.

3.1.3.1. North Unit

North Unit land cover in the fourteen sections is shown in *Table 3.1a and Table 3.1b.*

Table 3.1a North Unit Corridor Section Land Cover							
Land Cover Description	Corridor Section Land Cover as % of Total Acreage						
	N1	N2	N3	N4	N5	N6	N7
High Intensity Developed	0.00%	3.79%	0.84%	0.13%	0.00%	0.15%	0.09%
Developed	0.05%	6.96%	3.00%	4.40%	1.01%	0.40%	0.86%
Low Intensity Developed	7.12%	17.40%	9.11%	10.99%	8.79%	8.69%	1.61%
Developed Open Space	0.01%	3.92%	8.00%	14.76%	4.42%	6.55%	0.61%
Cultivated	22.99%	51.70%	0.73%	0.10%	0.00%	0.00%	0.00%
Pasture/Hay	0.00%	4.46%	8.11%	16.63%	20.45%	13.40%	22.18%
Grassland	0.00%	1.87%	3.01%	0.39%	2.59%	3.60%	15.13%
Deciduous Forest	0.00%	1.38%	1.53%	1.33%	0.62%	0.34%	0.02%
Evergreen Forest	0.00%	0.00%	1.83%	0.07%	0.00%	0.46%	0.00%
Mixed Forest	0.00%	0.03%	0.09%	0.34%	0.10%	0.02%	0.00%
Scrub/Shrub	24.94%	1.40%	3.36%	2.16%	1.85%	5.98%	8.70%
Palustrine Forested Wetland	42.09%	4.41%	50.52%	46.63%	53.86%	52.52%	34.00%
Palustrine Scrub/Shrub Wetland	0.27%	0.18%	6.37%	1.44%	3.13%	6.93%	5.65%
Palustrine Emergent Wetland	0.40%	0.16%	0.84%	0.35%	0.77%	0.53%	1.57%
Unconsolidated Shore	0.00%	0.03%	0.16%	0.00%	0.40%	0.00%	4.63%
Bare Land	0.00%	0.05%	0.64%	0.14%	0.41%	0.07%	0.20%
Water	2.11%	2.27%	1.84%	0.15%	1.60%	0.36%	4.75%
Corridor Section Acreage TOTAL	**1,189.0**	**4,399.5**	**2,607.0**	**614.1**	**841.3**	**1,264.2**	**215.9**

Table 3.1b North Unit Corridor Section Land Cover							
Land Cover Description	Corridor Section Land Cover as % of Total Acreage						
	N8	N9	N10	N11	N12	N13	N14
High Intensity Developed	0.19%	0.02%	0.26%	0.05%	0.38%	0.23%	2.02%
Medium Intensity Developed	0.47%	0.02%	2.46%	2.35%	1.39%	0.27%	1.65%
Low Intensity Developed	6.79%	1.59%	10.30%	2.24%	4.77%	2.76%	3.91%
Developed Open Space	2.35%	0.58%	1.74%	0.45%	0.95%	0.50%	0.57%
Cultivated	1.62%	3.50%	1.28%	4.19%	2.97%	0.48%	0.01%
Pasture/Hay	19.20%	17.06%	20.55%	15.58%	14.00%	29.54%	9.37%
Grassland	3.82%	7.28%	5.37%	3.20%	3.39%	8.51%	1.11%
Deciduous Forest	2.33%	0.00%	0.06%	0.33%	0.09%	0.04%	0.00%
Evergreen Forest	3.72%	4.61%	2.36%	8.57%	6.63%	12.56%	22.10%
Mixed Forest	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
Scrub/Shrub	5.36%	7.98%	18.63%	16.65%	29.08%	7.79%	17.59%
Palustrine Forested Wetland	45.58%	49.10%	30.23%	37.04%	23.18%	31.57%	38.01%
Palustrine Scrub/Shrub Wetland	4.55%	6.63%	3.52%	6.35%	8.16%	3.53%	1.93%
Palustrine Emergent Wetland	0.97%	0.53%	0.54%	0.52%	1.09%	0.98%	0.76%
Unconsolidated Shore	1.72%	0.29%	0.65%	0.89%	0.74%	0.02%	0.00%
Bare Land	0.18%	0.17%	0.18%	0.06%	0.26%	0.55%	0.44%
Water	1.14%	0.64%	1.88%	1.53%	2.92%	0.68%	0.53%
Corridor Section Acreage TOTAL	**1,820.9**	**2,820.3**	**1,725.9**	**1,460.8**	**3,247.2**	**1,004.9**	**1,237.1**

Predominant land cover is agricultural (cultivated, pasture/hay, and grassland) in sections N2 and N13. Wetlands (palustrine forested-scrub/shrub- emergent wetlands, unconsolidated shore, water, palustrine aquatic bed, and estuarine aquatic bed) are the chief land cover in the other twelve sections.

Table 3.2 shows North Unit alternative land cover.

Table 3.2 North Unit Corridor Alternative Land Cover

Land Cover Description	Corridor Alternative Land Cover as % of Total				
	NA	NB	NC	ND	NE
High Intensity Developed	1.81%	1.58%	1.52%	1.42%	1.40%
Medium Intensity Developed	3.70%	3.25%	3.08%	2.84%	2.74%
Low Intensity Developed	11.03%	10.67%	10.45%	8.44%	8.63%
Developed Open Space	3.48%	3.00%	3.21%	2.72%	2.71%
Cultivated	21.33%	20.30%	19.34%	19.39%	18.58%
Pasture/Hay	9.66%	12.37%	12.12%	11.36%	10.29%
Grassland	2.90%	2.87%	3.15%	3.44%	3.11%
Deciduous Forest	0.84%	0.92%	0.87%	0.56%	0.51%
Evergreen Forest	4.01%	3.96%	3.82%	4.72%	4.23%
Mixed Forest	0.03%	0.03%	0.03%	0.03%	0.03%
Scrub/Shrub	8.74%	8.59%	8.77%	8.66%	12.41%
Palustrine Forested Wetland	27.30%	27.85%	28.64%	31.15%	28.79%
Palustrine Scrub/Shrub Wetland	2.44%	1.94%	2.39%	3.19%	3.95%
Palustrine Emergent Wetland	0.51%	0.52%	0.52%	0.45%	0.54%
Unconsolidated Shore	0.14%	0.37%	0.40%	0.16%	0.22%
Bare Land	0.27%	0.19%	0.16%	0.15%	0.15%
Water	1.80%	1.60%	1.54%	1.32%	1.69%
Corridor Alternative Acreage TOTAL	**12,163.47**	**12,832.81**	**13,471.69**	**13,990.03**	**14,771.46**

There are three major land cover types in the North Unit alternatives. Agricultural land is 32.0% to 35.5%, wetlands are 32.2% to 36.3%, and developed land (low, medium, and high-density, and open developed space) is 15.4% to 20.0% in all alternatives.

Exhibits 3-2 to 3-4 in Volume 3 show land cover for the North Unit.

3.1.3.2. South Unit

South Unit land cover in the fourteen sections is shown in *Table 3.3a and 3.3b.*

The preponderate land cover is agricultural (cultivated, pasture/hay, and grassland) in eight sections – S3, S4, S6, S10, S11, S12, S13 and S14. Wetlands palustrine forested-scrub/shrub- emergent wetlands, unconsolidated shore, water, palustrine aquatic bed, and estuarine aquatic bed, predominate in six sections, S1, S2, S5, S7, S8, and S9.

Table 3.3a South Unit Corridor Section Land Cover

Land Cover Description	Corridor Section Land Cover as % of Total Acreage						
	S1	S2	S3	S4	S5	S6	S7
High Intensity Developed	0.01%	0.00%	0.11%	0.05%	1.01%	0.00%	0.65%
Medium Intensity Developed	0.00%	0.00%	0.24%	0.62%	0.54%	0.02%	0.33%
Low Intensity Developed	0.53%	0.02%	3.93%	13.35%	9.28%	0.32%	2.57%
Developed Open Space	0.00%	0.00%	0.30%	0.30%	0.19%	0.00%	1.05%
Cultivated	12.11%	3.97%	41.42%	22.75%	37.37%	43.46%	21.31%
Pasture/Hay	4.40%	0.00%	11.65%	40.96%	3.70%	6.65%	7.59%
Grassland	1.08%	0.00%	0.33%	4.11%	0.04%	0.24%	0.42%
Deciduous Forest	0.00%	0.00%	0.02%	0.10%	0.01%	0.00%	0.02%
Evergreen Forest	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%
Mixed Forest	0.01%	0.00%	0.13%	0.00%	0.05%	0.00%	0.03%
Scrub/Shrub	0.00%	0.00%	0.61%	0.37%	0.03%	0.03%	0.28%
Palustrine Forested Wetland	76.10%	85.64%	39.71%	17.14%	46.48%	43.66%	53.27%
Palustrine Scrub/Shrub Wetland	3.60%	9.47%	0.83%	0.12%	0.37%	0.17%	4.71%
Palustrine Emergent Wetland	1.21%	0.90%	0.27%	0.02%	0.67%	5.36%	2.37%
Unconsolidated Shore	0.03%	0.00%	0.00%	0.00%	0.18%	0.00%	0.07%
Bare Land	0.00%	0.00%	0.00%	0.12%	0.06%	0.00%	2.33%
Water	0.89%	0.00%	0.44%	0.00%	0.01%	0.08%	2.94%
Corridor Section Acreage TOTAL	**5,714.31**	**1,719.87**	**3,029.37**	**428.22**	**1,446.22**	**1,251.25**	**1,299.55**

Table 3.3b South Unit Corridor Section Land Cover

Land Cover Description	Corridor Section Land Cover as % of Total Acreage						
	S8	S9	S10	S11	S12	S13	S14
High Intensity Developed	1.65%	0.64%	7.77%	0.08%	0.06%	1.49%	0.15%
Medium Intensity Developed	5.07%	0.47%	4.72%	0.49%	0.13%	1.14%	1.39%
Low Intensity Developed	5.30%	4.75%	13.80%	5.92%	2.62%	6.20%	3.55%
Developed Open Space	6.30%	0.90%	0.45%	0.78%	0.07%	0.09%	0.33%
Cultivated	3.50%	9.20%	22.10%	37.44%	45.74%	63.01%	37.01%
Pasture/Hay	16.89%	26.70%	11.92%	6.50%	11.22%	3.86%	9.05%
Grassland	7.65%	6.29%	3.27%	2.48%	0.50%	0.06%	0.95%
Deciduous Forest	0.00%	0.05%	0.56%	0.00%	0.00%	0.00%	0.00%
Evergreen Forest	0.12%	0.09%	0.00%	0.02%	0.00%	0.00%	0.00%
Mixed Forest	0.00%	0.00%	0.00%	0.00%	0.02%	0.03%	0.02%
Scrub/Shrub	1.60%	3.21%	0.59%	3.70%	0.74%	0.44%	5.38%
Palustrine Forested Wetland	44.64%	31.33%	31.91%	37.91%	34.07%	5.74%	31.19%
Palustrine Scrub/Shrub Wetland	3.38%	14.45%	1.60%	3.24%	0.59%	0.03%	0.58%
Palustrine Emergent Wetland	1.75%	1.33%	0.91%	1.17%	0.58%	0.12%	0.54%
Unconsolidated Shore	0.00%	0.00%	0.00%	0.00%	0.03%	3.22%	0.08%
Bare Land	0.18%	0.17%	0.34%	0.03%	0.01%	0.02%	0.03%
Water	1.94%	0.41%	0.05%	0.23%	3.62%	14.55%	9.75%
Corridor Section Acreage TOTAL	**1,027.00**	**1,110.68**	**869.37**	**2,052.08**	**14,169.79**	**1,853.37**	**784.82**

South Unit Corridor Alternative land cover is shown in *Tables 3.4a and 3.4b.* Wetlands are the main land cover in all alternatives, ranging from 52.71% to 61.64% with agricultural land the second largest, ranging from 33.11% to 43.03%. Developed land is 2.8% to 5.5% of land cover in any South Unit alternative.

Table 3.4a South Unit Corridor Alternative Land Cover

	Corridor Alternative Land Cover as % of Total Acreage								
Land Cover Description	SA	SB	SC	SD	SE	SF	SG	SH	SI
High Intensity Developed	0.23%	0.33%	0.15%	0.24%	0.54%	0.63%	0.14%	0.19%	0.10%
Medium Intensity Developed	0.57%	0.62%	0.26%	0.30%	0.50%	0.54%	0.30%	0.33%	0.14%
Low Intensity Developed	2.41%	3.32%	2.85%	3.63%	3.33%	4.12%	2.15%	2.64%	2.42%
Developed Open Space	0.67%	0.68%	0.34%	0.35%	0.30%	0.32%	0.35%	0.36%	0.18%
Cultivated	23.58%	23.22%	25.69%	25.35%	26.68%	26.32%	32.00%	31.75%	32.55%
Pasture/Hay	8.91%	8.57%	9.33%	9.03%	8.23%	7.94%	9.26%	9.08%	9.47%
Grassland	1.36%	1.32%	1.44%	1.41%	1.20%	1.17%	0.93%	0.91%	1.01%
Deciduous Forest	0.01%	0.01%	0.01%	0.01%	0.04%	0.04%	0.00%	0.00%	0.00%
Evergreen Forest	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Mixed Forest	0.04%	0.04%	0.03%	0.04%	0.03%	0.04%	0.02%	0.02%	0.02%
Scrub/Shrub	0.61%	0.61%	1.14%	1.12%	0.96%	0.94%	0.49%	0.49%	0.80%
Palustrine Forested Wetland	55.91%	56.03%	52.55%	52.70%	52.91%	53.06%	48.50%	48.62%	47.17%
Palustrine Scrub/Shrub Wetland	2.47%	2.46%	3.36%	3.34%	2.46%	2.45%	2.15%	2.15%	2.68%
Palustrine Emergent Wetland	1.46%	1.02%	1.39%	1.02%	1.37%	0.99%	1.11%	0.88%	1.10%
Unconsolidated Shore	0.02%	0.04%	0.02%	0.04%	0.02%	0.04%	0.02%	0.03%	0.02%
Bare Land	0.24%	0.25%	0.22%	0.22%	0.23%	0.23%	0.14%	0.14%	0.13%
Water	1.48%	1.45%	1.21%	1.19%	1.20%	1.18%	2.43%	2.41%	2.21%
Corridor Alternative Acreage TOTAL	**13,534.5**	**13,729.5**	**15,670.3**	**15,865.3**	**15,429.0**	**15,623.9**	**25,610.0**	**25,805.0**	**27,745.7**

Table 3.4b South Unit Corridor Alternative Land Cover

	Corridor Alternative Land Cover as % of Total Acreage								
Land Cover Description	SJ	SK	SL	SM	SN	SO	SP	SQ	SR
High Intensity Developed	0.15%	0.32%	0.37%	0.35%	0.44%	0.27%	0.60%	0.34%	0.68%
Medium Intensity Developed	0.17%	0.28%	0.30%	0.54%	0.58%	0.28%	0.48%	0.31%	0.51%
Low Intensity Developed	2.87%	2.68%	3.13%	2.53%	3.29%	2.89%	3.30%	3.56%	3.97%
Developed Open Space	0.19%	0.16%	0.17%	0.55%	0.56%	0.28%	0.25%	0.29%	0.26%
Cultivated	32.31%	33.16%	32.91%	25.34%	25.02%	26.93%	27.78%	26.63%	27.47%
Pasture/Hay	9.30%	8.86%	8.69%	7.39%	7.13%	7.93%	6.97%	7.68%	6.74%
Grassland	0.99%	0.86%	0.85%	1.09%	1.06%	1.19%	0.98%	1.17%	0.96%
Deciduous Forest	0.00%	0.02%	0.02%	0.01%	0.01%	0.01%	0.03%	0.01%	0.03%
Evergreen Forest	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Mixed Forest	0.02%	0.02%	0.02%	0.03%	0.04%	0.03%	0.03%	0.03%	0.03%
Scrub/Shrub	0.79%	0.69%	0.69%	0.30%	0.30%	0.78%	0.62%	0.77%	0.62%
Palustrine Forested Wetland	47.29%	47.32%	47.45%	54.53%	54.65%	51.84%	52.14%	51.97%	52.27%
Palustrine Scrub/Shrub Wetland	2.67%	2.17%	2.17%	3.02%	3.00%	3.71%	2.96%	3.69%	2.94%
Palustrine Emergent Wetland	0.88%	1.08%	0.87%	1.29%	0.93%	1.26%	1.24%	0.94%	0.91%
Unconsolidated Shore	0.03%	0.02%	0.03%	0.38%	0.39%	0.34%	0.34%	0.35%	0.35%
Bare Land	0.13%	0.13%	0.14%	0.20%	0.21%	0.18%	0.19%	0.19%	0.19%
Water	2.19%	2.21%	2.19%	2.41%	2.38%	2.07%	2.08%	2.05%	2.05%
Corridor Alternative Acreage TOTAL	**27,940.7**	**27,504.4**	**27,699.4**	**16,322.9**	**16,517.9**	**18,458.7**	**18,217.4**	**18,653.7**	**18,412.4**

Exhibits 3-5 to 3-13 in Volume 3 show land cover for the South Unit.

3.1.3.3. East Unit

East Unit land cover in the ten sections is shown in *Tables 3.5*a and *3.5b*. Predominate land cover in all ten sections is wetlands.

Table 3.5a East Unit Corridor Section Land Cover

Land Cover Description	Corridor Section Land Cover as % of Total Acreage				
	E1	E2	E3	E4	E5
High Intensity Developed	0.18%	0.00%	0.00%	0.00%	0.00%
Medium Intensity Developed	0.52%	1.40%	0.00%	0.00%	0.00%
Low Intensity Developed	5.22%	8.05%	6.28%	0.23%	2.49%
Developed Open Space	0.90%	1.01%	0.90%	0.00%	0.22%
Cultivated	25.97%	15.08%	10.34%	0.11%	12.46%
Pasture/Hay	5.92%	1.72%	0.00%	0.00%	13.61%
Grassland	1.21%	0.00%	3.18%	0.34%	1.50%
Deciduous Forest	0.00%	0.06%	0.02%	0.00%	0.00%
Evergreen Forest	0.01%	0.00%	0.00%	0.30%	3.20%
Mixed Forest	0.03%	0.00%	0.12%	0.00%	0.00%
Scrub/Shrub	1.01%	10.93%	7.62%	0.14%	3.39%
Palustrine Forested Wetland	48.70%	49.91%	64.15%	88.39%	56.66%
Palustrine Scrub/Shrub Wetland	6.36%	3.82%	1.78%	8.39%	5.59%
Palustrine Emergent Wetland	2.46%	6.82%	4.59%	1.20%	0.52%
Unconsolidated Shore	0.00%	0.00%	0.00%	0.00%	0.00%
Bare Land	0.07%	0.00%	0.02%	0.00%	0.00%
Water	1.47%	1.22%	0.99%	0.90%	0.37%
Palustrine Aquatic Bed	0.00%	0.00%	0.00%	0.00%	0.00%
Corridor Section Acreage TOTAL	**1,558.7**	**362.2**	**872.6**	**1,352.9**	**301.8**

Table 3.5b East Unit - Corridor Section Land Cover

Land Cover Description	Corridor Section Land Cover as % of Total Acreage				
	E6	E7	E8	E9	E10
High Intensity Developed	0.00%	0.17%	0.09%	0.05%	0.03%
Medium Intensity Developed	0.00%	0.00%	0.11%	0.03%	0.01%
Low Intensity Developed	0.54%	0.04%	3.87%	2.23%	1.31%
Developed Open Space	0.00%	0.00%	0.73%	0.40%	0.01%
Cultivated	0.00%	0.00%	1.33%	1.93%	0.00%
Pasture/Hay	0.00%	0.03%	6.49%	5.00%	0.07%
Grassland	0.28%	0.10%	2.06%	2.54%	4.86%
Deciduous Forest	0.00%	0.00%	0.00%	0.00%	0.00%
Evergreen Forest	0.52%	2.04%	20.46%	20.05%	38.00%
Mixed Forest	0.00%	0.00%	0.02%	0.00%	0.00%
Scrub/Shrub	0.24%	1.13%	8.46%	9.97%	24.71%
Palustrine Forested Wetland	92.51%	95.34%	51.48%	53.51%	26.23%
Palustrine Scrub/Shrub Wetland	4.47%	1.15%	2.00%	0.97%	4.13%
Palustrine Emergent Wetland	0.97%	0.00%	0.70%	0.19%	0.40%
Unconsolidated Shore	0.00%	0.00%	0.00%	0.03%	0.00%
Bare Land	0.00%	0.00%	0.07%	0.25%	0.03%
Water	0.46%	0.00%	1.95%	0.00%	0.21%
Palustrine Aquatic Bed	0.00%	0.00%	0.16%	0.05%	0.00%
Corridor Section Acreage TOTAL	**730.7**	**135.0**	**896.3**	**796.3**	**5,497.5**

East Unit alternatives land cover is shown in *Table 3.6a and 3.6b.* Dominate land cover in all alternatives is wetlands (48.93% to 53.76%) with forested land the second largest (20.69% to 22.94%). Developed land comprises 2.4% to 2.84% land cover in any East Unit alternative.

Table 3.6a East Unit Corridor Alternative Land Cover

Land Cover Description	Corridor Alternative Land Cover as % of Total			
	EA	EB	EC	ED
High Intensity Developed	0.05%	0.05%	0.05%	0.04%
Medium Intensity Developed	0.15%	0.14%	0.14%	0.13%
Low Intensity Developed	2.29%	2.11%	2.13%	2.02%
Developed Open Space	0.25%	0.22%	0.23%	0.21%
Cultivated	5.12%	5.14%	4.49%	4.62%
Pasture/Hay	2.02%	1.83%	1.53%	1.38%
Grassland	3.15%	3.15%	2.95%	3.04%
Deciduous Forest	0.00%	0.00%	0.00%	0.00%
Evergreen Forest	22.94%	22.65%	21.68%	21.92%
Mixed Forest	0.01%	0.00%	0.01%	0.00%
Scrub/Shrub	15.06%	15.06%	14.19%	14.53%
Palustrine Forested Wetland	42.23%	43.01%	45.98%	45.44%
Palustrine Scrub/Shrub Wetland	4.90%	4.79%	4.80%	4.79%
Palustrine Emergent Wetland	1.09%	1.04%	1.09%	1.07%
Unconsolidated Shore	0.00%	0.00%	0.00%	0.00%
Bare Land	0.03%	0.05%	0.03%	0.05%
Water	0.70%	0.52%	0.68%	0.53%
Palustrine Aquatic Bed	0.01%	0.00%	0.01%	0.00%
Corridor Alternative Acreage TOTAL	**9,969.4**	**10,004.4**	**10,533.4**	**10,298.3**

Table 3.6b East Unit Corridor Alternative Land Cover

Land Cover Description	Corridor Alternative Land Cover as % of Total			
	EE	EF	EG	EH
High Intensity Developed	0.05%	0.05%	0.05%	0.04%
Medium Intensity Developed	0.09%	0.08%	0.09%	0.08%
Low Intensity Developed	2.42%	2.25%	2.27%	2.16%
Developed Open Space	0.28%	0.25%	0.26%	0.24%
Cultivated	5.21%	5.23%	4.60%	4.74%
Pasture/Hay	1.87%	1.69%	1.40%	1.26%
Grassland	3.26%	3.26%	3.07%	3.15%
Deciduous Forest	0.00%	0.00%	0.00%	0.00%
Evergreen Forest	21.82%	21.55%	20.68%	20.88%
Mixed Forest	0.02%	0.01%	0.02%	0.01%
Scrub/Shrub	14.59%	14.59%	13.78%	14.10%
Palustrine Forested Wetland	43.79%	44.53%	47.29%	46.80%
Palustrine Scrub/Shrub Wetland	4.67%	4.58%	4.59%	4.58%
Palustrine Emergent Wetland	1.19%	1.14%	1.18%	1.16%
Unconsolidated Shore	0.00%	0.00%	0.00%	0.00%
Bare Land	0.03%	0.05%	0.03%	0.05%
Water	0.71%	0.54%	0.69%	0.54%
Palustrine Aquatic Bed	0.01%	0.00%	0.01%	0.00%
Corridor Alternative Acreage TOTAL	**10,479.8**	**10,514.8**	**11,043.8**	**10,808.7**

Exhibits 3-14 to 3-17 in Volume 3 show land cover for East Unit.

At the Tier 1 EIS phase of the project, it is not possible to determine the concise land use impacts as specific alternative alignments have not been developed. However, with the preponderance of wetlands in the South and East Unit Corridor Alternatives, it is probable that the largest potential land cover impact in any South or East Unit Corridor Alternative would be to wetlands. In the North Unit, the largest potential land cover impact would likely be to either wetlands or agricultural land depending on the Corridor Alternative.

3.2. Prime Farmland Soils

This section has been prepared to respond to the substantive requirements of the Farmland Protection Policy Act of 1981 (7 U.S.C. 4201 *et seq.*) and associated implementing regulations of the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) (7 CFR Part 658) as well as related FHWA regulations. The Farmland Protection Policy Act is intended to minimize the impact of Federal programs on the conversion of farmland to nonagricultural uses and to ensure that, to the extent possible, federal programs are compatible with state and local government and private programs and policies to protect farmland. Farmland includes prime farmland, unique farmland and land of state or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

3.2.1. Setting

Prime farmland, as defined by USDA, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas.

The Baton Rouge Loop Project area at a gross level has a substantial quantity of prime farmland soils based solely on soil classification. However, once urban, built-up or water area use is considered the quantity decreases. The largest concentration of prime farmland soils in the Project area is located west of the Mississippi River in West Baton Rouge Parish and Iberville Parish, and Ascension Parish south of I-10. *Exhibit 3-18* in Volume 3 shows prime farmland for the Project area.

3.2.2. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to prime farmland soils. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, could potentially result in prime farmland soils impacts.

3.2.3. Build Alternative

Prime farmland was determined using a multi – step process. First soil survey files were limited to only those classified as Prime Farmland soils in each parish. Next, these prime farmland soil files were overlapped with the 2005 NOAA land cover data. From the merged dataset, areas classified as High, Medium or Low Density Development and Water were deleted to be consistent with USDA's definition of prime farmland as not urban or built-up land or water areas.

The following data were collected for each of the five parishes in the Project area and used in this analysis: U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Soil Survey Geographic (SSURGO); NOAA 2005 land cover data; and the NRCS, National Cooperative Soil Survey, Web Soil Survey 2.1.

3.2.3.1. North Unit

North Unit prime farmland soils in the sections and alternatives are shown in *Tables 3.7* and *3.8.* The percentage of prime farmland acreage in sections varies from the lowest in section N14, 22.79%, to the highest in section N1 (90.11%).

Table 3.7 North Unit Corridor Section Prime Farmland Soils

Section	Corridor Section Prime Farmland Acreage	Corridor Section Total Acreage	Prime Farmland Acreage as % of Total Acreage
N1	1,071.4	1,189.0	90.11%
N2	2,918.4	4,399.5	66.34%
N3	1,411.9	2,607.0	54.16%
N4	259.4	614.1	42.24%
N5	299.4	841.3	35.59%
N6	436.2	1,264.2	34.50%
N7	117.8	215.9	54.54%
N8	929.9	1,820.9	51.07%
N9	1,651.9	2,820.3	58.57%
N10	693.4	1,725.9	40.17%
N11	592.0	1,460.9	40.52%
N12	1,143.6	3,247.2	35.22%
N13	484.5	1,004.9	48.21%
N14	281.9	1,237.2	22.79%

Table 3.8 North Unit Corridor Alternative Prime Farmland Soils

Alternative	Corridor Alternative Prime Farmland Acreage	Corridor Alternative Total Acreage	Prime Farmland Acreage as % of Total Acreage
NA	6,861.5	12,163.5	56.41%
NB	6,938.3	12,832.8	54.07%
NC	7,192.8	13,471.7	53.39%
ND	7,695.7	13,990.0	55.01%
NE	7,762.7	14,771.5	52.55%

Prime farmland acreage in the five alternatives ranges from 52.55% in Alternative NE to 56.41% in Alternative NA.

Exhibits 3-19 to 3-21 in Volume 3 show North Unit prime farmland soils.

3.2.3.2. South Unit

South Unit prime farmland soils in the sections and alternatives are shown in *Tables 3.9* and *3.10.*

Table 3.9 South Unit Corridor Section Prime Farmland Soils

Section	Corridor Section Prime Farmland Acreage	Corridor Section Total Acreage	Prime Farmland Acreage as % of Total Acreage
S1	5,622.61	5,713.47	98.41%
S2	1,719.58	1,719.87	99.98%
S3	1,969.25	3,029.37	65.01%
S4	366.33	428.22	85.55%
S5	947.45	1,446.22	65.51%
S6	1,002.71	1,251.25	80.14%
S7	384.96	1,299.55	29.62%
S8	748.32	1,027.00	72.86%
S9	1,021.55	1,110.68	91.98%
S10	640.25	869.37	73.65%
S11	1,908.65	2,052.08	93.01%
S12	12,877.02	14,169.79	90.88%
S13	1,357.14	1,853.37	73.23%
S14	646.62	784.82	82.39%

Table 3.10 South Unit Corridor Alternative Prime Farmland Soils

Alternative	Corridor Alternative Prime Farmland Acreage	Corridor Alternative Total Acreage	Prime Farmland Acreage as % of Total Acreage
SA	10,740.80	13,533.69	79.36%
SB	10,685.54	13,728.66	77.83%
SC	12,922.68	15,669.45	82.47%
SD	12,867.42	15,864.42	81.11%
SE	14,510.63	18,457.51	78.62%
SF	12,486.12	15,623.11	79.92%
SG	22,721.53	25,609.15	88.72%
SH	22,666.27	25,804.12	87.84%
SI	24,903.41	27,744.91	89.76%
SJ	24,848.15	27,939.88	88.93%
SK	24,522.11	27,503.60	89.16%
SL	24,466.85	27,698.57	88.33%
SM	13,170.89	16,322.10	80.69%
SN	13,115.63	16,517.07	79.41%
SO	15,352.77	18,457.86	83.18%
SP	14,971.47	18,216.55	82.19%
SQ	15,297.51	18,652.83	82.01%
SR	14,916.21	18,411.52	81.02%

The percentage of prime farmland acreage in sections varies from the lowest in section S7 (29.62%), to the highest in section S2 (99.98%).

Prime farmland acreage in the eighteen alternatives ranges from the lowest (77.83%) in Alternative SB to the highest (89.76%) in Alternative SI.

Exhibits 3-22 to 3-30 in Volume 3 show South Unit prime farmland soils.

3.2.3.3. East Unit

East Unit prime farmland soils in the sections and alternatives are shown in *Tables 3.11* and *3.12.* The percentage of prime farmland acreage in sections varies from the lowest in section E6 (9.39%), to the highest in section E5 (79.01%).

Table 3.11 East Unit Corridor Section Prime Farmland Soils

Section	Corridor Section Prime Farmland Acreage	Corridor Section Total Acreage	Prime Farmland Acreage as % of Total Acreage
E1	828.73	1,558.72	53.17%
E2	209.88	362.15	57.95%
E3	393.21	872.57	45.06%
E4	154.06	1,352.87	11.39%
E5	238.42	301.77	79.01%
E6	68.61	730.73	9.39%
E7	48.90	135.04	36.21%
E8	527.48	896.33	58.85%
E9	259.66	796.29	32.61%
E10	1,736.88	5,497.54	31.59%

Table 3.12 East Unit Corridor Alternative Prime Farmland Soils

Alternative	Corridor Alternative Prime Farmland Acreage	Corridor Alternative Total Acreage	Prime Farmland Acreage as % of Total Acreage
EA	3,695.45	9,969.38	37.07%
EB	3,238.11	10,004.38	32.37%
EC	3,574.54	10,533.38	33.94%
ED	3,257.82	10,298.30	31.63%
EE	3,878.78	10,479.80	37.01%
EF	3,659.86	10,514.80	34.81%
EG	3,757.87	11,043.80	34.03%
EH	3,441.15	10,808.72	31.84%

Prime farmland acreage in the eight alternatives ranges from 31.63% in Alternative ED to 37.07% in Alternative EA.

Exhibits 3-31 to 3-34 in Volume 3 show East Unit prime farmland soils.

At the Tier 1 EIS phase of the Project, it is not possible to determine prime farmland impacts as specific alternative alignments have not been developed. Based on gross acreage it would appear the South Unit has the greatest potential and the East Unit the least potential for prime farmland soils effects. However, impacts to prime farmland resulting from conversion are not based solely on land conversion but also on non-soil related considerations such as the potential for impact on the local agricultural economy if the land is converted to non-farm use and compatibility with existing agricultural use.

3.3. Socioeconomics

This section has been prepared to respond to the substantive requirements, and to support the goals, of Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* dated February 11, 1994 and Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000[d]) as

well as related FHWA regulations. EO 12898 directs all federal agencies to take appropriate steps to identify and address any disproportionately high and adverse human health or environmental effects of federal programs, policies, and activities on minority and low-income populations. Title VI dictates, "no person, because of race, color, or national origin, shall be excluded from participation in, denied benefits of or in any other way be subjected to discrimination under any program or activity receiving federal assistance".

On May 2, 2012, the U.S. Department of Transportation (USDOT) published Departmental Order 5610.2(a), Actions to Address Environmental Justice in Minority Populations and Low Income Populations, which updated the original DOT Order published in 1997. The new Order focuses on improving the internal management of USDOT administrations (such as FHWA) with regard to environmental justice compliance and promotion of environmental justice principles in all programs, policies, and activities that could potentially generate disproportionate adverse impacts on minority and/or low income populations. The Order identifies the incorporation of environmental justice considerations in early planning activities and throughout each administration's decision-making processes as a critical means to avoid environmental justice impacts.

Following issuance of DOT Order 5610.2(a), the FHWA published a directive entitled FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations dated June 14, 2012. This Directive updated an earlier version promulgated in 1998 and details the policies and procedures that FHWA must follow to comply with EO 12898 while re-affirming the commitments of the DOT Order and Title VI. It is intended to be implemented within the existing legal framework and, consequently, serves as guidance without creating any new substantive regulatory requirements. The Directive dictates that environmental justice principles are to be incorporated into existing FHWA operations. FHWA programs, policies, and activities must be performed or conducted in a manner that allows early identification of discrimination risks and disproportionate adverse human health and environmental impacts on affected populations. The Directive requires that the process of determining whether disproportionate impacts are potentially accruing to environmental justice populations should also take into account mitigation measures, enhancements, and other considerations that may offer offsetting benefits to these same populations. Comparative impacts on non-low income and non-minority populations should also be taken into account. Any FHWA programs, policies, and activities that may disproportionately and adversely impact populations protected by Title VI will only be implemented if: (1) There is a substantial need based broadly on the public interest; (2) alternatives having less adverse effects on these populations either have major adverse environmental and/or human health impacts or would be extraordinarily costly. Relevant findings supporting these conclusions must be presented in associated planning and NEPA documentation.

As discussed elsewhere in this document, this Tier 1 EIS was completed using predominantly desktop analyses of information from publicly-available databases and published sources and is intended to provide an initial broad assessment of large corridor alternatives for the Baton Rouge Loop project. At this stage of analysis, evaluation of detailed project impacts at the community level or on specific groups such as environmental justice or non-environmental justice populations was

not performed. Such assessments, including the detailed identification of environmental justice communities, will be undertaken as part of Tier 2 studies. Nonetheless, to comply with the FHWA policy to identify and prevent discriminatory effects of its activities and actions by early recognition of potential social impacts to communities, the minority and low income composition of the population within project alternative sections was performed. This analysis represents the first step in the process of determining whether project alternatives would have disproportionately high and adverse impacts on environmental justice populations. This step involved an initial identification of where environmental justice populations occur or are concentrated in the vicinity of proposed corridor sections based on U.S. Census data. Mapping the location of Census tracts and block groups with high EJ concentrations, as shown in Exhibits 3-120 through 3-122 (Volume 3 of the FEIS), provided a relative indication of the demographic makeup within and surrounding the proposed corridors.

The minority and low-income composition of corridor sections was used as a possible indicator of the likelihood for environmental justice issues for comparison purposes during alternatives screening (see Chapter 5). The intent was to factor potential environmental justice considerations into the screening process for determining which project alternatives should be advanced to Tier 2 studies. However, predicting the type and magnitude of impacts on both environmental justice and non-environmental justice populations in order to determine if these impacts would be disproportionate, and quantifying what benefits might accrue to affected populations that could offset these impacts, cannot be determined on the basis of the broad Tier 1 analyses performed to date. Tier 2 studies will assess these considerations in detail.

3.3.1. Setting

The five-parish Baton Rouge Loop Project area has shown significant development and growth since 1990. Population in the five-parishes increased 13.7% between 1990 and 2000. It is estimated to increase by 21.0% between 2000 and 2010 for an overall projected growth of 37.6% between 1990 and 2010.

- Based on US Census Bureau data, from April 1, 2000 to July 1, 2008, the Project area had a 10.93% population increase. Four of the five parishes were in the top twenty parishes for growth in the state during this period. Ascension Parish experienced the highest population growth in the state at 33.22%. Livingston Parish had the second highest growth rate with an estimated population growth of 30.98% in the same period as shown in *Table 3.13.*

Table 3.13 Baton Rouge Loop Project Area Population				
Population Estimates April 1, 2000 - July 1, 2008	July 1, 2008 Estimate	April 1, 2000 Census Estimate Base	% Change 2000 - 2008	2000 - 2008 State Growth Rank
Louisiana	4,410,796	4,468,958	-1.30%	-
Ascension Parish	101,789	76,408	33.22%	1
East Baton Rouge Parish	428,360	412,852	3.76%	17
Iberville Parish	32,545	33,320	-2.33%	44
Livingston Parish	120,256	91,810	30.98%	2
West Baton Rouge Parish	22,553	21,601	4.41%	14
Project Area	705,503	635,991	10.93%	

Source:
01-22)
Source: Population Division, U.S. Census Bureau Release Date: March 19, 2009

The Project area minority population percentage was slightly higher than that for Louisiana as a whole in 2000. Based on 2007 data the Project area has shown a minority population percentage increase six times that of the state as seen in *Table 3.14.*

Table 3.14 Baton Rouge Loop Project Area Minority Population					
	2000		2007		
	Total Population - Estimate Base	Total Minority Population (%)	Total Population - Estimate Base	Total Minority Population (%)	% Change 2000 - 2007
Louisiana	4,468,976	36.1%	4,344,053	36.3%	0.2%
Ascension Parish	76,627	23.8%	94,520	24.7%	0.9%
East Baton Rouge Parish	412,852	44.9%	424,597	48.3%	3.4%
Iberville Parish	33,320	51.4%	32,526	51.6%	0.2%
Livingston Parish	91,814	6.5%	112,445	7.5%	1.0%
West Baton Rouge Parish	21,601	37.9%	22,126	39.3%	1.4%
Project Area	636,214	36.9%	686,214	38.2%	1.3%

2000 Data
Source: U.S. Census 2000 SF1 Table P8, Combines Census Table P8 categories 'Some other race alone' and 'Two or more races'
2007 Data
Source: U.S. Census Bureau, 2005-2007 American Community Survey, ACS Demographic and Housing Estimates: 2005-2007
Data Set: 2005-2007 American Community Survey 3-Year Estimates Survey: American Community Survey

The Baton Rouge Loop Project area poverty level population percentage was less than that for Louisiana as a whole in 2000. According to 2007 data, the Project area is still below the state rate but three of the parishes have shown increased rates over 2000 as shown in *Table 3.15*.

Table 3.15 Baton Rouge Loop Project Area Poverty Level Population					
	2000		2007		
State/Parish	All individuals for whom poverty status is determined	Total % Below Poverty Level	All individuals for whom poverty status is determined	Total % Below Poverty Level	% Change 2000 - 2007
Louisiana	4,334,094	19.6%	4,344,053	19.3%	-0.30%
Ascension Parish	75,755	12.9%	94,520	11.8%	-1.10%
East Baton Rouge Parish	398,888	17.9%	424,597	19.6%	1.70%
Iberville Parish	29,895	23.1%	32,526	20.6%	-2.50%
Livingston Parish	90,959	11.4%	112,445	12.6%	1.20%
West Baton Rouge Parish	20,953	17.0%	22,126	18.3%	1.30%
Baton Rouge Loop Project Area	616,450	16.5%	686,214	17.4%	0.84%

2000 Data
U.S. Census Bureau, Census 2000 Summary File 4, Matrices PCT142, PCT144, PCT147, PCT150, PCT151, PCT152, and PCT153.
QT-P34: Poverty Status in 1999 of Individuals:2000 Data Set: Census 2000 Summary File 4 (SF 4) - Sample Data
2007 Data
Selected Economic Characteristics: 2005-2007 Data Set: 2005-2007 American Community Survey 3-Year Estimates

3.3.2. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to population groups. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, could potentially result in population group impacts. A detailed analysis regarding whether these projects may generate disproportionate effects on environmental justice populations, taking into account such considerations as reduction or denial of services or delay in receipt of benefits by these same groups, will be included as part of a more in-depth environmental justice analysis in the Tier 2 EIS.

3.3.3. Build Alternative

Project Unit Corridor Alternatives population socioeconomic analysis was prepared using census block group or census block data from the U.S. Census Bureau, Census 2000. In conducting the initial data review it was determined that census block groups for the Project area encompass large geographic areas. Average block group size by parish is:Ascension Parish - 4,400 acres; East Baton Rouge Parish - 985 acres; Iberville Parish - 19,891 acres; Livingston Parish - 9,782 acres; and West Baton Rouge Parish - 10,020 acres.

Census block data were used for population and minority population analysis for each corridor section. Even at the census block level the population and socioeconomic data likely over-estimates the potentially affected population for any specific section. Many of the census blocks have physical coverage larger than the area traversed by a corridor section. Tables identifying total population and minority population express it as a maximum as the number represents all the population in a census block.

Minority population for each corridor section was determined by a multi-step calculation. The population of each census block traversed by a section was multiplied by the percent of minority population then added to yield a total minority population per corridor section. Total minority population was divided by the section total census block population to determine the percent of minority population per corridor section.

Poverty level population was calculated for each corridor section using a percentile rank extrapolation of the 1999 U.S. Department of Health and Human Services (DHHS) poverty guideline of $16,700 for a household to determine the total percent of poverty level households in each block group crossed by a corridor section. The percent of poverty level households was multiplied by the section total block population to derive the section poverty population.

Corridor Alternative total population, minority population and percent, and poverty level population and percent were tabulated by adding data for each corridor section then converting the data to a percentage.

3.3.3.1. North Unit

The North Unit has corridor sections in three of the five Project area parishes – East Baton Rouge, Livingston, and West Baton Rouge. *Table 3.16* shows population data at the parish level. The North Unit parishes have minority and poverty level population percentages greater than the state and Project area percentages for

each of these categories. *Table 3.17* provides North Unit population data by section, and *Table 3.18* shows North Unit population data by alternative.

Table 3.16 North Unit Parish Total Population, % Minority and % Poverty Level Population 2000

	Total Population	% Minority Population	% Poverty Level Population
East Baton Rouge Parish	412,852	44.9%	22.9%
Livingston Parish	91,814	6.5%	19.0%
West Baton Rouge Parish	21,601	37.9%	22.1%
North Unit	526,267	37.9%	22.7%

Source: U.S. Census 2000 SF1 Table P8

1 Combines Census Table P8 categories 'Some other race alone' and 'Two or more races'

2 Small area Census geographies are named by their FIPS codes (State FIPS-County FIPS-Tract FIPS-Block group FIPS & Block FIPS).

The North Unit section data in *Table 3.17* indicates that two sections, N2 and N4, have the potential to have minority population percentages in excess of the North Unit parish percentage. Section N2 also has the potential to have poverty level population percentages in excess of the North Unit percentage.

Table 3.17 North Unit Corridor Section Population, Minority and Poverty Level Population - 2000

Corridor Section	Total Population	Minority Population	% Minority Population	Poverty Level Population	% Poverty Level Population
N1	129	15	11.65%	12	9.0%
N2	5641	3962	70.23%	1806	32.0%
N3	6142	1620	26.37%	891	14.5%
N4	2,974	1725	58.01%	556	18.7%
N5	2,741	843	30.77%	423	15.4%
N6	3,036	1123	36.98%	511	16.8%
N7	1,070	154	14.38%	152	14.2%
N8	5,304	222	4.18%	571	10.8%
N9	2,131	363	17.03%	311	14.6%
N10	5,729	157	2.73%	771	13.5%
N11	2,581	80	3.12%	412	15.9%
N12	5,214	176	3.38%	870	16.7%
N13	2,659	133	5.00%	416	15.7%
N14	2,012	92	4.57%	399	19.8%

Source: U.S. Census 2000 SF1 Table P8
Combines Census Table P8 categories 'Some other race alone' and 'Two or more races'

Table 3.18 shows none of the North Unit alternatives have minority or poverty level populations in excess of the overall North Unit parish percentages.

Table 3.18 North Unit Corridor Alternative - Total, Minority and Poverty Level Population - 2000					
Corridor Alternative	Total Population	Total Minority Population	% Minority Population	Poverty Level Population	% Poverty Level Population
NA	22,312	5,978	26.8%	4,294	19.2%
NB	27,189	7,149	26.3%	4,952	18.2%
NC	28,554	7,582	26.6%	5,192	18.2%
ND	21,163	7,493	35.4%	4,421	20.9%
NE	21,137	7,456	35.3%	4,463	21.1%

It is reasonable to estimate that the potential population effect in any North Unit section or alternative would not be significant when reviewing these data in combination with the Land Cover information in Section 3.1., This conclusion is based on overall population, the acreage of the sections and alternatives, and the percentage and location of development relative to the sections and alternatives.

3.3.3.2. South Unit

The South Unit has corridor sections in four of the five Project area parishes - Ascension, East Baton Rouge, Iberville, and West Baton Rouge. *Table 3.19* shows population data at the South Unit parish level. The South Unit has both minority and poverty level population percentages greater than the state and Project area percentages for each of these categories.

Table 3.19 South Unit Parish Total Population, % Minority and % Poverty Level Population 2000			
	Total Population	% Minority Population	% Poverty Level Population
Ascension Parish	76,627	23.8%	17.9%
East Baton Rouge Parish	412,852	44.9%	22.9%
Iberville Parish	33,320	51.4%	30.6%
West Baton Rouge Parish	21,601	37.9%	22.1%
South Unit	544,400	42.1%	22.7%

Source: U.S. Census 2000 SF1 Table P8

1 Combines Census Table P8 categories 'Some other race alone' and 'Two or more races'

2 Small area Census geographies are named by their FIPS codes (State FIPS-County FIPS-Tract FIPS-Block group FIPS & Block FIPS).

Table 3.20 provides population data by section, and *Table 3.21* shows population data by alternative.

The South Unit section data in *Table 3.20* indicates that eight sections (S3, S4, S6, S9, S10, S11, S12, and S14) have the potential to have minority population percentages in excess of the South Unit percentages. Two sections (S3 and S12) have the potential to have poverty level population percentages in excess of the South Unit percentages.

Table 3.20 South Unit Corridor Section Population, Minority and Poverty Level Population - 2000

Corridor Section	Total Population	Minority Population	% Minority Population	Poverty Level Population	% Poverty Level Population
S1	366	33	9.0%	52	14.3%
S2	18	0	0.0%	3	19.4%
S3	1728	1192	69.0%	472	27.3%
S4	1,210	610	50.4%	229	18.9%
S5	706	243	34.4%	150	21.3%
S6	4,400	2256	51.3%	589	13.4%
S7	316	36	11.4%	62	19.5%
S8	1,733	376	21.7%	288	16.6%
S9	953	612	64.2%	189	19.9%
S10	237	160	67.5%	47	19.9%
S11	811	342	42.1%	146	18.0%
S12	1,518	1506	99.2%	416	27.4%
S13	421	67	15.9%	91	21.6%
S14	826	408	49.4%	161	19.5%

Source: U.S. Census 2000 SF1 Table P8

1 Combines Census Table P8 categories 'Some other race alone' and 'Two or more races'

Block group FIPS & Block FIPS).

Table 3.21 reveals that nine of the eighteen South Unit alternatives (SA, SC, SD, SE, SF SM, SN, SP, and SQ) have the potential to have minority populations in excess of the overall South Unit parish minority population percentage of 42.1%. No alternative exceeds the South Unit parish poverty level population percentage of 22.7%.

Table 3.21 South Unit Corridor Alternative - Total, Minority and Poverty Level Population - 2000

Corridor Alternative	Total Population	Total Minority Population	% Minority Population	Poverty Level Population	% Poverty Level Population
SA	10,579	4,504	**42.6%**	1,854	17.5%
SB	6,885	2,491	36.2%	1,415	20.6%
SC	10,610	5,081	**47.9%**	1,901	17.9%
SD	6,916	3,068	**44.4%**	1,463	21.1%
SE	9,894	4,629	**46.8%**	1,759	17.8%
SF	6,200	2,616	**42.2%**	1,320	21.3%
SG	9,561	3,312	34.6%	1,639	17.1%
SH	5,867	1,299	22.1%	1,200	20.5%
SI	9,592	3,889	40.5%	1,687	17.6%
SJ	5,898	1,876	31.8%	1,248	21.2%
SK	8,876	3,437	38.7%	1,735	19.5%
SL	5,182	1,424	27.5%	1,106	21.3%
SM	10,192	5,915	**58.0%**	1,787	17.5%
SN	6,498	6,279	**96.6%**	1,348	20.7%
SO	10,223	1,901	18.6%	1,834	17.9%
SP	9,507	4,237	**44.6%**	1,692	17.8%
SQ	6,529	4,570	**70.0%**	1,396	21.4%
SR	5,813	981	16.9%	1,253	21.6%

Bold indicates % exceeds the South Unit percentage shown in Table 3-19.

It is reasonable to estimate that the potential population impact in any South Unit section or alternative would not be significant when reviewing this data in

combination with the Land Cover information in Section 3.1. This conclusion is based on overall population, the acreage of the sections and alternatives, and the percentage and location of development relative to the sections and alternatives.

3.3.3.3. East Unit

The East Unit has corridor sections in two of the five Project area parishes - Ascension and Livingston. *Table 3.22* shows population data at the East Unit parish level. The East Unit has both minority and poverty level population percentages below the state and Project area percentages for each of these categories.

Table 3.22 East Unit Parish Total Population, % Minority and % Poverty Level Population 2000

	Total Population	% Minority Population	% Poverty Level Population
Ascension Parish	76,627	23.8%	17.9%
Livingston Parish	91,814	6.5%	19.0%
East Unit	168,441	14.4%	18.5%

Source: U.S. Census 2000 SF1 Table P8

1 Combines Census Table P8 categories 'Some other race alone' and 'Two or more races'

Tract FIPS-Block group FIPS & Block FIPS).

Table 3.23 provides population data by section, and *Table 3.24 s*hows population data by alternative.

Table 3.23 indicates one section (E7) has the potential to have minority population greater than the East Unit percentage. One section (E1) has the potential to have poverty level population greater than the East Unit percentage.

Table 3.23 East Unit Corridor Section Population, Minority and Poverty Level Population - 2000

Corridor Section	Total Population	Minority Population	% Minority Population	Poverty Level Population	% Poverty Level Population
E1	1406	69	4.94%	267	19.0%
E2	2467	42	1.71%	454	18.4%
E3	2165	46	2.14%	358	16.5%
E4	1,572	40	2.54%	193	12.2%
E5	1,985	131	6.59%	207	10.4%
E6	1,491	109	7.31%	160	10.7%
E7	367	79	21.60%	46	12.5%
E8	2,052	236	11.48%	367	17.9%
E9	717	95	13.30%	107	14.9%
E10	732	20	2.74%	131	17.9%

Source: U.S. Census 2000 SF1 Table P8

1 Combines Census Table P8 categories 'Some other race alone' and 'Two or more races'

2 Small area Census geographies are named by their FIPS codes (State FIPS-County FIPS-Tract FIPS-Block group FIPS & Block FIPS).

Table 3.24 illustrates that none of the East Unit alternatives have minority or poverty level populations in excess of the overall East Unit percentages.

Table 3.24 East Unit Corridor Alternative - Total, Minority and Poverty Level Population - 2000					
Corridor Alternative	Total Population	Total Minority Population	% Minority Population	Poverty Level Population	% Poverty Level Population
EA	10,214	538	5.3%	1,619	15.9%
EB	9,246	477	5.2%	1,405	15.2%
EC	10,087	595	5.9%	1,617	16.0%
ED	8,385	376	4.5%	1,311	15.6%
EE	9,912	542	5.5%	1,523	15.4%
EF	8,944	481	5.4%	1,309	14.6%
EG	9,785	599	6.1%	1,521	15.5%
EH	8,083	380	4.7%	1,215	15.0%

It is reasonable to estimate that the potential population impacts in any East Unit section or alternative would not be significant when reviewing these data in combination with the Land Cover information in Section 3.1. This conclusion is based on overall population, the acreage of the sections and alternatives and the percentage and location of development relative to the sections and alternatives.

3.4. Parks, Recreation Areas, Wildlife Refuges, Community Facilities

The information presented in this section is intended, in part, to respond to requirements of Section 4(f) of the USDOT Act of 1966 (23 U.S.C. 138, recodified as 49 U.S.C. 303, as amended) and FHWA and LADOTD regulations. Section 4(f) of the USDOT Act of 1966 established a national policy for the USDOT to avoid the use of significant public parks, recreation areas, wildlife and waterfowl refuges and historic sites as part of a project, unless there is no feasible and prudent alternative to the use of such land and such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use.

23 CFR 774.7 (e) states:

A Section 4(f) approval may involve different levels of detail where the Section 4(f) involvement is addressed in a tiered Environmental Impact Statement (EIS) under Sec. 771.111 (g) of this title.

> (1) When the first tier, broad scale EIS is prepared, the detailed information necessary to complete the Section 4(f) approval may not be available at that stage in the development of the action. In such cases, the documentation should be made on the potential impacts that a proposed action would have on Section 4(f) property and whether those impacts could have a bearing on the decision to be made. A preliminary determination may be made at this time as to whether there are feasible and prudent locations or alternatives for the action to avoid the use of Section 4(f) property. This preliminary determination shall consider all possible planning to minimize harm to the extent that the level of detail available at the first tier EIS stage allows. It is recognized that such planning at this stage would normally be limited to ensuring that opportunities to minimize harm at subsequent stages in the development process have not been precluded by decisions made at the first tier stage. This preliminary determination is then incorporated into the first tier EIS.

(2) The Section 4(f) approval will be finalized in the second-tier study. If no new Section 4(f) use, other than a de minimis impact, is identified in the second-tier study and if all possible planning to minimize harm has occurred, then the second-tier Section 4(f) approval may finalize the preliminary approval by reference to the first-tier documentation. Re-evaluation of the preliminary Section 4(f) approval is only needed to the extent that new or more detailed information available at the second-tier stage raises new Section 4(f) concerns not already considered.

(3) The final Section 4(f) approval may be made in the second tier categorical exclusion (CE), environmental assessment (EA), final EIS, Record of Decision (ROD) or Finding of No Significant Impact (FONSI).

A Tier 1 level Section 4(f) analysis for the proposed project is presented in Chapter 4 of this FEIS. Note that as part of the Tier 2 process, any alignments outside of the yet to be determined preferred corridor(s) may need to be analyzed to avoid Section 4(f) properties.

3.4.1. Setting

The Baton Rouge Loop Project area has numerous community facilities including parks operated by the five parishes, the Waddill Wildlife Refuge, various municipal and parish fire and police resources, and hundreds of schools, churches, and other resources in keeping with its urban, suburban, and rural setting. The majority of these resources are in proximity to population centers. The Waddill Wildlife Refuge is located in the Project North Unit study area but is outside of any sections or alternatives. *Exhibit 3-35* in Volume 3 shows parks and community facilities for the Project area.

3.4.2. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to parks, recreation areas, and community facilities. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, could potentially result in parks, recreation areas, and community facilities impacts.

3.4.3. Build Alternative

3.4.3.1. North Unit

Tables 3.25 and *Table 3.26* show the number of parks and community facilities by section and alternative in the North Unit.

Table 3.25 North Unit - Corridor Section Community Facilities

Community Facility	Corridor Section Community Facilities #														
	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	Total
Church	0	7	1	0	0	0	0	0	1	3	0	0	1	0	13
Schools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parks	0	1	1	1	2	2	0	0	0	0	0	1	0	0	8
Post Office	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Fire Department	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Police Department	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marinas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cemeteries	0	3	0	0	0	0	0	0	0	1	0	1	0	0	5
Hospitals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	**12**	**2**	**1**	**2**	**2**	**0**	**0**	**1**	**4**	**0**	**2**	**1**	**0**	**27**

These include:

- Thirteen churches:
  - Saint Rock Church (historical), Saint Catherine Church, Community Bible Church, Sixty-eighth Avenue Baptist Church, Trinity Baptist Church, Jordan United Methodist Church, True Worship Christian Fellowship - N2,
  - Hooper Road Baptist Church - N3,
  - Evening Star Baptist Church - N9,
  - Lighthouse Church; Emmanuel Baptist Church,
  - Church of God of Prophecy - N10, and
  - True Light Church - N13.
- Eight parks:
  - Scotlandville Park - N2,
  - Hooper Rd. Park - N3,
  - Cohn Preserve - N4,
  - Cohn Preserve, James Watson Park - N5,
  - Cohn Arboretum, Cohn Preserve - N6, and
  - Live Oak Ball Park - N12
- One post office: Zion City – N2, and
- Six cemeteries:
  - Westover Cemetery, Saint Catherine Cemetery, Benevolent Society Cemetery, unnamed cemetery - N2,
  - Amite Cemetery - N10, and
  - Judson Cemetery - N12

Table 3.26 shows that Alternative ND has the least community facilities with 17, while Alternative NE has 18, Alternative NA 19, and Alternatives NB and NC the most with 20 each.

Table 3.26 NorthUnit - Corridor Alternative Community Facilities					
Community Facility	Corridor Section Community Facilities #				
	NA	NB	NC	ND	NE
Church	12	11	11	9	8
Schools	0	0	0	0	0
Parks	2	4	4	4	5
Post Office	1	1	1	1	1
Fire Department	0	0	0	0	0
Police Department	0	0	0	0	0
Marinas	0	0	0	0	0
Cemeteries	4	4	4	3	4
Hospitals	0	0	0	0	0
	19	**20**	**20**	**17**	**18**

Exhibits 3-36 to 3-38 in Volume 3 show parks and community facilities for the North Unit.

3.4.3.2. South Unit

Tables 3.27 and *Table 3.28* show the number of parks and community facilities by section and alternative in the South Unit.

These include:

- Five churches:
  - Ebenezer Church - S3,
  - Doright Baptist Church - S11, and
  - True Light Community Church, Mount Zion Baptist Church, Little Zion Baptist Church – S12
- One school: East Iberville Middle/High School - S5
- Three parks:
  - BREC Woodstock Park - S3,
  - East Iberville District Park - S5, and
  - Sunshine Park, St. Gabriel – S12
- One post office: St. Gabriel P.O. - S5
- One fire department: East Iberville Volunteer Fire Dept. - S5
- One police station: St. Gabriel Police Dept. - S4,
- One boat launch/marina: Bayou Plaquemine Boat Launch – S12, and
- One cemetery: Doright Cemetery – S11.

Section S12 has the most community facilities with five, while S5 has four, S3 has two, S4 and S11 have one each, and the remainder have none.

Table 3.27 South Unit Corridor Section Community Facilities															
Community Facility	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	Total
Church	0	0	1	0	0	0	0	0	0	0	1	3	0	0	5
Schools	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Parks	0	0	1	0	1	0	0	0	0	0	0	1	0	0	3
Post Office	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Fire Department	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Police Department	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Marinas	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Cemeteries	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Hospitals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	**0**	**2**	**1**	**4**	**0**	**0**	**0**	**0**	**0**	**2**	**5**	**0**	**0**	**14**

Table 3.28 shows that Alternative SA and SM have the least community facilities with three, and Alternatives SJ and SL have the most with twelve.

Table 3.28 South Unit - Corridor Alternative Community Facilities																		
Community Facility	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR
Church	1	1	2	2	3	2	3	3	4	4	4	4	1	1	2	2	2	2
Schools	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	1	1
Parks	1	2	1	2	2	2	1	2	1	2	1	2	1	2	1	1	2	2
Post Office	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	1	1
Fire Department	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	1	1
Police Department	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Marinas	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0
Cemeteries	0	0	1	1	1	1	0	0	1	1	1	1	0	0	1	1	1	1
Hospitals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3	**7**	**5**	**9**	**7**	**9**	**6**	**10**	**8**	**12**	**8**	**12**	**3**	**7**	**5**	**5**	**9**	**9**

Exhibits 3-39 to3-47 in Volume 3 shows parks and community facilities for the South Unit.

3.4.3.3. East Unit

Tables 3.29 and *Table 3.30* show the number of parks and community facilities by section and alternative in the East Unit.

These include:

- Three churches:
  - o New River United Methodist Church - E2, and
  - o Mount Zion Church and Mount Zion Baptist Church - E8
- One park/recreation area: Ascension Civic Center - E1.
- Four cemeteries:
  - o New River United Methodist Church cemetery - E2, and
  - o Mount Zion Church cemetery, Mount Zion Baptist Church cemetery, and an unknown cemetery - E8

Table 3.29 East Unit Corridor Section Community Facilities											
Community Facility	Corridor Section Community Facilities #										
	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	Total
Church	0	1	0	0	0	0	0	2	0	0	3
Schools	0	0	0	0	0	0	0	0	0	0	0
Parks	1	0	0	0	0	0	0	0	0	0	1
Post Office	0	0	0	0	0	0	0	0	0	0	0
Fire Department	0	0	0	0	0	0	0	0	0	0	0
Police Department	0	0	0	0	0	0	0	0	0	0	0
Marinas	0	0	0	0	0	0	0	0	0	0	0
Cemeteries	0	1	0	0	0	0	0	3	0	0	4
Hospitals	0	0	0	0	0	0	0	0	0	0	0
	1	**2**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**8**

Section E8 has the most community facilities with five, E2 has two, E1 – has one and the remainder have none.

Table 3.30 shows that Alternatives EF and EH have the least community facilities with one and Alternatives EA and EC have the most with eight.

Table 3.30 East Unit Corridor Alternative Community Facilities								
Community Facility	Corridor Section Community Facilities #							
	EA	EB	EC	ED	EE	EF	EG	EH
Church	3	1	3	1	2	0	2	0
Schools	0	0	0	0	0	0	0	0
Parks	1	1	1	1	1	1	1	1
Post Office	0	0	0	0	0	0	0	0
Fire Department	0	0	0	0	0	0	0	0
Police Department	0	0	0	0	0	0	0	0
Marinas	0	0	0	0	0	0	0	0
Cemeteries	4	1	4	1	3	0	3	0
Hospitals	0	0	0	0	0	0	0	0
	8	**3**	**8**	**3**	**6**	**1**	**6**	**1**

Exhibits 3-48 to 3-51 in Volume 3 show parks and community facilities for the East Unit.

At this phase of the Project, it is not feasible to determine if any community facilities would be impacted. Typically, community facilities are avoided where feasible.

3.5. Cultural Resources

This section has been prepared to respond to the substantive requirements of requirements of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 *et seq.*), the implementing regulations of the Advisory Council on Historic Preservation (36 CFR Part 800), and regulations of the Louisiana Department of Culture, Recreation, and Tourism, Office of Cultural Development, which is the designated State Historic Preservation Office (SHPO).

3.5.1. Setting

The five-parishes that comprise the Baton Rouge Loop Project area, are located within Management Units IV and V, as defined in "Louisiana's Comprehensive Archaeological Plan" (Smith et al. 1983). These management units are defined based on common geography, culture, and economic development. Management Unit IV is associated with the rolling uplands (Pleistocene terraces) of the Florida

Parishes and includes East Baton Rouge and Livingston Parishes (Smith et al. 1983:77). Management Unit V contains Ascension, Iberville, and West Baton Rouge Parishes. This management unit is characterized by landscapes of the Lower Mississippi River valley, which are dominated by "low-lying swampland, natural and man-made levees, and coastal marsh" (Smith et al. 1983:93). *Exhibit 3-52* in Volume 3 shows the known cultural resources associated with the Project area. A Cultural Resources Study report was prepared in conjunction with the EIS and was provided to the (SHPO) for review and comment. A copy of the report is located in the Technical File and on file at LADOTD. SHPO issued acceptance of the data in the report in May 2012 and documentation can be found in Appendix E. The following sections summarize the findings in the report as applicable.

3.5.2. Cultural Resources Terminology

Within the State of Louisiana, all historic and/or prehistoric period archaeological sites, standing structures, and cemeteries 50 years or older are considered cultural resources for the purposes of the current discussion. Previously recorded cultural resources are those resources that have been documented and the information put on file with either the Louisiana Divisions of Archaeology and/or Historic Preservation.

A 'historic property', as defined by the Advisory Council on Historic Preservation, is "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior" (36 CFR 800.16(l)(1). In all other cases, 'historic' or 'historic period' has been used in the discussion to refer to those cultural resources (i.e., historic period archaeological sites, historic standing structures, and historic cemeteries) that are associated with the time period between ca. AD 1540 and the present.

The National Register eligibility status of the identified cultural resources associated with this project are categorized as "Eligible", "Not Eligible", "Not Assessed, or "Listed". The 'Not Assessed' identifier indicates that either no eligibility information was entered in the records on file at the Louisiana Divisions of Archaeology and/or Historic Preservation, or at the time of initial documentation of the resource sufficient information was not collected by the researchers to provide an adequate assessment of the National Register of Historic Places (NRHP) eligibility.

3.5.3. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to cultural resources. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, could potentially result in cultural resource impacts.

3.5.4. Build Alternative

The cultural resources background information on previously completed cultural resources surveys, previously recorded archaeological sites, historic period standing structures, historic period cemeteries, and listed NRHP properties was obtained for Ascension, East Baton Rouge, Iberville, Livingston, and West Baton

Rouge Parishes. For the purposes of this document, the background research was restricted to those previously recorded cultural resources that were located within a one-half mile buffer zone of the proposed North, South, and East Unit corridor sections as required by the State Historic Preservation Office (SHPO). A list of the various data sources is presented below:

- Louisiana Division of Archaeology (site forms and cultural resource surveys), located in Baton Rouge, Louisiana;
- Louisiana Division of Historic Preservation/State Library (historic period standing structures), located in Baton Rouge, Louisiana;
- Louisiana Cultural Resources Map hosted by the Louisiana Division of Archaeology;
- NRHP online database; and
- Louisiana Division of Historic Preservation National Register Website.

This information provided a context for the subsequent discussions focusing on known cultural resource distributions within the Baton Rouge Loop Project area. This investigation followed the general procedures outlined in Louisiana's Comprehensive Archaeological Plan (Smith et al. 1983) and the Section 106 Investigation and Report Standards (Louisiana Division of Archaeology, Department of Culture, Recreation, and Tourism).

3.5.4.1. North Unit

Thirteen cultural resource surveys have been conducted within the fourteen corridor sections comprising the North Unit (see Appendix F - Previous Cultural Resource Studies by Unit). Corridor section N2 has the highest number of cultural resource evaluations with five, followed by sections N10 and N12 with three each. Corridor sections N3, N8, and N11 were the subject of two cultural resources studies, while sections N1, N6, N13, and N14 had single cultural resources investigations. Corridor sections N4, N5, N7, and N9 have not been assessed for cultural resources.

The majority of these studies were completed before 2001 (61.5%) and were comprised primarily of lineal corridor surveys for the Louisiana Department of Transportation and Development (39%) and natural gas pipeline developments (31%). The remaining studies were undertaken for the US Army Corps of Engineers - New Orleans District (15%) and private enterprise (15%). In total, approximately 509 acres of land have been systematically assessed for cultural resources within these fourteen corridor sections, representing approximately 2.1% of the acreage in the North Unit.

This review indicates that twenty-three cultural resources are located within the fourteen North Unit sections, consisting of eight archaeological sites, nine historic period standing structures, and six historic period cemeteries. There are no NRHP listed properties within the fourteen North Unit corridor sections. *Table 3.31* shows the resources by section.

Table 3. 31 North Unit - Corridor Section Cultural Resources															
	Corridor Section														
Cultural Resource	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	Total
Archaeological Site	0	2	1	0	0	0	0	0	0	1	0	4	0	0	8
NRHP Listed Property	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Historic Standing Structure	0	2	8	0	0	0	0	1	0	0	0	0	0	0	11
Cemetery	0	3	1	0	0	0	0	0	0	1	0	1	0	0	6
Corridor Section Totals	**0**	**7**	**10**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**5**	**0**	**0**	**25**

Sections N1, N4, N5, N6, N7, N9, N13, and N14 have zero previously recorded cultural resources, while sections N7, N8, N10, and N11, have less than two cultural resources each. Sections N12 and N2 contain four and seven cultural resources, respectively, while section N3 has ten cultural resources, comprised of eight historic period standing structures, one archaeological site, and one historic period cemetery.

Table 3.32 identifies the eight archaeological sites in the North Unit. Five of these sites (63%) are associated with prehistoric period occupations; of those, three are not associated with a specific temporal period, while two (Sites 16EBR66 and 16LV51) date to the Paleo-Indian to Early Archaic Periods (ca. 10,000 to 6,000 B.C.). Two of the remaining sites are affiliated with historic period components, while Site 16LV54 contains both historic and prehistoric period components. Sites 16EBR66 and 16LV51 are considered eligible for listing on the NRHP, with the management plan consisting of either Phase II investigation and testing or Phase III mitigation.

Table 3.32 North Unit Corridor Section Previously Recorded Archaeological Sites				
Corridor Section	Site Number	Site Type	Age	NRHP Assessment
N2	16WBR10	Historic	Mid 1800s-Early 1900s	Not Eligible
N2	16WBR47	Historic	Unknown	Not Eligible
N3	16EBR66	Prehistoric	Paleo-Indian, Early Archaic, 10,000 - 6,000 B.C.	Eligible
N10	16LV28	Prehistoric	Unknown	Not Assessed
N11	16EBR49	Prehistoric	Unknown	Not Assessed
N12	16LV51	Prehistoric	Paleo-Indian, Early Archaic, 10,000 - 6,000 B.C.	Eligible
N12	16LV54	Prehistoric Historic	Unknown & Late 1800s-Early 1900s	Not Eligible
N12	16LV55	Prehistoric	Unknown	Not Eligible

Three of the remaining sites were determined not eligible for the NRHP and eligibility was not assessed for two sites.

Table 3.33 shows the ten historic period standing structures identified in sections N2, N3, and N8. Construction dates for these historic period structures ranged between 1900 and 1953. Five structures were identified as Craftsman/Bungalows with single examples of a Queen Anne, Minimal Traditional, and Foursquare style identified. A single structure (17-01771) was not identified as to structural type, and the remaining two structures were identified as the US 190 Bridge and the US 190

Bridge Administration Building. In reference to structural integrity, two were assessed as Fair, eight as Good and one Excellent. All eight of the structures were assessed as not eligible for listing on the NRHP, while the US 190 Bridge and US 190 Bridge Administration Building were considered eligible for listing by the Louisiana State Historic Preservation Officer and LADOTD.

Table 3.33 North Unit - Previously Recorded Historic Standing Structures by Corridor Section

Corridor Section	Structure Number	Construction Date	Named Structure Type	NRHP Assessment	Condition
N2	Not Applicable	1940	US 190 Bridge	Eligible	Good
N2	Not Applicable	1940	US 190 Bridge Admin. Bldg	Eligible	Good
N3	17-01751	1916-1935	Queen Anne	Not Eligible	Excellent
N3	17-01752	1900-1946	Craftsman/Bungalow	Not Eligible	Good
N3	17-01753	ca.1941	Craftsman/Bungalow	Not Eligible	Good
N3	17-01754	1941-1953	Bungalow	Not Eligible	Good
N3	17-01755	1941-1953	Minimal Traditional	Not Eligible	Good
N3	17-01770	1941-1953	Craftsman/Bungalow	Not Eligible	Fair
N3	17-01771	ca.1941	Style not Reported	Not Eligible	Good
N3	17-01772	1900-1940	Foursquare	Not Eligible	Fair
N8	17-01769	1941-1953	Bungalow	Not Eligible	Good

Table 3.34

identifies the historic period cemeteries in the North Unit. Sections N1, N4 to N9, N11, N13, and N14 do not contain historic period cemeteries. Sections N3, N10, and N12 have one historic period cemetery each, while section N2 contains three - the Benevolent Society, Saint Catherine, and Westover Cemeteries.

Table 3.34 North Unit Historic Period Cemeteries by Corridor Section

Corridor Section	Name
N2	Benevolent Society
N2	Saint Catherine
N2	Westover
N3	Unnamed
N10	Amite
N12	Judson

A summary of all cultural resources identified in the five North Unit Corridor Alternatives are shown in *Table 3.35.*

All alternatives intersect or contain at least known eight known cultural resources. Alternative ND has the fewest known cultural resources. Alternative NA contains the most cultural resources with 19, while Alternatives NB, NC, and NE each contain between 10 and 11 cultural resources.

NA: Alternative NA has the most potential cultural resource locations -19. The majority of these cultural resources, (42% of the total) are historic period standing structures, while historic cemeteries 26%, and archaeological sites comprise 21%; two NRHP-eligible properties (10%) represent the remaining cultural resources. Alternative NA could potentially affect 18 acres of known cultural resources, the most of the five alternatives.

NB: Ten cultural resources are found in Alternative NB. These cultural resources are dominated by historic cemeteries ((40% of the total) and archaeological sites (30%), with a single historic period standing structure present (10%); two NRHP-eligible properties (20%) represent the remaining cultural resources. This alternative could potentially affect approximately 13 acres of known cultural resources.

NC: There are ten cultural resource locations in Alternative NC with the majority comprised of historic period cemeteries (40% of the total) followed by archaeological sites (30%). A single historic period standing structure (10%) and two NRHP-eligible properties (20%) are also present. This alternative could potentially affect approximately 13 acres of known cultural resources.

ND: Alternative ND contains seven cultural resource locations, with three historic period cemeteries two archaeological sites, and two NRHP-eligible properties. Alternative ND could potentially affect the least amount of known cultural resources comprising seven acres.

NE: Eleven cultural resources were identified in Alternative NE comprised of five archaeological sites, four historic period cemeteries, and two NRHP-eligible properties. Alternative NE could potentially affect fifteen acres of previously recorded cultural resources.

Exhibits 3-53 to 3-55 in Volume 3 show North Unit cultural resources.

Table 3.35 North Unit - Corridor Alternative Cultural Resources by Total and Acreage					
	Corridor Alternative				
Cultural Resource	NA	NB	NC	ND	NE
Archaeological Sites	4	3	3	3	5
NRHP Listed Properties	2	2	2	2	2
Historic Standing Structures	8	1	1	0	0
Cemeteries	5	4	4	3	4
Corridor Alternative Totals	19	10	10	8	11
Acres	18	13	13	7	15

3.5.4.2. South Unit

Twenty-eight cultural resource surveys have been conducted in the South Unit (see Appendix F - Previous Cultural Resource Studies by Unit). Corridor sections S12 and S13 have the highest number of cultural resources evaluations (ten and eight, respectively), followed by section S3 with six and sections S7 and S11 with five each. Corridor sections S4 and S9 have four cultural resource investigations apiece, while sections S1, S2, S5, S6, S8, S10, and S14 have less than three assessments each.

The majority of these studies were completed after 1987 (71%) and consist primarily of lineal corridor surveys for natural gas pipeline, telecommunication, and railroad developments (46%). The remaining studies were undertaken for the US Army Corps of Engineers - New Orleans District (29%), private enterprise (21%), and the Louisiana Department of Transportation and Development (4%). In total, approximately 4,088 acres have been systematically assessed for cultural resources within the South Unit. This represents approximately 11.1% of the acreage within the South Unit.

A review of these studies identified twenty - six cultural resources in the South Unit consisting of sixteen archaeological sites, eight historic period standing structures, one historic period cemetery, and a single listed NRHP property - Longwood Plantation. *Table 3.36* lists these resources by section.

Table 3. 36 South Unit Corridor Section Cultural Resources															
Cultural Resource	Corridor Section														Total
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	
Archaeological Site	0	1	6	1	0	0	0	1	1	0	0	4	2	0	16
NRHP Listed Property	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Historic Period Standing Structure	0	0	0	0	0	0	0	0	1	0	0	7	0	0	8
Historic Period Cemetery	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Corridor Section TOTAL	**0**	**1**	**7**	**1**	**0**	**0**	**0**	**1**	**2**	**0**	**1**	**11**	**2**	**0**	**26**

Sections S1, S5, S6, S7, S10, and S14 have no previously recorded cultural resources, while sections S2, S4, S8, S9, S11, and S13 have less than two cultural resources. Section S12 has the highest number of cultural resources, comprised of four archaeological sites and seven historic period standing structures. Section S3 contains six archaeological sites and the single listed NRHP property, Longwood Plantation.

Table 3.37 identifies the sixteen archaeological sites in the South Unit. Eighty-eight percent of these sites (14), are associated with historic period occupations, generally from the mid to late 1800s to the early 1900s. The remaining two sites

contain both historic and prehistoric period components and are represented by Site 16AN1 (Broussard Mounds) and Site 16AN41 (Moniot Mound). Both of these sites are located in Ascension Parish. A portion of Site 16EBR41 (Longwood Plantation) is listed on the NRHP. This two-story, Greek Revival residence dates to circa 1845 and it is considered an example of locally significant architecture within East Baton Rouge Parish. Sites 16EBR57, 16EBR192 and 16AN1 are eligible for listing on the NRHP, nine of the remaining sites were determined to be ineligible and three were not assessed for NRHP eleigibility.

Table 3.37 South Unit Corridor Section Previously Recorded Archaeological Sites

Corridor Section	Site Number	Site Type	Age	NRHP Assessment	Associated Report
S2	16WBR50	Historic	Late 1800s-early 1900s	Not Eligible	22-3157
S3	16EBR41	Historic (Longwood Plantation)	Late 1800s-early 1900s	Listed	22-918
S3	16EBR87	Historic (cemetery)	Late 1800s	Not Eligible	
S3	16EBR88	Historic	Late 1800s	Not Eligible	22-1707
S3	16EBR192	Historic (Chatsworth Sugar House and Quarters)	Mid 1800s-early 1900s	Eligible	22-3087 & 22-3210
S3	16EBR193	Historic	Late 1800s-early 1900s	Not Eligible	22-3087 & 22-3210
S3	16EBR194	Historic	Late 1800s-early 1900s	Not Eligible	22-3087
S4	16IV28	Historic	Late 1800s-early 1900s	Not Eligible	
S9	16AN1	Multi-Component (Broussard Mounds)	Early to mid 1800s; Late Marksville (AD 200-400)	Eligible	22-1233
S8	16AN41	Multi-Component (Moniot Mound)	Late 1800s-early 1900s; Late Archaic (2,000–500 B.C.)	Not Assessed	
S12	16IV36	Historic	Late 1800s-early 1900s	Not Assessed	
S12	16IV37	Historic	Mid 1850s-early 1900s	Not Eligible	
S12	16IV40	Historic	1900s	Not Assessed	
S12	16IV46	Historic	Mid to late 1800s	Not Eligible	22-2266
S13	16WBR54	Historic	Late 1800s-early 1900s	Not Eligible	22-3229
S13	16EBR57	Historic	1812-1860	Eligible	22-918 & 22-1468

Seven historic period standing structures were identified in section S12 and one in section S9 as shown in *Table 3.38*. Construction dates of these structures ranged between circa 1854 and 1911; however, construction dates were not recorded for four of the structures. Two of the structures are identified as Double Pen-Creole Vernacular, two as Cross-Gable, two as Center Hall and single examples of a Pyramidal and Queen Anne structure. Concerning structural integrity, four were assessed as Fair, two as Good, and one Excellent, with a single structure not assessed for condition. None of the structures was assessed for listing on the National Register of Historic Places. The only historic cemetery identified, the Doright Cemetery, is located in section S11.

Table 3.38 South Unit Previously Recorded Historic Standing Structures by Corridor Section

Corridor Section	Structure Number	Construction Date	Named Structure Type	NRHP Assessment	Condition
S9	24-00610	Unknown	Queen Anne	Not Assessed	Not Assessed
S12	24-00321	Unknown	Cross Gable Double Pen; Creole	Not Assessed	Good
S12	24-00322	ca. 1910	Vernacular Double Pen; Creole	Not Assessed	Fair
S12	24-00323	Unknown	Vernacular	Not Assessed	Fair
S12	24-00324	Unknown	Raised Center Hall	Not Assessed	Good
S12	24-00325	1911	Cross Gable	Not Assessed	Fair
S12	24-00326	ca. 1900	Pyramidal	Not Assessed	Fair
S12	24-00327	ca. 1854	Center Hall; Creole	Not Assessed	Excellent

A summary of all cultural resources identified within the eighteen South Unit Corridor Alternatives is presented in *Table 3.39*.

Table 3.39 South Unit Corridor Alternative Cultural Resources by Total and Acreage

Cultural Resource	Corridor Alternative																	
	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR
Archaeological Sites	7	7	8	8	7	7	6	6	7	7	6	6	10	10	11	10	11	10
NRHP Listed Properties	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1
Historic Period Standing Structures	0	0	1	1	0	0	7	7	8	8	7	7	0	0	1	0	1	0
Historic Period Cemeteries	0	0	1	1	1	1	0	0	1	1	1	1	0	0	1	1	1	1
Corridor Alternative Totals	**8**	**8**	**11**	**11**	**9**	**9**	**13**	**13**	**16**	**16**	**14**	**14**	**11**	**11**	**14**	**12**	**14**	**12**
Acres	**46**	**46**	**92**	**92**	**46**	**46**	**85**	**85**	**85**	**85**	**39**	**39**	**317**	**317**	**364**	**318**	**364**	**318**

All alternatives intersect or contain at least eight cultural resources. The fewest known cultural resources are in Alternatives SA, SB, SE, and SF. Alternatives SI and SJ have the most cultural resources with 16, while Alternatives SC, SD, SG, SH, SK through SR have between 11 and 14 cultural resources each.

SA and SB: Alternatives SA and SB, along with alternatives SE and SF, contain the fewest potential cultural resource locations, eight and nine respectively. The majority of cultural resources in Alternatives SA and SB are associated with archaeological sites (89%); a single listed NRHP property is also represented. Both alternatives SA and SB contain 46 acres of previously recorded cultural resources.

SC and SD: Eleven cultural resources are associated with alternatives SC and SD. Most of the cultural resources are archaeological sites (73%), with a single listed NRHP property, a single historic period standing structure, and one historic period cemetery within each. Each of these alternatives contains approximately 92 acres of known cultural resources.

SE and SF: There are a total of nine cultural resource locations in alternatives SE and SF, with the majority consisting of archaeological sites (7), followed by a listed NRHP property and a historic period cemetery. Each of the two alternatives contain 46 acres of known cultural resources.

SG and SH: Alternatives SG and SH each contain thirteen cultural resource locations, with six archaeological sites and seven historic period standing structures. Alternatives SG and SH contain 85 acres of known cultural resources each.

SI and SJ: Sixteen cultural resources are located in alternatives SI and SJ. They are comprised of seven archaeological sites, eight historic period standing structures and a single historic period cemetery. Each alternative has 85 acres of previously recorded cultural resources.

SK and SL: These two alternatives have fourteen cultural resource locations apiece, including six archaeological sites, seven historic period standing structures, and one historic period cemetery. Each alternative contains 39 acres of previously recorded cultural resources; which is the smallest amount of cultural resource acreage of any South Unit alternative.

SM and SN: Alternatives SM and SN each contain eleven cultural resource locations, including ten archaeological sites and one NRHP property. These alternatives contain 317 acres of previously recorded cultural resources with the majority of the acreage associated with Site 16EBR57 (Cottage Plantation).

SO and SQ: Fourteen cultural resource are located within each of these alternatives, including eleven archaeological sites, one NRHP listed property, one historic period standing structure and a single historic period cemetery. Alternatives SO and SQ contain 364 acres of known cultural resources each; representing the most acreage of cultural resources of any of the proposed South Unit alternatives.

SP and SR: Alternatives SP and SR each have twelve cultural resources,consisting of ten archaeological sites, a single historic period standing structure, and a historic period cemetery. Each of these alternatives has 318 acres of known cultural resources primarily associated with Site 16EBR57 (Cottage Plantation).

Exhibits 3-56 to 3-64 in Volume 3 show South Unit cultural resources.

3.5.4.3. East Unit

Seven cultural resource surveys have been conducted within the ten corridor sections comprising the East Unit (see Appendix F - Previous Cultural Resource Studies by Unit). Corridor section E5 has five surveys, E7 has four, E9 and E10 have three each, E2, E3, and E5 have two apiece, E6 one, and E4 and E8 have no studies.

The majority of these studies were completed prior to 1990 (71%) with the studies conducted primarily for lineal corridor surveys associated with natural gas pipeline, telecommunication, road and railroad developments (86%). The remaining study was undertaken for the US Army Corps of Engineers, New Orleans District. In total, approximately 386 acres have been systematically assessed for cultural resources within these ten corridor sections, representing approximately 3.1% of the acreage in the East Unit.

A review of these studies identified ten cultural resources located within the East Unit consisting of five historic standing structures, four cemeteries, and a single archaeological site (16AN7), as shown in *Table 3.40*. Sections E1, E4, E7, E9, and E10 have no previously recorded cultural resources. Sections E5 and E6 contain only one cultural resource. Section E3 has three historic standing structures and section E8 has three cemeteries. Section E2 has two cultural resources, a historic period standing structure and a historic period cemetery. In total, approximately

6.57 acres, or 0.05% of the acreage of the ten East Unit corridor sections, include known cultural resources.

Table 3.40 East Unit Corridor Section Cultural Resources

Cultural Resource	Corridor Section										
	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	Total
Archaeological Site	0	0	0	0	0	1	0	0	0	0	1
NRHP Listed Property	0	0	0	0	0	0	0	0	0	0	0
Historic Period Standing Structure	0	1	3	0	1	0	0	0	0	0	5
Historic Period Cemetery	0	1	0	0	0	0	0	3	0	0	4
Corridor Section TOTAL	**0**	**2**	**3**	**0**	**1**	**1**	**0**	**3**	**0**	**0**	**10**

The single archaeological site, 16AN7, is located in section E6. It is described as a prehistoric earth midden (i.e., hamlet or village) associated with the Plaquemine/Mississippian Stage, dating from circa A.D. 1200 to 1540.

Table 3.41 shows the five historic standing structures identified in the East Unit, including one each in sections E2 and E5 and three in section E3.

Table 3.41 East Unit Previously Recorded Historic Standing Structures by Corridor Section

Corridor Section	Structure Number	Construction Date	Named Structure Type	NRHP Assessment	Condition
E2	03-00691	ca.1905	Creole Vernacular	Not Assessed	Good
E3	03-00686	ca. 1880	Queen Anne	Not Assessed	Excellent
E3	03-00687	ca. 1920	Commercial	Not Assessed	Good
E3	03-00688	ca. 1878	Queen Anne	Not Assessed	Excellent
E5	03-00136	ca.1860	Anglo Folk Vernacular	Not Assessed	Excellent

Construction dates range between 1860 and 1920. Two structures are identified as Creole or Anglo-Folk Vernacular, two as Queen Anne, and a single example of a commercial building. With regard to structural integrity, all five structures were assessed as being either in Good or Excellent condition. None of these structures was assessed for NRHP eligibility and no NRHP listed properties were identified within the East Unit.

Four historic period cemeteries were identified, one in section E2 and three in section E8 (*Table 3.42*). Interment dates commence around 1848 to 1850 for cemeteries 03-00140 and 03-00141 (Mt. Zion Cemeteries), while the New River Cemetery (03-00195) appears to date to the 1920s. No date was provided for cemetery 03-00139, also associated with the Mt. Zion cemeteries. None of these historic period cemeteries was assessed for NRHP eligibility.

Table 3.42 East Unit Historic Cemeteries by Corridor Section

Corridor Section	Structure Number	Construction Date	Named Structure Type	NRHP Assessment	Condition
E2	03-00195	ca.1920	New River Cemetery	Not Assessed	Not Assessed
E8	03-00139	No date	Mt. Zion Cemetery	Not Assessed	Not Assessed
E8	03-00140	ca.1848	Mt. Zion Cemetery	Not Assessed	Not Assessed
E8	03-00141	ca.1850	Mt. Zion Cemetery	Not Assessed	Not Assessed

Cultural resources identified within the eight East Unit Corridor Alternatives are shown in *Table 3.43*. All of the alternatives intersect or contain at least three cultural resources. Alternatives EB and ED have the fewest known cultural resources with three, while Alternatives EF and EH have four cultural resource apiece. Alternatives EE and EG contain the most cultural resources with seven each, while Alternatives EA and EC each contain six cultural resources.

Table 3.43 East Unit Corridor Alternative Cultural Resources by Total and Acreage

Cultural Resource	Corridor Alternative							
	EA	EB	EC	ED	EE	EF	EG	EH
Archaeological Sites	0	0	1	1	0	0	1	1
Historic Period Standing Structures	2	2	4	1	4	4	3	3
Historic Period Cemeteries	4	1	1	1	3	0	3	0
Corridor Alternative Totals	**6**	**3**	**6**	**3**	**7**	**4**	**7**	**4**
Acres	**4.4**	**1.4**	**6.2**	**2.4**	**7.7**	**4.0**	**8.8**	**5.0**

EA: Alternative EA, along with Alternative EC, has six potential cultural resource locations. The cultural resources in Alternative EA are associated with two historic period standing structures and four historic period cemeteries. Alternative EA could potentially affect 4.4 acres of known cultural resources.

EB: Three cultural resources are located within both Alternative EB and alternative. Two of the three cultural resources are historic period standing structures and one historic period cemetery. Alternative EB could potentially affect 1.4 acres of known cultural resources, the lowest amount for all eight East Unit alternatives.

EC: There are six cultural resource locations within Alternative EC, consisting of four historic period standing structures, one historic period cemetery, and a single archaeological site. Approximately 6.2 acres of Alternative EC contains known cultural resources.

ED: Alternative ED has three cultural resources comprised of single examples of an archaeological site, historic period standing structure, and a historic period cemetery. This alternative has the second lowest amount of cultural resources that could potentially be impacted at 2.4 acres.

EE: Seven cultural resources were identified in both Alternatives EE and EG. They are comprised of four historic period standing structures and three historic period cemeteries. Alternative EE has the second highest alternative acreage with known cultural resources at 7.7 acres.

EF: Alternative EF contains four cultural resources, all of which are historic period standing structures. Approximately 4.0 acres of this alternative is comprised of known cultural resources.

EG: Alternative EG has seven cultural resources consisting of three historic period standing structures, three historic period cemeteries, and a single archaeological site. This alternative could potentially affect the largest amount of known cultural resources (8.8 acres) in the East Unit.

EH: Alternative EH contains four cultural resources, including three historic period standing structures and a single archaeological site. A total of 5.0 acres of Alternative EH could potentially affect known cultural resources.

At this phase of the Project, it is not feasible to determine if any cultural resources would be impacted. Typically, NRHP-listed properties, historic period structures, and historic period cemeteries are avoided where feasible.

Exhibits 3-65 to 3-68 in Volume 3 show the locations of the NRHP-listed properties, historic standing structures, and historic cemeteries in the Corridor Alternatives.

3.6. Section 4(f) / Section 6(f) Resources

The information in this section is intended to satisfy the substantive requirements of Section 4(f) of the USDOT Act of 1966 (23 U.S.C. 138, recodified as 49 U.S.C. 303, as amended) and implementing regulations of FHWA and LADOTD. In addition, this section identifies properties that were acquired or improved with Land and Water Conservation Fund monies and could fall under the requirements of the Land and Water Conservations Fund Act (16 U.S.C. 4601 *et seq.*) if converted to highway purposes.

3.6.1. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to Section 4(f)/Section 6(f) resources. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, could potentially result in Section 4(f)/Section 6(f) resources impacts.

3.6.2. Build Alternative

This section identifies the Section 4(f) and Section 6(f) (Land and Water Conservation Fund) resources in each of the Project Units. The Section 4(f) / Section 6(f) Evaluation for the resources is found in Chapter 4.

3.6.2.1. North Unit

There are at least eight Section 4(f) resources in the North Unit. Four of the resources are parks/recreation areas, two are preserves, and two are associated with the US 190 (Huey P. Long / O.K. Allen) Bridge and the Bridge Administration Building. Five of the eight resources are owned by the Recreation and Park Commission for the Parish of East Baton Rouge (BREC), while a sixth resource (the park) is owned by Livingston Parish. The remaining two resources (i.e. Bridge and Bridge Administration Building) are owned by LADOTD. The resources by section are:

- US 190 Mississippi River Bridge – N2
- Administration Building, US 190 Mississippi River Bridge – N2
- Scotlandville Park - N2
- Hooper Road Park - N3
- Cohn Nature Preserve - N4
- Cohn Nature Preserve and James Watson Park - N5
- Cohn Arboretum, Cohn Nature Preserve - N6, and
- Live Oak Ball Park - N12

There are four Section 6(f) resources in the North Unit.

- Scotlandville Park - N2
- James Watson Park - N5, and
- Cohn Arboretum – N6
- Live Oak Park – N12

Scotlandville Park, James Watson Park, Cohn Arboretum, and Live Oak Park are Section 4(f) and Section 6(f) resources. One or more Section 4(f) and/or Section 6(f) resources are located in each of the five North Unit alternatives as shown in *Table 3.44*.

Table 3.44 North Unit Corridor Alternative Section 4(f) and Section 6(f) Resources

Resource	Corridor Alternative				
	NA	NB	NC	ND	NE
Park - 4(f)	2	3	3	3	4
Park - 6(f)	1	2	2	2	3
NRHP-eligible Sites--4(f)	2	2	2	2	2
Total 4(f) & 6(f) resources	4*	5*	5*	5*	6*

* Total resources is not a sum as all 6(f) resources are 4(f) resources.

Alternative NA has the least Section 4(f) resources with four, while Alternatives B, NC, and ND have five Section 4(f) resources, and Alternative NE has the most with six. Alternative NA has the least Section 6(f) resources with one. Alternatives NB, NC, and ND each have two Section 6(f) resources and NE has the most with three Section 6(f) resources.

3.6.2.2. South Unit

There are at least six Section 4(f) resources in the South Unit. They include three parks, a National Register of Historic Places (NRHP) listed historic property, and two NRHP listed or eligible archaeological sites determined to warrant preservation in place. The resources by section are:

- Woodstock Park - S3,
- Longwood Plantation (NRHP Listed) - S3
- Longwood Plantation archaeology site - 16EBR041 (NRHP eligible) - S3
- East Iberville District Park - S5
- Broussard Mounds archaeology site - 16AN001 (NHRP eligible) - S9, and
- Sunshine Park - St. Gabriel – S12.

There is one Section 6(f) resource in the South Unit in section S12. The resource is “Sunshine Park” owned by the City of St. Gabriel.

Sunshine Park is both a Section 4(f) and Section 6(f) resource. One or more of the six Section 4(f) resources is located in each of the eighteen South Unit alternatives. Alternatives SG and SK have the least Section 4(f) resources with one each, while Alternatives SD and SQ have the most with five. Alternatives SG, SH, SI, SJ, SK,

and SL contain the single Section 6(f) resource. *Tables 3.45a* and *3.45b* provide a summary of the resources by classification.

Table 3.45a South Unit - Corridor Alternative Section 4(f) and Section 6(f) Resources

	Corridor Alternative								
4(f) Resource	SA	SB	SC	SD	SE	SF	SG	SH	SI
Parks	1	2	1	2	1	2	1	2	1
Historic Sites	1	1	1	1	1	1	0	0	0
NR Listed/Eligible Arch. Sites	1	1	2	2	1	1	0	0	1
6(f) Resource									
Park	-	-	-	-	-	-	1	1	1
Total 4(f) & 6(f) resources	3	4	4	5	3	4	1*	2*	2*
* Total resources is not a sum as the 6(f) resource is a 4(f) resource.									

Table 3.45b South Unit - Corridor Alternative Section 4(f) and Section 6(f) Resources

	Corridor Alternative								
4(f) Resource	SJ	SK	SL	SM	SN	SO	SP	SQ	SR
Parks	2	1	2	1	2	1	1	2	2
Historic Sites	0	0	0	1	1	1	1	1	1
NR Listed/Eligible Arch. Sites	1	0	0	1	1	2	1	2	1
6(f) Resource									
Park	1	1	1	-	-	-	-	-	-
Total 4(f) & 6(f) resources	3*	1*	2*	3	4	4	3	5	4
* Total resources is not a sum as the 6(f) resource is a 4(f) resource.									

3.6.2.3. East Unit

There is at least one Section 4(f) resource in the East Unit - the Ascension Civic Center. This Section 4(f) resource is located in section E1 and is common to all of the East Unit alternatives. There are no Section 6(f) resources in the East Unit.

While it was not plausible to identify impacts to all the Section 4(f) resources in the Project Units, it was feasible to identify those Section 4(f) resources that would not be impacted, as discussed in detail in Chapter 4. The Section 4(f) resources that would not be impacted are:

- North Unit
  - Cohn Preserve
  - US 190 Bridge Administration Building
  - James Watson Park
  - Cohn Arboretum
  - Live Oak Ball Park
- South Unit
  - Longwood Plantation
  - Longwood Plantation archaeology site
  - East Iberville District Park
  - Broussard Mounds archaeology site
  - Sunshine Park
- East Unit
  - Ascension Civic Center

As all the Section 6(f) resources are also Section 4(f) resources, this non – use commitment only leaves one 6(f) resource (Scotlandville Park) in the North Unit subject to potential impacts and, thus, further evaluation in Tier 2.

3.7. Traffic and Transportation

3.7.1. Setting

3.7.1.1. Roadways

The Baton Rouge Loop study area is served by interstate highways, US highways, state highways, and parish and local roads. Three interstates serve the Baton Rouge Loop study area:

- I-10 - This east-west interstate route passes through the Baton Rouge Loop study area. It would serve as two of the three major interchange access points along the Baton Rouge Loop study area Units.
- I-12 - This east-west interstate route branches off from I-10 near the center of the Baton Rouge Loop study area and provides a more northerly East-West alternative to destinations to the east of this region (north of Lake Ponchartrain).
- I-110 – This north-south interstate route begins at its' junction with I-10 at the Mississippi River bridge and extends north to US 61. It will serve as a major interchange access point with corridors in the Baton Rouge Loop North Unit.

Two US Highways are located within the Baton Rouge Loop study area. US 61 is a major north-south route, and US 190 is a major east-west route that both serve the region. Multiple Louisiana state highways traverse the Baton Rouge Loop study area including:

- LA 415,
- LA 1,
- LA 67(Plank Road),
- LA 408 (Hooper Road),
- LA 410 (Blackwater Road),
- LA 64 (Greenwell Spring Point Hudson Road),
- LA 37 (Greenwell Springs Road),
- LA 16, LA 1019 (Springfield Road),
- LA 1024 (Cane Market Road),
- LA 1025 (Arnold Road),
- LA 447 (Walker North Road),
- LA 449 (Corbin Road),
- LA 75 (Belleview Drive),
- LA 30 (Nicholson Drive),
- LA 74,
- LA 73,
- LA 44,
- LA 22,
- LA 431, and
- LA 42.

Intertwined within this network are parish roads and city streets. Interstate routes are especially congested during peak hours from a combination of commuter,

traveler, and truck traffic. Once a traveler or commuter has exited the interstate highway, travel through the area consists of stop and start movement that further contributes to the interstate congestion.

3.7.1.2. Public Transportation

Public transportation in the Baton Rouge Loop study area is provided by the Capital Area Transit System (CATS). CATS serves the City of Baton Rouge and has seventeen day and nighttime routes and an additional route serving Southern University. Additionally, special transport services are provided through Tiger Trails the LSU Transit System. West Baton Rouge, Livingston, Iberville, and Ascension Parish do not have public transportation systems.

3.7.1.3. Aviation

There are nineteen airports and heliports in the five-parish Baton Rouge Loop study area - one public, and eighteen private facilities. The largest is the Baton Rouge Metropolitan Airport in East Baton Rouge Parish.

3.7.1.4. Navigable Waterways

There are several navigable waterways in the five-parish Baton Rouge Loop study area, including the Mississippi River, Gulf Intracoastal Waterway, and the Amite River.

3.7.2. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to traffic and transportation. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, could potentially have some positive impact in the general area on a limited basis. However, they would not provide a long-term solution to the traffic capacity and demand needs of the region.

3.7.3. Build Alternative

Traffic analysis for Unit Corridor Alternatives is discussed in Chapter 2, in Section 2.7.

3.8. Preliminary Impacts of Tolling

The Baton Rouge Loop is a proposed as a toll facility and would have an economic impact on the driving public upon opening and operation. At this Tier 1 phase, too many unknown elements exist to complete a detailed economic tolling analysis. However, once alignments are determined and additional details are investigated and made available during the Tier 2 phase, a tolling analysis would be completed, including the assessment of tolling impacts on low-income populations. If economic tolling impacts to low-income populations are determined during the Tier 2 phase to result from the proposed project, appropriate mitigation measures in accordance with FHWA policy would be implemented. Even without a detailed analysis, however,

potential future economic effects on individual households can be illustrated using the following generalized scenario.

Assume the toll rate is $ 0.15 per mile, the average household travels 12–miles one-way, and makes 250 round-trips per year. Under this scenario, the annual cost to use the Baton Rouge Loop would be approximately $900. A Baton Rouge Loop user with an annual household income equal to the 2007 median household income of the Project study area ($45,500) would spend approximately 2% of household income on tolls. Households with incomes at the 2007 DHHS poverty guideline level of $20,650 for a family of four would spend approximately 4.4% of household income on tolls or roughly 2.4% more than the median household income user.

As presented in this scenario, the direct economic impact of Baton Rouge Loop tolls would be higher for low-income users as the cost of paying tolls would represent a higher percentage of household income than for other users. Toll road users might reduce their personal economic impact of tolls by carpooling, where tolls would be divided among many travelers. It is anticipated that low-income populations unable to afford the toll should experience no additional adverse economic impacts. This is because it is likely that low-income populations would continue using the existing free roadways, as well as existing and planned regional public transportation. Moreover, with implementation of the Baton Rouge Loop, the existing system-wide network is projected to show increased overall average speeds (see Table 2.39), thus generally indicating improved traffic and transportation conditions (i.e., less congestion) experienced by all motorists, including EJ populations. This may also have a positive economic impact for non-toll using, low-income population drivers. That is, the reduction in travel time could reduce fuel consumption, therefore reducing fuel cost resulting in more disposable income. It should be noted, however, that the above described traffic model demonstrating an overall increase in average speeds is for the system-wide network. Accordingly, at this Tier 1 level analysis, it is unknown which roadways within the system-wide network would actually receive such a benefit, and therefore, it is also unknown what percentage of EJ motorists would actually be the beneficiary of the increased travel speeds.

As demonstrated above, the effects of tolling on environmental justice populations, which are widespread throughout the Baton Rouge Loop project area, would likely involve considerations beyond economic factors, most of which cannot be reliably quantified at this Tier 1 level of analysis. There have been numerous case studies of tolling effects on environmental justice populations, some of which are presented on the FHWA Environmental Justice website. However, these assessments are based on specific project alignments that are commensurate with a Tier 2 level of analysis. To determine whether potential tolling effects are disproportionate will involve addressing such considerations as access to jobs, effects on local and regional congestion, and changes to average travel time and daily VMT for both environmental justice and non-environmental justice populations. Data to support analysis of these considerations may have to come from project-specific origin/destination surveys. In addition, as described in the case studies mentioned above, potential mitigating measures that can offset any predicted environmental justice impacts of toll imposition often involve improvements to public transit service. Evaluation of such measures would involve quantifying effects of the project on transit usage, trip times, trip lengths, and access to employment opportunities,

shopping, medical services, and other community needs. These detailed studies would be addressed in Tier 2 when the range of feasible alternatives has been reduced and more detailed location data for refined alternative alignments are developed."

3.9. Air Quality

The USEPA has established criteria for evaluating air quality in accordance with the Clean Air Act Amendments of 1990 (42 U.S.C. 7401 et seq.). These standards are known as the National Ambient Air Quality Standards (NAAQS). The USEPA and Louisiana Department of Environmental Quality (LDEQ) regulate air quality in Louisiana. Air sheds that do not meet the NAAQS are known as nonattainment areas, and require special consideration.

3.9.1. Setting

The five parishes comprising the Baton Rouge metropolitan study area: Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge (see Figure 3-1), are designated as marginal nonattainment for the 2008 8-hour National Ambient Air Quality Standard for ozone (effective July 2012). The five parishes are in attainment for all other national and state air quality standards. Although USEPA does not require a modeled attainment demonstration for marginal nonattainment areas, the Baton Rouge area occasionally experiences monitored air quality values that are higher than USEPA ozone standards. In August 2013, LDEQ completed the 2008 8-Hour Ozone NAAQS Modeling Project. The main goal of the project was to develop the modeling data and associated analysis tools needed to reliably simulate the processes responsible for 8-hour ozone exceedances in the Baton Rouge region, as well as the evaluation of realistic emissions reduction strategies for inclusion in the Baton Rouge 8-hour ozone State Implementation Plan (SIP). It is anticipated that the results of this project will assist Baton Rouge and other metropolitan areas of the state with the data they can use to develop emission reduction plans to help them reach or maintain attainment with the standard. Additional work to further refine the modeling inputs is expected to occur over the next several years. LDEQ will not be required to submit a modeled attainment demonstration until after EPA finalizes a new, lowered standard, which is not expected until late 2015.

Due to the marginal nonattainment classification of the noted five parish area, the Capital Region Planning Commission (CRPC) acting as the technical staff of the Baton Rouge MPO, and the LADOTD, in cooperation with FHWA, LDEQ, USEPA, and the Federal Transit Administration (FTA), must prepare a transportation conformity analysis pursuant to state and federal conformity regulations (LAC 33:III.14.B and 40 CFR part 93, respectively). This analysis must be performed no less than every four years, or as significant changes are made to transportation plans, programs, or as required by applicable Federal Regulations. The latest transportation conformity analysis (Draft released June 10, 2013) demonstrated that the total projected VOC and NOx emissions within the Baton Rouge nonattainment area are less than the established motor vehicle emissions budgets for these ozone-precursor pollutants; thus the MTP and TIP conform to the State Implementation Plan.

In a final ruling effective March 12, 2010, the EPA determined that the Baton Rouge 1-hour ozone nonattainment area had attained the 1- hour ozone NAAQS. This determination was based upon three years of complete, quality-assured and certified ambient air monitoring data that showed the area had monitored attainment of the 1-hour ozone NAAQS for the 2006–2008 monitoring period. Preliminary data for 2009 also indicated that the area continued to attain the 1-hour ozone NAAQS. The requirements for this area to submit an attainment demonstration, a reasonable further progress plan, contingency measures, and other planning State Implementation Plan (SIP) requirements related to attainment of the 1-hour ozone NAAQS, are suspended for so long as the area continues to attain the 1-hour ozone NAAQS. EPA's ruling is limited to a determination that the Baton Rouge area has attained the 1-hour ozone NAAQS, and the effect of such a determination on the obligation to submit specified 1-hour anti-backsliding requirements. It does not formally address the 1-hour ozone anti-backsliding requirement for section 185 penalty fees or severe nonattainment new source (NNSR) review.

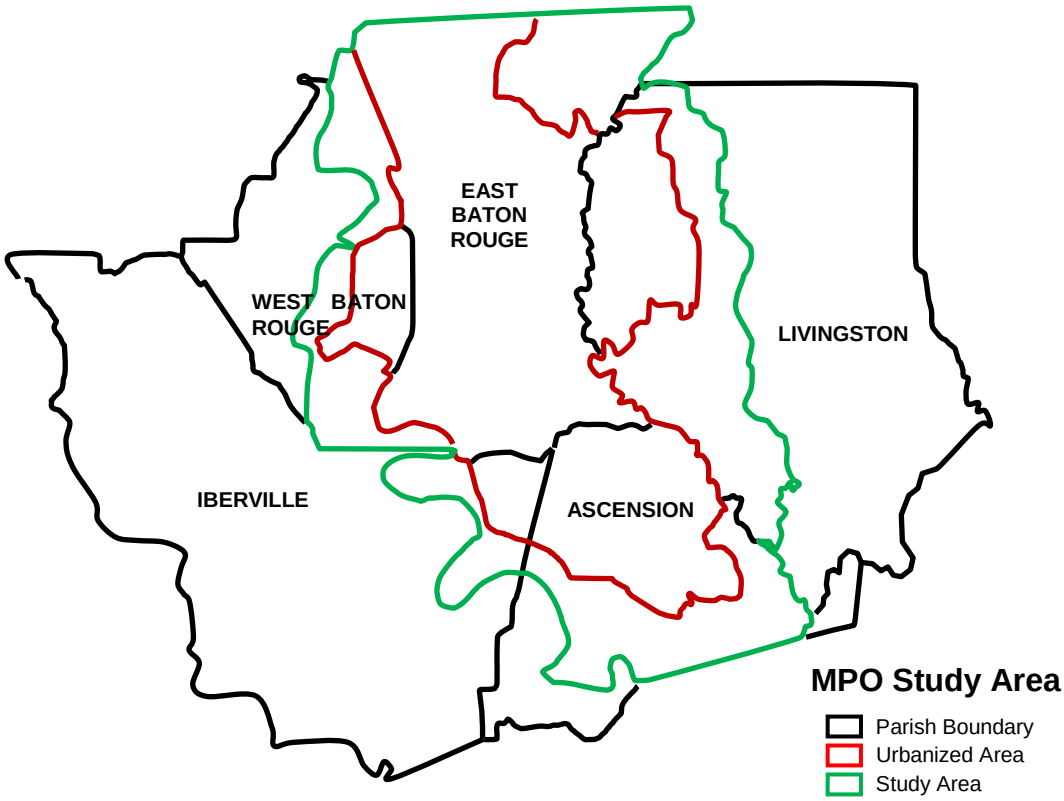


Figure 3–1: Baton Rouge/CRPC Study Area

3.9.2. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to air quality. Other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, would have no additional impact to air quality in the region as they have already been factored in the

conformity analysis for Capital Region Planning Commission (MPO) Transportation Improvement Program Fiscal Years 2009 – 2013.

3.9.3. Build Alternative

Consultation with the Louisiana Division of FHWA determined that air quality conformity modeling for the Baton Rouge area does not need to include the Baton Rouge Loop Tier 1 EIS.

This is based on CFR 40 § 93.126 Exempt projects.

Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in table 2 of this section (of the CFR) are exempt from the requirement to determine conformity. Such projects may proceed toward implementation even in the absence of a conforming transportation plan and TIP. A particular action of the type listed in table 2 of this section is not exempt if the MPO in consultation with other agencies (see §93.105(c) (1) (iii)), the EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that it has potentially adverse emissions impacts for any reason. States and MPOs must ensure that exempt projects do not interfere with TCM implementation. Table 2 excerpt follows:

Table 2—Exempt Projects

Other

Specific activities which do not involve or lead directly to construction, such as:

Planning and technical studies

Engineering to assess social, economic, and environmental effects of the proposed action or alternatives to that action.

Although it is not critical at this early development stage, it would be necessary for the Baton Rouge Loop to be placed on the MPO TIP prior to initiation of construction.

At the time that the Tier 2 EIS is prepared for this project, modeling will be performed by the CRPC or another entity under the direction of FHWA and LADOTD to determine project effects on regional emissions of criteria pollutants and whether the project conforms with the approved SIP. The modeling will use more accurate information on traffic volumes and roadway geometry and design parameters that will be available at that stage of project development.

Impacts of project construction activities on air quality will be short term. Emissions of gaseous pollutants from construction equipment will be controlled through best management practices, including compliance with requirements for use of low sulfur fuels for diesel-powered equipment. Dust from earth-moving activities will also be controlled through compliance with DOTD specifications and best management practices. Any burning of construction waste and debris will also be conducted in compliance with state and federal regulations.

3.9.4. Greenhouse Gas Emissions

Worldwide, anthropogenic sources of greenhouse gases (GHGs) are widely believed to be linked to global climate change. The CEQ has issued a draft guidance memorandum on the ways in which federal agencies can improve consideration of the effects of GHG emissions and climate change in the evaluation of proposals for federal actions under NEPA. This guidance, entitled "Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions" (February, 2010), elaborates on executive policies requiring federal agencies to take a leadership role in reducing GHGs as prescribed in EO 13514 (74 Federal Register 52117, October 8, 2009). As defined in Section 19(i) of EO 13514, GHGs refers to carbon dioxide, methane, nitrous oxide, hydro fluorocarbons, per fluorocarbons, and sulfur hexafluoride. Although CEQ guidance outlines a framework that offers some protocols for estimating GHGs for large direct emitting facilities, the guidance generally defers to individual federal agencies the task of developing policies for addressing GHGs in NEPA documents that are both reasonable and tailored to the agency needs.

To date, no national standards have been established regarding GHGs, nor has the USEPA established criteria or thresholds for GHG emissions. Per the 2010 draft CEQ guidance, "Many agency NEPA analyses to date have found that GHG emissions from an individual agency action have small potential effects. Emissions from many federal actions would not typically be expected to produce an environmental effect that would trigger or otherwise require a detailed discussion in an EIS." Given that climate impacts of carbon dioxide emissions are global in nature, analyzing how alternatives evaluated in an EIS might vary in their relatively small contribution to a global problem is not likely to better inform decisions. Further, due to the interactions between elements of the transportation system as a whole, emissions analyses would be less informative than analyses conducted at regional, state or national levels. Because of these concerns, carbon dioxide emissions cannot be evaluated usefully in this FEIS in the same way that other vehicle emissions are addressed in the discussion of air quality impacts.

Both FHWA and DOTD are actively engaged in the development of strategies to reduce transportation's contribution to GHGs. FHWA is involved in efforts to initiate, collect and disseminate climate change related research and to provide technical assistance to stakeholders. Working with the US DOT Center for Climate Change and Environmental Forecasting, as well as other partners, FHWA is involved in climate change initiatives that not only study GHG reduction strategies, particularly carbon dioxide emissions, but also assess the risks to transportation systems and services from climate change. DOTD is focusing on reducing energy consumption (particularly fossil fuels) by funding Travel System Management (TSM) strategies that reduce air pollution and GHGs, and assist in the nation's goal of energy independence. Examples of efforts undertaken by the State are the promotion of flex time, compressed work weeks, telecommuting, ride share and publicizing transit services already available. DOTD may utilize Congestion Mitigation and Air Quality (CMAQ) Improvement Program funds, as available, to convert public fleets (e.g., auto, buses, and school buses) to alternative fuels or replace certain public vehicles with hybrids, and to increase TSM activities that are beneficial to air quality (e.g., intersection improvements, upgrading signal equipment – including using LED signal heads which are more energy efficient, signal coordination, network surveillance and incident management, and work zone management). DOTD may

also use funds for reforestation of highway rights-of-way (outside of the roadside recovery area) to increase absorption of pollutants and carbon dioxide. DOTD also invests in transit and highway capacity to reduce energy consumption, which is DOTD's common strategy for reducing air pollution, reducing GHGs and helping the nation achieve energy independence.

FHWA and DOTD will continue to pursue these efforts as productive steps to address this important issue. FHWA and DOTD will review and update its approach to climate change at both the project and policy level as more information emerges and as policies and legal requirements evolve.

3.10. Floodplains

Information in this section is intended to respond to the substantive requirements of Executive Order 11988, Floodplain Management (May 24, 1977), USDOT Order 5650.2, (Floodplain Management and Protection), and implementing regulations of FHWA and LADOTD.

3.10.1. Setting

Much of the Project area landscape is dominated by "low-lying swampland and natural and man-made levees, once consisted almost entirely of bottomland hardwood deciduous forest, mixed hardwood forest, and cypress swamps. Major waterways within the Project area have a sizeable floodplain extending the length of the waterway. Other waterways, such as the Mississippi River, have manmade levees to protect adjacent areas that are subject to recurring inundation. The 100-year floodplain is an area where there is a one percent chance of flooding in any given year.

The regulations for floodplain management were designed to minimize highway encroachments within the 100-year floodplain and to avoid land use development inconsistent with floodplain values. During periods of high water, floodplains serve to moderate flood flow, provide water quality maintenance, and serve as temporary habitat for a number of plant and animal species. *Exhibit 3-69* in Volume 3 shows Project area floodplains.

3.10.2. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to floodplains. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, could potentially result in floodplain impacts.

3.10.3. Build Alternative

The digital 100-year floodplain from Flood Insurance Rate Maps and Flood Hazard Boundary Maps were obtained and put into the Geographic Information System (GIS) database. These data, combined with a map showing all of the streams in the Project area, were overlaid with the various Unit corridor sections, and 100-year floodplain area by section was calculated.

3.10.3.1. North Unit

Floodplain resources were tabulated for the fourteen sections in the North Unit -(see Table 3.46). Review of the 100-year floodplain data in the North Unit sections identified a total of 11,987.3 acres of floodplain. Section N7 has the highest percentage –(100%), while Section N2 has the least at – 3.2%.

Table 3.46 North Unit Corridor Section 100-Year Floodplain Acreage as Percent of Total Section Acreage

Corridor Section	Total Acres Floodplain	Total Section Acreage	100-Year Floodplain Acreage as Percent of Total Acreagege
N1	409.7	1,189.0	34.5%
N2	160.1	5,032.5	3.2%
N3	1,483.3	2,607.0	56.9%
N4	194.1	614.1	31.6%
N5	677.8	841.3	80.6%
N6	966.5	1,264.2	76.5%
N7	215.9	215.9	100.0%
N8	1,117.7	1,820.9	61.4%
N9	1,201.8	2,820.3	42.6%
N10	982.8	1,725.9	56.9%
N11	937.6	1,460.8	64.2%
N12	2,184.6	3,247.2	67.3%
N13	625.3	1,004.9	62.2%
N14	830.1	1,237.1	67.1%

A summary of all 100-year floodplains in the five North Unit Corridor Alternatives is shown in Table 3.47.

Table 3.47 North Unit Corridor Alternative 100-Year Floodplain Acreage as Percent of Total Alternative Acreage

	Corridor Alternative				
	NA	NB	NC	ND	NE
Total Acres Floodplain	4,491.2	4,997.5	5,502.2	5,325.1	5,946.9
Total Alternative Acreage	12,163.5	12,832.8	13,471.7	13,990.0	14,771.5
100-Year Floodplain Acreage as Percent of Total Acreagege	36.9%	38.9%	40.8%	38.1%	40.3%

Alternatives NC and NE have the largest percentage of 100-year floodplain while Alternative NA has the smallest.

Exhibits 3-70 to 3-72 in Volume 3 show North Unit floodplains.

3.10.3.2. South Unit

Potential floodplain resources were tabulated for each of the 14 corridor sections that comprise the South Unit as shown in *Table 3.48*.

Table 3.48 South Unit Corridor Section 100 -Year Floodplain Acreage as Percent of Total Acreage			
Corridor Section	Total Acreage Floodplain	Total Section Acreage	100-Year Floodplain Acreage as a Percent of Total Acreage
S1	4443.6	5713.5	77.8%
S2	1330.8	1719.7	77.4%
S3	1358.2	3029.3	44.8%
S4	101.2	428.3	23.6%
S5	0.5	1446.9	0.03%
S6	748.6	1251.6	59.8%
S7	1139.2	1300.6	87.6%
S8	564.5	1028.1	54.9%
S9	431.0	1112.1	38.8%
S10	36.1	870.5	4.2%
S11	1344.9	2054.3	65.5%
S12	3881.7	14169.3	27.4%
S13	446.9	1853.2	24.1%
S14	105.6	784.7	13.5%

One hundred year floodplain data within the South Unit sections identified a total of 15,932.6 acres. Section S1 has the highest percentage (77.8%), while section S5 has the least (0.03%).

A summary of all 100-year floodplain data identified within the 18 South Unit Corridor Alternatives is included in *Table 3.49*. Review of the 100-year floodplain data within the Corridor Alternatives of the South Unit identified a total of 190,252.5 acres of 100-year floodplain. Corridor Alternatives SA, SM, and SC have the largest percentage of 100-year floodplain greater than 60%, while alternatives SL and SH have the least, approximately 44%.

Table 3.49 South Unit Corridor Alternative 100 -Year Floodplain Acreage as Percent of Total Alternative Acreage			
Corridor Alternative	Total Acreage Floodplain	Total Alternative Acreage	100-Year Floodplain Acreage as a Percent of Total Acreage
SA	8,460.7	13,536.1	62.5%
SB	7,712.6	13,731.4	56.2%
SC	9,672.2	15,674.4	61.7%
SD	8,924.1	15,869.6	56.2%
SE	9,277.3	15,432.8	60.1%
SF	8,529.2	15,628.1	54.6%
SG	12,209.4	25,611.0	47.7%
SH	11,461.3	25,806.3	44.4%
SI	13,420.8	27,749.2	48.4%
SJ	12,672.7	27,944.5	45.3%
SK	13,025.9	27,507.7	47.4%
SL	12,277.8	27,702.9	44.3%
SM	10,132.8	16,324.3	62.1%
SN	9,384.7	16,519.6	56.8%
SO	11,344.3	18,462.5	61.4%
SP	10,949.4	18,220.9	60.1%
SQ	10,596.1	18,657.8	56.8%
SR	10,201.2	18,416.2	55.4%

Exhibits 3-73 to 3-81 in Volume 3 show South Unit floodplains.

3.10.3.3. East Unit

Floodplain resources were tabulated for the ten sections in the East Unit as shown in *Table 3.50*. Review of the 100-year floodplain data in the East Unit sections identified a total of 10,266.81 acres of floodplain.

Table 3.50 East Unit Corridor Section 100-Year Floodplain Acreage as Percent of Total Section Acreage

Corridor Section	Total Acres Floodplain	Total Section Acreage	100-Year Floodplain Acreage as Percent of Total Acreagege
E1	1,300.54	1,558.7	83.4%
E2	345.02	362.2	95.3%
E3	729.11	872.6	83.6%
E4	1,352.87	1,352.9	100.0%
E5	251.43	301.8	83.3%
E6	730.73	730.7	100.0%
E7	134.36	135.0	99.5%
E8	850.66	896.3	94.9%
E9	671.66	796.3	84.3%
E10	3,899.31	5,497.5	70.9%

Sections E4 and E6 have the highest percentage (100%), followed by E7 (99.5%) and E2 (95.3%). Section E10 has the smallest percentage (70.9%).

Table 3.51 shows a summary of 100-year floodplain acreage in the eight East Unit Corridor Alternatives.

Table 3.51 East Unit Corridor Alternative 100-Year Floodplain Acreage as Percent of Total Alternative Acreage

Corridor Alternative	Total Acres Floodplain	Total Alternative Acreage	100-Year Floodplain Acreage as Percent of Total Acreagege
EA	8,015.3	9,969.4	80.4%
EB	7,970.7	10,004.4	79.7%
EC	8,704.6	10,533.4	82.6%
ED	8,391.2	10,298.3	81.5%
EE	8,399.4	10,479.8	80.1%
EF	8,354.8	10,514.8	79.5%
EG	9,088.7	11,043.8	82.3%
EH	8,775.3	10,808.7	81.2%

All East Unit Corridor Alternatives have a substantial amount of 100-year floodplain. Alternative EC has the largest percentage at 82.6% and Alternative EF has the least at 79.5%.

Exhibits 3-82 to 3-85 in Volume 3 show East Unit floodplains.

At the Tier 1 EIS phase of the project, it is not possible to determine the concise floodplain impacts as specific alternative alignments have not been developed. However, based on the known information the East Unit has the highest probability for floodplain impacts and the North Unit the smallest potential.

3.11. Water Bodies

The information in this section is intended to respond to requirements of Section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*), the Wild and Scenic Rivers Act (16 U.S.C. 1271 *et seq.*), the Louisiana Scenic Rivers Program (Louisiana Revised Statutes Title 56, Chapter 9, Part II), and to implementing regulations of NPS, FHWA, LADOTD and LDWF.

3.11.1. Setting

Based on the USGS Hydrologic Unit Code system, the Project area is located within the Lower Mississippi Region and Lower Mississippi-Lake Maurepas Subregion (Subregion 0807). Subregion 0807 includes the Mississippi River Basin from the Lower Old River drainage boundary to the Bonnet Carre Floodway, and includes the Lower Grand River Basin west of the West-Bank Levee. Totaling 5,870 square miles, Subregion 0807 is divided into three Accounting Units that span the Project area: Lower Mississippi, Lake Maurepas, and Lower Grand. Surface water features such as rivers, streams, lakes, ponds, reservoirs and swamps crossed by the proposed corridor sections and Corridor Alternatives are identified below by Project Unit. *Exhibit 3-69* in Volume 3 shows Project area water bodies.

The Louisiana Scenic Rivers Act was established in 1970 to preserve, protect, and enhance the many unique and diverse free-flowing rivers, streams, and bayous in the state. The only scenic river in the study area is the Comite River to the entrance of White Bayou in East Baton Rouge Parish.

3.11.2. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to water bodies. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, could potentially result in waterbody impacts.

3.11.3. Build Alternative

The locations of ponds, lakes, reservoirs, swamps, perennial, and intermittent streams were identified from USGS 7.5 minute quadrangle maps and Geographical Information Systems (GIS) database mapping. GIS was also utilized to determine the watersheds in which the study area is located. Data sources used are listed in Appendix F.

3.11.3.1. North Unit

Major water bodies within the Project area include the Mississippi River (Section N2), the Comite River (Sections N3, N5, N7, and N9), and the Amite River (Sections N8 and N10).

Water bodies intersecting or included within each of the fourteen corridor sections that comprise the North Unit (*Table 3.52*) are listed below. One hundred thirty seven named and unnamed water bodies were identified within the North Unit corridor sections. Section N2 intersects the most water bodies (24), including seven streams/rivers and four lakes/ponds/reservoirs/swamps. Sections N4, N7, and N14

cross the fewest number of water features with three. According to the Louisiana Scenic Rivers Act, the Comite is classified as scenic within sections N5, N7, and N9.

Table 3.52 North Unit Water Crossings by Corridor Section

Corridor Section	Water Crossings (Streams/Rivers)	Water Crossings (Lakes/Ponds/ Reservoirs/Swamps)	Total Waterbody Crossings
N1	7	3	10
N2	20	4	24
N3	12	5	17
N4	3	0	3
N5*	5	0	5
N6	4	3	7
N7*	3	0	3
N8	8	3	11
N9*	11	5	16
N10	7	1	8
N11	10	1	11
N12	11	2	13
N13	3	3	6
N14	3	0	3
Total	107	30	137

* Contains parts of the Comite River designated as scenic.

Named and unnamed water bodies intersected by each of the corridor sections are described below:

- Section N1:Crosses ten water bodies, one of which is named (Alligator Bayou).
- Section N2:Crosses 24 water bodies, the most significant of which is the Mississippi River. The other named water crossing is Monte Sano Bayou.
- Section N3:Crosses 17 water bodies. The six named water crossings include the Amite River, Comite River, Cypress Bayou, Draughan Creek, Jones Bayou, and Beaver Bayou.
- Section N4:Crosses three water bodies including Cypress Bayou.
- Section N5:Crosses five water bodies. Three named water crossings include Blackwater Bayou, the Comite River, and White Bayou. The Comite River is considered scenic within this Corridor Section.
- Section N6:Crosses seven water bodies, one of which is White Bayou.
- Section N7:Crosses three water bodies, two of which are Blackwater Bayou and the Comite River. The Comite River is considered scenic within this Corridor Section.
- Section N8:Crosses 11 water bodies, the Amite River and Beaver Bayou.
- Section N9:Crosses 16 water bodies, seven of which are named: the Comite River, Blackwater Bayou, Beaver Bayou, Hub Bayou, Saunders Bayou, South Canal, and Sandy Creek. The Comite River is considered scenic within this Corridor Section.
- Section N10:Crosses eight water bodies, four of which are named: West Colyell Creek, the Amite River, Beaver Creek, and Moler Bayou.
- Section N11:Crosses 11 water bodies including the Amite River, Beaver Creek, and Sandy Creek.

- Section N12:Crosses 13 water bodies, including seven named water crossings (West Colyell Creek, the Amite River, Beaver Creek, Spillers Creek, Sandy Creek, Beaver Branch, and Moler Bayou).
- Section N13:Crosses six water bodies, two of which are West Colyell Creek and Beaver Branch.
- Section N14:Crosses three water bodies, including one named stream (Middle Colyell Creek).

Water bodies in the five North Unit Corridor Alternatives are shown in *Table 3.53*. Waterbody crossings in the North Unit alternatives range from 61 to 80. Alternative ND has the most waterbody crossings (80). Alternative NC crosses the fewest water bodies (61). Alternative NA does not cross any streams that are designated scenic. Alternatives NB, NC, ND, and NE all cross the Comite River at one location considered scenic. Because section N2 is common to all alternatives, all alternatives cross the Mississippi River.

Table 3.53 North Unit Water Crossings by Corridor Alternative

Corridor Alternative	Water Crossings (Streams/Rivers)	Water Crossings (Lakes/Ponds/ Reservoirs/Swamps)	Total
NA	52	16	68
NB*	56	14	70
NC*	58	17	61
ND*	61	19	80
NE*	59	17	76

*Contain parts of the Comite River designated as scenic.

Exhibits 3-70 to 3-72 in Volume 3 show North Unit water bodies.

3.11.3.2. South Unit

Major water bodies crossed by the South Unit corridor sections include the Gulf Intracoastal Waterway (S1) and the Mississippi River (S12, S13, and S14). Surface water crossings were identified for each of the fourteen corridor sections that comprise the South Unit as shown in *Table 3.54*.

Table 3.54 South Unit Water Crossings by Corridor Section

Corridor Section	Water Crossings (Streams/Rivers)	Water Crossings (Lakes/Ponds/ Reservoirs/Swamps)	Total Waterbody Crossings
S1	17	0	17
S2	4	0	4
S3	4	4	8
S4	6	2	8
S5	12	3	15
S6	9	5	14
S7	4	2	6
S8	5	1	6
S9	10	4	14
S10	6	0	6
S11	14	6	20
S12	42	6	48
S13	7	3	10
S14	5	2	7
Total	145	38	183

Review of the waterbody data identified 183 water bodies located within the South Unit corridor sections. Section S12 intersects the most water bodies with forty-eight, while Section S2 intersects the fewest with four.

Water bodies crossed by each of the corridor sections are described below:

- Section S1: Crosses seventeen water bodies three of which are named (Alligator Bayou, the Gulf Intracoastal Waterway, and Choctaw Bayou).
- Section S2: Crosses four water bodies with Bayou Bourbeaux being the only named stream.
- Section S3: Crosses eight water bodies, including two named water crossings are (Elbow Bayou, Bayou Manchac).
- Section S4: Crosses eight water bodies, two of which are named (Bayou Manchac and Bayou Paul).
- Section S5: Crosses 15 water bodies, one of which is named (Bayou Braud).
- Section S6: Crosses 14 water bodies, one of which is named (Bayou Braud).
- Section S7: Crosses six water bodies, including one named crossing, New River. Unnamed water bodies consist of a set of tailings ponds associated with Williams Olefins.
- Section S8: Crosses six water bodies, none of which is named.
- Section S9: Crosses 14 water bodies, including two named water crossings (New River and Smith Bayou).
- Section S10: Crosses six water bodies, none of which is named.
- Section S11: Crosses 20 water bodies, including two named water crossings (Smith Bayou Conway Bayou).
- Section S12:Crosses 48 water bodies, including seven named water crossings (Bayou Jacob, the Mississippi River, Bayou Paul, Bayou LaButte, Lodging Canal, Bayou Plaquemine, and Wilberts Canal).
- Section S13:Crosses ten water bodies, including two named water crossings (the Mississippi River and Bayou Bourbeaux).

- Section S14:Crosses seven water bodies including the Mississippi River.

Water bodies in the eighteen South Unit Corridor Alternatives are presented in *Table 3.55*. Waterbody crossings in the South Unit alternatives range from 66 to 132. Alternatives SJ and SI have the most waterbody crossings at 132 and 131 respectively. Alternatives SA and SB contain the fewest water crossings at 66 and 67, respectively. All Corridor Alternatives would cross the Intracoastal Waterway and the Mississippi River. There are no scenic stream crossings within the South Unit.

Table 3.55 South Unit Water Crossings by Corridor Alternative

Corridor Alternative	Water Crossings (Streams/Rivers)	Water Crossings (Lakes/Ponds/ Reservoirs/Swamps)	Total
SA	50	16	66
SB	53	14	67
SC	69	25	94
SD	72	23	95
SE	65	21	86
SF	68	19	87
SG	87	16	103
SH	90	14	104
SI	106	25	131
SJ	109	23	132
SK	102	21	123
SL	105	19	124
SM	56	17	73
SN	59	15	74
SO	75	26	101
SP	71	22	93
SQ	78	24	102
SR	74	20	94

Exhibits 3-73 to 3-81 in Volume 3 show South Unit water bodies.

3.11.3.3. East Unit

The only major waterbody crossed by the East Unit is the Amite River within corridor sections E8 and E9. The number of waterbody crossings within each of the ten East Unit corridor sections is listed below in *Table 3.56*.

Table 3.56 East Unit Water Crossings by Corridor Section

Corridor Section	Water Crossings (Streams/Rivers)	Water Crossings (Lakes/Ponds/ Reservoirs/Swamps)	Total Waterbody Crossings
E1	10	7	17
E2	5	3	8
E3	4	7	11
E4	4	6	10
E5	1	5	6
E6	4	5	9
E7	0	1	1
E8	7	12	19
E9	5	5	10
E10	8	3	11
Total	48	54	102

One hundred two named and unnamed water bodies were identified in the East Unit corridor sections. Many of the water crossings in the East Unit are associated with wetland areas. Section E8 has the most water crossings (19), and section E7 the fewest with one.

Water bodies intersected by each of the corridor sections are described in detail below:

- Section E1: Crosses seventeen water bodies, three of which are named (Bayou Conway, Bayou Francois, and Hachett Canal).
- Section E2: Crosses eight water bodies including two named streams (New River and Saveiro Canal).
- Section E3: Crosses 11 water bodies including Saveiro Canal and New River.
- Section E4: Crosses ten water bodies including: Bayou Vicknair, Flat Lake, and Lake Martin.
- Section E5: Crosses six water bodies with Henderson Bayou the only named stream.
- Section E6: Crosses nine water bodies, including three named water crossings (Cocodrie Bayou, Lake Martin, and Lake Villars).
- Section E7: Crosses nine water bodies, five of which are named (Cocodrie Bayou, Lake Martin, Lake Villars, Henderson Bayou, and St. Amant Swamp).
- Section E8: Crosses nineteen water bodies, four of which are named (Amite River, Keys Lake, Boudreaux Bayou, and Grays Creek).
- Section E9: Crosses ten water water bodies, four of which are named (Amite River, Willis Bayou, and Grays Creek).
- Section E10: Crosses eleven water bodies, three of which are named (Middle Colyell Creek, Prairie Bayou, and West Colyell Creek).

Waterbody crossings within the eight East Unit Corridor Alternatives are presented in *Table 3.57*. Total waterbody crossings in the East Unit alternatives range from 48 to 71. Alternative EA has the most waterbody crossings at 71. Alternative EF has the fewest waterbody crossings at 48. All Corridor Alternatives cross the Amite River. There are no scenic streams located within the East Unit.

Table 3.57 East Unit Water Crossings by Corridor Alternative

Corridor Alternative	Water Crossings (Streams/Rivers)	Water Crossings (Lakes/Ponds/ Reservoirs/Swamps)	Total
EA	35	36	71
EB	33	30	63
EC	38	37	57
ED	36	29	54
EE	34	40	49
EF	32	34	48
EG	37	41	56
EH	35	33	53

Exhibits 3-82 to 3-85 in Volume 3 show East Unit water bodies.

3.12. Wetlands

The information in this section is intended to respond to requirements of Section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*), Executive Order 11990, *Preservation of Wetlands* (August 24, 1977), and to implementing regulations of FHWA and LADOTD.

Section 404 of the CWA (hereinafter "Section 404") authorizes the Secretary of the Army, acting through the U.S. Army Corps of Engineers (COE), to issue permits for the discharge of dredged or fill material into waters of the U.S., including wetlands (33 U.S. Code § 1344). COE regulations implementing Section 404 (33 CFR § 328.3) define waters of the U.S., including wetlands, as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    c. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs 1-4 above;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs 1-6 above.

In addition to the regulation of wetlands which meet the criteria of Section 404 as waters of the U.S., Executive policy issued as EO 11990 – Protection of Wetlands (42 Federal Register 26961, May 24, 1977) addresses a broader range of wetland environments. Under EO 11990, wetlands are defined as "those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction." Unlike Section 404, the definition of wetlands in EO 11990 does not consider the relationship of wetlands to any waters of the U.S. or tributaries to such, but applies to areas with vegetation adapted to wetland conditions wherever such areas may be found.

The Executive policy embodied in EO 11990 requires federal agencies to minimize the destruction, loss, or degradation of wetlands, and preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. A key element of the EO is the requirement for federal agencies to avoid adverse

impacts to wetlands unless there is no practicable alternative. The EO does not prescribe a methodology for determining whether a proposed action alternative is practicable, but requires federal agencies to implement its policies by regulation and guidance. If more than one alternative is determined to be practicable, then the EO requires federal agencies to select the practicable alternative which is least damaging to wetlands.

3.12.1. Setting

The five parishes that comprise the Baton Rouge Loop Project area are located within the Mississippi River Alluvial Plain and the Upper East Gulf Coastal Plain ecoregions. Areas having ecological similarities are classified as ecoregions. Portions of these ecoregions within the Project area are characterized by wetlands that include characteristics such as low-lying swampland, natural and man-made levees, and coastal marsh (Smith et al. 1983:93). Soils within these wetlands are saturated (hydric soils) either year round or seasonally. Much of the Project area once consisted almost entirely of bottomland hardwood deciduous forest, mixed hardwood forest, and cypress swamps. *Exhibits 3-86* in Volume 3 shows Project area wetlands and hydric soils.

3.12.2. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to wetlands. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, could potentially result in wetland impacts.

3.12.3. Build Alternative

Wetlands, or potential wetlands, in the Project Units were identified at two levels: (1) NOAA 2005 National Land Cover Database (NLCD) land cover data, and (2) NRCS Parish Soils Survey, USDA State Soil Geographic (STATSGO) Database, and the national and state hydric soils list. See Appendix F.

Discrepancies in acreages may occur because NOAA land cover is a nationally standardized database of land cover and land change information for the coastal regions of the U.S. developed using remotely sensed imagery, while the hydric soils are simply a list of hydric soils determined by the NRCS.

NOAA wetland land cover types within the Project area are:

- **Palustrine Forested Wetland** – Includes tidal and nontidal wetlands dominated by woody vegetation greater than or equal to 5 meters in height, and all such wetlands that occur in tidal areas in which salinity due to ocean-derived salts is below 0.5 percent. Total vegetation coverage is greater than 20 percent.
- **Palustrine Scrub/Shrub Wetland** – Includes all tidal and non-tidal wetlands dominated by woody vegetation less than 5 meters in height, and all such wetlands that occur in tidal areas in which salinity due to ocean-derived salts is below 0.5 percent. Total vegetation coverage is greater than 20 percent. The species present could be true shrubs, young trees and shrubs, or trees that are small or stunted due to environmental conditions (Cowardin et al. 1979).

- **Palustrine Emergent Wetland (Persistent)** – Includes all tidal and nontidal wetlands dominated by persistent emergent vascular plants, emergent mosses, or lichens, and all such wetlands that occur in tidal areas in which salinity due to ocean-derived salts is below 0.5 percent. Plants generally remain standing until the next growing season. Total vegetation cover is greater than 80 percent.
- **Palustrine Aquatic Bed** – Includes tidal and nontidal wetlands and deepwater habitats in which salinity due to ocean-derived salts is below 0.5 percent and which are dominated by plants that grow and form a continuous cover principally on or at the surface of the water. These include algal mats, detached floating mats, and rooted vascular plant assemblages. Total vegetation cover is greater than 80 percent. This classification is only present in the East Unit.
- **Unconsolidated Shore** – Unconsolidated material such as silt, sand, or gravel that is subject to inundation and redistribution due to the action of water. Characterized by substrates lacking vegetation except for pioneering plants that become established during brief periods when growing conditions are favorable. Erosion and deposition by waves and currents produce a number of landforms representing this class.
- **Open Water** – All areas of open water, generally with less than 25 percent cover of vegetation or soil.

Hydric soils were identified using the STATSGO database developed by the NRCS. STATSGO spatial data are compiled by combining geologically and topographically related soil series found in detailed parish soil surveys (1:12,000 to 1:24,000) into larger map units. STATSGO data were supplemented with soil surveys for East Baton Rouge, West Baton Rouge, Livingston, Ascension, and Iberville Parishes, as well as the web soil survey.

The Project sections and alternatives were assessed using NRCS soil data for East Baton Rouge, West Baton Rouge, Ascension, Livingston, and Iberville parishes. The soils identified in the Project area were compared to NRCS hydric soils lists. This review allowed for preliminary identification of wetlands.

Soils found at each surveyed location within the Project sections and alternatives were investigated by reviewing available NRCS publications on hydric soils. Soil types and their hydric characteristics were compared with the NRCS National Hydric Soils list.

A list of the soil series that would be crossed by the proposed Project is provided in Appendix F.

3.12.3.1. North Unit

Potential wetland resources were tabulated for each of the fourteen sections that comprise the North Unit by wetland classification *Table 3.58* and hydric soil *Tables 3.59a* and *3.59b.*

Table 3.58 North Unit Corridor Section Wetland Land Cover Acreage as Percent of Total Acreage

Section	Wetland Percent Acreage by Classification					
	Palustrine Forested Wetland	Palustrine Scrub/Shrub Wetland	Palustrine Emergent Wetland	Unconsolidated Shore	Water	Wetland Acreage as Percent of Total Acreage
N1	42.09%	0.27%	0.40%	0.06%	2.11%	44.88%
N2	4.41%	0.18%	0.16%	0.03%	2.27%	7.04%
N3	50.52%	6.37%	0.84%	0.00%	1.84%	59.74%
N4	46.63%	1.44%	0.35%	0.40%	0.15%	48.57%
N5	53.86%	3.13%	0.77%	0.00%	1.60%	59.77%
N6	52.52%	6.93%	0.53%	4.63%	0.36%	60.34%
N7	34.00%	5.65%	1.57%	1.72%	4.75%	50.60%
N8	45.58%	4.55%	0.97%	0.29%	1.14%	53.96%
N9	49.10%	6.63%	0.53%	0.65%	0.64%	57.18%
N10	30.23%	3.52%	0.54%	0.89%	1.88%	36.82%
N11	37.04%	6.35%	0.52%	0.74%	1.53%	46.32%
N12	23.18%	8.16%	1.09%	0.02%	2.92%	36.08%
N13	31.57%	3.53%	0.98%	0.00%	0.68%	36.77%
N14	38.01%	1.93%	0.76%	0.00%	0.53%	41.23%

Table 3.59a North Unit Corridor Section Hydric Soil as Percent of Total Acreage

Hydric Soil Classification	Corridor Section						
	N1	N2	N3	N4	N5	N6	N7
En	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FoA	0.00%	0.73%	1.73%	2.91%	0.00%	2.64%	0.00%
CSA	0.00%	0.00%	4.36%	11.54%	3.18%	8.88%	0.00%
Gb	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Ge	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
GeA	0.00%	0.00%	29.07%	0.00%	10.90%	0.00%	54.20%
GtA	0.00%	0.00%	3.87%	0.00%	26.86%	0.00%	5.96%
OU	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
OUA	0.00%	0.00%	7.14%	0.00%	17.86%	10.35%	30.83%
Pa	0.00%	0.00%	0.04%	0.00%	0.00%	0.00%	0.00%
Pt	0.00%	0.00%	6.58%	0.00%	0.00%	0.00%	0.00%
Se	41.49%	4.09%	0.00%	0.00%	0.00%	0.00%	0.00%
Sf	51.17%	0.34%	0.00%	0.00%	0.00%	0.00%	0.00%
Sp	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent of Total Acreage	92.67%	5.16%	52.79%	14.45%	58.80%	21.87%	90.99%

There were 10,032.6 acres of wetlands according to the NOAA land cover data and 12,598.25 acres of wetlands using hydric soils only, indicating discrepancies between the NOAA and hydric soils datasets.

Table 3.59b North Unit Corridor Section Hydric Soil as Percent of Total Acreage

Hydric Soil Classification	Corridor Section						
	N8	N9	N10	N11	N12	N13	N14
En	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13.66%
FoA	0.00%	1.65%	0.00%	0.00%	0.00%	0.00%	0.00%
CSA	0.00%	1.12%	0.00%	0.00%	0.00%	0.00%	0.00%
Gb	0.00%	0.00%	22.33%	8.71%	10.72%	32.50%	2.86%
Ge	0.00%	0.00%	36.77%	31.59%	35.37%	46.35%	36.50%
GeA	42.48%	31.22%	0.00%	2.90%	2.79%	0.00%	0.00%
GtA	25.28%	11.69%	0.00%	0.01%	1.01%	0.00%	0.00%
OU	0.79%	0.00%	9.83%	8.43%	8.05%	1.36%	11.18%
OUA	1.35%	4.68%	0.13%	13.70%	10.04%	0.00%	0.00%
Pa	0.00%	0.00%	0.13%	0.00%	0.15%	0.00%	1.68%
Pt	4.44%	0.13%	0.17%	0.00%	1.18%	0.00%	0.00%
Se	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sf	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sp	0.00%	0.00%	0.00%	0.77%	0.00%	0.00%	1.77%
Percent of Total Acreage	74.34%	50.48%	69.35%	66.10%	69.31%	80.21%	67.65%

The highest percentage of wetlands is in section N6 at 60.34% while the lowest percentage of wetlands is in section N2 at 7.04%. Palustrine forested wetlands are the dominant wetlands type followed by palustrine scrub/shrub wetlands and palustrine emergent wetlands.

The highest percentage of hydric soils is in section N1 (92.67%) while the lowest is in section N2 at 5.16%. Gilbert Brimstone (Ge) and Gilbert Brimstone Silt Loams (Gb) and Gilbert Silt Loam 0 to 1% slopes (GeA) are the largest percentage and Springfield silt loams (Sp) and Pits arents complex 0 to 5% (Pa) are the smallest percentage of hydric soils in the North Unit.

Wetland resources identified within the five North Unit Corridor Alternatives are shown by wetland classification in *Table 3.60* and hydric soil in *Table 3.61.*

Table 3.60 North Unit Corridor Alternative Wetland Land Cover Acreage as Percent of Total Acreage

Alternative	Wetland Percent Acreage by Classification					
	Palustrine Forested Wetland	Palustrine Scrub/Shrub Wetland	Palustrine Emergent Wetland	Unconsolidated Shore	Water	Wetland Acreage as Percent of Total Acreage
NA	27.30%	2.44%	0.51%	0.14%	1.80%	32.19%
NB	27.85%	1.94%	0.52%	0.37%	1.60%	32.28%
NC	28.64%	2.39%	0.52%	0.40%	1.54%	33.49%
ND	31.15%	3.19%	0.45%	0.16%	1.32%	36.27%
NE	28.79%	3.95%	0.54%	0.22%	1.69%	35.20%

Wetland acreages in the North Unit alternatives range from 32.195 to 36.27%. Alternative ND has the highest percentage of wetlands, 36.27% and Alternative NA

has the lowest percent of wetlands, 32.19%. In each case, the majority of the wetlands are palustrine-forested wetlands ranging from approximately 31% in Alternative ND to about 27% in Alternative NA. Palustrine scrub/shrub wetlands ranged from about 2% to 4% in each alternative while palustrine emergent wetlands and unconsolidated shore both comprised less than 1% in all alternatives.

Based on the hydric soil summary data in *Table 3.61* Alternative NB has the highest percentage of hydric soils (47.58%) and Alternative ND has the lowest percentage of hydric soils (40.95%).

Table 3.61 North Unit Corridor Alternative Hydric Soil as Percent of Total Acreage

Hydric Soil Classification	Corridor Alternative				
	NA	NB	NC	ND	NE
En	1.39%	1.32%	1.26%	1.21%	1.14%
FoA	0.63%	0.39%	0.62%	0.93%	0.88%
CSA	0.93%	0.76%	1.36%	1.53%	1.45%
Gb	6.14%	5.82%	5.55%	3.49%	2.60%
Ge	12.76%	12.09%	11.53%	9.85%	10.83%
GeA	6.23%	6.74%	6.61%	6.61%	6.59%
GtA	0.83%	5.35%	3.51%	2.36%	2.46%
OU	2.65%	2.62%	2.50%	1.97%	2.71%
OUA	1.55%	1.38%	1.66%	3.31%	3.98%
Pa	0.20%	0.18%	0.17%	0.15%	0.17%
Pt	1.43%	0.65%	0.62%	0.03%	0.28%
Se	5.53%	5.25%	5.00%	4.81%	4.56%
Sf	5.12%	4.86%	4.63%	4.46%	4.22%
Sp	0.18%	0.17%	0.16%	0.24%	0.15%
Percent of Total Acreage	45.57%	47.58%	45.18%	40.95%	42.02%

In summary, palustrine forested wetlands comprised the largest wetland acreage across all five North Unit alternatives. Palustrine scrub/shrub is the second largest. Water, followed by palustrine emergent wetlands, and lastly, unconsolidated shore are the smallest wetland percentages observed in each of the alternatives. When comparing the wetland land cover and the hydric soils for the alternatives, Alternative ND has the highest percentage of wetland acreage and Alternative NB has the largest hydric soils acreage percentage.

Exhibits 3-87 to 3-89 in Volume 3 show North Unit wetlands and hydric soils.

3.12.3.2. South Unit

Potential wetland resources were tabulated for each of the fourteen sections that comprise the South Unit by wetland classification (*Table 3.62)* and hydric soil (*Tables 3.63a* and *Table 3.63b).*

Table 3.62 South Unit Corridor Section Wetland Land Cover Acreage as Percent of Total Acreage

Section	Wetland Percent Acreage by Classification						
	Palustrine Forested Wetland	Palustrine Scrub/Shrub	Palustrine Emergent Wetland	Palustrine Aquatic bed	Unconsolidated Shore	Water	Percent of Total Acreage
S1	76.10%	3.60%	1.21%	0.01%	0.03%	0.89%	81.84%
S2	85.64%	9.47%	0.90%	0.00%	0.00%	0.00%	96.02%
S3	39.71%	0.83%	0.27%	0.00%	0.00%	0.44%	41.25%
S4	17.14%	0.12%	0.02%	0.00%	0.00%	0.00%	17.27%
S5	46.48%	0.37%	0.67%	0.00%	0.18%	0.01%	47.71%
S6	43.66%	0.17%	5.36%	0.00%	0.00%	0.08%	49.27%
S7	53.27%	4.71%	2.37%	0.00%	0.07%	2.94%	63.37%
S8	44.64%	3.38%	1.75%	0.00%	0.00%	1.94%	51.72%
S9	31.33%	14.45%	1.33%	0.00%	0.00%	0.41%	47.52%
S10	31.91%	1.60%	0.91%	0.00%	0.00%	0.05%	34.48%
S11	37.91%	3.24%	1.17%	0.00%	0.00%	0.23%	42.55%
S12	34.07%	0.59%	0.58%	0.00%	0.03%	3.62%	38.89%
S13	5.74%	0.03%	0.12%	0.00%	3.22%	14.55%	23.66%
S14	31.19%	0.58%	0.54%	0.00%	0.08%	9.75%	42.14%

Table 3.63a South Unit Corridor Section Hydric Soil as Percent of Total Acreage

Hydric Soil Classification	Corridor Section						
	S1	S2	S3	S4	S5	S6	S7
Sf	86.2%	99.5%	0.0%	0.0%	0.0%	7.6%	59.2%
CX	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cg	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gr	0.0%	0.0%	0.0%	11.1%	0.4%	0.0%	0.0%
Sb	0.0%	0.0%	0.0%	38.1%	55.5%	74.9%	0.6%
Sd	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Se	0.0%	0.5%	0.0%	0.0%	23.3%	12.0%	3.0%
Sg	0.0%	0.0%	0.0%	3.4%	2.0%	1.9%	0.0%
CRC	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SeA	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%
Ca	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
FA	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	2.0%
Sa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%
Sc	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.9%
Percent of Total Acreage	86.24%	100.00%	2.03%	52.62%	81.20%	97.44%	87.92%

Table 3.63b South Unit Corridor Section Hydric Soil as Percent of Total Acreage							
	Corridor Section						
Hydric Soil Classification	S8	S9	S10	S11	S12	S13	S14
Sf	11.4%	2.6%	0.0%	0.0%	0.9%	4.0%	15.6%
CX	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%
Cg	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%
Gr	0.0%	0.0%	0.0%	0.0%	8.1%	0.0%	0.0%
Sb	0.0%	0.0%	0.0%	0.0%	6.7%	0.0%	0.0%
Sd	0.0%	0.0%	0.0%	0.0%	3.5%	0.0%	0.0%
Se	0.0%	0.0%	0.0%	0.0%	0.0%	3.4%	0.0%
Sg	0.0%	0.0%	0.0%	0.0%	29.5%	0.0%	0.0%
CRC	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.5%
SeA	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
Ca	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%
FA	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sa	19.5%	6.5%	4.3%	0.4%	0.0%	0.0%	0.0%
Sc	6.2%	6.8%	4.1%	56.7%	0.0%	0.0%	0.0%
Percent of Total Acreage	38.80%	15.93%	9.86%	57.06%	50.93%	8.44%	16.10%

There are 18,294 acres of wetlands according to the NOAA data and 18,743 acres of hydric soils, indicating discrepancies between the NOAA and hydric soils datasets.

The highest percentage of wetlands is in section S2 (96%) while the lowest is in section S4 at 17.3%. Palustrine forested wetlands are the dominant wetland type followed by palustrine scrub/shrub and water.

The highest percentage of hydric soils is in section S2 (100%) while the lowest percentage is in section S3 at 2.0%.

Wetland resources identified in the 18 South Unit Corridor Alternatives are shown in *Tables 3.64 and Table 3.65.*

Table 3.64 South Unit Corridor Alternative Wetland Land Cover Acreage as Percent of Total Acreage

Alternative	Wetland Percent Acreage by Classification						
	Palustrine Forested Wetland	Palustrine Scrub/Shrub Wetland	Palustrine Emergent Wetland	Palustrine Aquatic Bed	Unconsolidated Shore	Water	Percent of Total Acreage
SA	55.91%	2.47%	1.46%	0.00%	0.02%	1.48%	61.34%
SB	56.03%	2.46%	1.02%	0.00%	0.04%	1.45%	61.01%
SC	52.55%	3.36%	1.39%	0.00%	0.02%	1.21%	58.53%
SD	52.70%	3.34%	1.02%	0.00%	0.04%	1.19%	58.28%
SE	52.91%	2.46%	1.37%	0.00%	0.02%	1.20%	57.97%
SF	53.06%	2.45%	0.99%	0.00%	0.04%	1.18%	57.72%
SG	48.50%	2.15%	1.11%	0.00%	0.02%	2.43%	54.21%
SH	48.62%	2.15%	0.88%	0.00%	0.03%	2.41%	54.09%
SI	47.17%	2.68%	1.10%	0.00%	0.02%	2.21%	53.18%
SJ	47.29%	2.67%	0.88%	0.00%	0.03%	2.19%	53.07%
SK	47.32%	2.17%	1.08%	0.00%	0.02%	2.21%	52.81%
SL	47.45%	2.17%	0.87%	0.00%	0.03%	2.19%	52.71%
SM	54.53%	3.02%	1.29%	0.00%	0.38%	2.41%	61.64%
SN	54.65%	3.00%	0.93%	0.00%	0.39%	2.38%	61.36%
SO	51.84%	3.71%	1.26%	0.00%	0.34%	2.07%	59.22%
SP	52.14%	2.96%	1.24%	0.00%	0.34%	2.08%	58.75%
SQ	51.97%	3.69%	0.94%	0.00%	0.35%	2.05%	59.00%
SR	52.27%	2.94%	0.91%	0.00%	0.35%	2.05%	58.53%

Table 3.65 South Unit Corridor Alternative Hydric Soil as Percent of Total Acreage

Alternative	Hydric Soil Classification														
	Sf	CX	Cg	Gr	Sb	Sd	Se	Sg	CRC	SeA	Ca	FA	Sa	Sc	% of Total Acreage
SA	44.6%	0.0%	0.0%	0.4%	8.2%	0.0%	1.4%	0.3%	0.0%	0.4%	0.1%	0.4%	1.8%	2.3%	59.8%
SB	43.2%	0.0%	0.0%	0.4%	7.1%	0.0%	2.7%	0.3%	0.0%	0.4%	0.1%	0.3%	1.8%	2.3%	58.7%
SC	37.9%	0.0%	0.0%	0.3%	7.1%	0.0%	1.2%	0.2%	0.0%	0.4%	0.1%	0.2%	0.8%	9.5%	57.7%
SD	36.9%	0.0%	0.0%	0.3%	6.1%	0.0%	2.4%	0.3%	0.0%	0.4%	0.1%	0.2%	0.8%	9.4%	56.8%
SE	38.3%	0.0%	0.0%	0.3%	7.2%	0.0%	1.2%	0.3%	0.0%	0.4%	0.2%	0.2%	0.6%	9.4%	58.1%
SF	37.2%	0.0%	0.0%	0.3%	6.2%	0.0%	2.4%	0.3%	0.0%	0.4%	0.2%	0.2%	0.5%	9.3%	57.0%
SG	30.3%	0.9%	0.3%	4.7%	8.1%	2.0%	0.8%	16.5%	0.0%	0.0%	0.1%	0.2%	0.9%	1.2%	65.8%
SH	29.7%	0.9%	0.3%	4.6%	7.5%	1.9%	1.5%	16.4%	0.0%	0.0%	0.1%	0.2%	0.9%	1.2%	65.1%
SI	27.6%	0.8%	0.3%	4.3%	7.4%	1.8%	0.7%	15.2%	0.0%	0.0%	0.1%	0.1%	0.4%	5.4%	64.1%
SJ	27.1%	0.8%	0.3%	4.3%	6.9%	1.8%	1.4%	15.1%	0.0%	0.0%	0.0%	0.1%	0.4%	5.3%	63.5%
SK	27.8%	0.8%	0.3%	4.3%	7.5%	1.8%	0.7%	15.3%	0.0%	0.0%	0.1%	0.1%	0.3%	5.3%	64.4%
SL	27.2%	0.8%	0.3%	4.3%	7.0%	1.8%	1.4%	15.2%	0.0%	0.0%	0.1%	0.1%	0.3%	5.2%	63.8%
SM	47.1%	0.0%	0.0%	0.3%	6.8%	0.0%	1.6%	0.2%	0.1%	0.4%	0.1%	0.3%	1.5%	1.9%	60.3%
SN	46.0%	0.0%	0.0%	0.3%	5.9%	0.0%	2.7%	0.3%	0.1%	0.4%	0.1%	0.3%	1.5%	1.9%	59.4%
SO	41.2%	0.0%	0.0%	0.3%	6.0%	0.0%	1.4%	0.2%	0.1%	0.4%	0.1%	0.2%	0.7%	8.0%	58.5%
SP	41.6%	0.0%	0.0%	0.3%	6.1%	0.0%	1.4%	0.2%	0.1%	0.4%	0.1%	0.2%	0.5%	7.9%	58.8%
SQ	40.3%	0.0%	0.0%	0.3%	5.2%	0.0%	2.4%	0.2%	0.1%	0.3%	0.1%	0.1%	0.6%	8.0%	57.7%
SR	40.6%	0.0%	0.0%	0.3%	5.3%	0.0%	2.4%	0.2%	0.1%	0.4%	0.1%	0.1%	0.5%	7.9%	57.9%

All Corridor Alternatives contain at least 52% wetland acreage and at least 56% hydric soils acreage. Alternatives SM, SN, SA, and SB have the highest percentage of wetlands (61.64%, 61.36%, 61.34%, and 61.01%, respectively) while Alternatives SK and SL have the lowest percentage of wetlands (52.81% and 52.71%, respectively).

Palustrine forested wetland land cover comprises the largest wetland acreage within all 18 Corridor Alternatives. Palustrine scrub/shrub wetlands are the second highest wetland acreage within most of the alternatives. Unconsolidated shore and water have the least percentage of wetland acreage. Palustrine aquatic wetlands are a negligible fraction of wetlands and not represented in the table due to minimal occurrence within the eighteen alternatives.

Alternatives SG and SH have the highest percentage of hydric soils (65.8% and 65.1%, respectively). Alternatives SD and SF have the lowest percentage (56.8% and 57.0%, respectively). Soil types Sf (Sharkey Clay) and Sb (Shreiver Clay) comprised the highest percentages of hydric soils throughout the alternatives while Type Cg (Carville and Robinsonville Soils) comprise the least percentage of hydric soils in the alternatives.

In addition to naturally occurring wetlands, the South Unit is the only Project Unit to have COE regulated Wetland Mitigation Banks. These mitigation banks include those identified as closed (no longer selling wetland mitigation credits), active (currently selling mitigation credits), pending (an active application that is currently under review) and, potential (known application that has not been submitted).

The COE would prefer the Project to avoid the wetland mitigation banks completely. If mitigation banks were to be encroached, the COE would require the selected alternative to be the least damaging alternative. Following is a summary of the South Unit wetland mitigation banks by section:

S1: Two mitigation banks are located in section S1 north of the Gulf Intracoastal Waterway (GIWW). The Bercham Mitigation Area lies entirely within the section and encompasses approximately 177.5 acres of bottomland hardwood and cypress on the northwestern side of the section near I-10 and Alligator Bayou. The Bayou Choctaw Wetlands Mitigation Area contains approximately 510 acres of bottomland hardwoods, with 166 acres in the section. It is located immediately northwest of the GIWW near the confluence of the GIWW and Choctaw Bayou. Section S1 is common to all South Unit Corridor Alternatives.

S5: Approximately 33 acres of the Lago Espanol Mitigation Area lies in section S5 on the north edge near its junction with sections S6 and S7. This mitigation area also extends northward into section S6

S6: Four wetland mitigation bank areas are located in section S6. Bayou Paul (14 acres of bottomland hardwood), Bayou Paul Addendum 2 (47 acres of presumably bottomland hardwood, listed as potential), Bayou Manchac Oakley (149 acres of presumably bottomland hardwood, listed as pending) and Lago Espanol (312.5 acres). The Lago Espanol Mitigation Area is in two noncontiguous portions consisting of approximately 140 and 172.5 acres each of bottomland hardwood and cypress, respectively. These mitigation areas are along utility servitudes located throughout the section and all extend to the northeast beyond the boundaries of the section toward Spanish Lake.

S7: Approximately 0.02 acres of the Lago Espanol Mitigation Area lies in section S7 on the north edge near its junction with sections S6 and S7. This mitigation area also extends northward into section S6.

Unavoidable wetland mitigation banks in section S6 would be present in nine of the eighteen South Unit Corridor Alternatives (SA, SC, SE, SG, SI, SK, SM, SO, and SP).

Exhibits 3-90 to 3-98 in Volume 3 show South Unit wetlands, hydric soils, and wetland mitigation banks.

3.12.3.3. East Unit

Potential wetland resources were tabulated for each of the ten sections in the East Unit by wetland classification (*Table 3.66)* and hydric soil (*Table 3.67)*. There are 6,911.14 acres of wetlands according to the NOAA data and 9,126.14 acres of wetlands using hydric soils data, indicating discrepancies between the NOAA and hydric soils datasets.

Table 3.66 East Unit Corridor Section Wetland Land Cover Acreage as Percent of Total Acreage

Section	Wetland Percent Acreage by Classification						
	Palustrine Forested Wetland	Palustrine Scrub/Shrub Wetland	Palustrine Emergent Wetland	Palustrine Aquatic Bed	Unconsolidated Shore	Water	Percent of Total Acreage
E1	48.64%	6.37%	2.22%	0.00%	0.00%	1.51%	58.75%
E2	51.97%	3.80%	7.36%	0.00%	0.00%	1.60%	64.73%
E3	64.18%	1.83%	4.71%	0.00%	0.00%	0.99%	71.71%
E4	88.61%	8.17%	1.15%	0.00%	0.00%	0.94%	98.86%
E5	57.72%	5.60%	0.59%	0.00%	0.00%	0.37%	64.27%
E6	90.52%	5.48%	1.62%	0.03%	0.00%	2.35%	100.00%
E7	95.99%	0.82%	0.00%	0.00%	0.00%	0.00%	96.81%
E8	51.55%	2.03%	0.69%	0.17%	0.00%	1.78%	56.22%
E9	55.56%	0.89%	0.28%	0.06%	0.03%	2.85%	59.67%
E10	26.11%	4.09%	0.41%	0.00%	0.00%	0.21%	30.82%

Table 3.67 East Unit Corridor Section Hydric Soil as Percent of Total Acreage										
Hydric Soil Classification	Corridor Section									
	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
Sf	35.47%	18.41%	18.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FA	4.42%	12.57%	24.97%	27.36%	34.17%	40.58%	63.34%	1.81%	9.28%	0.00%
BA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.77%	10.52%	0.36%
Ca	0.00%	1.45%	13.74%	11.48%	46.16%	9.23%	20.70%	10.81%	1.92%	0.00%
Sa	5.24%	29.44%	8.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sc	36.25%	1.79%	7.16%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
FG	0.00%	0.98%	2.69%	50.78%	18.28%	47.21%	0.00%	0.00%	2.71%	0.00%
Fo	0.00%	0.00%	0.00%	7.72%	1.39%	0.00%	0.00%	0.00%	0.00%	0.00%
At	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.47%	5.23%	0.00%
OU	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	29.30%	21.39%	9.39%
Gb	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.05%
Ge	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.51%
Sp	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.00%	15.85%	13.09%
En	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.91%	24.63%
Cy	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.68%	0.00%
Percent of Total Acreage	81.38%	64.64%	76.19%	97.34%	100.00%	97.02%	84.04%	55.16%	80.49%	61.03%

The highest total percent of wetlands is in section E6 (100%) while the lowest total percent of wetlands is in section E10 (30.82%). Palustrine forested wetlands are the dominant wetland type followed by palustrine scrub/shrub and palustrine emergent wetlands.

The highest total percent of hydric soils is in section E5 (100%) while the lowest total percent of hydric soils is in section E8 at 55.71%.

Wetland resources in the eight East Unit Corridor Alternatives are shown by wetland classification in *Table 3.68* and hydric soil in *Table 3.69.*

Table 3.68 shows Alternatives EG and EH have the largest total percentage of wetlands (54.35% and 54.05%, respectively) while Alternative EA has the lowest total percent of wetlands (48.95%). The majority of wetlands in all East Unit alternatives are palustrine-forested wetlands, ranging from a high of 47.65% in Alternative EG to a low of 42.25% in Alternative EB. Palustrine scrub/shrub wetlands are about 5% in all alternatives while palustrine emergent wetlands are about 1% each.

Table 3.68 East Unit Corridor Alternative Wetland Land Cover Acreage as Percent of Total Acreage

Alternative	Wetland Percent Acreage by Classification						
	Palustrine Forested Wetland	Palustrine Scrub/Shrub Wetland	Palustrine Emergent Wetland	Palustrine Aquatic Bed	Unconsolidated Shore	Water	Percent of Total Acreage
EA	42.29%	4.85%	1.08%	0.02%	0.00%	0.71%	48.95%
EB	43.25%	4.74%	1.03%	0.00%	0.00%	0.77%	49.79%
EC	46.43%	4.86%	1.12%	0.02%	0.00%	0.84%	53.27%
ED	46.04%	4.85%	1.11%	0.01%	0.00%	0.92%	52.93%
EE	43.78%	4.64%	1.16%	0.01%	0.00%	0.70%	50.30%
EF	44.68%	4.53%	1.12%	0.00%	0.00%	0.76%	51.10%
EG	47.65%	4.65%	1.20%	0.02%	0.00%	0.82%	54.35%
EH	47.31%	4.64%	1.19%	0.01%	0.00%	0.90%	54.05%

Table 3.69 shows that Alternative EH has the largest percentage of hydric soils (73.6%) and Alternative EA has the lowest total percent of hydric soils (56.16%).

Table 3.69 East Unit Corridor Alternative Hydric Soil as Percent of Total Acreage

Hydric Soil Classification	Corridor Alternative							
	EA	EB	EC	ED	EE	EF	EG	EH
Sf	6.21%	6.19%	5.88%	6.02%	6.85%	6.83%	6.50%	6.64%
FA	5.89%	7.47%	8.38%	8.30%	7.41%	8.74%	9.55%	9.50%
BA	0.27%	1.04%	0.25%	1.01%	0.25%	0.98%	0.24%	0.96%
Ca	3.97%	3.42%	3.35%	2.36%	4.87%	4.35%	4.23%	3.31%
Sa	1.89%	1.88%	1.79%	1.83%	1.51%	1.50%	1.43%	1.46%
Sc	5.73%	5.71%	5.43%	5.55%	5.99%	5.97%	5.68%	5.81%
FG	7.47%	7.66%	9.83%	10.26%	7.30%	7.48%	9.56%	9.96%
Fo	1.09%	1.08%	0.99%	1.01%	1.03%	1.03%	0.95%	0.97%
At	0.40%	0.42%	0.38%	0.40%	0.38%	0.40%	0.36%	0.39%
OU	7.82%	6.87%	7.40%	6.67%	7.43%	6.53%	7.06%	6.35%
Gb	1.13%	1.12%	1.07%	1.09%	1.07%	1.07%	1.02%	1.04%
Ge	6.35%	6.33%	6.01%	6.15%	6.04%	6.02%	5.73%	5.86%
Sp	7.94%	8.45%	7.51%	8.21%	7.55%	8.04%	7.17%	7.83%
En	0.00%	14.56%	12.86%	14.15%	12.92%	13.86%	12.26%	13.48%
Cy	0.00%	0.05%	0.00%	0.05%	0.00%	0.05%	0.00%	0.05%
Percent of Total Acreage	56.16%	72.26%	71.12%	73.07%	70.61%	72.85%	71.73%	73.60%

In summary, palustrine forested wetlands comprised the largest wetland acreage for all eight alternatives. Palustrine scrub/shrub is the second largest category followed by palustrine emergent wetlands. The smallest contributors are unconsolidated shore, water, and palustrine aquatic bed. When comparing wetland land cover and hydric soils for the alternatives, Alternatives EG and EH generally have the highest acreage while Alternatives EA and EB have the lowest acreage.

Exhibits 3-99 to 3-102 in Volume 3 show East Unit wetlands and hydric soils.

At this phase of the Project it is not feasible to determine specific wetland impacts. Such impacts will be evaluated for specific project alignments to be developed as part of the studies conducted during Tier 2.

3.13. Navigation & Navigable Waters

The information in this subsection is intended to identify waterways that may be regulated under two sections of the Rivers and Harbors Act of 1899. Section 9 (33 U.S.C. 401) is administered by the U.S. Coast Guard and deals with regulating construction of bridges over navigable waters. Section 10 (33 U.S.C. 403) is administered by the U.S. Army Corps of Engineers and deals with obstructions in navigable waters. The provisions of the law are administered through separate permit programs run by both agencies.

3.13.1. Setting

Five navigable waters of the United States exist in the Baton Rouge Loop study area: the Lower Mississippi River, Gulf Intracoastal Waterway Morgan City - Port Allen route; Amite River; Bayou Plaquemine; and Bayou Manchac. Of these five, four are crossed by potential corridors. Bayou Manchac is not crossed by any potential corridors. *Exhibit 3-69* in Volume 3 shows Project area water bodies including the navigable waters.

3.13.2. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop Project-related impacts to navigation or navigable waters.

3.13.3. Build Alternative

Potential project effects to navigable waters and navigation, and particularly Mississippi River navigation, were identified by the 8th Coast Guard District as an area of concern early in the Tier 1 EIS process. The Project Team, working with the Coast Guard as well as deep draft and tow maritime groups determined that three of the four proposed Mississippi River crossing locations should have navigation modeling. The selections were based on determining the proposed crossings where river conditions and existing facilities present challenges to navigation. The fourth Mississippi River crossing south of Plaquemine in section S12 did not require modeling and the proposed location was fully acceptable to the maritime groups.

Selected navigation modeling of feasible bridge span arrangements within the proposed river crossing sections was conducted. Additional details, including the crossing locations and feasible span arrangements, are presented in Appendix B.

In consultation with the commercial navigation industry, it was decided to perform the navigation modeling and simulations at two facilities. The Missouri Bend (S14) and Red Eye (S13) crossings were modeled at the Maritime Pilots Institute (MPI). Three proposed crossings US 190 [section N2], Missouri Bend [section S13], and Red Eye [section S14] were modeled at the Seaman's Church Institute (SCI). The distinction of the two facilities is the industries served. MPI primarily serves the deep draft shipping industry while SCI usually serves the barge tow industry. The

US 190 [section N2] crossing was not modeled at MPI because the existing bridge vertical clearance prevents deep draft navigation further upstream.

Navigation modeling consists of placing representative bridge structures within the proposed corridors in the databases of the simulators. The simulators at each facility serve a similar purpose to the commercial navigation industry as flight simulators do for the aviation industry. The simulators allow river pilots to train for differing conditions on the river within a virtual environment that closely models actual conditions. The simulators take into account such factors as river currents, ship and tow weight, size, and speed, day or night lighting, water level, wind, and visual and physical impediments. For these proposed crossings, the pier locations and bridge deck were represented in the model, thus allowing the pilots to experience navigating the river with the proposed representative structures in place. Views of the modeled bridges from the simulators are shown in *Figures 3-3*, *3-4*., and 3-5

A survey of the pilots experience navigating the proposed crossings was taken to document the feasibility of the locations and span arrangements from the commercial navigation industry perspective. A copy of the survey forms used is included in Appendix B. Technical memorandums of the results of the two-simulation analyses are completed and have been distributed to lead and participating agencies. The memorandums indicate the proposed crossings are acceptable to the commercial navigation community and can be improved during the Tier 2 and design phases with reasonable revisions to the proposed span arrangements. Navigation clearances for the Intracoastal Waterway have been verified. The Amite River does not currently have navigation clearance requirements. The prevailing criteria would be matching existing bridges over the Amite and investigating potential future use. Similar prevailing criteria and use study would also apply to the Bayou Plaquemine crossing in S12. The technical memorandums are available in the Project technical file.

3.13.3.1. North Unit

The North Unit has one navigable waterway crossing, the section N2 crossing of the Lower Mississippi River (LMR) at mile marker (MM) 233.8 just south of the existing US190 Bridge. *Exhibits 3-70 to 3-72* in Volume 3 show the location of the North Unit Mississippi River crossing.

At this location, barge traffic consisting of both small and large tow sizes has been and is presently the dominant navigation traffic on the Mississippi River. This type of configuration is expected to continue in the future. The typical barge tow consists of a 6x6 configuration, resulting in a width of 210 feet and length of 1,370 feet. Towboat height is generally less than 60 feet. See *Figure 3.2* below for typical barge tow configuration of the proposed North Unit crossing at the Mississippi River.

The existing US190 Bridge has a minimum vertical clearance of 64 feet and a channel span width of 748 feet. The Project Team, in consultation with the Coast Guard and maritime industry representatives, determined that a new structure within 200 feet of the downstream face of the existing structure piers would be acceptable. The modeled structure for the section N2 crossing consisted of a three span cable stayed bridge. Span lengths were modeled at 850, 1,700, and 850 feet east to west. The minimum vertical clearance of the new crossing would be at least that of

the existing US 190 bridge, eliminating height-related impacts to current or future traffic.

Following the modeling and pilot simulation runs, the tow maritime industry found this crossing and structure arrangement fully acceptable.

Construction will be timed to minimize impacts to navigation. This will be further explored in the Tier 2 phase.

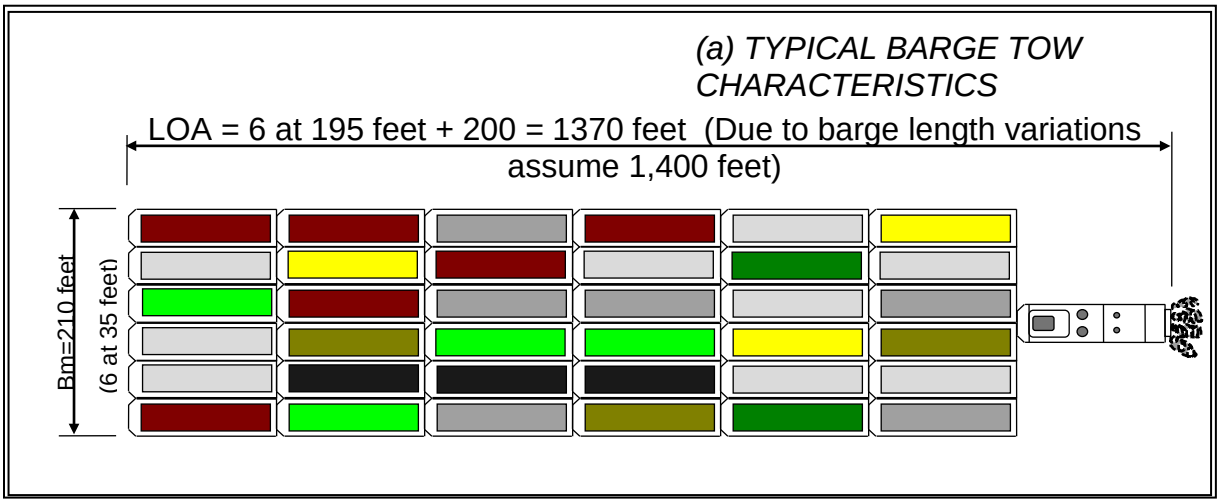


Figure 3-2: Typical Barge Tow Configuration for North Unit

Figure 3-3: SCI US 190 (N2) Bridge Simulation

3.13.3.2. South Unit

The South Unit has four potential crossings of navigable waters. From north to south the crossings are:

- Section S1 crossing of the Gulf Intracoastal Waterway (GIWW), Morgan City - Port Allen Route at MM 58 just east of the second major bend from the Port Allen locks (near Trinity Marine).
- Section S14 crossing of the LMR near MM 224.1 near Brusly, LA just north of Missouri Bend at the Red Eye Crossing.
- Section S13 crossing of the LMR near MM 222.5 at Addis, LA at Missouri Bend;
- Section S12 crossing of the LMR near MM 203.2 just south of Granada Crossing/north of Pt. Pleasant, south of Plaquemine.
- Section S12 crossing of Bayou Plaquemine approximately four miles upstream of the historical confluence with LMR (now permanently closed).

Figure 3-4: SCI Red Eye (S14) Crossing Bridge Simulation

Figure 3-5: SCI Missouri Bend (S13) Crossing Bridge Simulation

All alternatives in the South Unit would have at least two navigable waterway crossings, a section S1 crossing, and a section S12, S13, or S14 crossing. An alternative including S12 would have a third crossing over Bayou Plaquemine. *Exhibits 3-73 to 3-81* in Volume 3 show South Unit water bodies with these four crossings.

The section S1 crossing would cross the GIWW, Morgan City - Port Allen Route. Traffic on this section of the GIWW consists of barge traffic with a typical towboat height of less than 60 feet. David Frank, Chief of the Bridge Administration Branch, 8th Coast Guard District, advised that vertical guide clearance is 73 feet above mean high water, with most bridges on the GIWW now getting permits providing 300 feet of horizontal clearance. Mr. Frank recommended the project provide as much horizontal clearance as possible. A detailed traffic study to determine the frequency of navigational use and the size of barge tows will be conducted in the Tier 2 phase to determine the appropriate vertical and horizontal clearances. Construction will be timed to minimize navigational impacts during construction. All Coast Guard requirements will be met, and a bridge permit will be required from the Coast Guard prior to construction.

Vessel traffic in the S12, S13, and S14 crossings of the LMR consists of both deep draft and shallow draft traffic. The Port of Baton Rouge, the only deep draft vessel destination north of these potential crossings, receives approximately 500 deep draft vessel calls annually. The largest vessels have beams of less than 160 feet and keel-to-mast-heights of less than 170 feet. The Huey P. Long, I-310, Gramercy, and Sunshine bridges, all downriver of these potential crossings, provide minimum vertical clearances of 132 to 138 feet. No crossings in this section of the LMR would provide less vertical clearance than those downriver bridges.

Shallow draft barge traffic consisting of both small and large tow sizes has been and is expected to continue to be the dominant navigation traffic on the Mississippi River, including this section of the LMR. The typical barge tow consists of a 6x6 configuration, resulting in a width of 210 feet and length of 1370 feet. *Figure 3-6* below depicts a typical barge tow configuration expected to occur for the South Unit crossings at the Mississippi River.

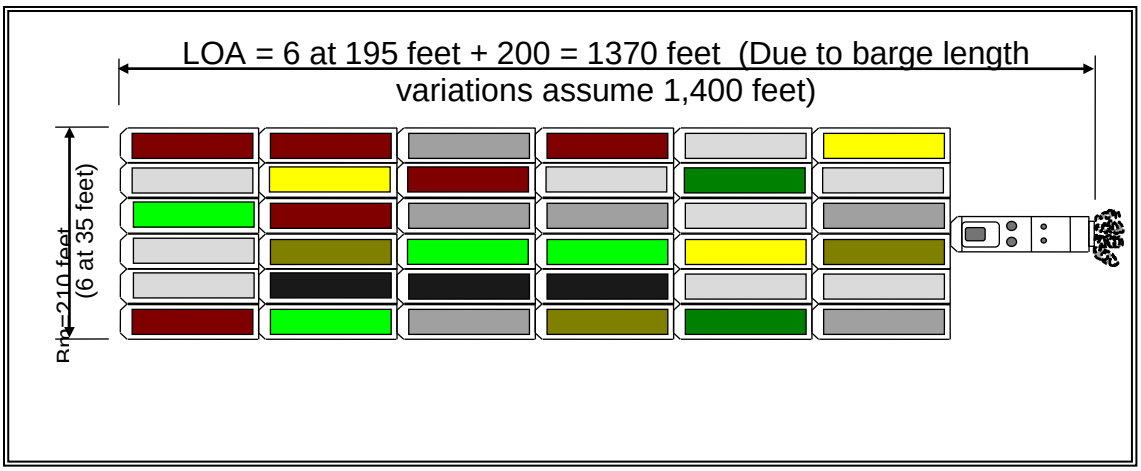


Figure 3-6: Typical Barge Tow Configuration for South Unit

For the South Unit location, the proposed LMR bridge will provide a minimum 1300 feet horizontal clearance and 133 feet vertical clearance. With these clearances, there would be minimal impact to navigation or current/proposed economic development along the river. Utilizing the high level river crossing as shown in Figures 2-14, 2-15, and 2-16 in Appendix B there would not be any impact to either recreation or commercial navigation during normal operations of the bridge. Construction of the bridge would require a temporary restriction of the navigation channel while the substructure is built in the river and the superstructure is completed. Construction would be timed based on river levels to reduce impacts to navigation during construction. More detailed information about construction impacts to navigation will be provided in the Tier 2 phase.

The section S12 LMR crossing was fully acceptable to both the Coast Guard and maritime industry. The structure proposed for this crossing would be a three span cable stayed bridge with spans of 720, 1,600, and 720 feet east to west.

The proposed section S13 crossing structure would be a four-span cable stayed bridge with spans of 855, 1,900, 1,900, and 855 feet east to west.

The proposed section S14 crossing structure proposed is a three-span cable stayed bridge with spans of 765, 1,700, and 765 feet east to west.

Following the modeling and pilot simulation runs, the maritime industry offered the following input: for the section S14 Red Eye crossing, the tow operators considered it fully acceptable and the deep draft operators acceptable but not advantageous; for the section S13 Missouri Bend crossing, the tow industry considered it acceptable but not advantageous whereas the deep draft industry found it fully acceptable.

More detailed analysis of these crossing locations, pier placements, and navigation impacts will be conducted in the Tier 2 phase.

The S12 Bayou Plaquemine crossing would be located between an existing fixed span bridge and an existing swing bridge. The swing bridge, which has no vertical clearance restrictions, is located between the potential S12 crossing and the confluence with the GIWW. If this S12 crossing moves forward into the Tier 2 phase, a detailed vessel traffic study will be conducted to determine the frequency and size of vessel traffic in this area, and this information will be used to determine the appropriate vertical and horizontal clearances required by existing and potential future traffic. A crossing would be subject to Coast Guard permit.

3.13.3.3. East Unit

The East Unit has two potential crossings of navigable waters, consisting of the section E8 crossing of the Amite River and the section E9 crossing of the Amite River. Only one of the crossings would be required for any East Unit Corridor Alternative.

Consultation with David Frank, Chief of the Bridge Administration Branch, 8th Coast Guard District, determined that there are no current navigation requirements established for the Amite River. The only constraints for a new river crossing at either the E8 or E9 location would be to match existing bridges in the area and accommodate known future use of the river. Due to a very shallow draft and the existence of multiple sandbars, the only vessel traffic on this section of the Amite

River is likely recreational. A detailed vessel traffic study will be conducted in the Tier 2 phase to determine whether this crossing meets the criteria for the Surface Transportation Assistance Act, which would eliminate the need for a Coast Guard permit.

For the East Unit location, the proposed bridge is likely to provide a minimum 300 feet horizontal clearance and 65 feet vertical clearance. With these clearances, there would be minimal impact to navigation or potential future economic development along the river. It is anticipated that there would not be any impact to recreational navigation during normal operations of the bridge. Construction of the bridge would require a temporary restriction of the navigation channel while the substructure is built in the river and the superstructure is completed.

Exhibits 3-82 to 3-85 in Volume 3 show East Unit water bodies with these two crossings.

3.13.4. United States Coast Guard Bridge Permit Factors

The navigational and environmental impacts for the chosen locations will need to be provided as part of the Bridge Permit application. The following is a list of the specific items that will be required in the application letter:

- Reference to the environmental analysis of human impacts due to the bridge.
- Delineation of any publicly owned lands from a park, recreational area, or wildlife or waterfowl refuge, or any land from an historic (including archaeological) site, in either the vicinity or the approaches of the structure.
- Any effects to minority or low income populations under Environmental Justice requirements
- If the bridge is a new or replacement structure.
- Estimated construction costs of the bridge and approach structures.

3.14. Threatened or Endangered Species

The information in this section is intended to respond to the substantive provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*), the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), the Bald and Golden Eagle Protection Act (16 U.S.C. 668), and to implementing regulations and procedures of FHWA, LADOTD, USFWS, and LDWF.

The Endangered Species Act (ESA) of 1973 and subsequent amendments (16 U.S. Code §§1531-1544) grants the USFWS legislative authority to list and monitor the status of species whose populations are considered imperiled. Pursuant to USFWS regulations which implement the ESA (50 CFR Part 17), the federal process stratifies potential candidates based upon the species' biological vulnerability. The vulnerability decision is based upon many factors affecting the species and is linked to the best scientific data available to the USFWS at the time. Species listed as threatened or endangered by the USFWS are provided full protection. This protection includes a prohibition of indirect take such as destruction of critical habitat. Additionally, species that have been proposed for listing as threatened or endangered are granted limited protection under the ESA until a decision is reached. The ESA and accompanying regulations also encourage the individual states to

establish regulatory programs which complement the management and protection of threatened and endangered species under the federal program.

The Fish and Wildlife Coordination Act (FWCA) (16 U.S. Code §§ 661 – 666c) requires federal agencies to coordinate with the USFWS regarding projects which propose to modify streams or other water bodies. The FWCA also requires coordination with the state agency responsible for wildlife resources. The purpose of these consultations is to ensure the proponents of projects with federal sponsorship or oversight take into consideration the effect that water-related projects would have on fish and wildlife resources; take action to prevent loss or damage to these resources; and provide for the development and improvement of these resources.

The Migratory Bird Treaty Act of 1918 (MBTA) makes it unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance within the MBTA's implementing regulations (16 U.S. Code §§ 703 – 712). The MBTA applies to virtually all migratory birds, regardless of whether a species is common or rare. Compliance with the MBTA the planning of major construction projects to take steps to avoid harm to migratory birds, such as removal of trees or structures which may contain bird nests after nesting season or taking precautions to prevent birds from establishing nests in such areas prior to construction activity.

Even though it has been delisted under the Endangered Species Act, the bald eagle is protected by the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). Originally passed in 1940, the law provides for the protection of the bald eagle and the golden eagle (as amended in 1962) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). "Take" includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb (16 U.S.C. 668c; 50 CFR 22.3).

3.14.1. Setting

A listing of current threatened and endangered (T&E) species by parish for the Baton Rouge Loop study area is shown in *Table 3.70*. According to USFWS coordination there are five Federal threatened or endangered species presumed or known to have occurred in three of the five parishes(Ascension, Livingston, and East Baton Rouge), while West Baton Rouge and Iberville have no Federally Listed species (see USFWS coordination dated March 10, 2009, reproduced in Appendix E). However, per the USFWS website, there are five T&E species known to, or believed to occur in Ascension, East Baton Rouge, and Livingston Parishes, three species in Iberville Parish, and two in West Baton Rouge Parish (http://www.fws.gov/endangered/, assessed July 31, 2012). The website information will be used as the basis for the following discussion.

**Table 3.70 Baton Rouge Loop Project Area
Threatened, Endangered, and Protected Species**

Threatened and Endangered Species	Parish of Occurrence	Rank
Gulf Sturgeon	Ascension, East Baton Rouge, Iberville, and Livingston	Federally Listed Threatened
Inflated Heelsplitter	Ascension, Livingston, and East Baton Rouge	Federally Listed Threatened
Manatee	Ascension, East Baton Rouge, and Livingston	Federally Listed Endangered
Red-Cockaded Woodpecker	Livingston	Federally Listed Endangered
Pallid Sturgeon	Ascension, East Baton Rouge, Iberville, and West Baton Rouge	Federally Listed Endangered
Bald Eagle	Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge	Federally Delisted, State Listed Endangered
Louisiana Black Bear	Ascension, Iberville, East Baton Rouge, Livingston, and West Baton Rouge	Federally Listed Threatened

Both Listed Federal and State protected species are categorized as endangered, threatened, or candidate species. Candidate species are species that are actively being considered for listing as endangered or threatened. Delisted species are species previously listed as threatened or endangered.

The gulf sturgeon lives in all saltwater habitats, except during the winter when it is found in rivers that empty into the Gulf of Mexico. Gulf sturgeons are bottom feeders and primarily prey on insects, crustaceans, mollusks, annelids (worms), and small fishes. They are found from the Mississippi River delta east to Suwannee River, Florida. In Louisiana, most occurrence records have been in the Pearl, Bogue Chitto, and Tchfefuncte Rivers. They are likely to be found also in any large river located within the Lake Pontchartrain drainage.

The inflated heelsplitter is a large freshwater mussel. Their habitat consists of flowing rivers with stable sand or silt bottoms. They are filter feeders that extract plankton and detritus by pumping water through their siphons. The range of the inflated heelsplitter consists of Alabama, Louisiana, and Mississippi.

The manatee can be found in marine open water, bays, and rivers. They are generally restricted to rivers and estuaries, although manatees may enter salt water when traveling from site to site. They are often found in waters with submerged aquatic beds or floating vegetation. The manatee is herbivorous and eats a variety of aquatic plants. In the United States, they are found in Florida, Georgia, Mississippi, Louisiana, North Carolina, and South Carolina.

The red-cockaded woodpeckers' habitat consists of longleaf pine forests and mixed pine-upland hardwood forests with little or no hardwood midstory. The average tree ranges from 60 to 126 years for longleaf pine, 70 to 90 years for loblolly pine and 75

to 149 years for shortleaf pine. Specifically, a good habitat consists of pine stands with trees 22.9 cm and larger in diameter at breast height. The red-cockaded woodpecker feeds on insects beneath the bark and consumes fruits of shrubs and vines. They are widely distributed, but local, throughout the southeastern coastal states from eastern Texas to southern Maryland and formerly found throughout Louisiana in mature pine forests.

The pallid sturgeons' habitat consists of large rivers in southeast United States, preferring the main channels of excessively turbid rivers in areas with strong currents over firm sandy bottom. Their diet includes aquatic insects and small fishes. In Louisiana, the pallid sturgeon was thought to be restricted to the main channel of the Mississippi River; however, recent data indicate that the species also exists in the Atchafalaya River.

The bald eagles' suitable habitat is primarily near large open bodies of water that provide suitable hunting ground and old-growth cypress trees used for nesting. The bald eagle preys primarily on fish, carrion, waterfowl, coots, muskrats, and nutria. The breeding range extends throughout the United States, while their winters are spent along river systems, large lakes, or coastal areas. In Louisiana, they nest primarily in southeastern coastal parishes. Critical habitats are areas that are deemed critical for the conservation of a listed species. Critical habitat for the Louisiana Black Bear is located within the Project area based on digital data provided by the LNHP. Louisiana black bear critical habitat consists of bald cypress and water tupelo trees with visible cavities that occur along rivers, lakes, streams, bayous, sloughs, or other water bodies.

3.14.2. Other Wildlife Concerns

With any construction project, there are potential effects on wildlife that should be considered. Typically, focus is placed on threatened and endangered species; however, it is also critical to evaluate other wildlife concerns. Potential impacts from the proposed action to other wildlife and their respective habitats including terrestrial mammals, marine mammals, migratory birds and fish have been reviewed at a desktop level.

The Alabama shad is found along sand and gravel bars in medium to large freshwater rivers and at sea. Their range consists of the northern region of the Gulf of Mexico and its tributaries as far north as Tennessee, Missouri, and Arkansas. They feed on phytoplankton, aquatic insects, crustaceans, small fishes, and vegetation. Spawning adults do not eat while in freshwater. The Alabama shad is listed as a Species of Concern by the National Marine Fisheries Service. It is not afforded protection under the Endangered Species Act, and this status does not provide this species with any other regulatory protections while further information is gathered on its status and threats. Its possible presence in the project area may have to be examined during development of specific alignments in Tier 2.

This review yielded no widespread impacts to supporting habitat suitable for migratory birds and other marine mammals, with the exception of the manatee discussed in the Threatened and Endangered Species section. Potential impacts to terrestrial wildlife and essential fish habitat could occur in all of the project units. Potential impacts to these resources will be further evaluated during the Tier 2 EIS that will be conducted at the alignment level of the project when more detailed site-

specific information is available. Early coordination with respective agencies concerning mitigation, if necessary, will also be detailed in the Tier 2 process based on more detailed alignment information.

3.14.3. No-Build Alternative

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to threatened or endangered species. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, could potentially result in threatened/endangered species impacts. Other fish and wildlife in addition to those designated as threatened and endangered could also potentially be impacted by planned transportation improvement projects within the project area.

3.14.4. Build Alternative

Table 3.71 shows the identified T&E species by Unit for the proposed Project.

Table 3.71 Unit Threatened, Endangered, and Protected Species

Unit	Threatened and Endangered Species
North	Gulf Sturgeon, Inflated Heelsplitter, Manatee, Red-Cockaded Woodpecker, Pallid Sturgeon, Bald Eagle, Louisiana Black Bear
South	Gulf Sturgeon, Inflated Heelsplitter, Manatee, Pallid Sturgeon, Bald Eagle, Louisiana Black Bear
East	Gulf Sturgeon, Inflated Heelsplitter, Manatee, Red-Cockaded Woodpecker, Bald Eagle

Table 3.72 shows Unit, corridor section and Corridor Alternative Critical and Important Habitat.

Table 3.72 Unit, Corridor Section and Affected Corridor Alternative Threatened & Endangered Species Critical and Important Habitat

Unit	Corridor Section	Affected Corridor Alternative	Threatened and Endangered Species	Critcal or Important Habitat
North	N2	ALL - NA, NB, NC, ND, NE	Pallid Sturgeon	Critical Habitat - Mississippi River
	N3, N8, N10, N11, N12	ALL - NA, NB, NC, ND, NE	Inflated Heelsplitter	Important Mussel Habitat - Amite River
	N1	ALL - NA, NB, NC, ND, NE	Louisiana Black Bear	Critical Habitat - Atchafalaya Floodway
South	S12, S13, S14	ALL - SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR	Pallid Sturgeon	Critical Habitat - Mississippi River
	S1	ALL - SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR	Louisiana Black Bear	Critical Habitat - Atchafalaya Floodway

The Mississippi River is designated a Critical Habitat for the pallid sturgeon. Portions of the North Unit (section N2) and South Unit (sections S12, S13, and S14) would cross the Mississippi River.

The Amite River is designated Important Mussel Habitat. Portions of the North Unit sections N3, N8, N10, N11, and N1 cross the Amite River in the designated Important Mussel Habitat. Portions of the East Unit, sections E8 and E9 that cross the Amite River appear to be outside the Important Habitat.

On March 10, 2009, the USFWS designated Critical Habitat for the Louisiana Black Bear (Ursus americanus luteolus) along a corridor extending from the Tensas National Wildlife Refuge (TNWR) southward to the Gulf Coast. The Atchafalaya River Basin (Atchafalaya Floodway) is included in this critical habitat designation. A small portion (11.47 acres) of the extreme western portion of North Unit section N1 and South Unit section S1 in West Baton Rouge Parish is designated as critical habitat for the Louisiana Black Bear.

3.14.4.1. North Unit

All North Unit Corridor Alternatives have the potential to have seven of the T&E and protected species identified, and critical or important habitat for three species.

3.14.4.2. South Unit

Corridor Alternatives SA, SB, SC, SM, SN, SO, SP, SQ and SR have the potential to have five T&E and protected species identified and critical habitat for two species. Corridor Alternatives SD, SE, SF, SG, SH, SI, SJ, SK and SL have the potential to have six T&E and protected species identified and critical habitat for two species.

3.14.4.3. East Unit

All East Unit Corridor Alternatives have the potential to have five of the T&E and protected species identified but no identified critical or important habitat.

At this phase of the Project, it is not feasible to determine if any threatened and endangered species or critical or sensitive habitat would be impacted. However, other fish and wildlife in addition to those designated as threatened and endangered species could potentially be impacted in all three units comprising the proposed project.

3.15. Waste Sites

The following information is intended to support compliance with the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 *et seq.*), the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. 9601 *et seq.*), and implementing regulations of USEPA, LDEQ, FHWA, LADOTD.

3.15.1. Setting

The five-parishes that comprise the Baton Rouge Loop Project area are heavily industrialized, particularly along the Mississippi River in East Baton Rouge, Iberville, and Ascension Parishes. These industrial areas primarily consist of petrochemical facilities and supporting service companies. In addition, because parts of the Project area are within metropolitan and suburban areas, facilities such as service stations, electrical generation stations, sewerage treatment facilities, landfills and other commercial locations that store, generate or transport hazardous wastes are present. Many areas surrounding these facilities could potentially have environmental impacts to the soil, surface water, and groundwater because of surrounding industrial activities. Additionally, exploration and production activities for oil and gas resources occur at many locations throughout the Project area. In some cases, oil and gas drilling activities and associated drilling waste pits can result in potential impacts to soil and groundwater. *Exhibit 3-103* in Volume 3 shows waste sites and oil and gas wells in the Project area.

3.15.2. Data Sources

Waste site information was obtained from various sources that included federal and state agencies such as the U.S. Environmental Protection Agency (USEPA), the Louisiana Department of Environmental Quality (LDEQ) and the Louisiana Department of Natural Resources (LDNR). Information obtained from these agency listings consisted of the following datasets that are described in detail below:

- National Priority List (NPL): This is a list of the most hazardous waste sites that have been identified by Superfund and included after being scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money. Locations of NPL sites were obtained from the USEPA.
- Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Sites: This database contains potentially

hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies, and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Information for CERCLIS sites was obtained from both USEPA and LDEQ databases. Information for LDEQ CERCLIS sites was obtained from both potential and confirmed lists of state CERCLIS sites.

- Resource Conservation and Recovery Information System (RCRIS): This database contains hazardous waste sites as defined by the Resource Conservation Recovery Act (RCRA) and the Hazardous and Solid Waste Amendments (HSWA) of 1984. These sites generate, transport, store, treat, and/or dispose of hazardous wastes. For the purposes of this document, only Large Quantity Generators (LQGs), transporters, and treatment, storage, and disposal facilities were identified. LQGs are those sites that generate more than 2,200 pounds of hazardous waste or waste oil per month. Small Quantity Generators (SQGs) and Conditionally Exempt Generators were not identified for this analysis.
- Solid Waste Facilities: These sites are active or inactive facilities with surface impoundments, land farms, incinerators, transfer stations, resource recovery facilities, refuse-derived fuel facilities, or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal. This information was obtained from the LDEQ.
- Landfills: Disposal facilities registered by the LDEQ that includes sanitary landfills and industrial landfills. This information was obtained from the LDEQ.
- State Hazardous Waste Sites: These are sites that have been confirmed to potentially contain hazardous waste(s) or substance(s) that are currently under the jurisdiction of the LDEQ/Remedial Services Division. These sites were formerly referred to as Inactive and Abandoned Sites by the LDEQ.
- LUST Sites: Leaking underground storage tank records contain an inventory of reported leaking underground storage tank incidents registered by LDEQ.
- Active Facilities: For the purposes of this document, these are existing facilities that are likely to have associated waste units/environmental issues although the exact location of the waste unit/environmental issue within the facility may not be known. This category includes facilities such as large industrial complexes that are totally or partially located within a corridor. These sites also include facilities with the high potential for releases to the soil and ground water such as automobile salvage yards, sewer treatment plants and other facilities that are likely to store or generate large quantities of petroleum-based, chemical or other conventional wastes.
- Oil and Gas Wells and Registered Oil and Gas Pits: This dataset includes locations of both active and inactive oil and gas wells provided by the LDNR. Some of these wells have associated production and reserve pits that may have been registered since 1986 as required by LDNR regulations. However, many wells drilled prior to 1986 may have had associated pits but registration of the pits was not required.

Data sets were obtained by online database searches or formal agency requests. Location data were provided either by coordinates or by addresses. Where coordinates were not provided by the agencies, they were identified by locating the sites by address and subsequently obtaining their respective coordinates, or by

conducting an online search of the LDEQ/Environmental Data Management System (EDMS) to locate the facilities.

In some cases, waste units were identified by the agencies as being contained within large industrial facilities. These large industrial facilities were treated as "Active Facilities" to indicate the potential presence of waste sites. Locations of "Active Facilities" were obtained from aerial photography, the LDEQ EDMS or, in some cases, by limited field reconnaissance. It should be noted that boundaries of these active facilities may not be exact and are based on best professional judgment from the database searches, aerial photography, or limited field reconnaissance.

Coordinates specific to the location of production and reserve pits were not available; however, as indicated by LDNR, these pits are typically associated with well activities and thus, they are mapped with their respective wells. However, it should be noted that pits closed prior to 1986 were not required to be registered and are not included in this dataset.

Based on information provided by the LDNR, most of the oil and gas wells located within the sections for all Project Units are inactive wells. These inactive wells are classified either as "Dry and Plugged" or "Plugged and Abandoned". Only a few active wells were identified within the Unit sections, primarily in the South Unit in section S3, near the active tank battery in Sardine Point Field located between LA 30 and the Mississippi River Levee. Efforts will be made to avoid impacts to this area and to any other active wells identified within the Units of the project.

3.15.3. No-Build

Under the No-Build Alternative, there would be no Baton Rouge Loop project-related impacts to waste sites or oil and gas wells. However, other transportation improvement projects planned in the project area, discussed previously in Section 2.3.1, could potentially result in waste site or oil and gas well impacts.

3.15.4. Build Alternative

3.15.4.1. North Unit

Known waste sites/active facilities were tabulated for each of the sections that comprise the North Unit as shown in *Table 3.73*. The area near the US 190 Bridge crossing, section N2, on the east bank of the Mississippi River bridge crossing has a history of heavy industrialization for several decades.

Table 3.73 North Unit Known and Potential Waste Sites by Corridor Section															
	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	Total
CERCLIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NPL Sites	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solid Waste	0	1[(a)]	0	0	0	0	0	0	0	0	0	0	0	0	1[(a)]
RCRA	0	1[(a)]	0	0	0	0	0	0	0	0	0	0	0	0	1[(a)]
State Hazardous Sites	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
LUST	0	3	0	0	0	0	0	1	0	0	0	0	0	0	4
Landfills	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
VRP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Active Facilities	0	15	2	0	0	0	0	1	0	0	0	0	0	0	18
Corridor Section Totals	0	22[(a)]	2	0	0	0	0	2	0	0	0	0	0	0	26[(a)]
[(a)] Rhodia is both a RCRA and Solid Waste Site but counted as only one site in the total.															

The area along US 190 on the west bank of the Mississippi River also has concentrated areas of construction, transport and service industries in addition to numerous auto salvage businesses. Because of the surrounding industrial development and the potential for a new bridge to be constructed adjacent to the existing US 190 Bridge, detailed evaluations of environmental conditions (soil and groundwater) were conducted on the east bank of the Mississippi River at the base of the existing US 190 Bridge.

Results of this investigation are summarized in the following paragraphs. Detailed findings as well as a map on environmental conditions near the US 190 Bridge are included in Appendix D. The locations of waste sites/active facilities in the North Unit are shown on *Exhibits 3-104* through *3-106, Volume 3*.

Twenty-six waste sites/active facilities are located within the 14 corridor sections comprising the North Unit. Eighteen of the facilities identified are active facilities that could potentially have associated waste units/ environmental issues although the exact location of the waste unit/ environmental issue within the facility may not be known. The remaining facilities are one Solid Waste site, one RCRA site, one landfill, two State Hazardous sites, and four LUSTs.

No CERCLIS, NPL, or VRP sites were identified by LDEQ within any of the North Unit sections. Section N2 contains the most waste sites/active facilities (22). Section N3 contains two active facilities and section N8 contains one LUST and one active facility. The remaining sections contain no waste sites/active facilities. Corridor sections that contain waste sites/active facilities are described in detail below:

Section N2: Three LUSTs, one RCRA site and one solid waste site both from Rhodia, two state hazardous sites, one landfill, and eighteen active facilities.

Three LUSTS:

- Chevron located at 4716 Hooper Road (intersection of Hooper and Plank Roads) – This service station is no longer operating and has undergone corrective action. A formal request was made for a No Further Action (NFA) status; however, no documentation granting the NFA status was located in the LDEQ EDMS system as of October 20, 2009.
- Texaco located at 7160 Plank Road – This service station is a historical LUST that was granted NFA status on July 23, 2009. LDEQ documentation indicates

that soils cannot be removed from the site unless they are disposed of at a permitted facility.

- Circle K located at 1432 US 190 West in Port Allen. This service station is currently undergoing monitoring with LDEQ oversight. The company has applied for a reimbursement request from the Motor Fuels Trust Fund.

One RCRA and one Solid Waste Site: The Rhodia facility, located on the West Bank of the Mississippi River on the north side of US 190 near the bridge crossing was identified by LDEQ as a RCRA Treatment, Storage and Disposal (TSD) facility. Additionally, Rhodia was identified as having solid waste management units during the detailed environmental evaluation of the industrial facilities near the US 190 Bridge. Additional information pertaining to this facility can be found in Appendix D.

Two State Hazardous Sites:

- Former Haggard Trucking Service located at 3030 US 190 in Port Allen. This facility is no longer in operation; and
- Former Catalysts Handling Systems, Inc. located at 4022 Riverview Road in Port Allen. This facility is no longer in operation and is currently occupied by another business.

One Landfill Site: The Kaiser East Landfill located at 1201 Airline Highway was identified during the detailed environmental evaluation of the industrial facilities near the US 190 Bridge. Further information on this site is provided in Appendix D.

Fifteen Active facilities: Slade's Industrial Service, Holcim Cement Distribution Terminal, River Mountain Quarries, UOP, CEMUS, TMI Inc (formerly Safeway Transportation Inc), Delta Cement, Sullivan Asphalt Plant, Foreign and Domestic Auto Salvage, a former auto salvage lot, Baton Rouge Trucking Service, Gold Coast Motors (auto salvage), Specialty Application Services, Louisiana Scrap Metal Recycling, and Coastal Bridge.

Section N3: Two active facilities, the former Service Distributor Inc. near the intersection of Hooper and Plank Roads and the Evergreen Gas Processing Facility located along Rome Drive in Greenwell Springs. The former Service Distributor Inc. appears to be non-operational; however limited field reconnaissance and aerial photography indicates the presence of salvage equipment and parts at the site.

Section N8: One LUST, Denham Road Conoco located at 1922 Denham Road in Baton Rouge and one active facility, a large automobile salvage yard (Copart Direct). Corrective action is required for the Conoco station according to LDEQ documentation dated July 10, 2009.

Oil and gas wells located in the Corridor Sections are presented below in *Table 3.74*.

Table 3.74 North Unit Oil and Gas Wells by Corridor Section

	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13	N14	Total
Oil and Gas Wells	1	9	5	0	2	0	1	2	1	2	0	1	3	1	28
Oil and Gas Wells with Registered Pits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Corridor Section Totals	1	9	5	0	2	0	1	2	1	2	0	1	3	1	28

There are 28 oil and gas wells within the North Unit sections based on information provided by the LDNR. Section N2 contains the most wells at nine, primarily associated with the Lobdell and Lobdell East Fields. No oil and gas wells were

identified in sections N4, N6, and N11. There were no oil and gas wells with registered pits identified by LDNR within any of the North Unit sections.

The total number of known and potential waste sites by North Unit Corridor Alternative is shown in *Table 3.75*.

Table 3.75 North Unit Known and Potential Waste Sites by Corridor Alternative

	NA	NB	NC	ND	NE
CERCLIS	0	0	0	0	0
NPL Sites	0	0	0	0	0
Solid Waste	1[(a)]	1[(a)]	1[(a)]	1[(a)]	1[(a)]
RCRA	1[(a)]	1[(a)]	1[(a)]	1[(a)]	1[(a)]
State Sites	2	2	2	2	2
LUST	3	4	4	3	3
Landfills	1	1	1	1	1
VRP	0	0	0	0	0
Active Facilities	17	16	16	15	15
Corridor Alternative Totals	24[(a)]	24[(a)]	24[(a)]	22[(a)]	22[(a)]

[(a)] Rhodia is both a RCRA and Solid Waste Site but counted as only one site in the total.

Because all North Unit Corridor Alternatives include section N2, all would have a high count of known and potential waste sites. Additional information on the section N2 industrial properties and related waste site issues is presented in Appendix D. Alternatives ND and NE had the fewest known waste sites/active facilities totaling 22. Alternatives NA, NB and NC contain the most identified waste sites/active facilities, totaling 24.

Oil and gas wells by Alternative are shown in *Table 3.76*. Alternatives NA, NB and NC have the most oil and gas wells with 21, 20, and 19, respectively. The fewest oil and gas wells are located within Alternatives NE and ND at 13 and 15, respectively. None of the North Unit Corridor Alternatives contains oil and gas wells with registered pits.

Table 3.76 North Unit Oil and Gas Wells by Corridor Alternative

	NA	NB	NC	ND	NE
Oil & Gas Wells	21	20	19	15	13
Oil & Gas Wells with Pits	0	0	0	0	0
Corridor Alternative Totals	21	20	19	15	13

Exhibits 3-104 to 3-106 in Volume 3 show North Unit waste sites and oil and gas wells.

3.15.4.2. South Unit

Table 3.77 shows the known waste sites/active facilities tabulated for each of the sections that comprise the South Unit. *Table 3.78* shows the number of oil and gas wells and wells with registered pits in the South Unit sections.

Table 3.77 South Unit Known and Potential Waste Sites by Corridor Section															
Site Type	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	Totals
CERCLIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NPL Sites	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solid Waste	0	0	0	0	1	0	1	0	0	0	0	1	0	0	3
RCRA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Hazardous Sites	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
LUST	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Landfills	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VRP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Active Facilities	0	0	2	0	1	1	1	0	1	4	0	2	2	2	16
Corridor Section Totals	0	0	3	0	2	1	2	0	1	4	0	4	2	2	21

Twenty-one waste sites/active facilities are located in the 14 South Unit sections. Sixteen are active facilities likely to have associated waste units/environmental issues although the exact location within the facility may not be known. The remaining facilities are three Solid Waste sites, one State Hazardous site, and a LUST.

Corridor Sections that contain waste sites/active facilities are described in detail below:

Section S3: One LUST at the Louisiana State University (LSU Agricultural Experiment Station), and two active facilities, an electrical power station and a tank battery located on the west side of the railroad tracks along LA 30. The LUST site at the LSU Agricultural Experiment Station has undergone remediation activities; however, documentation of No Further Action (NFA) status was not found within the LDEQ EDMS system as of October 22, 2009.

Section S5: One solid waste site (Taminco Higher Amines) and one active facility, Entergy Air Products Substation. Both of these are located along LA 30 south of the LA 74 intersection.

Section S6: One active facility, a sewerage treatment plant that appears to be associated with one of the correctional facilities in the area.

Section S7: One solid waste facility and one active facility. The solid waste facility is identified by LDEQ as being operated by Williams Olefins (ethylene plant). The active facility consists of several large tailings ponds, also operated by Williams Olefins that encompass most of section S7. Because these facilities are located in two distinct areas of the Williams Olefins operational areas, they are treated as individual waste sites/active facilities for the purpose of this analysis. The tailings ponds are located on the north side of LA 30 (south of LA 74) and the ethylene plant is located on the south side of LA 30.

Section S9: One active facility, an electrical power station (Entergy - Geismar Substation) located on the east side of LA 73.

Section S10: Four active facilities: Hexion Specialty Chemicals, Copolymer, Air Liquide America Corporation, and Air Products & Chemicals, Inc. It is not known if these active facilities have waste units located within the corridor. All of these facilities are located on the south side of LA 30.

Section S12: Contains a portion of Sid Richardson Carbon & Energy Company identified by LDEQ as having a solid waste unit, a state hazardous waste site - LADOTD Marine Maintenance Facility, and two active facilities: an electrical power station, and a portion of an above-ground storage tank (AST) farm on the east bank

of the Mississippi River. Based on information obtained from 2007 aerial photography, the ASTs have been removed from the area contained within the corridor. The Sid Richardson, LADOTD facility and the electrical power station are located on the west side of the Mississippi River.

Section S13: Two industrial facilities, one currently owned by Shintech Plant B (formerly Borden Chemical), and a site previously operated by DSM Copolymer. Currently, both of these facilities appear to be non-operational. A limited review of LDEQ files indicated that there have been some soil and groundwater issues at the Shintech Plant B facility; however, these issues appear to be confined to areas within the plant boundaries. The former DSM Copolymer was issued an NFA by LDEQ in September 2008. The LDEQ requires notification of land use changes for both the Shintech and DSM Copolymer facilities if changes from industrial to non-industrial are proposed.

Section S14: Two active sites: a large automobile salvage yard and an electrical power station both located on the west bank of the Mississippi River.

No CERCLIS, RCRA, NPL, VRP, or Landfill sites were identified within any of the South Unit sections. Sections S10 and S12 contain the most waste sites/active facilities at four each. Corridor Sections S1, S2, S4, S8, and S11 contain no waste sites.

There are 133 oil and gas wells within the South Unit sections based on information provided by the LDNR (*Table 3.78*). Sections S12 and S1 contain the most wells at 49 and 36, respectively. Section S12 has 49 identified wells, mostly associated with the Bayou Choctaw Field. Section S12 also has the highest number of oil and gas wells with 11 registered pits. Section S1 has 36 identified oil and gas wells, five of which have associated pits. The oil and gas wells located within section S1 are primarily associated with the Port Allen Field. The southern portion of section S3 also contains four registered pits between LA 30 and the Mississippi River at the same location as the active tank battery facility. No oil and gas wells were identified in sections S2, S4, S9, S10, S11, S13, and S14. Locations of the waste facilities and oil and gas wells located in the South Unit are shown on *Exhibits 3-107* through *3-115*.

Table 3.78 South Unit Oil and Gas Wells by Corridor Section

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	Totals
Oil and Gas Wells	31	0	15	0	7	14	5	1	0	0	0	38	0	0	111
Oil and Gas Wells with Registered Pits	5	0	4	0	0	2	0	0	0	0	0	11	0	0	22
Corridor Section Totals	36	0	19	0	7	16	5	1	0	0	0	49	0	0	133

The total number of waste sites by Corridor Alternative is shown above in *Table 3.79*.

Table 3.79 South Unit Known and Potential Waste Sites by Corridor Alternative																		
	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR
CERCLIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NPL Sites	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solid Waste	1	2	1	2	1	2	2	3	2	3	2	3	1	2	1	1	2	2
RCRA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Hazardous Sites	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0
LUST	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1
Landfills	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VRP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Active Facilities	6	6	7	7	10	10	4	4	5	5	8	8	6	6	7	10	7	10
Corridor Alternative Totals	8	9	9	10	12	13	7	8	8	9	11	12	8	9	9	12	10	13

All of the alternatives intersect or contain at least seven identified known waste sites/active facilities. Alternative SG had the fewest known waste sites/active facilities totaling seven. Alternative SR contains the most identified waste sites/active facilities (13). Because all of the South Unit Corridor Alternatives include section S7, all Corridor Alternatives would include the Williams Olefins tailings ponds and ethylene plant that encompass a large portion of section S7.

Oil and gas facilities by Corridor Alternative are shown in *Table 3.80.*

Table 3.80 South Unit Identified Oil and Gas Facilities by Corridor Alternative																		
	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR
Oil & Gas Wells	66	59	65	58	65	58	89	82	88	81	88	81	66	59	65	65	58	58
Oil & Gas Wells with Pits	11	9	11	9	11	9	18	16	18	16	18	16	11	9	11	11	9	9
Corridor Alternative Totals	77	68	76	67	76	67	107	98	106	97	106	97	77	68	76	76	67	67

Alternative SG has the most oil and gas wells with 107, associated with drilling activities in the Port Allen Field (S1), the Bayou Choctaw Field (S12), and the St. Gabriel Field (S6). Alternatives SI and SK also have high oil and gas well counts at 106. The fewest oil and gas wells are located within Alternatives SD, SF, SQ, and SR at 67. Alternatives SG, SI and SK have the highest number of wells with registered pits. Alternatives SB, SD, SF, SN, SQ, and SR have the fewest oil and gas wells with nine registered pits.

Exhibits 3-107 to 3-115 in Volume 3 show South Unit waste sites and oil and gas wells.

3.15.4.3. East Unit

Based on information provided by the LDEQ and USEPA there are no waste sites located within any of the East Unit sections. One facility, identified as Port Vincent #4, was included on the state hazardous list provided by LDEQ. However, this facility could not be located due to the lack of coordinates and address. No further location information was provided via the LDEQ EDMS and no further information could be provided by LDEQ officials during telephone interviews. It is not known if the Port Vincent #4 facility is located within any of the East Unit sections. No active facilities were identified on the aerial photography. However, some oil and gas wells were identified within the sections as shown in *Table 3.81*.

Table 3.81 East Unit Oil and Gas Wells by Corridor Section											
	Oil & Gas Sites By Corridor Section										
Waste Sites	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	TOTAL
Oil and Gas Wells	2	0	0	0	0	0	0	0	0	2	4
Oil and Gas Wells with Registered Pits	0	0	0	0	0	0	0	0	0	0	0
Corridor Section Totals	2	0	0	0	0	0	0	0	0	2	4

There are four oil and gas wells within the East Unit sections based on information provided by the LDNR. Sections E1 and E10 both contain two wells. No oil and gas wells are contained within any of the other sections. There were no registered pits identified in any of the sections that comprise the East Unit.

Oil and gas wells by alternative are shown below in *Table 3.82*.

Table 3.82 East Unit Identified Oil and Gas Facilities by Corridor Alternative								
	Oil & Gas Facilities By Corridor Alternative							
Sites	EA	EB	EC	ED	EE	EF	EG	EH
Oil & Gas Wells	4	4	4	4	4	4	4	4
Oil & Gas Wells with Pits	0	0	0	0	0	0	0	0
Corridor Section Totals	4	4	4	4	4	4	4	4

Because all of the alternatives contain sections E1 and E10, each containing two oil and gas wells, all of the alternatives contain four wells.

Exhibits 3-116 to 3-119 in Volume 3 show East Unit waste sites and oil and gas wells.

3.16. Cumulative and Indirect Impacts

Cumulative impacts "are impacts which result from the incremental consequences of the action when added to other past and reasonably foreseeable future actions" (*40 CFR Part 1500 et seq.).* Cumulative impacts are related to the influence of intra-regional land development because of the project and other potential intervening factors such as sewer and water infrastructure development and comprehensive planning.

Secondary or indirect impacts are defined by FHWA as those impacts that are "caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable". Indirect impacts are related to the change of land use that might be expected to occur in the immediate Project area due to Project construction.

3.16.1. Cumulative Impacts

Cumulative effects consist of the combination of direct and indirect effects, both beneficial and adverse, of a proposed project or undertaking in combination with the impacts resulting from the past, current, and reasonably foreseeable actions of others. Cumulative effects analysis (CEA) focuses on changes in specific

environmental resources that are continually being modified by other processes and projects.

Broad approaches for addressing potential cumulative effects of a proposed undertaking, described in a handbook issued by CEQ (January 1997), can be applied to the Baton Rouge Loop Project. Three basic steps are generally involved:

(1) Identify the past, present, and reasonably foreseeable impacts of other actions to which the impacts of the Baton Rouge Loop Project can be added to determine the incremental impacts of the proposed build alternatives;

(2) Evaluate the significance of the incremental impacts expected from project implementation; and

(3) Identify the feasibility and effectiveness of any mitigation measures that may reduce anticipated adverse impacts.

As discussed previously, this Tier 1 EIS is intended to provide inventories of environmental resources in Project alternatives as an indication of potential project effects. The detailed assessment of project impacts, required as part of step (1) above, would not be performed until Tier 2 studies are undertaken. Consequently, a detailed alternative-specific CEA must await the results of the Tier 2 impact assessments and would be included in the Tier 2 EIS. However, for the Tier 1 investigation, it was still possible to address some of the parameters that must be defined as part of the CEA process as well as provide an indication of potential cumulative effects based on environmental resources present in the corridors and existing trends affecting these resources.

Parameters that would form the basis for the CEA are described below and addressed to the extent possible as part of this Tier 1 EIS.

- Identify resources with the greatest potential cumulative impact implications for project development

The potential cumulative effects of the proposed project must be evaluated for those environmental resources that have experienced substantial losses or modifications in the past and/or are expected to be under stress and risk of substantial losses or modifications in the future. Future trends may be a result of development pressures or other causative factors related to the proposed project, other projects, or any other considerations. In addition, the project CEA should take into account effects on resources that have special interest to resource and jurisdictional agencies, and the public, for any reason. Based on the information collected to date for this Tier 1 EIS as well as consultations with Project Team specialists, it was determined that the CEA for the project should focus on effects on wetlands, floodplains, and agricultural lands as the resources with the greatest potential cumulative impact implications for project development. Each of these resources has experienced widespread loss or modification of the resource base in areas that may be affected by Project construction. In addition, each of these resources is expected to be under continuing pressure in the future from an array of influences, but particularly because of expected regional population growth and associated development pressures.

- Define geographical boundaries for analysis

The geographical boundaries for the CEA must be established to provide meaningful results that would be useful to Project decision makers and the public.

At one extreme, assessing the incremental impacts of the proposed Project in the context of impacts on a particular resource across the entire United States would not be a useful exercise. At the other extreme, the analysis cannot be confined to the incremental impacts occurring within just the established Project study area because the influence of the Project would likely extend beyond these limits. In order to provide a meaningful analysis, the establishment of the boundaries for the CEA must take into account the geographical coverage of available historical data for the resources of interest to this analysis. At best, it was assumed that historical data on resource impacts would exist at the parish or state level. Consequently, it was reasonable to establish the geographical boundaries for the CEA at the outside jurisdictional limits of the five parishes affected by the Project. It is recognized that historical and future trend data may have widely varying geographical areas of coverage, and that the boundaries for the CEA may not be the same for each of the resource areas of interest to this analysis and may need to be adjusted during the Tier 2 EIS phase of project development.

- Establish timeframe for analysis

It was recognized that the timeframe for defining historical trends in resource conditions would likely be data-dependent and would vary with the resource being considered. (e.g., wetland loss data may be documented for the past 50 years while agricultural land conversion data may extend back 100 years, or that good quality floodplain data may be available for the past ten years with older data available but of limited usefulness for this analysis). For purposes of the CEA, it was assumed that historical resource impact data would be limited to the past 30 years.

For the future timeframe, the analysis would extend to the full Project build-out date of twenty years beyond the start of construction (estimated to be the year 2032). Given the size of the Baton Rouge Loop Project and likely fiscal constraints that would affect availability of funding and project scheduling, the Project would likely be implemented in stages involving sequential construction of several sections of independent utility. Consequently, the build-out date for the CEA is assumed to be the completion date of the last section of independent utility. The magnitude and distribution of potential cumulative and indirect impacts would be related to the anticipated construction phasing.

- Identify other current and reasonably foreseeable actions to be included in analysis

The CEQ regulations for implementing NEPA specify that the CEA must take into account the impacts of other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal), entity, or person undertakes such other actions. Past and present actions are easily identified, but "reasonably foreseeable future actions" injects a level of uncertainty into this process. Judicial review and recent guidance by CEQ and FHWA clarify that a reasonably foreseeable action is one that has a high probability of occurring rather than one that merely may possibly occur. This definition helps ensure that the CEA can provide substantive results to assist the decision making process while reducing speculation that may not be useful.

In addition, the universe of possible present and reasonably foreseeable future actions must be confined to a manageable number to perform the CEA in a timely and efficient manner. FHWA recognizes that it is not productive to try to account for

every single action that has or may have an effect on the resources of interest to the CEA. The ultimate goal is to identify those actions that account for the major portion of known or expected impacts.

Based on these considerations, the current and future projects listed below are considered reasonable for inclusion as part of the CEA for the project and are proposed for analysis in Tier 2. It is uncertain at this time what magnitude or degree of impact these projects may have on the resources of interest to the Project. However, based on the size, regional significance, and other attributes, there is at least a reasonable potential for impacts that merits further investigation. Prior to commencement of the detailed Tier 2 CEA, projects may be eliminated from this list and others added based on comments received from agency and public review.

The projects proposed for inclusion in the Baton Rouge Loop CEA are listed and briefly described below.

- River Studios and FilmPort at Studio City Louisiana movie production studio: A $500 million development proposed for a 150-acre site (the Allendale Plantation), with Mississippi River frontage in West Baton Rouge Parish.
- Mayeux Ranch New Community: A planned community on a 3,000-acre cattle ranch in St. Gabriel, Iberville Parish including up to 36 million square feet of new, ecologically friendly development.
- Gateway Industrial Park Development: The second phase of an industrial subdivision proposed by Superstar Industrial Holdings LLC on 83 acres located adjacent to LA 30 in Ascension Parish.
- Pinnacle Casino and Resort: A $250 million gaming complex and hotel proposed to be constructed by Pinnacle Entertainment, Inc. on 550 acres fronting on the Mississippi River in East Baton Rouge Parish.
- Shintech Manufacturing Facility: A new chemical manufacturing facility, under construction, near Plaquemine, Iberville Parish. It is on a 1,725-acre site bordering the Mississippi River.
- Comite River Diversion Project: An Army Corps of Engineers flood damage reduction project in the Comite River basin between the towns of Baker and Zachary in East Baton Rouge and East Feliciana Parishes consisting of twelve miles of diversion channels, flood control structures, and new bridges.

In addition, there are a number of highway-related projects either under construction or firmly planned by LADOTD and city/parish governments proposed for inclusion in the Baton Rouge Loop CEA. These projects are listed in the latest MPO TIP. The TIP is financially constrained, which factors into account fiscal constraints into project planning timelines. As a result, these projects can be considered reasonably foreseeable for purposes of the CEA. The projects involve adding roadway capacity and include:

- Widening of LA 3245 (O'Neal Lane between I-12 and Florida Boulevard (State Project Number 817-41-00080)
- Widening of Millerville Road between I-12 and South Harrells Ferry Road (State Project Number 742-06-0044)
- Widening of I-10 between Siegen Lane and Highland Road (American Recovery and Reinvestment Act project)

- Widening of I-12 between O'Neal and Juban (State Project Number 454-02-0071)
- New Beaver Bayou bridges for the Central Thruway (State Project Number 742-17-0148)
- Widening of Sullivan Road between the Central Thruway and approximately one-half mile north of Wax Road (State Project Number 03-CS-CI-0020)
- Widening of O'Neal Lane (Segment 1) between South Harrells Ferry Road and approximately one-quarter mile south of I-12 (State Project Number 06-CS-HC-0023)
- Widening of O'Neal Lane between George O'Neal Road and South Harrells Ferry Road (State Project Number 02-CS-HC-0002)
- Widening of South Harrells Ferry Road (Segment 1) between Sherwood Forest Boulevard and Millerville Road (State Project Number 02-CS-HC-0002)
- Widening of South Harrells Ferry Road (Segment 2) between Millerville Road and O'Neal Lane (State Project Number 06-CS-HS-0029)
- New five-lane Stumberg Extension between Airline Highway and Jefferson Highway (State Project Number 03-CS-HC-0021)
- Widening of South Choctaw Road between Flannery Road and the Central Thruway (City/Parish project)
- Widening of Old Hammond Highway (Segment 1) between Boulevard de Provence and Millerville Road (City/Parish project)
- Widening of Old Hammond Highway (Segment 2) between Millerville Road and O'Neal Lane (City/Parish project)
- Widening of LA 73 between LA 30 and US 61 (State Project Number 077-02-0020)
- New two-lane LA 37 at the Central Thruway (State Project Number 254-02-0051)
- New I-12 interchange at Pete's Highway (State Project Number 454-02-0047)
- New I-10 interchange and additional road improvements at Pecue Lane (City/Parish project)
- Widening of Sherwood Forest Boulevard between Choctaw Drive and Greenwell Springs Road (State Project Number 742-17-0118)
- Widening of Jones Creek Road between Tigerbend Road and Coursey Boulevard (State Project Numbers 742-17-0155 and 742-17-0131)
- Widening of LA 42 between US 61 and LA 44 (State Project Number 260-01-OA26)

The above list includes several but not all of the 47 Green Light Plan projects currently being implemented by the East Baton Rouge City-Parish.

Roadway projects to be considered as part of the CEA would likely decrease upon further investigation to determine whether there are significant impacts on the resources of interest to the CEA (i.e. wetlands, agricultural lands, and/or floodplains). In addition, if information about any project is unavailable or unobtainable, the implications would be discussed in the CEA.

The CEA must also take into account existing or proposed comprehensive plans, land use plans, and zoning changes that are not associated with the Baton Rouge

Loop Project. Some of this information has already been collected as part of the separate land use planning project performed by Fregonese Associates, as discussed previously and contained in Appendix J. Regional and local government plans and regulations for the entire CEA study area would be obtained and reviewed during the Tier 2 analysis.

- Characterize significant resources to define baseline conditions, identify historical trends and future projections of resource changes, and describe stresses affecting these resources
- A preliminary review of available published data on baseline conditions, historical trends, and factors affecting these trends for the resources of interest to the Baton Rouge Loop CEA (wetlands, floodplains, and agricultural lands) revealed that there is wide variation in the quality and usefulness of these existing data for the CEA. For some specific needs of the CEA, available data were limited or nonexistent. It is anticipated that information needs would be discussed in the future with resource agency staff on the state and federal level as well as university researchers. The Tier 2 scoping process would play a major role in identifying issues and sources of data critical to the CEA.
- Evaluate cause and effect relationships between actions and other processes/factors and resource conditions/trends

Defining cause and effect relationships to explain trends in natural resource conditions is generally one of the most difficult and tenuous aspects of CEA. For this Tier 1 EIS, a preliminary search for data on cause and effect relationships between the broad conditions and trends affecting the resources of interest (wetlands, floodplains, and agricultural lands) and other actions, projects, or processes that occur in the study area did not yield a large amount of useful data. It is anticipated that coordination would be conducted with government agency and university researchers to identify potential published and unpublished studies that may be useful to the detailed CEA to be performed as part of the Tier 2 EIS.

- Determine magnitude and importance of incremental project-related effects on resources superimposed on combined effects of other actions and projections of future changes in resource base

This step of the analysis and the next step would be performed for the Tier 2 EIS. Data on environmental consequences of the other reasonably foreseeable projects to be included in the Baton Rouge Loop CEA would be obtained from the respective project sponsors, if available when the CEA is initiated.

- Identify potential mitigation measures for adverse effects

If it is determined that the Baton Rouge Loop Project alternatives would generate adverse cumulative effects, potential mitigation measures to reduce the magnitude and/or severity of these impacts would be proposed and evaluated, as needed. The CAEA would be responsible for the mitigation of adverse cumulative effects specifically attributable to this Project.

3.16.2. Potential Cumulative Impacts

3.16.2.1. No-Build Alternative

For cumulative impacts, the No-Build Alternative would involve implementation of the reasonably foreseeable projects listed above, with the universe of other smaller

actions that would contribute to the future trends in conditions of the resources of interest that would have to be identified as part of the CEA analysis. This would serve as the base case to which the incremental impacts of the Baton Rouge Loop Project would be added and significance determined.

3.16.2.2. Build Alternative

As discussed above, CEA is performed on a regional level taking into account complete alternatives representing full project build out in the specified future year of analysis. Consequently, cumulative effects cannot be evaluated by corridor alternatives or by units as part of this Tier 1 EIS.

3.16.3. Indirect Impacts

Indirect effects include both beneficial and adverse consequences of the proposed action. Indirect effects are also often referred to as secondary effects. Indirect effects analysis (IEA) focuses on the consequences of an action (a proposed project or undertaking) that creates conditions leading to other actions not part of the initial action that, in turn, generate their own impacts beyond the impacts of the initial action.

Two National Cooperative Highway Research Program reports offer guidance on a reasonable approach for addressing IEA that has been widely implemented by state departments of transportation across the U.S. (National Cooperative Highway Research Program, 1998, 2002). The approach consists of an eight-step process:

(1) Establish the study area boundaries for evaluating indirect effects (which would likely be more expansive than the study area for project direct effects) and the timeframe for analysis;

(2) Identify the community trends and goals in the study area, targeting socioeconomic, and land use considerations;

(3) Identify critical natural resources that may experience indirect effects of the proposed Project;

(4) Identify the most significant Project-related aspects or attributes that may result in indirect impacts on the items identified in steps (2) and (3);

(5) Identify potential indirect impacts that may result from the causal factors of step (4) superimposed on the items in steps (2) and (3) and select the most significant effects for detailed analysis;

(6) Evaluate the indirect impacts, including qualitative or quantitative estimates of the magnitude of the impacts and the locations where the impacts are expected to occur;

(7) Analyze the validity of the estimates from step (6), taking into account the normally high levels of uncertainty associated with IEA; and

(8) Determine the consequences of the indirect impacts and possible mitigation strategies or measures to reduce the level of adverse impacts.

This is not a prescriptive approach for IEA. The methodology to be implemented on any given project is normally tailored to the specifics of the project. For the Baton Rouge Loop Project, the technical approach would be modified to account for the

size of the study area and address indirect impacts primarily on a broad (regional or sub-regional) level.

Critical parameters that must be defined before indirect impacts can be addressed include:

- The geographic boundaries of the IEA study area (the physical limits of the area beyond which the influence of the project is expected to be minimal or inconsequential),
- the timeframe for the analysis (i.e. how far out into the future that the project may influence indirect consequences), and
- Other projects and local conditions that would also have an influence on the indirect effects of the proposed undertaking.

These parameters are common to both the IEA and the (CEA) discussed previously.

Generally, the indirect effects of most concern associated with highway project development involve changes in land use due to secondary development and the consequences associated with this development (e.g. increased traffic, increased demand on public services, greater air pollutant emissions, and noise). However, indirect effects can include a much broader array of project consequences than induced growth. For example, a proposed project may alter the long-term functions of natural systems. Although these consequences are considered indirect effects, such outcomes are sometimes addressed in combination with a project's direct effects on the particular resource.

The CAEA has contracted separately for a Baton Rouge Loop Land Use/Land Development Plan (Appendix J). The ultimate goal of this effort is to guide growth in the five-parish study area by:

- Identifying sites where development pressures may increase due to Baton Rouge Loop construction under various future scenarios:
- Evaluating highest and best use for undeveloped land:
- Formulating planning and zoning policies to guide this development: and
- Proposing a structure for coordinated local government oversight of development.

By its nature, the focus of the study targets the indirect effects of the Baton Rouge Loop Project.

As an initial step, the study would develop a base case scenario that would involve projection of the existing prevailing development patterns using, in part, an assessment of Project area environmental conditions, trends, and constraints. The land use study would address long-term projections of household growth in the Baton Rouge area, market directions of housing and effects of changing demographics on commercial land use. Additionally, the study would consider the effects of new accessibility created by the Baton Rouge Loop Project on land uses in and near the project corridor, and the impacts of all these factors on local community goals and values.

3.16.4. Potential Indirect Impacts

The following discussion presents a general overview of potential indirect impacts of the Baton Rouge Loop project based on the location of corridor alternatives as well as existing land uses and current development pressures in areas that may be affected by project implementation. Prediction of potential indirect impacts involves a high level of uncertainty since these impacts are a function of a host of complex factors that are often not related to highway project development. In addition, since the size of the Baton Rouge Loop Project dictates that it must be built in segments over a period of years, the type, magnitude, and location of indirect impacts resulting from project construction would be dependent on several factors. This includes the implementation plan (i.e. where and when each segment would be built) as well as the siting of interchanges, which further increases the level of uncertainty in assessing possible indirect effects.

In general, the level of uncertainty in IEA can be reduced when there are land use controls and/or comprehensive plans that provide some degree of predictability about future development. However, such controls currently are not widespread in the study area. Options for controlling growth under various future scenarios, including area wide planning and zoning controls, are being explored under the separate CAEA study described previously. The recommendations from this study, if implemented, could have a major influence on the magnitude and extent of indirect impacts arising from project construction.

As mentioned above, IEA for highway projects generally focuses on changes in land use and secondary development resulting, in part, from increased accessibility and reduced travel times offered by new or improved roadways. Undeveloped lands that are subject to secondary development pressures resulting from highway projects are frequently in agricultural use. However, due to the unique characteristics of south Louisiana, development pressures not only impact agricultural resources, but also wetlands and floodplains that occur extensively throughout the region and comprise a significant portion of existing undeveloped lands. The widespread occurrence of these resources usually means that impacts resulting from economic growth and development are frequently unavoidable and can only be mitigated.

The Baton Rouge region has experienced substantial population growth in the past ten years and development pressures resulting from this growth are continuing. Two of the five parishes in the Project study area were ranked first (Ascension) and second (Livingston) in terms of population growth in the state over the period of 2000-2008. This was partially due to relocations resulting from Hurricane Katrina, but other factors are also playing a role in increasing the desirability of the region as a place to live. It is likely that growth would continue into the future but at a slower rate. As a result, secondary development spurred by Baton Rouge Loop construction is likely based on foreseeable trends.

3.16.4.1. No-Build Alternative

The No-Build Alternative would result in continuing and increasing traffic congestion and delays throughout the Baton Rouge region with resulting adverse secondary effects on productivity, through movement of goods and services, and increased emissions as well as continuation of existing development patterns and trends.

3.16.4.2. Build Alternative

The following sections address potential indirect effects on specific land use/land cover resources, namely agricultural lands, wetlands, and floodplains, that comprise the corridor alternatives. The area of influence that may experience indirect impacts from Baton Rouge Loop construction would extend well beyond the corridor alternative limits, so this analysis should be used only as an indication of resource impacts beyond the limits of the corridor sections.

3.16.4.2.1 North Unit

Each of the five North Unit alternatives (NA, NB, NC, ND, and NE) is partially located in Livingston, East Baton Rouge, and West Baton Rouge Parishes. Development pressures are high in each of these parishes, but particularly in Livingston Parish. Between 24% and 33% of the alignment of each North Unit corridor alternative would be located in Livingston Parish. Based on GIS land use/land cover data presented previously in this EIS, these corridor alternatives contain approximately 80% undeveloped lands. It might be anticipated that the North Unit corridor alternatives may support secondary development in response to current pressures if this portion of the project is constructed in the near term (i.e. in an early phase of the project implementation).

The undeveloped lands within the limits of the corridor alternatives that are not converted to new highway right-of-way may be susceptible to secondary development at or near planned interchanges. Undeveloped lands beyond these limits may also be subject to development in the short term. Approximately one-third of each alternative is comprised of wetlands, roughly, 40% is comprised of floodplains, and approximately 34% of the corridor alternatives consist of agricultural lands. Secondary development would likely occur first on sites near the highway that have minimum constraints, but such sites are scarce or nonexistent in the immediate vicinity of North Unit corridor alternatives. As a result, secondary development, and especially development that might be concentrated near interchanges, appears to have a high probability of affecting these resources.

3.16.4.2.2 South Unit

Each of the eighteen South Unit alternatives (SA through SR) is partially located in four of the five study area parishes. With the exception of Iberville Parish (which ranked 44th out of 64 parishes in terms of growth rate between 2000 and 2008), existing development pressures are high in these parishes, and particularly in Ascension Parish, which had the highest growth rate in the state over the past ten years. The proportion of the South Unit corridor alternatives that would be built in Ascension Parish would vary widely, from nine percent (Corridor Alternatives SG and SH) to 29% (Corridor Alternative SC). Based on GIS land use/land cover data, the South Unit corridor alternatives contain undeveloped lands comprising 93% to 95% of the total acreage depending on alternative. Depending on which corridor alternative is ultimately identified as the preferred alternative, construction of a South Unit corridor alternative in the early years of Baton Rouge Loop Project implementation may support additional development in response to continuing growth trends. In addition to potential new housing, access to the Baton Rouge Loop may spur commercial development in support of new development and to service development that has occurred over the past ten years in Ascension Parish.

Similar to the North Unit corridor alternatives, undeveloped lands within the South Unit corridor alternatives that are not converted to new highway right-of-way may experience secondary development, particularly near planned interchanges. Additional undeveloped areas near, but outside, the corridor alternative limits may also experience development pressures in the short term. On average, 56% of the area contained within the South Unit corridor alternatives consists of wetlands (range of 51%-61%), 55% is located within a 100-year floodplain (range of 44%-63%), and 42% consists of agricultural lands (range of 33%-43%). Secondary development would likely occur first on sites near the highway that have minimum constraints, but such sites are scarce or nonexistent near South Unit alternatives. Consequently, potential secondary development arising because of project construction would have a high likelihood of affecting these resources.

3.16.4.2.3 East Unit

Each of the eight East Unit alternatives would be located in the two parishes that have experienced the highest growth rates in the state over the past ten years (Ascension and Livingston Parishes). Roughly, 40% of the alignment of each corridor alternative would be located in Ascension Parish and the remaining 60% would be situated in Livingston Parish. Based on GIS land use/land cover data presented previously in this EIS, these corridor alternatives contain approximately 97% undeveloped lands. If the Baton Rouge Loop implementation plan dictates that the East Unit section would be constructed in the early stages of the 20-year development process, additional development would likely occur to service the needs of recent development as well as respond to continuing development trends.

Similar to the North and South Unit alternatives, undeveloped lands within the boundaries of the East Unit alternatives that are not converted to new highway right-of-way may experience secondary development, particularly near planned interchanges. Additional undeveloped areas near, but outside, the corridor alternative limits may also experience development pressures in the short term.

On average, 51% of the area contained within the East Unit alternatives consists of wetlands (range of 49%-54%), 81% is located within a 100-year floodplain (range of 80%-83%), and 9.6% consists of agricultural lands (range of 9%-10.3%). Secondary development would likely occur first on sites near the highway that have minimum constraints, but such sites are scarce or nonexistent in the immediate environs surrounding the East Unit corridor alternatives. Consequently, potential secondary development spurred by Baton Rouge Loop construction would have a high likelihood of impacting wetland, floodplain, and/or agricultural resources.

3.17. Synopsis

This chapter of the EIS provides a discussion and inventory of resources within each Unit Corridor Alternative. This Tier 1 EIS provides an inventory of resources as an order of magnitude of potential impacts that may result from the proposed Project in the Corridor Alternatives in each Unit.

Chapter 4 SECTION 4(F) / SECTION 6(F) EVALUATION

Section 4(f) of the USDOT Act of 1966 (23 U.S.C. 138, recodified as 49 U.S.C. 303, as amended) established a national policy for the USDOT to avoid the use of significant public parks, recreation areas, wildlife and waterfowl refuges and historic sites as part of a project, unless there is no feasible and prudent alternative to the use of such land and such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use.

23 CFR 774.7 (e) states:

> A Section 4(f) approval may involve different levels of detail where the Section 4(f) involvement is addressed in a tiered Environmental Impact Statement (EIS) under Sec. 771.111 (g) of this title.
>
> (1) When the first tier, broadscale EIS is prepared, the detailed information necessary to complete the Section 4(f) approval may not be available at that stage in the development of the action. In such cases, the documentation should be made on the potential impacts that a proposed action would have on Section 4(f) property and whether those impacts could have a bearing on the decision to be made. A preliminary determination may be made at this time as to whether there are feasible and prudent locations or alternatives for the action to avoid the use of Section 4(f) property. This preliminary determination shall consider all possible planning to minimize harm to the extent that the level of detail available at the first tier EIS stage allows. It is recognized that such planning at this stage would normally be limited to ensuring that opportunities to minimize harm at subsequent stages in the development process have not been precluded by decisions made at the first tier stage. This preliminary determination is then incorporated into the first tier EIS.
>
> (2) The Section 4(f) approval will be finalized in the second-tier study. If no new Section 4(f) use, other than a de minimis impact, is identified in the second-tier study and if all possible planning to minimize harm has occurred, then the second-tier Section 4(f) approval may finalize the preliminary approval by reference to the first-tier documentation. Re-evaluation of the preliminary Section 4(f) approval is only needed to the extent that new or more detailed information available at the second-tier stage raises new Section 4(f) concerns not already considered.
>
> (3) The final Section 4(f) approval may be made in the second tier categorical exclusion (CE), environmental assessment (EA), final EIS, Record of Decision (ROD) or Finding of No Significant Impact (FONSI).

The FHWA Section 4(f) Policy Paper (July 2012), a supplement to FHWA regulations governing Section 4(f), includes information and guidance utilized for the determination and evaluation of potential uses of Section 4(f) resources, as presented in this chapter.

Section 6(f) of the Land and Water Conservation Fund Act (16 U.S.C. 4601 *et seq.*) requires that the outdoor recreational facilities acquired or developed with Department of Interior financial assistance under the LWCF may not be converted to non-recreational use unless approval is granted by the National Park Service (NPS) to substitute property of reasonably equivalent usefulness and location and of at least equal fair market value. In accordance with the regulatory requirements of 36 CFR Part 59, requests for conversion approval must be submitted in writing by the State Liaison Officer to the appropriate NPS Regional Director. The following prerequisites must be met for conversion approval:

- Evaluation of all practical alternatives to the proposed conversion;
- The substitution property must be of at least equal fair market value;
- The substitution property must be of reasonably equivalent usefulness and location as that being converted;
- The substitution property must meet the eligibility requirements for LWCF assisted acquisition and constitutes or is part of a viable recreation area;
- Partially converted sites must remain recreationally viable, or otherwise be replaced;
- Accomplishment of coordination with other Federal agencies;
- Completion of guidelines for environmental evaluation and consideration by NPS;
- Adherence to state intergovernmental clearinghouse review procedures; and
- The conversion and substitution must be in accordance with the Statewide Comprehensive Outdoor Recreation Plan (SCORP) and/or equivalent recreation plans.

All conversions require amendments to the original project agreements that should be submitted concurrently with conversion requests or when the details of the conversion have been worked out with NPS.

The Section 4(f) Evaluation for Tier 1 of the Project documents the inventory of Section 4(f) and Section 6(f) resources in the Project study area and, to the extent information is available, provides preliminary determinations as to whether there are feasible and prudent locations or alternatives for the Project to avoid the use of each identified Section 4(f) property in the Project study area. In instances where it appears at this preliminary stage that a prudent and feasible alternative for a given 4(f) property may not exist, potential impacts to that property are described. However, the detail of that description is necessarily limited by the amount of information available at this stage of Project development and by the fairly broad latitude for selecting an alignment within given corridors and corridor segments at the Tier 2 stage that exists in most cases. Consequently, more detailed 4(f) analysis and final Section 4(f) approval will take place in the second-tier study(ies) for the Project.

4.1. Section 4 (f) and Section 6(f) Resources

4.1.1. North Unit

There are eight Section 4(f) / Section 6(f) resources in the North Unit. Two of the resources are structures used for public vehicular use, four are parks/recreation areas and two are preserves. Five of the six resources are owned by the Recreation and Park Commission for the Parish of East Baton Rouge (BREC), with the sixth a Livingston Parish Recreation District facility. The resources by section are described below and section locations are presented in *Figure 5-1: Remaining and Eliminated Unit Corridor Sections/Alternatives*.

- Huey P. Long / O. K. Allen Bridge (US 190) - N2

US 190 Crossing of Mississippi River. The Huey P. Long-O.K. Allen Bridge on U.S. 190, which opened on August 10, 1940, served as the first bridge connecting East and West Baton Rouge Parishes. Plans were in development as early as 1931, but construction on the cantilevered, Warren-through-truss bridge did not begin until 1936. The entire length of the structure is approximately 5,880 feet, including the approaches, while the main truss is approximately 3,300 feet. The bridge is composed of railroad tracks in the center of the structure, with two traffic lanes on either side. It is situated at only 113 feet above the surface of the Mississippi River; this low height impedes ocean-going vessels from continuing up the river. The Huey P. Long-O.K. Allen Bridge is considered eligible for the National Register of Historic Places.

- Huey P. Long Bridge Administration Building (US 190) - N2

East bank of Mississippi River, immediately north of US 190 westbound lanes. This structure was built around 1940 and served as the administration building for Louisiana Highway Commission staff. The Modern/Beaux-Arts style building appears to be in good structural condition, but is not currently in use, and the windows and doors have been boarded over; a parking area is located to the east of the structure.

- Scotlandville Park - N2

Interstate 110 at Harding Boulevard. This 109.80-acre BREC park runs along both sides of Interstate 110, north of Airline Highway in Scotlandville, across from Baton Rouge Metro Airport. It is part of the interstate system, which the LADOTD has leased to BREC for use as a park as a part of a joint use agreement. There is a ball field, several playground areas, 3.6 miles of walking paths, multi-use areas, picnic facilities and a shelter. As part of the joint use agreement, the DOTD retains the right to utilize the property for highway and other transportation purposes. LWCF funds were used to acquire or improve this park.

- Hooper Road Park - N3

6261 Guynell Drive. This large, 232.85 acre, BREC park is surrounded by Sharon Hills, Cedar Glen, and Pleasant Hills subdivisions. It is north of Hooper Road, near the intersection of Mickens Road and Hooper Road. Only a part of this park is developed at this time. There is a recreation center, a playground area, tennis courts, two lighted ball diamonds, one unlighted ball diamond, picnic facilities, a horse trail and an eight-mile mountain bike and walking trail.

- Cohn Preserve - N4, N5 and N6

11332 Foster Road. This BREC facility is a 28.50-acre undeveloped property on Foster Road that is to be left in its natural state for birds and animals. The late Margie Cohn donated the park to BREC for this purpose. It is located just south of the Cohn Arboretum.

- James Watson Park - N5

10800 Foster Road. Located in the Brownsfield area, this 14.76-acre BREC park is on Foster Road between Comite Drive and Hooper Road, in the Greenwood subdivision. This neighborhood park is provided with a large family pavilion, a playground, basketball courts, picnic facilities, tennis courts, a ball diamond, and open space areas. LWCF funds were used to acquire or improve this park.

- Cohn Arboretum- N6

12056 Foster Road. This 16-acre BREC facility is heavily wooded land used for the preservation and study of native plants and flora from other areas. It houses several major plant collections including a Tropical House, a Camellia Collection, Evergreen collections, a Crepe Myrtle Collection and an Herb/Fragrance Garden. Services include pamphlets, paved walkways, self-guided tours, guided tours, painting, and drawing opportunities and a teaching garden for children with disabilities. LWCF funds were used to acquire or improve this facility.

- Live Oak Ball Park - N12

36965 LA Highway 16, Watson. This is a Livingston Parish Recreation District No. 2 facility. The approximately 32.5 acre recreational facility includes seven baseball and/or softball fields of various dimensions, as well as open recreation space and parking facilities. LWCF funds were used to acquire or improve this park.

4.1.2. South Unit

There are six Section 4(f) / Section 6(f) resources in the South Unit. They include three parks, a NRHP listed historic property, and two NRHP listed or eligible archaeological sites determined to warrant preservation in place. The resources by section are described below and section locations are presented in *Figure 5-1: Remaining and Eliminated Unit Corridor Sections/Alternatives*.

- Woodstock Park - S3

LA 30 (Nicholson Drive). This 52.98-acre BREC park was recently purchased and there has not yet been development of facilities on the site. It is located on the east side of Nicholson Drive, south of Gardere Lane, in the very southern part of the parish immediately north of St. Gabriel.

- Longwood Plantation - S3

River Road, Baton Rouge. Longwood Plantation House is NRHP listed and locally significant in the area of architecture because it is a distinctive example among a small group of surviving two-story Greek Revival residences in East Baton Rouge Parish.

- NRHP eligible Longwood Plantation (16EBR041) archaeology site - S3

Archaeology site associated with Longwood Plantation House, located within the National Register listed property boundary. Investigations by the National Park Service (NPS) in 1984 and Surveys Unlimited Research Associates Inc., (SURA) in 1998 reported the site as being the remains of a sugar plantation dating from the 1780s to the 20th century (Jones, et al 1998). The site was recommended for NRHP eligibility by the NPS survey as well as the SURA survey. The management plan for the site is preservation in place.

- East Iberville District Park - S5

Monticello Drive, St. Gabriel. An Iberville Parish Parks and Recreation District facility. This approximately 11-acre park includes a recreation center, tennis court, volleyball facility, basketball court, two ball fields, concession stand, and picnic and playground facilities.

- NRHP eligible Broussard Mounds (16AN001) archaeology site - S9

A single component multi-mound site with a confirmed cultural component for one of the three mounds at the site. A historic occupation at the site has been documented, beginning in the late eighteenth century and continuing until as recently as the 1980s. The area was once the location of Riverside Plantation, and several structures associated with the plantation are known to have existed at the site. A later occupation was present as well. In addition to the historic structures, a small cemetery is located on top of one of the mounds. The management plan for the site is preservation in place.

- Sunshine Park – S12

5035 Iberville Street, St. Gabriel. This recreational facility is located behind the St. Gabriel City Hall complex at the old Sunshine School campus. The park is approximately 7.5 acres and includes a baseball/softball field and parking area. LWCF funds were used to acquire or improve this park.

4.1.3. East Unit

There is one Section 4(f) resource in the East Unit, the Ascension Civic Center, located in section E1 and common to all East Unit alternatives. Section E-1 is shown in *Figure 5-1: Remaining and Eliminated Unit Corridor Sections/Alternatives*. There are no Section 6(f) resources in the East Unit.

Ascension Civic Center is located on the east side of US 61 (Airline Highway) in the northernmost section of Sorrento. The property is owned by the Ascension Parish School Board. The, building, grounds, ball fields, and basketball courts are maintained by the Parish of Ascension Recreation and Culture Department. The facility includes an indoor and outdoor pavilion, cooking area, softball/soccer field, baseball field, basketball court, and archery/rifle range. The portion of the property used as a park is approximately 26.5 acres.

4.2. Avoidance Alternatives

At the current Tier 1 EIS stage, the Project can:

- Identify those Section 4(f) / Section 6(f) resources that preliminary engineering analysis indicates have potential avoidance alternatives, and document the avoidance alternatives; or
- Identify Section 4(f) / Section 6(f) resources where a potential use is currently unknown as specific alternative alignments have not been identified, and avoidance by modifying a corridor section to avoid the resource is not reasonable.

For the sections that follow, multiple data sources provided the input necessary to evaluate potential avoidance alternatives and determine if those avoidance alternatives would likely be feasible and prudent. These data sources included the continued input from engineering analyses and traffic modeling; feedback from agencies, stakeholders and the public; and the use of spatial analysis techniques to screen environmental constraints supplemented by the Project Team's extensive knowledge of the study area. These data and analyses are documented within the *Baton Rouge Loop Implementation Plan* technical memorandums in the areas of engineering, environmental, traffic and revenue, financial feasibility, and community involvement (Appendix G). Data obtained subsequent to the implementation plan are presented throughout the FEIS and associated appendices, including but not limited to supporting data for the purpose and need (Section 1.3 and Appendix A), environmental resources (Chapter 3) and public and agency input (Appendix E).

4.2.1. North Unit

- Huey P. Long / O. K. Allen Bridge (US 190) - N2

The entirety of the Huey P. Long /O.K. Allen Bridge (US 190) in section N2 are common to all of the North Unit Corridor Alternatives. Avoidance of the N2 corridor section containing this resource would create a significant reconfiguration of the section. The N2 corridor section includes the likely river crossing site for the North Unit. This potential crossing site was identified based, in part, upon the fact that US 190 already crosses the river at this point and based upon estimations that a crossing at this point would meet the Project's purpose of reducing present and future traffic congestion on I-10, I-12, and other major arterials, as well as enhancing roadway capacity. Consequently, a reconfiguration of the North Unit that contemplates crossing the River at another location, in turn, appears likely to be imprudent because a new crossing would likely involve increased Project costs of an extraordinary magnitude and it may not meet the Project purpose of reducing present and future traffic congestion, as well as the identified crossing within the N2 segment. In addition, the environmental impacts associated with developing a crossing at another location are likely to be of an extraordinary magnitude. To be clear, this preliminary assessment does mean that the Huey P. Long/O.K. Allen Bridge itself would be used; the possibility simply cannot be definitively ruled out at this point.

Because it is not possible at this point in Project development to determine if the resource would be directly used or the extent of such use in light of mitigation and minimization measures, a Section 4(f) determination and evaluation must be deferred to the Tier 2 EIS phase.

- Huey P. Long Bridge Administration Building (US 190) - N2

The Huey P. Long Bridge Administration Building in section N2 is common to all of the North Unit Corridor Alternatives. Avoidance of the resource within the section boundary is prudent and feasible. Project commitment to the avoidance is reasonable based on the location of the building within the section and the ability to adjust alternative alignments if the North Unit sections containing the resource are within the preferred Baton Rouge Loop Corridor.

- Scotlandville Park - N2

Approximately 24.5 acres of this resource are in section N2 that is common to all North Unit Corridor Alternatives. Avoidance of the resource would create a significant reconfiguration of the section and preclude the use of the existing US 90/I-110 interchange, a portion of which lies within the park boundary.

At present, it is not possible to determine if the resource would be directly used or the extent of such use. Although LADOTD leases the property to BREC for use as a park per joint use agreement, LADOTD retains the right to utilize the property for highway or other transportation purposes. Accordingly, Section 4(f) determination and evaluation does not apply. However, because LWCF funds were used by BREC to improve the park, a Section 6(f) evaluation would be required should conversion to a non-recreational use per approval by the National Park Service be necessary. Because it is not possible at this time to determine if conversion would be required, a Section 6(f) determination and evaluation would need to be deferred to the Tier 2 EIS phase.

- Hooper Road Park - N3

Three pieces of this resource (4.28 acres, 0.02 acres, and 0.30 acres) totaling 4.6 acres are in section N3 north of LA 408. The three pieces are wooded undeveloped sections on the south edge of the total park tract with the two smallest pieces on the north edge of the North Unit section.

Avoidance of the two smaller pieces of the resource within the section boundary is prudent and feasible. Project commitment to the avoidance is reasonable based on the location of these pieces of the resource within the section and the ability to adjust alternative alignments if the North Unit sections containing the resource are within the preferred Baton Rouge Loop Corridor.

To avoid the 4.28-acre piece of the resource located immediately north of LA 408, the corridor would need to be shifted south. In doing so, potential impacts could result to three churches and one daycare center, facilities that generally function to unite and solidify a cohesive unit or community. Such a reconfiguration of the corridor could involve additional costs and environmental impacts, including community impacts, of a magnitude that could render the avoidance alternative not prudent.

At present, it is not possible to determine if the resource would be directly used or the extent of such use, including the possibility of a Section 4(f) de minimis finding. As such, a Section 4(f) determination and evaluation would need to be deferred to the Tier 2 EIS phase.

- Cohn Preserve - N4, N5 and N6

This resource is located at the junction of three North Unit sections with 0.29 acres in N4, 12.73 acres in N5, and 0.38 acres in N6. As established in Section 5.4, corridor sections N4, N5 and N6 are not part of the preferred corridor recommended for further consideration in the Tier 2 EIS phase. Accordingly, this resource would not be affected with the use of the preferred corridor.

- James Watson Park - N5

About 3.08 acres of the resource is located in section N5 on its south edge just east of the junction of N4 and N5. As established in Section 5.4, corridor section N5 is not part of the preferred corridor recommended for further consideration in the Tier 2 EIS phase. Accordingly, this resource would not be affected with the use of the preferred corridor.

- Cohn Arboretum- N6

The entirety of this resource is located within section N6. The only rational avoidance alternative is no alternative alignment development within the Cohn Arboretum. The Project committing not to use the Cohn Arboretum is a prudent and feasible alternative. This determination is based on the location of the resource within the corridor section, and the capability to adjust alternative alignments if this section is within the preferred Baton Rouge Loop Corridor.

- Live Oak Ball Park - N12

Almost the total area of this resource is located in section N12 on the south edge west of LA 16. As established in Section 5.4, corridor section N12 is not part of the preferred corridor recommended for further consideration in the Tier 2 EIS phase. Accordingly, this resource would not be affected with the use of the preferred corridor.

4.2.2. South Unit

- Longwood Plantation and the NRHP eligible Longwood Plantation (16EBR041) archaeology site - S3

The 25.5-acre resource, which includes the archaeology site, is located entirely within section S3 on its west border. . Due to the proximity of the Mississippi River to the west of the resource, shifting the corridor to the east is the only possibility for avoiding Longwood Plantation and the archaeology site. Reconfiguration of the corridor to the east could potentially impact a 150-unit apartment complex, four neighborhoods, a convenience store and gas station and a sewage treatment facility for the City of Baton Rouge. Accordingly, this reconfiguration would likely involve additional costs and environmental impacts of a magnitude that could render the avoidance alternative not prudent.

At present, it is not possible to determine if the resource would be directly used or the extent of such use, including the possibility of a Section 4(f) de minimus

finding, and as such, a Section 4(f) determination and evaluation would need to be deferred to the Tier 2 EIS phase.

- Woodstock Park - S3

Approximately 18.8 acres of this new undeveloped resource are in the S3 section. Modifying the corridor section to avoid the resource is feasible but not likely prudent. as this would create a significant reconfiguration of the section and preclude the use of existing LA 30/Nicholson Road that is immediately adjacent to the park boundary.

Shifting the corridor to the east to avoid Woodstock Park could result in potential impacts to three neighborhoods and a country club with golf course. Shifting the corridor to the west to avoid the park could result in potential impacts to one church, an oil and gas production field and two railroad overpasses that could substantially increase project costs. Reconfiguration of the corridor in either direction and hindrance of the use of existing LA 30/Nicholson Road would likely involve additional costs and environmental impacts of a magnitude that could render the avoidance alternative not prudent.

At present, it is not possible to determine if the resource would be directly used or the extent of such use, including the possibility of a Section 4(f) de minimus finding, and as such, a Section 4(f) determination and evaluation would need to be deferred to the Tier 2 EIS phase.

- East Iberville District Park - S5

Roughly, 11 acres of this resource are in section S5 on its western edge.

Due to the proximity of the Mississippi River to the west of East Iberville District Park, shifting the corridor to the east is the only possibility for avoiding the resource. Reconfiguration of the corridor to the east could potentially impact two neighborhoods, two convenience stores with gas stations, one bank, one post office, one electrical substation and the East Iberville water tank and facility. Accordingly, this reconfiguration would likely involve additional costs and environmental impacts of a magnitude that could render the avoidance alternative not prudent.

At present, it is not possible to determine if the resource would be directly used or the extent of such use, including the possibility of a Section 4(f) de minimus finding, and as such, a Section 4(f) determination and evaluation would need to be deferred to the Tier 2 EIS phase.

- NRHP eligible Broussard Mounds (16AN001) archaeology site - S9

Approximately 46 acres of the NRHP eligible resource is located in section S9. As established in Section 5.4, corridor section S9 is not part of the preferred corridor recommended for further consideration in the Tier 2 EIS phase. Accordingly, this resource would not be affected with the use of the preferred corridor.

- Sunshine Park – S12

This resource is located entirely in section S12. The only reasonable avoidance alternative is no alternative alignment development within Sunshine Park. The

Project committing not to use the resource is a prudent and feasible alternative. This determination is based on the location of the resource within the corridor section, and the means to adjust alternative alignments if this section is within the preferred Baton Rouge Loop Corridor.

4.2.3. East Unit

- Ascension Civic Center

Approximately 7.4 acres of the Ascension Civic Center is located in section E1 that is common to all East Unit Corridor Alternatives.

The placement of the corridor in the vicinity of the Ascension Civic Center is largely dependent on the required location of a new I-10 interchange for the Loop. Due to FHWA interchange spacing requirements and the proximity of existing I-10 interchanges, there is a tight window for placement of a new interchange. As a result, it is likely that the Loop would utilize a previously abandoned Rest Area interchange. Developing an entirely new interchange for the project to connect with I-10 would likely involve increased Project costs of an extraordinary magnitude compared to an alternative making use of an existing interchange.

In addition, shifting the corridor southeast could potentially impact a technical college, a neighborhood and several businesses. Likewise, shifting the corridor northwest could potentially impact a neighborhood and would likely violate interchange spacing requirements for the new Baton Rouge Loop / I-10 interchange. Reconfiguration of the corridor to avoid the resource would likely result in environmental impacts of and extraordinary magnitude. Consequently, a prudent avoidance alternative has not been identified.

At present, it is not possible to determine if the resource would be directly used or the extent of such use, including the possibility of a Section 4(f) de minimis finding, and as such, a Section 4(f) determination and evaluation would need to be deferred to the Tier 2 EIS phase.

4.3. Section 4 (f) / Section 6(f) Evaluation Summary

Of the fifteen Section 4(f) / Section 6(f) resources in the three Project Units, eleven have been identified as having a prudent and feasible avoidance alternative. These eleven Section 4(f) / Section 6(f) resources are as follows:

- North Unit - US190 - Huey P. Long Bridge Administration Building, Cohn Preserve, James Watson Park and Cohn Arboretum;
- South Unit - Live Oak Ball Park, Longwood Plantation, Longwood Plantation archaeology site, East Iberville District Park, Broussard Mounds archaeology site and Sunshine Park; and
- East Unit - Ascension Civic Center.

For these eleven resources listed above, the Project commits to no use in the Tier 2 EIS phase, with no alternative alignment development within the resource. This commitment is noted in Chapter 6 of this Tier 1 EIS.

The four remaining Section 4(f) / Section 6(f) resources (US 190 - Huey P. Long / O.K. Allen Bridge, Scotlandville Park, Hooper Road Park, and Woodstock Park) would require a Section 4(f) / Section 6(f) Evaluation during the Tier 2 EIS phase of the Project to determine use and if there are prudent and feasible avoidance alternatives. Scotlandville Park is the only recreational facility that was acquired, improved, or both using LWCF funds. At the time that a Section 4(f) / Section 6(f) evaluation is prepared for this site, coordination will be conducted with the NPS and the investigations needed to satisfy the conversion procedures of Section 6(f) will be initiated.

As the Project advances in to the Tier 2 EIS phase, other factors may come into play such as previously unknown or unidentified Section 4(f) / Section 6(f) resources or other significant environmental resources that could necessitate a reevaluation of Section 4(f) / Section 6(f) resources and commitments identified in this Tier 1 EIS.

Chapter 5. COMPARISON AND EVALUATION OF ALTERNATIVES

One primary goal of the Tier 1 EIS is to identify a preferred Baton Rouge Loop Corridor consisting of preferred corridor alternatives for the North, South, and East Units. This chapter discusses the process of comparison and evaluation for the corridor alternatives identified in Section 2.3.2 to determine a preferred corridor.

5.1. Methodology

Various methodologies exist to evaluate and identify a "preferred corridor" for a project such as the Baton Rouge Loop. These typically include the identification of a set of evaluation parameters and some form of ranking evaluation. Types of parameters considered typically reflect issues most relevant to a project, with the number of parameters evaluated tailored to the complexity and level of analysis. Parameters considered typically are agreed upon by the engineering, environmental, and public involvement disciplines of the Project Team, as well as the lead and cooperating agencies. Summary matrices simplify the documentation of the chosen quantified evaluation parameters and the qualitative rankings.

The Baton Rouge Loop Project Team consists of Federal Highway Administration (FHWA), Louisiana Department of Transportation and Development, Capital Area Expressway Authority (CAEA), HNTB Corporation, Stantec Inc. (formerly ABMB Engineers), URS Corporation, and Marmillion/Gray Media, Inc. Evaluation parameters were discussed and selected by the Project Team in conjunction with FHWA, LADOTD, and the CAEA. For each individual Unit corridor alternative, evaluation parameters were quantified or a desirability/feasibility value assigned. Using best professional judgment, each corridor alternative evaluation parameter was then analyzed by the Project Team to determine the most optimal corridor alternative considering one parameter at a time within a unit. This evaluation process results in some corridor alternatives being eliminated if they had a higher potential level of adverse impacts than the other alternatives. The remaining corridor alternatives were then evaluated one by one based on the potential impacts identified for each parameter.

5.2. Evaluation Parameters

The Project Team identified the most relevant environmental resources for this project to include: developed land, prime farmland, cultural resources, socioeconomics/environmental justice, wetlands, (100-year) floodplains, threatened and endangered species, and hazardous waste sites. The level of potential project impacts on other environmental resources identified in Chapter 3 are considered generally equal and not a differentiating factor among the Corridor Alternatives.

Developed land, both residential and commercial, and potential displacements was an important factor of concern and comment by the public and stakeholders. Each corridor alternative would likely require one or more displacements. The number and type (commercial or residential) of potential displacements cannot be determined until the Tier 2 EIS when specific alignments and other design details

would be developed. Every effort will be utilized in Tier 2 to avoid and minimize displacements by utilizing alignment shifts and other techniques.

Prime farmland was an issue of concern and comment by the public and stakeholders during the initial public information meetings and therefore has been included as part of the evaluation process. The potential for unavoidable cultural resource impacts within a corridor alternative has been included as part of the evaluation process. Socioeconomic / environmental justice impacts have been considered during the evaluation process based on input from resource agencies during the DEIS review. Wetlands, 100-year floodplains, river crossings, and hazardous waste sites have major design and/or permitting and agency consultation considerations. Impacts to threatened, endangered and protected species have been considered during the evaluation process based on input from State and Federal resource agencies.

Other considerations, including estimated capital cost, traffic and transportation improvement, and river crossing feasibility are critical components of the Baton Rouge Loop Project, contribute significantly to the viability of the project, and have also been included as evaluation parameters.

River crossing feasibility was initially considered applicable to all Project Units. However, after further consultation with the applicable resource agencies and following corridor alternative refinements and eliminations in the North Unit, it was decided that this parameter would only be considered as part of the South Unit evaluation.

Public and stakeholder input was considered in the evaluation process and included comments received at public meetings, Public Hearings, and the Project website. Additionally, input from the Stakeholder Committee and Advisory Committee was included. Agency input was also important due to jurisdictional or permitting authority that may eventually be needed for Project construction.

The Project Team determined that some resources (e.g. community facilities and Section 4(f) / Section 6(f) resources) while identified and considered in alternative corridor development will most likely be avoided in alternative alignment development and have little or no influence on Corridor Alternative preference. Corridors with unavoidable Section 4(f) and Section 6(f) impacts may result in elimination from further evaluation.

Special consideration during the alignment development in Tier 2 studies are noted for Section 4(f) resources in:

- Section S3 (part of Corridor Alternatives SA through SF and SM through SR),
- Section N2 (part of all North Unit Corridor Alternatives), and
- Section N3 (part of Corridor Alternative NA).

These potential Section 4(f) / Section 6(f) resources will be subject to further evaluation during the Tier 2 studies at the alignment level.

5.3. Evaluation

The evaluations of the North Unit, South Unit, and East Unit Corridor Alternatives were independent of each other but utilized the same set of parameters with the same quantitative and qualitative ranking approach.

5.3.1. Quantification Matrix

For the quantification matrices, actual values or symbols representing findings from the studies performed in support of this Tier 1 EIS are used for each evaluation parameter as follows:

- Estimated Capital Cost: $M – Millions 2008 dollars.
- Traffic & Transportation Improvement: Average Daily Traffic (ADT) expected on the BR Loop roadway at critical locations and daily reduction of the traffic system wide measured by Vehicle Hours Traveled (VHT).
- River Crossing Feasibility (South Unit Only): Acceptability to Coast Guard (CG) and Maritime Industry (Maritime) as represented by symbols:
  - ● - Unacceptable to CG & Maritime
  - ◯ - Acceptable but not desirable by CG & Maritime

As this affects two sectors of the maritime industry (shallow, and deep draft operators), a preference is identified for each group.

- Developed Land: Percentage of developed land within total corridor alternative, estimated potential acreage of developed land.
- Prime Farmland Soils: Percentage of prime farmland soil within total corridor alternative, estimated potential acreage of prime farmland soils.
- Cultural Resources: Percentage of eligible and listed NRHP properties within the corridor alternative and estimated potential acreage of eligible and listed NRHP properties potentially affected.
- Socioeconomics / Environmental Justice: Minority population and low income population as percentages of the total corridor population.
- Wetlands: Percentage of wetland cover within the total Corridor Alternative, estimated potential acreage of wetland impacts, estimated potential acreage of forested, scrub shrub, and emergent wetland impacts.
- 100-year Floodplain: Percentage of 100-year floodplain within the total corridor alternative and estimated potential acreage.
- Hazardous Waste Sites: Number for each of the hazardous waste site types.
- Public/Stakeholder Input on corridor alternative is represented by symbols for each corridor alternative:
  - ● - Most controversial or undesirable
  - ◯ - Least controversial or preferred

This desirability/feasibility value must also consider the input received from all sources including special purpose meetings, public meetings, public officials, and other sources such as newspaper editorials, website comments, and public opinion surveys related to the overall public/stakeholder pool.

- Agency Input on corridor alternative is represented by symbols for each corridor alternative:
  - ● - Most controversy or undesirable
  - ◯ - Least controversy or preferred

5.3.2. Ranking Procedure

A discussion follows each unit quantification matrix that outlines the results of the corridor alternatives evaluation based on each parameter evaluated.

5.3.3. Unit specific Evaluations

The following is a summation of the Unit corridor alternative evaluations with the quantification matrices and ranking discussions.

5.3.3.1. North Unit Corridor Alternatives

For the North Unit quantification matrix (Table 5.1) several issues were influential in comparing corridor alternatives. North Unit estimated capital costs were provided based on two scenarios: 1) a new Mississippi River bridge, and 2) no new bridge and utilization of the existing U.S. 190 structure. Cost estimates for the new Mississippi River bridge scenario varied by less than 8%. The difference with no new Mississippi River bridge was approximately 10%.

Traffic and transportation improvement had little ADT difference at the Mississippi River crossing (less than 2.5%), but significant difference in ADT at the Amite River crossing at greater than 25%.

Corridor Alternative NA ranks as the most feasible alternative considering estimated construction costs and improvements to traffic congestion within the region. As a result, **Corridor Alternative NA** is also assumed to be the most feasible alternative from a toll perspective because initial costs would be lowest and ridership would be highest. This is mainly because **Corridor Alternative NA** would be sufficiently close to the suburban population centers to attract traffic from the existing parallel I-12. **Corridor Alternatives ND and NE** are the least favorable concerning the engineering and tolling parameters.

Table 5.1 North Unit Corridor Alternative Quantification Matrix

Evaluation Parameter		North Unit Corridor Alternatives				
		NA	NB	NC	ND	NE
		Estimated length (miles)				
		35.0	37.2	36.9	40.2	40.1
ENGINEERING & POTENTIAL TOLL FEASIBILITY	Estimated Capital Cost w new Miss. R. Bridge (Millions - $2008)	○ $1,673.6	◑ $1,732.8	◑ $1,730.9	● $1,807.1	● $1,782.5
	Estimated Capital Cost wo new Miss. R. Bridge (Millions - $2008)	○ $1,360.2	◑ $1,419.4	◑ $1,417.5	● $1,493.7	● $1,469.1
	Traffic & Transportation Improvement:					
	ADT at Mississippi River	○ 56,631	◑ 55,949	◑ 55,949	● 55,268	● 55,268
	ADT at Amite River	○ 57,437	◑ 50,211	◑ 50,211	● 42,986	● 42,986
	Daily Reduction System Wide (VHT)	5,246	5,238	5,238	5,230	5,230
ENVIRONMENTAL RESOURCE INVENTORY POTENTIAL FOR IMPACTS	**Land/Land Use:**					
	Developed Land (% TA)	20.0%	18.5%	18.3%	15.4%	15.5%
	Developed Land (ac)	● 340	● 333	◕ 327	○ 301	○ 301
	Prime Farmland Soils (% TA)	56.4%	54.1%	53.4%	55.0%	52.6%
	Prime Farmland Soils (ac)	○ 958	○ 975	○ 956	● 1072	◑ 1021
	Cultural Resources					
	Eligible and Listed NRHP Properties (% TA)	0.31%	0.24%	0.23%	0.22%	0.20%
	Eligible and Listed NRHP Properties (ac)	● 37.4	◔ 30.7	◔ 30.7	○ 30.4	○ 28.9
	Socioeconomics / Environmental Justice					
	Minority Population (% of Total Corridor Population)	○ 54.0%	◔ 57.6%	○ 50.5%	● 70.6%	◕ 64.1%
	Low Income Population (% of Total Corridor Population)	◕ 22.3%	● 24.2%	◕ 22.7%	● 25.1%	○ 18.0%
	Natural Resources:					
	Wetlands (%TA)	32.2%	32.3%	33.5%	36.3%	35.2%
	Wetland Area Impact (ac)	○ 547	◔ 582	◔ 600	● 707	● 684
	Palustrine Forested Wetland Area Impact (ac)	○ 464	◔ 502	◔ 513	● 607	◕ 559
	Palustrine Scrub/Shrub Wetland Area Impact (ac)	○ 41	○ 35	○ 43	◕ 62	● 77
	Palustrine Emergent Wetland Area Impact (ac)	○ 9	◔ 9	◔ 9	○ 9	● 11
	100-year floodplain (%TA)	36.6%	38.6%	40.4%	37.7%	39.9%
	100-year floodplain (ac)	○ 622	◑ 695	◕ 723	◕ 736	● 774
	T&E and Protected Species					
	Number of Species Identified	**7**	7	7	7	7
	Hazardous Waste Sites (#):					
	Solid Waste Facilities	1	1	1	1	1
	RCRA	1	1	1	1	1
	State Hazardous Sites	2	2	2	2	2
	LUST	○ 3	● 4	● 4	○ 3	○ 3
	Landfills	1	1	1	1	1
	Active Facilities	● 17	◑ 16	◑ 16	○ 15	○ 15
INPUT	Public/Stakeholder Input on Corridor Alternative	●	●	●	●	●
	Resource Agency Input on Corridor Alternative	N/A	N/A	N/A	N/A	N/A

% TA: Percent of total corridor alternative acreage.

#: Number of a resource in corridor alternative.

● = Least Desirable based on parameter

○ = Most Desirable based on parameter

ac: Acres calculated by multiplying %TA by estimated corridor area (corridor length times 400' projected right of way)

Corridor Alternative NE ranks the best in regard to the developed land (percentage and acreage) and **Corridor Alternative NA** ranks as the least desirable based on this parameter.

Prime farmland soil percentages were similar for all alternatives; however, due to the different lengths of corridors the estimated acreages of farmland soils varied by over 100 acres. As a result, **Corridor Alternatives NA, NB, and NC** rank as the most advantageous corridor alternative based on acreage. **Corridor Alternative ND** ranks as the least desirable based on potential impact to acreage of prime farmland.

Total wetland acreage percentages in all alternatives were similar but the estimated acreage of impacts varied greatly for total wetlands, palustrine forested wetlands, and palustrine scrub/shrub wetlands. **Corridor Alternative NA** ranked as the most desirable corridor alternative in terms of minimizing the potential for impacts on these parameters. **Corridor Alternative ND** ranked as the least desirable for estimated acreage of total wetland and palustrine forested wetlands impacts. **Corridor Alternative NE** ranked the least desirable for estimated acreage for palustrine scrub/shrub wetlands. Estimated acreages for potentially impacted palustrine emergent wetlands were similar for all North Unit alternatives.

One hundred year floodplain impacts were comparable for all alternatives based on percentages but the total estimated acreages ranged between 622 and 774 acres due to the various lengths of corridors. **Corridor Alternative NA** is estimated to have the least impacts to 100-year floodplain while **Corridor Alternative NE** is anticipated to have the most impacts to the 100-year floodplain.

Hazardous waste sites across all alternatives have a similar number and all potentially involve the industrial property sites by the US 190 bridge. All are considered to have a potential impact based on the industrial property sites.

Public and stakeholder input for the North Unit alternatives has been mixed and there is no clear consensus on a single preferred alternative for this Unit. Some residents of the City of Central prefer the no-build alternative or the most northern alternatives, **Corridor Alternatives NE and ND,** because they have less potential impacts to them directly. During the initial phase of the project, **Corridor Alternatives NB and NC** were found to conflict with provisions of the City of Central master plan for future development. As a result of inconsistencies with this master plan, and due to potential other engineering and environmental impacts at levels similar to those of **Corridor Alternative NA,** these corridor alternatives were eliminated from further consideration in the EIS. It is assumed from the comments received throughout the project, that many residents of Watson and Walker primarily prefer the no-build alternative or **Corridor Alternative NA** because they would pose fewer potential impacts to their communities. Refer to the public meeting summaries contained in Appendix E and the DEIS public comments summary table in Appendix K for more information. *Table 5.1* shows all corridor alternatives with a least desirable ranking due to the public and stakeholder input being mixed for all corridor alternatives.

Based on independent public opinion poll information obtained during the course of the project and the results of the focus groups performed as a part of the land use study, it was evident that there is project support from areas of the City of Central and Livingston Parish, and the need for the project is evident. Information gathered

from the independent poll and focus groups is contained in Appendix A. It is also noted, that some public officials and political bodies from the City of Central and Livingston Parish have gone on record opposing the project for various reasons. Their comments are included in Appendix K as a reference. In addition, the Central City News, a weekly community newspaper, and a web-based group going by the name "Neighbors in Action" submitted feedback in opposition to the Project.

Resource agency input was received on the river crossing issues addressed during corridor alternative refinement. Overall, resource agency input was focused on avoiding and minimizing environmental resource impacts. All corridor alternatives were deemed acceptable and not focused on corridor preferences, so there is no evaluation of alternatives for this parameter.

5.3.3.2. South Unit Corridor Alternatives

For the South Unit quantification matrix (*Table 5.2a* and *Table 5.2b)*, a number of issues were relevant. River crossing feasibility for the South Unit alternatives varied somewhat between the two maritime groups involved, the tow operators and the deep draft operators. For the section S14 Red Eye crossing, the tow operators considered it fully acceptable and the deep draft operators acceptable but not desirable. For the section S13 Missouri Bend, crossing the tow industry considered it acceptable but not desirable whereas the deep draft industry found it fully acceptable. In regards to the section S12 Plaquemine crossing, both maritime groups found it fully acceptable. Alternatives using the Missouri Bend and Red Eye Mississippi river crossing locations combined with the northern connection to I-10 in Ascension parish showed much higher traffic volumes than alternatives using the Plaquemine Mississippi river crossing and the southern I-10 crossing. However, traffic and transportation improvements generally showed lower values in the South Unit compared to the North Unit.

Corridor alternatives utilizing the Missouri Bend or Red Eye crossing locations showed much higher daily traffic numbers than those alternatives utilizing the Plaquemine crossing. **Corridor Alternatives SA, SB and SM** resulted in the greatest decrease in travel time, while Corridor Alternatives SI, SJ, SK and SL actually resulted in an increase in travel time, primarily because of the increased length of the corridors.

Impacts to prime farmland would vary greatly depending on which Mississippi River crossing is utilized. Differences between using the Plaquemine crossing or either the Missouri Bend or Red Eye crossing varied between 300-900 acres. **Corridor Alternatives SA and SB** rank as the most desirable in this parameter, while Corridor Alternative SJ ranks as the least desirable based on this parameter.

Total wetland percentages for each corridor alternative were similar but the estimated acreage impacts varied widely due to the lengths of the corridors. **Corridor Alternative SA** was the most desirable corridor based on minimizing total potential wetland acreage impacts as well as potential impacts to palustrine forested wetlands and palustrine scrub/shrub wetlands. **Corridor Alternative SN** was the most desirable corridor in regard to minimizing impacts to palustrine emergent wetlands, while **Corridor Alternatives SC, SE, and SI** had the most impacts. **Corridor Alternative SJ** ranked as the least desirable with the highest impact to total wetland areas.

Potential impacts to the 100-year flood plain varied between 842 acres and 1,121 acres. This was due to the differences in corridor lengths as well as the low-lying land around the southern I-10 connection in Ascension Parish. **Corridor Alternative SB** was estimated to have the least potential impact to the 100-year flood plain, while **Corridor Alternative SO** was estimated to have the most potential impact.

Many of the corridor alternatives posed a high potential to impact environmental justice populations, in part because such populations are widespread throughout the area. For example, **Corridor Alternatives SC, SD, SE, and SF** have minority populations representing over 80% of the total populations in the corridors. **Corridor Alternatives SG and SH** had the lowest minority populations at 29% of the total corridor population. **Corridor Alternative SA** had the lowest percentage of total population that is low income at 13% while **Corridor Alternative SK** had the highest low income percentage at 25% of the total population.

Impacts to hazardous waste sites would be similar for all corridor alternatives not using the southern I-10 connection in Ascension Parish, which contains several active facilities.

Public input for corridors in the South Unit has primarily focused on two areas: The location of the Mississippi River crossing and the connection to I-10 in Ascension Parish. Local officials and residents of Iberville Parish have strongly voiced their request for a Mississippi River Bridge crossing in the Plaquemine area. However, alternates using this crossing location performed poorly in the tolling analysis because of the increased length (capital costs) and low traffic volumes.

Residents in Ascension Parish directly affected by the Northern I-10 crossing have strongly opposed corridors with this connection. Corridor alternatives using this connection would have a much higher ridership than corridors using the southern I-10 crossing. Refer to the public meeting summaries contained in Appendix E and the DEIS public comments summary table in Appendix K for more information.

Table 5.2a South Unit Corridor Alternative Quantification Matrix SA - SI

Evaluation Parameter		South Unit Corridor Alternatives								
		SA	SB	SC	SD	SE	SF	SG	SH	SI
		Estimated length (miles)								
		29.1	30.0	36.0	36.9	36.1	36.4	38.3	39.1	44.7
ENGINEERING & POTENTIAL TOLL FEASIBILITY	Estimated Capital Cost (Millions - $2008)	$1,612.4	$1,577.8	$1,649.6	$1,615.6	$1,665.3	$1,444.9	$1,561.7	$1,495.8	$1,596.5
	Traffic & Transportation Improvement:									
	ADT at Mississippi River	38,883	38,883	38,883	38,883	37,270	38,883	*	*	22,589
	ADT west of I-10	20,006	20,006	5,157	5,157	5,157	5,157	*	*	5,157
	ADT north of LA 30	20,575	20,575	19,364	19,364	19,364	19,364	*	*	23,210
	Daily Reduction System Wide (VHT)	6,727	6,727	5,246	5,246	5,246	5,246	*	*	(1,499)
	River Crossing Feasibility - Tow Industry									
	River Crossing Feasibility - Deep Draft									
ENVIRONMENTAL RESOURCE INVENTORY POTENTIAL FOR IMPACTS	**Land/Land Use:**									
	Developed Land (% TA)	3.9%	4.9%	3.6%	4.5%	4.6%	5.5%	2.9%	3.5%	2.8%
	Developed Land (ac) Prime	54	71	62	80	81	98	55	67	62
	Farmland Soils (% TA) Prime	77.4%	75.9%	80.7%	79.4%	92.0%	78.2%	88.7%	87.8%	89.8%
	Farmland Soils (ac)	1093	1104	1410	1421	1611	1382	1647	1666	1944
	Cultural Resources									
	Eligible and Listed NRHP Properties (% TA)	0.51%	0.50%	0.73%	0.72%	0.45%	0.44%	0.15%	0.15%	0.31%
	Eligible and Listed NRHP Properties (ac)	68.4	68.4	114.9	114.9	69.0	69.0	38.2	38.2	84.7
	Socioeconomics / Environmental Justice									
	Minority Population (% of Total Corridor Population)	54.5%	54.5%	81.9%	80.1%	80.9%	80.9%	29.2%	29.2%	72.0%
	Low Income Population (% of Total Corridor Population)	13.3%	14.1%	13.9%	14.6%	13.6%	14.2%	17.6%	17.8%	17.7%
	Natural Resources:									
	Wetlands (%TA)	60.2%	59.9%	57.6%	57.4%	57.1%	56.8%	54.2%	54.1%	53.2%
	Potential Total Wetland Area Impact (ac)	866	887	1022	1043	1015	1020	1007	1026	1152
	Potential Palustrine Forested Wetland Area Impact (ac)	789	814	918	943	926	938	900	922	1021
	Potential Palustrine Scrub/ Shrub Wetland Area Impact (ac)	35	36	59	60	43	43	40	41	58
	Potential Palustrine Emergent Wetland Area Impact (ac)	21	15	24	18	24	17	21	17	24
	100-year floodplain (%TA)	62.5%	56.2%	61.7%	56.2%	60.1%	54.6%	47.7%	44.4%	48.4%
	100-year floodplain (ac)	882	816	1078	1006	1052	964	885	842	1047
	T&E and Protected Species									
	Number of Species Identified	5	5	5	6	6	6	6	6	6
	Hazardous Waste Sites (#):									
	Solid Waste Facilities	1	2	1	2	1	2	2	3	2
	RCRA	0	0	0	0	0	0	0	0	0
	State Hazardous Sites	0	0	0	0	0	0	1	1	1
	LUST	1	1	1	1	1	1	0	0	0
	Active Facilities	6	6	7	7	10	10	4	4	5
INPUT	Public/Stakeholder Input on Corridor Alternative									
	Resource Agency Input on Corridor Alternative	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% TA: Percent of total corridor alternative acreage.

#: Number of a resource in corridor alternative.

ac: Acres calculated by multiplying %TA by estimated corridor area (corridor length times 400' projected right of way)

● = Least Desirable based on parameter

○ = Most Desirable based on parameter

***** Initial traffic modeling for these alternatives indicated ADT and VHT would be low and no further modeling was conducted. For purposes of the evaluation, these alternatives were assumed

Table 5.2b South Unit Corridor Alternative Quantification Matrix SJ - SR

Evaluation Parameter		South Unit Corridor Alternatives								
		SJ	SK	SL	SM	SN	SO	SP	SQ	SR
		Estimated length (miles)								
		45.6	44.5	45.1	30.7	31.6	37.6	37.5	38.5	38.0
ENGINEERING & POTENTIAL TOLL FEASIBILITY	Estimated Capital Cost (Millions -$2008)	$1,577.2	$1,612.2	$1,406.2	$1,791.1	$1,756.5	$1,828.5	$1,843.1	$1,794.5	$1,623.7
	Traffic & Transportation Improvement:									
	ADT at Mississippi River	22,589	22,589	22,589	38,883	38,947	38,883	38,883	38,883	38,883
	ADT west of I-10	5,157	5,157	4,106	20,006	20,006	5,157	5,157	5,157	5,157
	ADT north of LA 30	23,210	23,210	22,589	20,575	19,063	19,364	19,364	19,364	19,364
	Daily Reduction System Wide (VHT)	(1,499)	(1,499)	(1,499)	6,727	5,246	5,246	5,246	5,246	5,246
	River Crossing Feasibility - Tow Industry									
	River Crossing Feasibility - Deep Draft									
ENVIRONMENTAL RESOURCE INVENTORY POTENTIAL FOR IMPACTS	**Land/Land Use:**									
	Developed Land (% TA)	3.4%	3.4%	4.0%	4.0%	4.9%	3.7%	4.6%	4.5%	5.4%
	Developed Land (ac) Prime	75	74	87	59	75	68	84	84	100
	Farmland Soils (% TA) Prime	88.9%	89.2%	88.3%	80.7%	79.4%	83.2%	82.2%	82.0%	81.0%
	Farmland Soils (ac)	1967	1925	1930	1201	1215	1517	1493	1531	1493
	Cultural Resources									
	Eligible and Listed NRHP Properties (% TA)	0.30%	0.14%	0.14%	0.64%	0.63%	0.82%	0.58%	0.81%	0.57%
	Eligible and Listed NRHP Properties (ac)	84.7	38.7	38.7	104.5	104.5	151.0	105.1	151.0	105.1
	Socioeconomics / Environmental Justice									
	Minority Population (% of Total Corridor Population)	72.0%	74.2%	66.7%	46.0%	46.1%	69.0%	64.5%	69.0%	64.5%
	Low Income Population (% of Total Corridor Population)	17.9%	25.3%	18.0%	21.5%	14.3%	14.2%	22.2%	18.1%	18.0%
	Natural Resources:									
	Wetlands (%TA)	53.1%	52.8%	52.7%	61.6%	61.4%	59.2%	58.8%	59.0%	58.5%
	Potential Total Wetland Area Impact (ac)	1174	1140	1152	918	939	1080	1068	1101	1078
	Potential Palustrine Forested Wetland Area Impact (ac)	1046	1022	1037	812	836	945	947	970	963
	Potential Palustrine Scrub/ Shrub Wetland Area Impact (ac)	59	47	47	45	46	68	54	69	54
	Potential Palustrine Emergent Wetland Area Impact (ac)	20	23	19	19	14	23	22	17	17
	100-year floodplain (%TA)	45.3%	47.4%	44.3%	62.1%	56.8%	61.4%	60.1%	56.8%	55.4%
	100-year floodplain (ac)	1003	1022	968	924	869	1121	1092	1060	1021
	T&E and Protected Species									
	Number of Species Identified	6	6	6	5	5	5	5	5	5
	Hazardous Waste Sites (#):									
	Solid Waste Facilities	3	2	3	1	2	1	1	2	2
	RCRA	0	0	0	0	0	0	0	0	0
	State Hazardous Sites	1	1	1	0	0	0	0	0	0
	LUST	0	0	0	1	1	1	1	1	1
	Active Facilities	5	8	8	6	6	7	10	7	10
INPUT	Public/Stakeholder Input on Corridor Alternative									
	Resource Agency Input on Corridor Alternative	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% TA: Percent of total corridor alternative acreage.

#: Number of a resource in corridor alternative.

ac: Acres calculated by multiplying %TA by estimated corridor area (corridor length times 400' projected right of way)

● = Least Desirable based on parameter

○ = Most Desirable based on paramete

Tables 5.2a and 5.2b show a high desirability for corridors with the Plaquemine crossing location and a low to moderate desirability for the corridors using either the Red Eye or Missouri Bend crossing locations. It is also noted that some public officials and political bodies from Ascension and Iberville parishes have publicly opposed the project for various reasons. Their most recent comments are included in Appendix K as a reference.

Resource agency input was received on the river crossing issues addressed during the corridor alternative refinement. Overall, resource agency input was focused on avoiding and minimizing environmental resource impacts. All Corridor alternatives presented were deemed acceptable, so there is no evaluation of alternatives for this parameter.

5.3.3.3. East Unit Corridor Alternatives

The East Unit quantification matrix is shown in *Table 5.3*. In general, all the alternatives would have very similar impacts to the environment and would provide the same benefits to traffic and congestion, primarily because the area is currently undeveloped and there is no access to existing infrastructure.

There would be some differences in the construction cost of the corridor alternatives. **Corridor Alternative EB** would be the most feasible alternative based on this parameter at a cost of $969 million. **Corridor Alternative EG** is the least desirable with a cost of $1,227 million.

The potential socioeconomic/environmental justice impacts in the East Unit would generally be the lowest of the three units, in large part because minority and low income populations represent a smaller percentage of the total population than occurs in the North and South Units. **Corridor Alternative EC** has a minority population representing 14% of the total population, the lowest in the East Unit. **Corridor Alternative EF** has the highest minority population percentage at 22% of the total population. The portion of the total population that is considered low income is generally equal for all corridor alternatives in the East Unit, ranging from 9%-11%.

There were only slight variances in the potential estimated impacts to wetlands for the corridor alternatives. **Corridor Alternatives EA and EB** would pose the lowest potential for total wetland impacts as well as for potential impacts on palustrine forested wetlands. **Corridor Alternative EG** would be the least feasible alternative based solely on potential adverse wetland impacts.

Public input on the East Unit corridors originated primarily from residents of the Village of French Settlement in Livingston Parish. There was strong opposition to a particular section that would impact this community. This section was removed from further study, resulting in the elimination of four corridor alternatives.

Table 5.3 East Unit Corridor Alternative Quantification Matrix

Evaluation Parameter		East Unit Corridor Alternatives							
		EA	EB	EC	ED	EE	EF	EG	EH
		Estimated length (miles)							
		25.0	24.4	24.9	23.8	26.1	25.5	25.8	24.8
ENGINEERING & POTENTIAL TOLL FEASIBILITY	Estimated Capital Cost (Millions -$2008)	○ $1,000.6	○ $969.2	◔ $1,071.1	◔ $1,045.4	◕ $1,157.4	◕ $1,126.0	● $1,227.1	● $1,201.4
	Traffic & Transportation Improvement:								
	ADT at Amite River	35,964	35,964	35,964	35,964	35,964	35,964	35,964	35,964
	ADT south of I-12	21,344	21,344	21,344	21,344	21,344	21,344	21,344	21,344
	Daily Reduction System Wide (VHT)	5,246	5,246	5,246	5,246	5,246	5,246	5,246	5,246
ENVIRONMENTAL RESOURCE INVENTORY POTENTIAL FOR IMPACTS	**Land/Land Use:**								
	Developed Land (% TA)	2.7%	2.5%	2.6%	2.4%	2.8%	2.6%	2.7%	2.5%
	Developed Land (ac)	◕ 33	◔ 31	◔ 31	○ 29	● 34	◑ 32	◑ 32	◔ 30
	Prime Farmland Soils (% TA)	37.1%	32.4%	33.9%	31.6%	37.0%	34.8%	34.0%	31.8%
	Prime Farmland Soils (ac)	● 447	○ 390	◑ 409	○ 381	● 446	◑ 420	◑ 410	○ 384
	Cultural Resources								
	Eligible and Listed NRHP Properties (% TA)	0.04%	0.00%	0.06%	0.02%	0.04%	0.00%	0.06%	0.02%
	Eligible and Listed NRHP Properties (ac)	◕ 4.22	○ 0.49	● 6.18	◔ 2.44	◕ 4.13	○ 0.40	● 6.1	◔ 2.35
	Socioeconomics / Environmental Justice								
	Minority Population (% of Total Corridor Population)	○ 14.6%	◑ 18.4%	○ 14.4%	◑ 18.1%	◑ 17.6%	● 22.4%	◔ 17.4%	● 22.0%
	Low Income Population (% of Total Corridor Population)	◕ 10.7%	○ 9.5%	◔ 10.0%	◔ 10.1%	● 11.1%	○ 9.6%	◑ 10.3%	◕ 10.5%
	Natural Resources:								
	Wetlands (%TA)	49.0%	49.8%	53.3%	52.9%	50.3%	51.1%	54.4%	54.1%
	Potential Total Wetland Area Impact (ac)	○ 593	○ 588	◑ 642	◔ 612	◑ 636	◑ 631	● 679	◕ 649
	Potential Palustrine Forested Wetland Area Impact (ac)	○ 512	○ 511	◑ 560	◔ 532	◑ 554	◑ 552	● 595	◕ 568
	Potential Palustrine Scrub/ Shrub Wetland Area Impact (ac)	● 59	○ 56	● 59	○ 56	● 59	○ 56	◕ 58	○ 56
	Potential Palustrine Emergent Wetland Area Impact (ac)	◔ 13	○ 12	◑ 13	◔ 13	● 15	◑ 14	● 15	◕ 14
	100-year floodplain (%TA)	80.4%	79.7%	82.6%	81.5%	80.1%	79.4%	82.3%	81.2%
	100-year floodplain (ac)	◔ 974	○ 941	◕ 996	○ 942	● 1013	◑ 981	● 1028	◔ 974
	T&E and Protected Species								
	Number of Species Identified	5	5	5	5	5	5	5	5
	Hazardous Waste Sites (#):								
	Solid Waste Facilities	0	0	0	0	0	0	0	0
	RCRA	0	0	0	0	0	0	0	0
	State Hazardous Sites	0	0	0	0	0	0	0	0
	LUST	0	0	0	0	0	0	0	0
	Active Facilities	0	0	0	0	0	0	0	0
INPUT	Public/Stakeholder Input on Corridor Alternative	○	●	○	●	○	●	○	●
	Resource Agency Input on Corridor Alternative	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% TA: Percent of total corridor alternative acreage.

#: Number of a resource in corridor alternative.

ac: Acres calculated by multiplying %TA by estimated corridor area (corridor length times 400' projected right of way)

= Least Desirable based on parameter

= Most Desirable based on param

Agency input was minimal with exception of upland/wetland interface concerns which were addressed during the refinement of alternatives. All corridor alternatives presented were deemed acceptable, so there is no evaluation of alternatives for this parameter.

5.4. Baton Rouge Loop Corridor Recommendation

Based on an evaluation of capital cost, traffic, environmental resources, and agency and public input a single preferred corridor alternative for the North and East Units and four (4) preferred corridor alternatives for the South Unit are recommended. The Preferred Corridor Alternatives are shown in Figure 5-1. Within each unit write-up below, the environmentally preferable alternative is also identified in accordance with 40 CFR 1505.2(b). The environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment. Note that NEPA is a procedural law that requires agencies to take a hard look and clearly communicate to the public the anticipated environmental impacts to various resources, in light of possible mitigation and minimization efforts. NEPA, however, does not require agencies to select the alternative that is most preferable from an environmental perspective. NEPA is also intended to enable agencies to make fully informed project decisions in light of environmental consequences, to inform the public about those consequences, and allow the public an opportunity to participate in the process through commenting.

5.4.1. North Unit

In the North Unit, **Corridor Alternative NA** was determined to meet the project's objectives and purpose more than the other corridor alternatives considered. It was also determined to be the environmentally preferable alternative. As stated in Section 5.3.3.1, **Corridor Alternative NA** is the most viable corridor alternative based on a traffic and toll feasibility standpoint. **Corridor Alternative NA** is estimated to attract more traffic than the other northern corridor alternatives and provide the largest traffic relief to the existing system. In addition, **Corridor Alternative NA** ranked as most desirable based on the potential for environmental impact on differentiating factors with the exception of developed land. Although the analysis in this Tier 1 EIS reports that the number of estimated acres potentially impacted by **Corridor Alternative NA** is anticipated to the be the highest of the northern corridor alternatives considered, **Corridor Alternatives NB and NC** would have a direct impact on developed land identified in the City of Central master plan for mixed use. Therefore**, Corridor Alternatives NB and NC** were eliminated from further consideration as a Preferred Corridor since the project objectives and purpose were also achieved in **Corridor Alternative NA**. Additionally, Corridor Alternative NA ranked the most desirable corridor alternative in terms of minimizing the potential for impacts to total wetlands, including palustrine forested wetlands, and is estimated to have the least impacts to 100-year floodplain. Based on public input, no consensus was gathered for one single northern corridor. It is recommended that public involvement continue to be a major component of the project throughout the Tier 2 phase to ensure public and public officials in the City of Central and Livingston Parish are well-informed of project developments.

5.4.2. South Unit

In the South Unit, it is recommended that fourteen (14) of the alternatives should be eliminated from further consideration. The fourteen alternatives are recommended for removal due to the potential for significant environmental impacts and failure to meet traffic and toll feasibility requirements, Section S6 was eliminated to avoid impacting wetland mitigation banks. An NRHP eligible property is located in Section S9. Due to its size and location, it is not possible to develop an alignment that will not impact the site. The low traffic volumes and additional 10-15 miles of roadway on Section S12 have made this section not feasible from a traffic and tolling perspective and has been eliminated. Four Corridor Alternatives, SB, SF, SN and SR, will be carried forward for further evaluation. These corridor alternatives include both the Missouri Bend and Red Eye Mississippi River crossings and both connections to I-10 in Ascension Parish. More studies are needed during the Tier 2 phase to narrow down the corridor alternatives at the two Mississippi River crossings noted above and the two connections to I-10, from which a final alignment will be determined. When evaluating all impacts to the biological and physical environments, including impacts to natural and cultural resources, Corridor Alternative SB was determined to be the environmentally preferable alternative.

5.4.3. East Unit

In the East Unit, it is recommended a single Corridor Alternative, Corridor Alternative EA, be carried forward for further evaluation. It is also the environmentally preferable alternative. Section E9 was eliminated from further consideration based on public input. This resulted in the elimination of four Corridor Alternatives; EB, ED, EF and EH. The corridor alternatives closest to the upland/wetland interface would be the most feasible since it contains the least amount of wetland impacts and other impacts are generally considered equal. Therefore, sections E3 and E6 have been eliminated from further consideration.

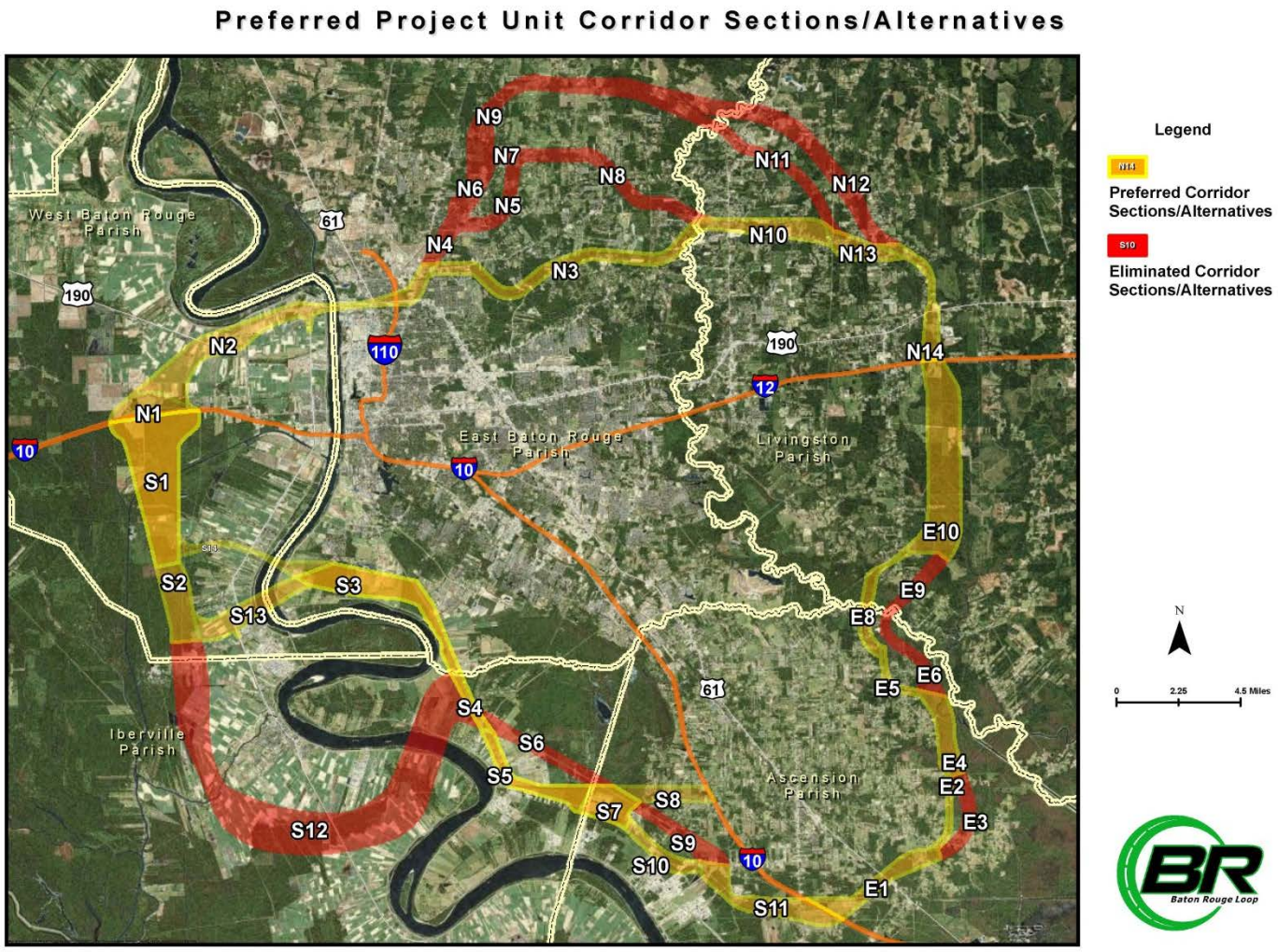


Figure 5-1: Remaining and Eliminated Unit Corridor Sections/Alternatives

Chapter 6. FUTURE ACTIONS, COMMITMENTS, MITIGATION, AND PERMITS

The Tier 1 EIS Section 4(f) and Section 6(f) Evaluation only advances the Baton Rouge Loop Project at a corridor level without specific environmental resource, land use, and demographic and socioeconomic impacts identified. However, even at this inventory level of analysis, it is possible to identify some Project future actions, commitments, mitigation measures/strategies and the potential permits that may be needed for the specific roadway alignments to be developed in Tier 2.

The Baton Rouge Loop Project acknowledges the following preliminary future actions and commitments through the Tier 1 EIS phase.

6.1. Future Actions

During the Tier 2 phase of the Project, the following activities and/or work will be conducted for the selected (as identified in the Tier 1 ROD) Baton Rouge Loop Corridor.

- Development of alternative alignment or alignments to a sufficient detail to allow the assessment and/or evaluation of environmental impacts and right of way requirements, as well as production of refined traffic and revenues studies and capital cost estimates. Waterway crossings would be identified with approaches and alignment.
- Integration of Context Sensitive Solutions (CSS) in alternative alignment development. CSS activities would include stakeholder engagement, visualization, and Context Sensitive Design (CSD) activities.
- Environmental, land use, and socioeconomic studies and/or fieldwork would be conducted to assess the impacts of the alternative alignments. This would include analysis of the following resources and issues:
    - Land Cover/Land Use
    - Farmlands/Prime Farmlands - Farmland and FPPA consultation with NRCS including completion and submission of form AD-1006, Farmland Conversion Impact Rating
    - Socioeconomic analysis – Refinement of socioeconomic studies
    - Environmental justice - Analysis as appropriate
    - Residential and commercial displacements
    - Community facilities
    - Air Quality analysis in accordance with FHWA and LADOTD policy to include conformity determinations for general and/or transportation conformity
    - Noise Assessment in compliance with the LADOTD “Highway Traffic Noise Policy”
    - Identification, delineation and evaluation of impacts to waters of the U.S., including wetlands in accordance with key preservation policies including

Section 404 of the Clean Water Act and EO 11990, *Protection of Wetlands*

- Impacts to Natural and Scenic Rivers and American Heritage Rivers
- Impacts to water quality, including compliance with Section 401 of the Clean Water Act and Safe Drinking Water Act
- Proposed BR Loop unit corridor sections pass through the portions of Livingston and Ascension Parishes located within Louisiana's Coastal Zone Inland Boundary (effective June 7, 2012). In accordance with the Louisiana Coastal Resources Program (LCRP), a Coastal Use Permit (CUP) would be required, as well as a consistency determination that the proposed activities are consistent with the State's coastal management program.
- Floodplain and floodway
- Wildlife, habitat, and ecosystems studies including migratory birds, essential fish habitats, national marine sanctuaries, and marine mammals present in the project area and impacts to these resources in compliance with the Migratory Bird Act, Bald and Golden Eagle Protection Acts, Magnuson-Stevens Act, Marine Mammal Protection Act of 1972, the Fish and Wildlife Coordination Act, and National Marine Sanctuaries Act. In addition, an abidement by the National Bald Eagle management (NBEM) Guidelines will be required during environmental refinement studies.
- Threatened and endangered species (Section 7) including a Biological Assessment and/or opinion, impacts to proposed species, mitigation, and compliance with the Endangered Species Act of 1973. Also, further consultation will occur with USFWS regarding the Alabama (inflated) heelsplitter mussel, the Gulf sturgeon, and the West Indian manatee if the project will directly or indirectly affect the Amite River, and the pallid sturgeon if directly or indirectly affecting the Mississippi River.
- Section 106 Investigations in compliance with the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Antiquities Act of 1906, Archaeological Resources Protection Act of 1979, and American Indian Religious Freedom Act of 1978. Cultural resources investigations to include; Phase I Archaeological Survey, Historic Structures Survey with National Register eligibility determination, Criteria of Effects evaluation as required
- Construction impacts to environmental resources
- Visual/aesthetics
- Mineral resources
- Indirect effects analysis (IEA)
- Cumulative effects analysis (CEA)
- Section 4(f) evaluation of resources not identified as being avoided in Tier 1 EIS
- Section 6(f) analysis and coordination for conversion of use pursuant to Section 6(f) of the LWCF.
- Waste Sites – Phase 1 ESA and subsequent phase assessment as appropriate. Additional waste site issues may include those associated with the industrial properties in section N2 common to all North Unit Corridor Alternatives.

- Continued consultation with the Coast Guard, Corps of Engineers, and maritime groups regarding the Mississippi River and Gulf Intracoastal Waterway crossings.
- Contact with the LNHP Data Manager if Heritage tracked species are encountered.

The Baton Rouge Loop Project would use the following design criteria and standards in the development of alternative alignments for the Tier 2 EIS phase and subsequent design phases of the Project:

- Current LADOTD Design Standards for Freeways.
- American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets
- AASHTO Roadside Design Guide.
- AASHTO Policy on Design Standards Interstate System

The Baton Rouge Loop Project will use the latest version of the following information in the preparation of Traffic and Revenue studies for the Tier 2 EIS and subsequent phases of the Project:

- MPO Transportation Improvement Plan
- Statewide Transportation Improvement Plan, and
- Baton Rouge Metropolitan Area Transportation Plan, Financially Constrained Plan

6.2. Commitments

Prior to construction of the Project, the following activities and/or work would be conducted:

- If work for the proposed project will commence during the nesting season, a field visit to the worksite (no more than two weeks before the project begins) will be conducted to look for evidence of nesting colonies. To minimize disturbance to colonial nesting birds, all project activity occurring within 300 meters of an active nesting colony for nesting wading birds will be restricted to the non-nesting period (September 1 - February 15); and for colonies of gulls, terns, and/or black skimmers, all project activity occurring within 400 meters (700 meters for brown pelicans) of an active nesting colony will be restricted to the non-nesting period (September 16 through April 1). Colonies will be surveyed by a qualified biologist within forested wetlands to document species present and the extent of the colonies and a survey report will be provided to Louisiana Department of Wildlife and Fisheries.
- If the proposed project will be visible from the nest:
    - Maintain a buffer of at least 660 feet (200 meters) between your project activities and the nest (including active and alternate nests). If a similar activity is closer than 660 feet, then you may maintain a distance buffer as close to the nest as the existing tolerated activity.
    - Restrict all clearing, external construction, and landscaping activities within 660 feet of the nest to outside the nesting season
    - Maintain established landscape buffers that screen the activity from the

nest.

- If the proposed project will not be visible from the nest
  - Maintain a buffer of at least 330 feet (100 meters) between your project activities and the nest (including active and alternate nests). If a similar activity is closer than 330 feet, then you may maintain a distance buffer as close to the nest as the existing tolerated activity.
  - Restrict all clearing, external construction, and landscaping activities within 660 feet of the nest to outside the nesting season

The Baton Rouge Loop Project would not use the following Section 4(f) / Section 6(f) resources in the Tier 2 EIS phase of the project:

6.2.1. North Unit

- Cohn Preserve
- James Watson Park
- Cohn Arboretum
- Live Oak Ball Park

6.2.2. South Unit

- Longwood Plantation
- Longwood Plantation archaeological site
- East Iberville District Park
- Broussard Mounds archaeological site
- Sunshine Park

6.2.3. East Unit

- Ascension Civic Center

6.3. Mitigation

At this phase, specific Baton Rouge Loop Project impacts cannot be identified or quantified. However, it is reasonable to identify mitigation strategies and measures that would be used in Tier 2 and subsequent phases. These strategies and mitigation measures are as follows:

- In general, resources would be avoided or impacts minimized where practical and practicable.
- Traffic noise – if adverse noise impacts are identified, mitigation measures may include horizontal and/or vertical alignment adjustment, and noise barriers.
- Construction noise - strategies may include: limited hours of work near schools and churches when in session, limitations on nighttime activities near residential areas, and the use and maintenance of appropriate noise reduction apparatus on equipment.

- Surface and ground water – best management practices for erosion and sedimentation control in accordance with LADOTD, LDEQ and EPA SWPP policy.
- Off – site disposal of construction materials, as appropriate, in accordance with Louisiana's Resource Conservation Recovery Act and other state and federal regulations.
- Wetlands – avoidance would be the first priority. If avoidance is not practicable then minimization. Where avoidance or minimization are not feasible compensatory mitigation would be developed in accordance with the current COE regulations.
- Water body (stream/bayou/river) modifications/crossings – strategies include avoidance, minimization, optimal structure placement and sizing, pier placement, retaining walls, relocation, and erosion and sedimentation control.
- Floodplains - strategies include avoidance, mitigation for loss of floodwater retention, optimal structure placement and sizing, and pier placement.
- Visual – strategies include landscaping and Context Sensitive Design in appropriate locations and settings.

6.4. Permitting

All specific permit requirements for the Baton Rouge Loop Project cannot be identified at this point in the process. Specific permits will be outlined in the Tier 2 EIS phase based on the results of the future studies/actions listed in Section 6.1. Nevertheless, certain permits are anticipated as follows:

Permits related to wetlands and water resources under provisions of the Clean Water Act of 1972 anticipated include the following:

- Section 401: water quality certification.
- Section 404: discharge of dredged and fill material into waters of the United States – Wetlands Encroachment (would be a combined permit including provisions of Section 10 of the Rivers and Harbors Act of 1899).
- LPDES: LAC 33:IX.2511. Storm water discharge. Discharge of pollutants from any point source into waters of the state of Louisiana, which meets the Section 402, permit requirement.

Permits would also be required for new bridge crossings of the Mississippi River, the Amite River, and the Gulf Intracoastal Waterway. In addition to the Section 10 permit mentioned above, this would include a USCG bridge permit issued under the authority of the General Bridge Act of 1946 (33 U.S.C.525).

Other potential permits for the Project include the following:

- Louisiana Coastal Use Permit: activity affecting the Coastal Zone, such as a project that involves either dredging or filling.
- Levee District Permits: for activity on the levee, on the batture or in the vicinity of 1500’ of a Mississippi River and Tributary (M R&T) levee or in the vicinity of 300’ of a Hurricane Protection Levee which occurs within the boundaries of a levee district. There are three levee districts in the Baton Rouge Loop Project study

area: Atchafalaya Basin Levee District, Ponchartrain Levee District, and the Metropolitan Council of Baton Rouge.

- Scenic River Permit: for activity affecting the Comite River which is designated as a Louisiana Natural and Scenic River.

Specific permit requirements for the Baton Rouge Loop are to be identified and refined in the Tier 2 phase.

6.5. Corridor Preservation

Actual right-of-way acquisition for this project would not occur until successful completion of the NEPA process and adequate funding is secured. In the meantime, early corridor preservation has been deemed a priority to avoid additional future impacts and cost. Restrictions to land use in the proposed corridors is not feasible at this time due to the numerous jurisdictions controlling these property rights.

Therefore, a two-pronged approach has been utilized at this stage to minimize additional corridor development: 1) identification and public dissemination of potential corridor locations, and 2) land use planning education for the affected jurisdictions and the public.

Concurrent with the Tier 1 EIS effort, a land use planning expert was brought in to work with the EIS team. The purpose of this undertaking was to work with the public to develop desirable land use scenarios for the potential corridors and to inform the governing bodies of potential methods of both short- and long-term methods of achieving these scenarios. Public meetings and focus groups were held and the summaries are included in Chapter 7 and Appendix E. In addition, a separate Land Use Planning Final Report & Strategic Actions has been prepared for use by the governing authorities. A copy is contained in Appendix J. This report specifies guiding principles for consideration by local jurisdictions as are appropriate at this stage of project development. In future phases, as corridors are refined and alignments determined, corridor preservation efforts should include codified restrictions and zoning by local governments in and around the project limits.

Chapter 7. PUBLIC INVOLVEMENT AND AGENCY COORDINATION

7.1. Agency Coordination

7.1.1. Lead, Cooperating, and Participating Agencies

FHWA is the Lead Federal Agency, LADOTD is the Lead State Agency, and the CAEA is the Local Lead Agency. The U.S. Army Corps of Engineers, New Orleans District, and the U.S. Coast Guard, 8th Coast Guard District agreed to be Cooperating Agencies.

Thirty agencies were invited to be Participating Agencies due to their areas of expertise.

The purpose of involving these agencies was to keep them informed during project development and get significant input from them during the planning process.

7.1.2. Agency Coordination Plan

As part of the coordination and consultation process, an Agency Coordination Plan (ACP) was prepared and is included in Appendix E. The key objectives of the ACP activities were to: 1) provide continuous information flow to agencies; 2) solicit meaningful input representing diverse points of view; and 3) facilitate problem identification and conflict resolution through consensus-building activities. Various coordination activities took place during the project consisting of consultation, scoping, meetings, and milestone review and concurrence.

This section provides a brief discussion of agency coordination activities and meetings and includes materials provided to them.

7.1.3. Solicitation of Views

A Solicitation of Views (SOV) letter was sent on February 20, 2009 to 288 project stakeholders. These stakeholders and agencies were contacted to provide them with information regarding the process and to ensure that their input would be considered during the planning process. Responses were received from stakeholders and agencies including:

- East Baton Rouge Metro Councilwoman Alison Cascio
- Alabama-Coushatta Tribe of Texas
- Choctaw Nation of Oklahoma
- Louisiana Department of Natural Resources
- East Baton Rouge Parish Floodplain Administrator
- Environmental Protection Agency
- Federal Emergency Management Agency
- U.S. Army Corps of Engineers, and
- Louisiana Department of Wildlife and Fisheries

Appendix E contains a copy of the SOV letter, a list of recipients, and a summary of the responses received.

7.1.4. Agency Scoping

A project Agency Scoping meeting was held on March 25, 2009. Meeting invitations were sent on February 20, 2009 to 64 agency representatives. Agencies with representatives in attendance were as follows:

- Louisiana State Police
- U.S. Fish and Wildlife Service
- Baton Rouge Metropolitan Airport
- U.S. Coast Guard
- LA Department of Culture Recreation and Tourism, Office of State Parks
- U.S. Department of Agriculture
- Louisiana Department of Transportation and Development
- Ascension Parish
- Louisiana Department of Wildlife and Fisheries
- Federal Highway Administration
- Chitimacha Tribe of Biloxi
- Louisiana Department of Natural Resources
- Louisiana Department of Environmental Quality
- Louisiana Department of Cultural, Recreation and Tourism, Division of Archaeology
- East Baton Rouge Parish
- Capital Region Planning Commission, and
- Environmental Protection Agency

During the meeting agency representatives were:

- Provided a background of the project
- Shown the proposed Corridor Alternatives
- Briefed on the SOV and comments received
- Advised as to identified lead, cooperating and participating agencies

The agencies were given an opportunity to comment on the project and various remarks and comments were received. The minutes of the meeting can be found in Appendix E. The slideshow presentation is located in the Project Technical File. Appendix E contains a copy of the meeting invitation letter, a list of recipients, and a summary of the responses received.

7.1.5. Coordination Meetings

A series of agency coordination meetings has been conducted throughout the Project Tier 1 EIS process. Following is a list of meetings held and the participating agencies. Minutes for each meeting can be found in Appendix E.

- February 12, 2009, LADOTD/FHWA - Tier 1 EIS Kickoff Meeting

Items discussed included project status; project Tier 1 EIS approach; Solicitation of Views; Agency Scoping Meeting; lead, cooperating and participating agencies; Public Involvement Plan; Agency Coordination Plan; and project schedule

- April 9, 2009, U.S. Coast Guard

Items discussed during this conference call included comment on the revised Mississippi River bridge crossings and suggestions for permissible alternative river crossings in West Baton Rouge Parish near the existing U.S. 190 river crossing

- April 22, 2009, LADOTD/FHWA/CAEA

Items discussed included review of public meetings and the Agency Scoping meeting held in March 2009; unit corridor section modifications; and preferred corridor evaluation methodology

- July 8, 2009, Agency Coordination Meeting

Items discussed included status of cooperating and participating agencies; corridor modifications; Mississippi River bridge crossings; corridor elimination matrix and methodology; public and agency involvement efforts; EIS document exhibits; and project schedule

- August 6, 2009, LADOTD/FHWA/CAEA

Items discussed included recent meetings with maritime organizations; corridor modifications and revisions; status of the EIS document including review of various chapters and mapping exhibits; upcoming public and agency involvement activities; and status of LADOTD participation

- August 28, 2009, LADOTD/FHWA/CAEA

Items discussed included LADOTD becoming a Joint Lead Agency for the project; Project background information; tiered approach to EIS; preliminary interchange location information; overall project funding; Mississippi River navigation concerns; public and agency involvement activities; and Project schedule

- September 22, 2009, LADOTD/FHWA/CAEA

Items discussed included status report on river simulation modeling exercise; public and agency involvement activities; Pre-Draft EIS production schedule; Pre-Draft EIS distribution; and public comment period

- March 25, 2010, LADOTD/FHWA/CAEA

Items discussed included status report on Draft Tier 1 EIS and a discussion on potential system-to-system interchanges associated with the project

- March 29, 2010, LADOTD/FHWA/CAEA

Items discussed included a summary of Pre-Draft Tier 1 EIS; corridor alternative evaluation factors and process; and project schedule

- January 25, 2011, LADOTD/FHWA/CAEA

Items discussed included the timing of an Interchange Justification Report

- January 17, 2012, LADOTD/FHWA/CAEA

Items discussed included comments received on Draft Tier 1 EIS from resource agencies

- February 14, 2012, LADOTD/FHWA/CAEA

Items discussed included summary of Public Hearing, Draft Tier 1 EIS comments received from the public and agencies, and approach for evaluation process modifications and Preferred Corridor discussion

- April 19, 2012, LADOTD/FHWA/CAEA

Items discussed included agency Draft Tier 1 EIS comments and responses

- May 2, 2012, LADOTD/FHWA/CAEA/EPA Region 6

Items discussed included clarifications on EPA Region 6 comments regarding Draft Tier 1 EIS.

7.2. Public Involvement Plan

A Public Involvement Plan (PIP) was finalized in February 2009. The PIP is intended to systematically build a broad basis of support from the public, parish and municipal stakeholders, and other interested parties.

The key objectives of the PIP activities were to:

Provide ongoing relevant project information

Solicit meaningful input representing diverse points of view

Facilitate problem identification and conflict resolution through consensus-building activities

Incorporate public input into the decision-making process.

Based on the dynamics within the five-parish Project area and surrounding region, there were five primary target groups to be actively engaged:

General public

Municipal and Parish staffs

Elected officials

Other stakeholders (business owners, developers, environmental interests, other affected parties), and

Federal, State and Local agencies

A copy of the PIP is included in Appendix E.

7.3. Public and Stakeholder Coordination

7.3.1. Public Scoping/Purpose and Need Meeting: February/March 2008

The first round of public meetings was held February 25-28 and March 3, 2008 from 4:00 to 7:00 p.m. each day. Meeting locations and dates follow:

- BREC Headquarters, Baton Rouge, Louisiana - February 25, 2008,
- Gonzales Civic Center, Gonzales, Louisiana - February 26, 2008,
- North Park Recreation Center, Denham Springs, Louisiana - February 27, 2008,
- Port Allen Community Center, Port Allen, Louisiana - February 28, 2008, and

- Plaquemine Civic Center, Plaquemine, Louisiana - March 3, 2008.

The purposes of these public scoping meetings were to inform the public about the Project and obtain public comments on the Project's purpose and need, range of alternatives considered, corridor alternatives, and identification of environmental, socioeconomic, and other concerns.

Meeting handouts, attendance records, and a summary of comments received are included in Appendix E. A summary report of these public meetings is located in the Project Technical File.

7.3.2. Public Meetings: March 2009

A second round of public meetings was held March 19 and March 23-26, 2009. Meeting locations and dates follow:

- BREC Tennis Recreation & Fitness Center, Baton Rouge, Louisiana - March 19, 2009,
- Gonzales Civic Center, Gonzales, Louisiana - March 23, 2009,
- Iberville Optional Education Center, Plaquemine, Louisiana - March 24, 2009,
- Anthony Dugas Recreation Center, Denham Springs, Louisiana - March 25, 2009, and
- West Baton Rouge Community Center, Addis, Louisiana - March 26, 2009.

Meeting handouts, attendance records and a summary of comments received are included in Appendix E. A summary report of these public meetings is located in the Project Technical File.

7.3.3. Public Meetings: January 2010

A third round of public meetings was held January 13-14, 19-20 and 25, 2010. Meetings locations and dates follow:

- Baton Rouge Community Center, Port Allen, Louisiana – January 13, 2010,
- BREC Headquarters Building, Baton Rouge, Louisiana – January 14, 2010,
- Gonzales Civic Center, Gonzales, Louisiana – January 19, 2010,
- Plaquemine Civic Center, Plaquemine, Louisiana – January 20, 2010,
- Livingston Parish Health Unit, Livingston, Louisiana – January 25, 2010.

Meeting handouts, attendance records and a summary of comments received are included in Appendix E. A summary report of these public meetings is located in the Project Technical File.

7.3.4. Project Web Site

The Project's web site is www.brloop.com. The web site includes a Project overview, corridor alternative maps, meeting notices and summaries, Project reports, and contact information.

The public website provided visitors an opportunity to leave name, address, contact information and their overall opinion of the proposed Project. Visitors were allowed to indicate favor or opposition to the Project and leave a detailed comment.

A summary of comments received via the website is included in Appendix E.

7.3.5. Newsletter

A Baton Rouge Loop newsletter entitled "BRLOOPNEWS" was sent out in July 2009 and again in September 2009 to the CAEA, the Stakeholder Committee; the Advisory Committee; and local, state and federal elected officials; and was posted to the Project's web site. The newsletter discussed project overview and status, corridor modifications, project history, project funding and public involvement activities.

Both newsletters are located in the Project Technical File.

7.3.6. Project Video

A short informational video was created and used in public meetings to inform the public about the Project. The video was utilized by the CAEA, the Stakeholder Committee, and the Advisory Committee members in public education and outreach efforts.

A DVD copy of the project video is located in the project technical file.

7.3.7. Stakeholder Database

A database was created at the start of the project and updated throughout. The database included contact information for the Project Team, CAEA, Stakeholder Committee and Advisory Committee members, agency representatives, elected officials, community groups and other organizations, and members of the general public who had inquired about the project.

A copy of the stakeholder database is located in the Project Technical File.

7.4. Stakeholder Committee, Advisory Committee, Special Purpose Meetings

7.4.1. Stakeholder Committee Meetings

The Stakeholder Committee was formed to represent civic and community stakeholders common to the five parishes as well as specific to each parish. Members were appointed by the CAEA.

- April 10, 2008

The purpose of the meeting was to update members of the committee on the Project status, review the latest public and agency involvement efforts, discuss the most recent corridor refinements, and review the Project schedule and transition into the Tier 1 EIS phase of the Project.

- July 2, 2009

The purpose of the meeting was to update members of the committee on the Project status, review the latest public and agency involvement efforts, discuss the most recent corridor refinements, and review the Project schedule.

Minutes for each meeting can be found in Appendix E.

7.4.2. Advisory Committee

The Advisory Committee was formed to provide technical assistance, coordinate with appropriate agencies, and provide expert advice and counsel to the CAEA. Members were appointed by the CAEA.

- April 10, 2008

The purpose of the meeting was to update members of the committee on the Project status, review the latest public and agency involvement efforts; discuss the most recent corridor refinements, and review the Project schedule and transition into the Tier 1 EIS phase of the project.

- July 2, 2009

The purpose of the meeting was to update committee members on the Project status, review the latest public and agency involvement efforts, discuss the most recent corridor refinements, and review the Project schedule.

Minutes for each meeting can be found in Appendix E.

7.4.3. Special Purpose Meetings

Meetings with various interest groups have been conducted throughout the Tier 1 EIS phase of the Project. Project meetings and presentations were conducted for the following:

- Southern University law students', Southern University Law Center, Southern University, Baton Rouge, LA - April 14, 2008

The purpose of the meeting was to provide the audience with an update on the Project.

- Ascension Leadership, Gonzales, LA - April 17, 2008

The purpose of the meeting was to provide the audience with an update on the Project.

- West Baton Rouge Chamber of Commerce, West Baton Rouge Visitors Center, Port Allen, LA - April 23, 2008

The purpose of the meeting was to provide the audience with an update on the Project.

- Livingston Parish Chamber of Commerce, Denham Springs, LA - May 7, 2008

The purpose of the meeting was to provide the audience with an update on the Project.

- Port Vincent community meeting - March 12, 2009

The purpose of the meeting was to provide the audience with an update on the Project, corridor alternatives in and around Port Vincent, and the definition of Prime Farmland and its protected status relative to the project

- Independent Title Attorneys meeting, Baton Rouge, LA - April 14, 2009

The purpose of the meeting was to provide the audience with an update on the Project.

- North Ascension Rotary Club meeting, Prairieville, LA - April 29, 2009

The purpose of the meeting was to provide the audience with an update on the Project.

- U.S. Coast Guard, Maritime Pilots Association, New Orleans-Baton Rouge Steamship Association - May 7, 2009

The purpose of the meeting was to learn more about Mississippi River marine navigation modeling that has been encouraged by the Coast Guard and river pilots for use on the Project

- Louisiana Engineering Society, American Society of Civil Engineers joint meeting, Baton Rouge, La - May 21, 2009

The purpose of the meeting was to provide the audience with an update on the Project.

- State Historical Preservation Office (SHPO) - June 1, 2009

The purpose of the meeting was to discuss three historical sites in the south unit that had the potential to be considered Section 4(f) resources as well as cultural resources.

- Marine Navigation Safety Association - July 29, 2009

The purpose of the meeting was to provide the audience with an update on the Project.

- Audubon Kiwanis Club meeting, Baton Rouge, LA - July 30, 2009

The purpose of the meeting was to provide the audience with an update on the Project.

- Tug Operators Association, Department of Natural Resources building, Baton Rouge, LA - July 31, 2009

The purpose of the meeting was to provide the audience with an update on the Project.

- Maritime Industry River Tour - August 17, 2009

The purpose of the meeting was to provide input from the maritime industry and other key project stakeholders and a field trip opportunity for the Project Team and CAEA members to witness Mississippi River navigation, and observe how new river crossings may affect barge traffic

- Lower Mississippi River Waterway Safety Advisory Committee (LOWMARSAC) meeting, New Orleans, LA - October 5-9, 2009

The purpose of the meeting was to provide the audience with an update on the Project.

- LSU Ag Center - December 16,2009

The purpose of the meeting was to brief the LSU Ag Center representatives regarding the Project and solicit the Ag Centers concerns in regards to its Master Plan and the Baton Rouge Loop Project.

- Land Use Planning Workshops, Denham Springs, Gonzales, and Addis, LA – February 8 & 9, 2010.

The intent of the meetings was to allow the public and stakeholders to provide input regarding future land use planning activities related to the Baton Rouge Loop Project.

- Focus Group Meetings, Baton Rouge, LA – September 15 & 16, 2010

Three focus groups were conducted in Baton Rouge, LA on September 15 and 16, 2010 with participants from East Baton Rouge, West Baton Rouge, Livingston, Ascension and Iberville Parishes recruited by the focus group facility based on parish demographics and Census Bureau statistics. The focus groups were conducted to determine attitudes, concerns and beliefs about the prospect of the Baton Rouge Loop.

There was universal awareness of the Baton Rouge Loop project and near universal support for building it within the groups, with a few concerned about it either being in the wrong place ("Not-in-my-back-yard" or NIMBY attitudes), a waste of money or too late. Most blamed politics for a Baton Rouge Loop not being constructed and some expressed cynicism about who might profit from the Baton Rouge Loop. While the groups enthusiastically supported building the Loop sooner than later, they expressed concerns that NIMBYs would prevent the Baton Rouge Loop from being built. Overall, the groups felt that a Baton Rouge Loop would address some of their immediate transportation concerns, particularly easing the volume of traffic on interstates and removing heavy trucks, which were particularly of concern. The groups felt the Baton Rouge Loop should be part of a package that included widening of streets, new grid construction and public transportation.

Details about their responses are contained in the Focus Group Report and PowerPoint summary presentation contained in Appendix E. The focus groups were videotaped and transcribed for preparation of the report and presentation.

7.5. Public Official Outreach

The Capital Region Legislative Caucus was briefed on the Project April 17, 2008 at the Louisiana State Capitol.

Zachary Mayor Henry Martinez, Central Councilwoman Joan Lansing, and Baton Rouge Metro Councilman Scott Wilson were briefed on the Project March 17, 2009.

Provided Baton Rouge Metro Councilman Scott Wilson with additional project information and details regarding the Project poll question April 1, 2009.

City of Central leadership was briefed April 28, 2009 regarding corridor locations.

Met with City of Central officials and representatives of the Moore Planning Group June 2, 2009 to discuss proposed routes and comprehensive plan underway.

Briefed Livingston Parish President Mike Grimmer June 22, 2009 on Project and proposed corridors.

7.6. Tier 1 DEIS Public Hearings

A round of public hearings was held December 5-7, 2011, following the public distribution of the Baton Rouge Loop Tier 1 Draft EIS. One public hearing was held

in each of the five parishes located within the project boundaries. Meeting locations and dates follow:

- BREC Headquarters, Baton Rouge, Louisiana – December 5, 2011,
- Pecan Grove Primary School, Gonzales, Louisiana – December 6, 2011,
- St. John School Cafeteria, Plaquemine, Louisiana – December 7, 2011,
- Port Allen Community Center, Port Allen, Louisiana – December 7, 2011, and
- Denham Springs High School, Denham Springs, Louisiana – December 7, 2008.

The hearings were advertised in the official parish journals in all five parishes and notices were emailed to the Baton Rouge Loop database. Outreach included newly elected officials in those parishes that had recently held elections. Press releases were sent to news media throughout the five parishes and news media covered the meetings.

The location of the Iberville Parish meeting was changed to the St. John School cafeteria a few blocks from the original site due to its last-minute unavailability. The new location was publicized in the Advocate, on local TV coverage of meetings held the night before and signs and staff were placed at the original site in case anyone needed to be redirected.

More than 260 citizens and agency representatives attended the public hearings.

Below is a summary table of attendees by parish.

Attendees	Agency	Public	Total
Ascension (Gonzales, LA)	5	41	46
East Baton Rouge (Baton Rouge, LA)	9	31	40
Iberville (Plaquemine, LA)	6	11	17
Livingston (Denham Springs, LA)	16	108	124
West Baton Rouge (Port Allen, LA)	9	33	42
Total	45	224	269

The purpose of the hearings was to obtain public comments regarding the Baton Rouge Loop Tier 1 Draft EIS which had recently been distributed. A video was prepared to give those attending the public hearings an overview of the project and the information contained in the Tier 1 Draft EIS. The video prompted questions that meeting participants might have and directed them to project team members on hand to provide additional information. It explained the duration of the public comment period and directed them to additional resources such as the website and public libraries to view the document after the hearings. A “virtual public hearing” was posted on the project website with all materials that were available at the

hearing, including the video and a public comment form that could be downloaded and mailed in.

Handouts were provided that included a description of the information available at each of the stations at the public hearing, an overview of the project, an explanation of the NEPA process, Project description, purpose and need, information about the corridor and typical sections, a summary of the environmental areas being investigated and details on the matrices for evaluation, engineering, traffic and preliminary cost estimates, information on financing and delivery of the Project, resources for inquiries about real estate and right-of-way acquisition, and a timeline and methods for providing public comment.

Representatives from the Project team were stationed at each location to explain exhibits and Project details and answer questions. Exhibits displayed at the hearings included a large project map of the corridor alternatives, renderings depicting potential typical sections of the future roadway, boards listing purpose and need, and a process overview and timeline.

Following the public hearings, oral statements and written comments were recorded for future study and inclusion in this Final EIS. A Public Hearing Report containing the advertisements, handouts, sign in sheets, video script, public transcripts, statement cards, written comments, exhibits and media coverage was prepared and is on file at LADOTD and in the Project Technical File. Comments received at the public hearing and during the official comment period, along with their corresponding responses, are included in Table 7.2b of Appendix K.

7.7. Comments Received Regarding the Tier 1 DEIS

The comment period originally was set to close on January 9, 2012; however, the FHWA Project Delivery Team Leader extended the close of the comment period to January 23, 2012 at the request of public citizens and resource agencies. This time extension was publicized on the project website and notices of the extension were sent to cooperating agencies who had not yet responded to the DEIS.

Written comments were received from various resource agencies during the comment period. Comments received on the DEIS from federal and state agencies, along with responses to each, are contained in *Table 7.1* located in Appendix K. The original comments are also contained in Appendix K as a reference.

Oral and written comments received from local/regional agencies, private organizations/groups, public officials, and other interested persons are categorized in *Table 7.2a* of Appendix K. *Table 7.2b* of Appendix K presents a summary of the comments received, including comments received at the public hearings and over the official comment period, along with a response for each comment, as appropriate. The Project team thoroughly analyzed, categorized, and responded to all comments pertinent to the proposed Project. The response code shown in *Table 7.2b* has been identified on each comment or transcript as appropriate. Only comments related to the subject Project received a response in this documentation.

Due to the overlap and repetition in many comments, similar comments were consolidated and paraphrased to reduce duplication. As a result, the comments that

appear in this report are often not the precise words found in the commenter's written comment, letter, or verbal comment. This has been done to reduce duplication of similar comments that elicited a comment response and in no way was intended to obscure the substance of a comment. Please refer to the CD found in Appendix K for a copy of each written comment received and verbatim public hearing transcripts.