Houma-Thibodaux to LA 3127 Connection Draft Environmental Impact Statement

State Project No. H.005257
FAP No. H.005257

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

U.S. Department of Transportation
Federal Highway Administration

State Project No. H.005257 (legacy no. 700-99-0302)
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Houma – Thibodaux to LA 3127 Connection
Terrebonne, Lafourche, St. James, and St. John the Baptist
Parishes, Louisiana

Draft Environmental Impact Statement

Submitted Pursuant to 42 U.S.C. 4332(2)(c)

by the
U.S. Department of Transportation, Federal Highway Administration (FHWA)
and the
Louisiana Department of Transportation and Development (LADOTD)

Cooperating Agency:
U.S. Army Corps of Engineers

7/15/15
Date of Approval

N. Ardoin
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7-14-15
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This project proposes to construct a new four-lane divided, limited access roadway between US Highway 90 (US 90) and Louisiana Highway 3127. The purpose of this project is to improve north-south system linkage between the Houma-Thibodaux area and the Mississippi River corridor and improve emergency and hurricane evacuation within Louisiana's bayou region through the establishment of a functional north-south transportation facility. The proposed freeway would be approximately 22 to 28 miles in length. The study area is located between US 90 and LA 3127 within the part of Louisiana known as the Bayou Region. Four alternatives were evaluated against the purpose and need of the project along with the associated environmental consequences using screening criteria, and documented within the DEIS.

Comments on this draft EIS are due by **September 14, 2015** and should be sent to

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Executive Summary

EXECUTIVE SUMMARY

Federal Highway Administration

Administrative Action – Environmental Impact Statement (EIS)

(X) Draft EIS ( ) Final EIS

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ES.1 DESCRIPTION OF THE PROJECT

The Louisiana Department of Transportation and Development (LADOTD), in cooperation with the Federal Highway Administration (FHWA) have prepared this Draft Environmental Impact Statement (DEIS) to address the environmental impacts of the proposed construction of the approximately 22 to 28 miles of new roadway, from U.S. Highway 90 (US 90) to Louisiana Highway 3127 (LA 3127).

ES.2 HISTORY OF THE HOUMA-THIBODAUX TO LA 3127 PROJECT

Since March 1996, the Louisiana Statewide Intermodal Transportation Plan placed the Houma-Thibodaux to Interstate 10 (I-10) Connection in the Tier 3 funding level of projects to pursue. The Tier 3 funding level refers to projects that rely entirely on additional (dedicated) revenues as their source of funding. Existing funding sources, such as State Budgets, and existing transportation revenue sources cannot be used to finance a Tier 3 project.

In 1998, Congress, in the Transportation Equity Act for the 21st Century (TEA-21) noted that their intent for this project (listed as High Priority Project Item 202, LA 024) was to "Construct Houma-Thibodaux to I-10 connector from Gramercy to Houma."

The December 2003 Louisiana Statewide Transportation Plan (LSTP) continued to identify this regional linkage to be of statewide importance, including emphasis on the additional facilitation of moving people during hurricane evacuation that such linkage and improvement to the transportation system would provide. In April 2004, the LADOTD, in cooperation with the FHWA, began the process of developing an EIS with the objective of providing an improved north-south hurricane evacuation route from the Houma-Thibodaux area to I-10 via LA 3127.

ES.3 PROJECT PURPOSE AND NEED

The purpose of the proposed Houma-Thibodaux to LA 3127 connection is to improve north-south system linkage between the Houma-Thibodaux area and the Mississippi River corridor and improve emergency and hurricane evacuation within Louisiana's bayou region through the establishment of a functional north-south transportation facility. The project is proposed to accomplish the following objectives:

- Improve north-south connectivity and mobility between US 90 and LA 3127 through an increase in the number of north-south links;
- Provide north-south system redundancy by identifying alternatives that enable additional options for north-south travel when LA 20 fails;
- Provide improved north-south highway network capacity in the project area;
- Provide a direct, limited access route between the Houma-Thibodaux area and the Mississippi River corridor to improve access to and from the Houma-Thibodaux area; and
- Maximize the efficient use and operation of hurricane evacuation routes by improving system redundancy; decreasing travel time; and providing facility access, capacity, and balanced distribution of evacuation traffic among critical Mississippi River crossings.

The need for the proposed project is based on removal of the following deficiencies.

Inadequate north-south transportation system linkage:

- Existing north-south system linkage between the Houma-Thibodaux area and the Mississippi River corridor is limited to LA 20—a narrow, winding arterial without access management.

Inadequate capacity in the roadway network in the Thibodaux area due to existing unmet travel demand in the north-south direction:

- Existing roadway network has current peak-period congestion and Level of Service (LOS) deficiencies.
- Portions of existing LA 20 show a LOS of E, which is characterized by very poor service, during both peak hours, along with three additional primary roadways (LA 308, LA 1, and LA 70) that have sections currently operating at LOS D, which is characterized by poor service.

Lack of a north-south emergency evacuation route and north-south rerouting opportunities in the Thibodaux area:

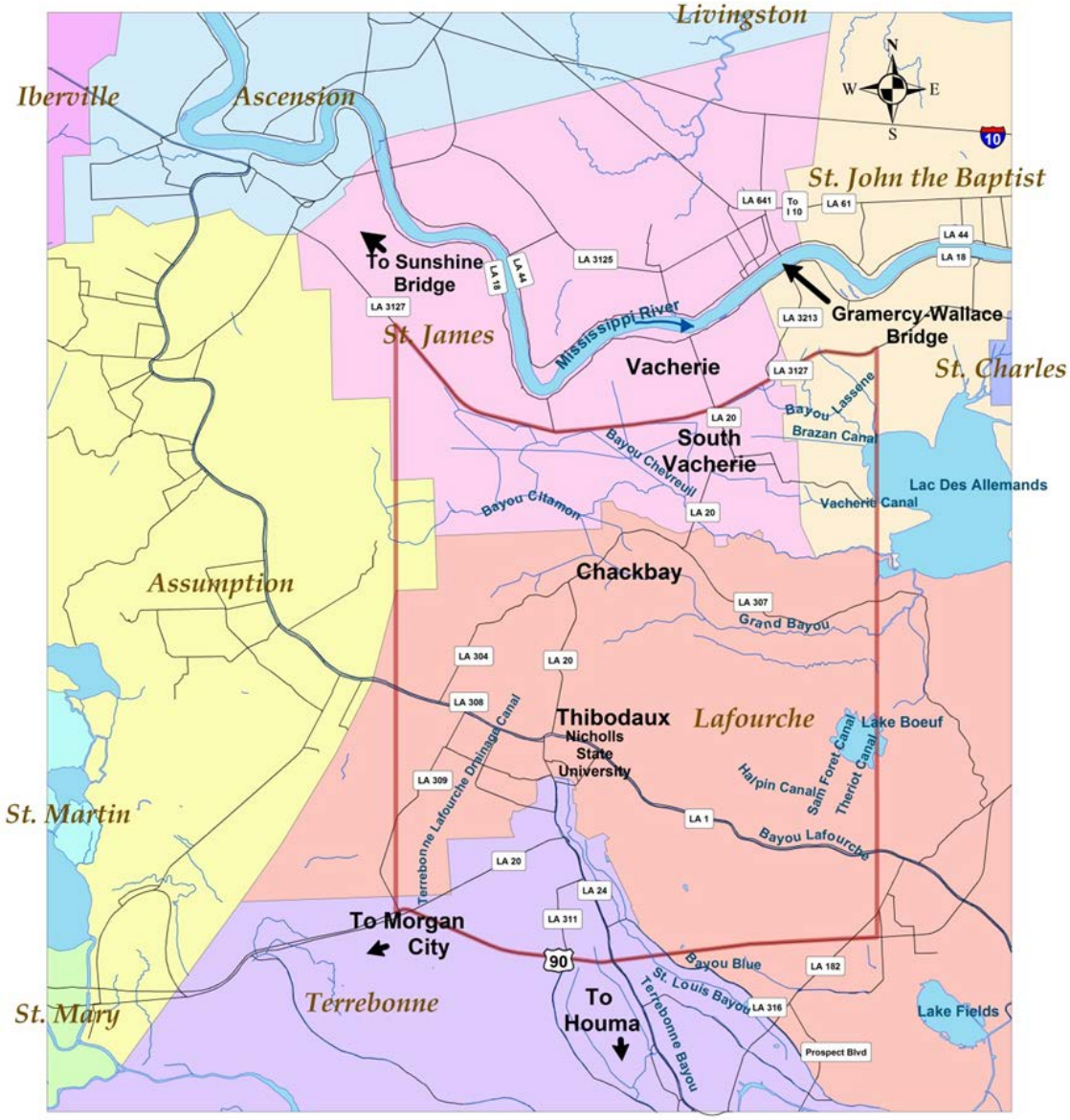
- In times of evacuation, the traffic volumes push the roadways far beyond their capacity.

ES.4 AREA OF STUDY FOR THE PROPOSED PROJECT

The study area is located between US 90 and LA 3127 within the part of Louisiana known as the Bayou Region (see **Figure ES-1**). This region is known for its abundance of natural features such as coastal wetlands, bayous, and both natural and man-made waterways. Due to the unique geography of this area, past and present development has mainly occurred near higher elevations and natural ridges. As a result, the roadway network within the study area is very limited and the existing transportation network provides better east-west connectivity than north-south connectivity.

The City of Thibodaux is located at the core of the study area and provides several commercial facilities, residential developments, a major university, and other amenities.

Figure ES-1
Study Area



ES.5 ALTERNATIVES CONSIDERED

The four alternatives selected as the reasonable Build Alternatives are as follows:

Alternative 1 (Western Alignment + North Alignment "A")

Alternative 1 (Western Alignment + North Alignment "A") proposes to connect US 90 and LA 3127 by incorporating existing alignment along LA 311 (Western Alignment as described in Section 3.7.1.1) and LA 20 (Segment North A as described in Section 3.7.1.1) as well as construction on a new location, resulting in a 26.6-mile, four-lane divided roadway. The northern terminus of *Alternative 1 (Western Alignment + North Alignment "A")* will be the intersection of LA 20 and LA 3127 and the southern terminus will be the intersection of LA 311 and US 90.

Alternative 2 (Western Alignment + North Alignment "B")

Alternative 2 (Western Alignment + North Alignment "B") proposes to connect US 90 and LA 3127 by incorporating existing alignment along LA 311 (Western Alignment as described in Section 3.7.1.1), but will not utilize segment North A as in *Alternative 1 (Western Alignment + North Alignment "A")* to reach LA 3127. Instead, *Alternative 2 (Western Alignment + North Alignment "B")* connects the Western alignment with Segment North B (as described in Section 3.7.1.2) resulting in a 28.8-mile four-lane, divided roadway.

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 (Central Alignment + North Alignment "A") proposes to connect US 90 and LA 3127 by incorporating existing alignment along LA 316 (Central Alignment as described in Section 3.7.1.3) and LA 20 (Segment North A as described in Section 3.7.1.1) as well as construction on a new location, resulting in a 22.6-mile, four-lane divided roadway. The northern terminus of *Alternative 3 (Central Alignment + North Alignment "A")* will be the intersection of LA 3213 and LA 3127 and the southern terminus will be the intersection of US 90 and LA 316.

Alternative 4 (Central Alignment + North Alignment "B")

Alternative 4 (Central Alignment + North Alignment "B") will begin with the Central Alignment (as fully described in Section 3.7.1.3) and connect to segment North B (as fully described in Section 3.7.1.2). The connection of the Central Alignment and segment North B will result in a 24.8-mile, four-lane divided roadway.

Following the evaluation of the reasonable build alternatives against the purpose and need and environmental criteria, selecting a single preferred alternative is the next step. The selection of the recommended preferred alternative will not occur until after public and agency comments on this Draft EIS are fully considered. All four reasonable build alternatives will be presented in public and agency meetings to allow for input from the aforementioned entities. The public and cooperating agencies will be asked to select their desired alternative. Once all the comments, concerns, and suggestions for the preferred alternative have been compiled from the public and cooperating agencies, the reasonable build alternatives will be reevaluated using this input as the basis for any further modifications or adjustments. At this point, the recommended preferred alternative will be selected and brought forward in the Final Environmental Impact Statement.

ES.6 IMPACTS TO THE ENVIRONMENT

Land Use

The predominant land use in all four build alternatives is agricultural use. *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 2 (Western Alignment + North Alignment "B")* are developed along 5 percent of their alignments, with the remaining areas undeveloped as either bottomland or cypress forest. The alignments of *Alternative 3 (Central Alignment + North*

Alignment "A") and *Alternative 4 (Central Alignment + North Alignment "B")* are predominantly undeveloped as bottomland or cypress forest with approximately 10 and 12 percent of land use considered developed, respectively. Percentages for the existing land use of the Build Alternatives are detailed in **Table ES.1**.

Table ES.1
Percent of Land Use Along Build Alternatives

Land Use	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Agricultural	52.6%	44.8%	44.0%	42.2%
Bottomland	<1%	<1%	0%	<1%
Cypress Forest	36.3%	52.3%	46.8%	44.9%
Developed	10.4%	3.1%	10.3%	12.2%

As the longest alternative, *Alternative 2 (Western Alignment + North Alignment "B")* has the greatest amount of land and therefore has the potential to have the largest direct impact to land use.

Environmental Justice

Upon completing the environmental justice analysis, the project team determined there is no disproportionately high and adverse human health or environmental impacts on minorities and/or low income populations with any of the new location alternatives. Impacts from any alternative would be similar for all groups regardless of demographic or socioeconomic characteristics of the community.

None of the build alternatives would directly impact any low-income or other protected population groups.

Relocations

Relocations occur when a new location alternative directly impacts a home or business. All of the Reasonable Alternatives for the Houma-Thibodaux to LA 3127 project would directly impact homes and businesses in the study area.

The proposed project will be mostly new alignment through uninhabited areas, with the exception of widening some portions of existing roadways with surrounding residential developments. An effort to minimize required relocations was made during the development of each alternative.

Alternative 1 (Western Alignment + North Alignment "A") could result in the most commercial and residential relocations among all of the alternatives, with a total of 39. This alternative could require 8 commercial and 31 residential relocations.

Alternative 2 (Western Alignment + North Alignment "B") is estimated to lead to the second highest number of relocations, both commercial and residential, among the alternatives, with a total of 36. This alternative could require 7 commercial and 29 residential relocations.

Alternative 3 (Central Alignment + North Alignment "A") could result in 27 commercial and residential relocations. This alternative could require 3 commercial and 24 residential relocations.

Alternative 4 (Central Alignment + North Alignment "B") could result in the fewest number of commercial and residential relocations among the alternatives, with a total of 24. This alternative could require 2 commercial and 22 residential relocations.

These numbers are preliminary and will be verified when the preferred alternative is identified in the Final Environmental Impact Statement (FEIS).

Recreation

There are numerous public parks and recreational facilities located throughout the study area, including 22 publicly-accessible boat ramps accessing the many bayous and canals present in the area. Recreational facilities within the study area that have received Land and Water Conservation Fund (LWCF) grants to date are the Thibodaux City Parks (various) and the Thibodaux Water Reservoir.

No Section 4(f) resources would be impacted or Section 6(f) impacts are anticipated by the implementation of *Alternative 1 (Western Alignment + North Alignment "A").*

No Section 4(f) resources would be impacted or Section 6(f) impacts are anticipated by the implementation of *Alternative 2 (Western Alignment + North Alignment "B").*

Alternative 3 (Central Alignment + North Alignment "A") would impact one property that meets the criteria for Section 4(f)*:* Schriever Gym, located in Schriever, La. Schriever, La is located just south of Thibodaux along La 24. Neither the Thibodaux City Parks nor the Thibodaux Water Reservoir is located within or adjacent to the right-of-way (ROW) of this alternative; therefore, no Section 6(f) impacts are anticipated.

Alternative 4 (Central Alignment + North Alignment "B") would, like Alternative 3, impact one property that meets the criteria for Section 4(f)*:* Schriever Gym. Neither the Thibodaux City Parks nor the Thibodaux Water Reservoir is located within or adjacent to the ROW of this alternative; therefore, no Section 6(f) impacts are anticipated.

Historic and Archaeological Resources

In order to refine the data in relation to the four reasonable alternatives, a one-mile buffer was established around each alternative. Research at the Louisiana Division of Historic Preservation concluded that there are six National Register of Historic Places (NRHP) properties within the study area. In addition, some 134 buildings greater than 50 years of age have been recorded previously. In addition, 21 archaeological sites have been recorded in the buffer area.

Alternative 1 (Western Alignment + North Alignment "A") would impact four previously recorded sites (16TR93, 16TR95, 16TR96, and 16LF268) located adjacent to the proposed Alternative 1. Magnolia Plantation (16TR93) is listed on the NRHP. The NRHP eligibility of 16TR95 and 16TR96 has not been determined. Site 16LF268 is considered ineligible for the NRHP. In addition, thirteen buildings greater than 50 years of age have been recorded adjacent to this alternative.

Alternative 2 (Western Alignment + North Alignment "B") would impact four previously recorded sites (16TR93, 16TR95, 16TR96, and 16LF268) located adjacent to the proposed Alternative 1. Magnolia Plantation (16TR93) is listed on the NRHP. The NRHP eligibility of 16TR95 and 16TR96 has not been determined. Site 16LF268 is considered ineligible for the NRHP. In addition, thirteen buildings greater than 50 years of age have been recorded adjacent to this alternative.

Alternative 3 (Central Alignment + North Alignment "A") would impact one site (16TR162) is adjacent to the proposed Alternative. The NRHP eligibility of the site is undetermined. There are also ten buildings greater than 50 years of age recorded adjacent to the alternative.

Alternative 4 (Central Alignment + North Alignment "B") would impact one site (16TR162) is adjacent to the proposed Alternative. The NRHP eligibility of the site is undetermined. There are also ten buildings greater than 50 years of age recorded adjacent to the alternative.

Hazardous Materials

An assessment was performed to identify hazardous material and waste sites that are adjacent to or within the ROW of each new location alternative. No superfund sites are located within the study area. Within the study area the following hazardous materials were identified:

- 1,240 potential regulated sites;
- Four brownfield sites;
- 1,320 oil and gas wells;
- 23 oil fields;
- 256 "Pit Study" sites; and
- 19 petroleum pipelines

A total of 33 regulated sites and other potential contamination sources were identified within or adjacent to the proposed ROW for *Alternative 1 (Western Alignment + North Alignment "A")*. The project area was also studied for sites/facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database but may handle petroleum products. In reviewing the project aerial photography, four gas stations were identified along the alignment. Two of these were listed in the underground storage tank (UST) databases—Hill City Oil Co. and Shop Rite #42 at the intersection of Park Road and LA 20. This alternative was also estimated to impact one petroleum waste pit site and five oil and gas wells.

A total of 25 regulated sites and other potential contamination sources were identified within or adjacent to the proposed ROW for *Alternative 2 (Western Alignment + North Alignment "B")*. The project area was also studied for sites/facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database but may handle petroleum products. In reviewing the project aerial photography and UST databases, two gas stations were identified along the alignment—Hill City Oil Co. and Shop Rite #42 at the intersection of Park Road and LA 20. It was also estimated that this alternative would impact one petroleum waste pit site and four oil and gas wells.

A total of 19 regulated sites and other potential contamination sources were identified within or adjacent to the proposed ROW for *Alternative 3 (Central Alignment + North Alignment "A")*. The project area was also studied for sites and facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database, but may handle petroleum products. In reviewing the project aerial photography, two gas stations were identified as being impacted. These locations were not listed in the UST databases. It was estimated that this alternative would also impact one petroleum waste pit site and five oil and gas wells.

A total of 11 regulated sites and other potential contamination sources were identified within or adjacent to the proposed ROW for *Alternative 4 (Central Alignment + North Alignment "B")*. The project area was also studied for sites/facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database, but may handle petroleum products. It was estimated that this alternative would impact one petroleum waste pit site and four oil and gas wells.

Mitigation of hazardous waste sites impacted by the proposed preferred alignment will vary depending on the type, size, and location of hazardous material sites. Each site would have to be

assessed and if necessary, mitigation would have to be determined according to the issues associated with each site.

Noise

A noise analysis was performed for the study area and completed in accordance to FHWA's 23 CFR 772.15 Procedures for Abatement of Highway Traffic Noise and Construction Noise and LADOTD Highway Traffic Noise Policy. The traffic forecast volumes for the proposed alternatives including major roadways within the study area were taken from the updated *Traffic Analysis (2013) Houma-Thibodaux to I-10 Connection, North-South Corridor, Hurricane Evacuation* (Appendix F). The model was used to forecast the 2032 No-build traffic and 2032 Build traffic for each of the alternatives.

For the 2032 No-build condition, the noise would increase by approximately 1 to 3 A-weighted decibels (dBA) on all sections except LA 20 from US 90 to LA 24, which suggests a 1 dBA decrease. None of these changes reach the impact criterion of an increase of 10 dBA. Hence, the No-build Alternative would result in no adverse impacts.

For *Alternative 1 (Western Alignment + North Alignment "A")* 2032 noise levels may potentially impact four noise receptors to experience noise impacts.

For *Alternative 2 (Western Alignment + North Alignment "B")* 2032 noise levels may potentially impact two noise receptors to experience noise impacts.

For *Alternative 3 (Central Alignment + North Alignment "A")* 2032 noise levels may potentially impact five noise receptors and would definitely impact one noise receptor, to experience noise impacts.

For *Alternative 4 (Central Alignment + North Alignment "B")* 2032 noise levels may potentially impact three noise receptors and would definitely impact one noise receptor, to experience noise impacts.

Air Quality

The project is located in an area that is below the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants; therefore, since the project is located in an attainment area, it is not subject to transportation conformity.

This DEIS includes a basic analysis of the likely Mobile Source Air Toxic (MSAT) emission impacts of the proposed project. The design year Annual Average Daily Traffic (AADT) is projected to be less than 140,000 to 150,000 vehicles per day, which is the FHWA criterion for a qualitative analysis; the project is expected to have low potential MSAT effects. Emissions will likely be lower than present levels in the design year as a result of the U.S. Environmental Protection Agency's (EPA's) national control programs that are projected to reduce annual MSAT emissions by over 80 percent from 2010 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turn over, Vehicle Miles of Travel (VMT) growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great, even after accounting for VMT growth, that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

Farmland

The No-build Alternative would have no effect on farming operations since existing conditions would remain unchanged. Construction of any of the new location alternatives would result in the

direct conversion of farmland to a transportation facility. No farmlands, besides those acquired for ROW, should be rendered un-farmable.

Alternative 1 (Western Alignment + North Alignment "A") would result in the complete loss of 127.07 acres of prime farmland soils from at-grade construction and the partial loss of 34.21 acres of prime farmland soils from the elevated portion of the proposed alternative.

Alternative 2 (Western Alignment + North Alignment "B") would result in the loss of 139.86 acres of prime farmland soils from at-grade construction. Approximately 37.85 acres of prime farmland soils will be partially lost to the elevated portion of the proposed alternative.

Alternative 3 (Central Alignment + North Alignment "A") would result in the complete loss of 52.84 acres of prime farmland soils and the partial loss of 33.44 acres of prime farmland soils.

Alternative 4 (Central Alignment + North Alignment "B") would result in the loss of 65.63 acres of prime farmland soils from at-grade construction. Approximately 37.08 acres of prime farmland soils would be partially lost to the elevated portion of this alternative.

Wetlands

Wetland habitat types observed in the study area include cypress-tupelo swamps, freshwater marsh, shrub-scrub, bottomland hardwoods, agricultural wetlands, and other waters of the U.S. It is anticipated that wetland impacts will result from any of the build alternatives. These impacts will be associated with clearing (all portions), filling (at-grade portions), and shading (elevated portions). Forested wetlands are the most abundant wetland type within the proposed Alternatives. For estimated impacts to wetlands, please see **Table ES.2**.

Table ES.2
Estimated Wetland Impact Types by Alternative

Impact Type	Potential Impacts Per Alternative (acres)			
	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Clearing/Shading - Forested	199.25	238.60	252.81	260.25
Shading - Open Water	1.57	1.58	0.98	0.98
Fill - Forested	0.56	2.64	6.67	8.75
Fill - Open Water	1.97	1.97	0.0	0.0
Total	**203.35**	**244.79**	**260.46**	**269.98**

Streams

Several streams will be crossed by the proposed project. None of these streams are considered a regulatory floodway.

- *Alternative 1 (Western Alignment + North Alignment "A")* would cross three streams
- *Alternative 2 (Western Alignment + North Alignment "B")* would cross four streams
- *Alternative 3 (Central Alignment + North Alignment "A")* would cross eight streams
- *Alternative 4 (Central Alignment + North Alignment "B")* would cross nine streams

Floodplains

More than 13 miles of the total 26.1 miles of *Alternative 1 (Western Alignment + North Alignment "A")* would be located within the 100-year floodplain, approximately 84 percent of which will have elevated construction.

Nearly 16 miles of the total 28.2 miles of *Alternative 2 (Western Alignment + North Alignment "B")* would be located within the 100-year floodplain, a majority of which (83 percent) will have elevated construction. This alternative would have the most 100-year floodplain acreage (nearly 347 acres) as well as the most at-grade construction (60 acres).

More than 13 miles of the total 22.7 miles of *Alternative 3 (Central Alignment + North Alignment "A")* would be located within the 100-year floodplain, 91 percent of which will have elevated construction. This alternative would have the fewest total acres within the 100-year floodplain, as well as having the fewest at-grade impacts. Only 27.6 acres of 100-year floodplain would be filled by at-grade construction of this alternative.

Almost 16 miles of the total 24.9 miles of *Alternative 4 (Central Alignment + North Alignment "B")* would be located within the 100-year floodplain, 88 percent of which will have elevated construction.

Water Quality and Water Resources

Surface Waters

Surface waters are abundant in the study area and are composed of rivers, lakes, bayous, swamps, fresh marsh, and canals (irrigation, service, and drainage). The predominant water bodies in the study area consist of Bayou Chevreuil, Grand Bayou, Bayou Lafourche, Lac Des Allemands, Lake Boeuf, and Bayou Terrebonne.

Each of the alternatives will have similar impacts on water quality within the study area. The more significant water quality impacts would be temporary and occur during the construction phase of the project. For surface water impacts, see **Table ES.3**.

Table ES.3
Alternatives – Ranking Table*

	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Distance to Impaired Water Body (miles)	0.42(4)	0.42(4)	2.66(1)	2.66(1)
Runoff Volume based on 25-Year 24-Hour Storm Event (gallons)	18,173,258(3)	19,715,038(4)	16,024,686(1)	17,602,375(2)
Potential Relocated National Pollutant Discharge Elimination System (NPDES)	10(4)	9(3)	3(1)	3(1)
Overall Ranking	3.67	3.67	1.00	1.33

* Rankings are in parentheses and based on each route versus the other routes. The rankings are 1 through 4, with 1 representing the highest rank and 4 representing the lowest rank. All three of the individual rankings were averaged to get the Overall Ranking for each build alternative.

Groundwater

There are six wells total within a 150-foot buffer of the four build alternative centerlines. There are two active and three plugged and abandoned wells located within the western portion of *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 2 (Western Alignment + North Alignment "B");* there is one active well located within the northern portion of all four alternatives.

Endangered, Threatened, and other Listed Species

A search of the U.S. Fish and Wildlife Service (USFWS) Threatened and Endangered Species System database[1] provided existing information concerning the potential occurrence of threatened and endangered species, federal species of concern, and candidate species within the study area. As of January 2010, this database identified 11 federally threatened or endangered species that are known to occur or have formerly occurred in the study area (USFWS 2010).

No critical listed species habitat has been identified within the four reasonable alternatives; therefore, this alternative is not anticipated to impact endangered, threatened, or other listed species.

ES.7 COMPARISON OF IMPACTS FOR THE REASONABLE ALTERNATIVES

Table ES.4 on the following page summarizes the benefits and impacts of the Reasonable Alternatives, and provides a comparison of the impacts that each of the Reasonable Alternatives would have on the human and natural environments.

ES.8 REQUIRED GOVERNMENT ACTIONS

The following governmental agencies are involved in review of this project: LADOTD, FHWA, U.S. Army Corps of Engineers (USACE), EPA, U.S. Department of Interior, USFWS, National Oceanic and Atmospheric Administration-National Marine Fisheries Service, U.S. Coast Guard (USCG), U.S. Department of Agriculture, and U.S. Department of Agriculture's Natural Resource Conservation Service. The following types of actions have been, or will be, needed for the proposed project:

- Final EIS preparation, review, and approval by LADOTD and FHWA;
- Section 7 (Endangered Species Act of 1973, as amended) compliance;
- Section 402 (Clean Water Act of 1972, as amended) NPDES permit;
- Section 404 Department of the Army wetland and stream impact permit;
- Coastal Zone Management Act Consistency Determination;
- Section 9 of the Rivers and Harbors Act of 1899 coordination with the USCG; and
- Section 10 of the Rivers and Harbors Act of 1899 compliance.

[1] http://ecos.fws.gov/tess_public/

Table ES.4
North-South Connector Affected Environment

	No build	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Length	NA	26.6 miles	28.8 miles	22.6 miles	24.8 miles
Elevated	NA	13	14.6	14.3	15.9
At Grade	NA	13.1	13.6	8.4	9
Total Acreage	NA	1,105.0	1,167.0	975.0	1,038.0
Cost	NA	$759,692,088	$842,017,218	$735,166,806	$817,317,558
Natural Environment					
Water Quality					
Distance to Impaired Water Body	no add'l impacts	0.42 miles	0.42 miles	2.66 miles	2.66 miles
Runoff Volume based on 25-year 24-hour storm event (gallons)	no add'l impacts	18,173,258	19,715,038	16,024,686	17,602,375
Potential Relocated NPDES Facilities	no add'l impacts	10	9	3	3
Impaired Water Bodies	no add'l impacts	3	3	3	3
Prime Farmland					
Complete Loss	no add'l impacts	127.07 acres	139.86 acres	52.84 acres	65.63 acres
Partial Loss	no add'l impacts	34.21 acres	37.85 acres	33.44 acres	37.08 acres
Agricultural	no add'l impacts	251.06 acres	284.99 acres	163.59 acres	197.52 acres
Vegetation and Habitat					
Built on existing roads	no add'l impacts	6.1 miles	4.8 miles	3.1 miles	4.4 miles
Elevated over forested wetland	no add'l impacts	W-3.9 miles; NA-3.7 miles	W-4 miles; NB-5.4 miles	NA-5.4 miles	NB - 5.4
Built over farmlands	no add'l impacts	no data	NB-2.5 miles	NA-2.5 miles	no data
Invasive Species	no add'l impacts	no ant. impacts	no ant. impacts	no ant. impacts	no ant. impacts
Wild and Scenic Rivers	none	none	none	none	none
Listed Species	none	none	none	none	none
Essential Fish Habitat	none	none	none	none	none
100-yr Floodplain Acreage	no add'l impacts	294.6	346.8	293.5	345.7
Coastal Zone Impacts	no add'l impacts	-	-	-	-
Wetlands (acreage)	no add'l impacts	203.3	244.8	260.5	301.9
Cypress-tupelo swamps	no add'l impacts	88.5	118.6	135.5	165.6
Cypress	no add'l impacts	21.7	21.7	31.9	31.9
Freshwater marsh	no add'l impacts	-	-	-	-
Shrub-scrub	no add'l impacts	0.4	5.9	28.7	34.2
Riverine	no add'l impacts	0.9	1.0	1.0	1.0
Bottomland hardwoods	no add'l impacts	89.2	95.1	63.3	69.3
Farmed wetlands	no add'l impacts	0.6	0.6	N/A	N/A
Lake		2.0	2.0	N/A	N/A
Non-Wetland Acreage	no add'l impacts	596.5	615.6	414.5	443.7
Wetland Percentage	no add'l impacts	25.4%	28.5%	38.6%	41.0%
Protected Lands	no add'l impacts	1	1	N/A	N/A
Human Environment					
Relocations	no add'l impacts	39	36	27	24
Commercial	no add'l impacts	8	7	3	2
Residential	no add'l impacts	31	29	24	22
4(f) Properties	no add'l impacts	0	0	1	1
Noise					
Definite	no add'l impacts	0	0	1	1
Potential	no add'l impacts	4	2	5	3
Hazardous Materials Total		**33**	**25**	**19**	**11**
Hazardous Waste Sites	no add'l impacts	23	18	11	6
USTs	no add'l impacts	4	2	2	0
Waste Pits	no add'l impacts	1	1	1	1
Oil and Gas Wells	no add'l impacts	5	4	5	4

ES.9 ENVIRONMENTAL COMMITMENTS

The project team will seek to reduce or limit the negative effects of the project. This will include the development of measures to compensate for environmental damage through replacement or restoration of resources where possible. Environmental commitments will be further developed and refined after the Public Hearing on this DEIS and will be included in the FEIS. As of now, the following environmental commitments have been identified for the project:

Commitments that will be implemented to offset adverse effects of the preferred build alternative would include, but are not limited to, the following:

- Implementation of BMPs during construction of the facility.
- Temporary impacts to jurisdictional wetlands from construction staging areas will be managed by the contractor, who will be required to restore the ground to its natural contour allowing for one complete growing season for natural restoration of vegetation.
- Purchase of wetland banking credits, wetland conservation easements, enhancement, restoration and/or creation of wetlands, or a combination thereof based on USACE, Louisiana, and Arkansas specifications during the Section 404 permit process.
- Another mitigation option to consider would be the possible establishment of wetlands for habitat in the location where both recommended Alternatives parallel LA 20 on an elevated structure. Wetlands could potentially be reestablished after removing part of the LA 20 embankment. However, the viability of this option and limits would need to be investigated further to determine practicability due to potential 4(f) issues along a section of the route.
- Mitigation of adverse stream effects based on the Section 404 permit process.
- An approved compensatory mitigation plan to offset losses of wetland acres will be developed.
- Avoidance of construction during the nesting season of bald eagles should individual nests be sighted within 1,500 feet of the alternative chosen for construction.
- Re-investigation and survey of areas considered potentially suitable habitat for federally-protected species within one year of letting the construction contract for the project.
- Acquisition of ROW will be handled in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the Secretary's Policy and Procedure Memorandum No. 48: UST and Contaminated Site Policy.
- All waterway closure requirements are to be coordinated with the Marine Safety Office.
- Warning signs visible to vessel operators will be posted prior to and during all water-related activities.

ES.10 PROJECT COSTS

A preliminary cost estimate was prepared for the purpose of the DEIS. The construction costs were estimated by using projects of a comparable scale as a guide. Since the estimates are only meant to evaluate the alternatives against each other, the values listed within the estimates should be considered as rough estimates. **Table ES.5** outlines the preliminary costs associated with the four reasonable build alternatives.

Table ES.5
Cost Estimate of the Four Reasonable Alternatives

Project	Alternative 1 Cost	Alternative 2 Cost	Alternative 3 Cost	Alternative 4 Cost
Construction Cost	$581,042,088	$655,277,218	$568,186,806	$641,997,558
Required Right-of-Way	$110,500,000	$116,700,000	$97,500,000	$103,800,000
Wetlands Mitigation	$12,750,000	$14,940,000	$13,830,000	$16,170,000
Relocation	$5,400,000	$5,100,000	$5,650,000	$5,350,000
Design	$50,000,000	$50,000,000	$50,000,000	$50,000,000
TOTAL COST	**$759,692,088**	**$842,017,218**	**$735,166,806**	**$817,317,558**

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Chapter 1.
Introduction

CHAPTER 1. INTRODUCTION

1.1 DESCRIPTION OF THIS DOCUMENT

The Louisiana Department of Transportation and Development (LADOTD), in cooperation with the Federal Highway Administration (FHWA), has prepared this Draft Environmental Impact Statement (DEIS) in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended, the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508), and FHWA's Environmental Impact and Related Procedures (23 CFR 771).

The Houma-Thibodaux to Louisiana Highway 3127 (LA 3127) DEIS was written in a "reader-friendly" format. This format differs from the traditional Environmental Impact Statement (EIS) format and attempts to meet the needs of professionals, decision-makers, and the public by "telling the story" of the project development process. This document will attempt to engage the reader through the use of question and answer headings, defined terms, and visuals in an easy-to-follow format. Blue call-out boxes can be found throughout the document. These call-out boxes provide the reader with additional information, define words, and/or bring attention to important terms found within the DEIS. The reader will find call out boxes throughout this document that provide additional information, definitions, or important terms in this document.

1.2 PROJECT BACKGROUND

1.2.1 What is the history of the project?

Tier 1 Funding Level relies partially on existing funding sources and partially on additional (dedicated) revenues.

Tier 2 Funding Level relies partially on existing transportation revenue sources but mostly on additional (dedicated) revenues.

Tier 3 Funding Level relies almost entirely on additional (dedicated) revenues.

Parish leaders of Lafourche, St. James and Terrebonne along with South Central Planning and Development Commission (SCPDC) met with LADOTD to discuss a new north-south route for their region. Subsequently, the March 1996 Louisiana Statewide Intermodal Transportation Plan placed the Houma-Thibodaux to Interstate 10 (I-10) connection in the Tier 3 funding level of projects to pursue. This proposed project, identified as one of 11 projects throughout the state in this tier, was one of the few projects in the entire plan not consisting of a proposed existing interstate improvement. The plan noted that this facility would provide "vastly improved north-south access and enhanced evacuation capabilities." The plan also noted that, "The major obstacle to this link (i.e., the Mississippi River) has already been overcome through the completion of a new bridge between Gramercy and Wallace."

In 1998, Congress, in the Transportation Equity Act for the 21st Century (TEA-21) noted that their intent for this project (listed as High Priority Project item 202, LA 024) was to "Construct Houma-Thibodaux to I-10 connector from Gramercy to Houma." It is noted that the connection from I-10 via LA 641, and the Gramercy Bridge is in place, and the proposed connection from the Gramercy Bridge to LA 3127 has also been constructed. Because of the above existing infrastructure, the Purpose and Need for this effort is to connect the Houma-

Thibodaux area north to LA 3127 and the communities of the Mississippi River corridor (including Vacherie) south to the Houma-Thibodaux area.

The December 2003 Louisiana Statewide Transportation Plan (LSTP) continued to identify this regional linkage to be of statewide importance, including emphasis on the additional facilitation of moving people during hurricane evacuation that such linkage and improvement to the transportation system would provide.

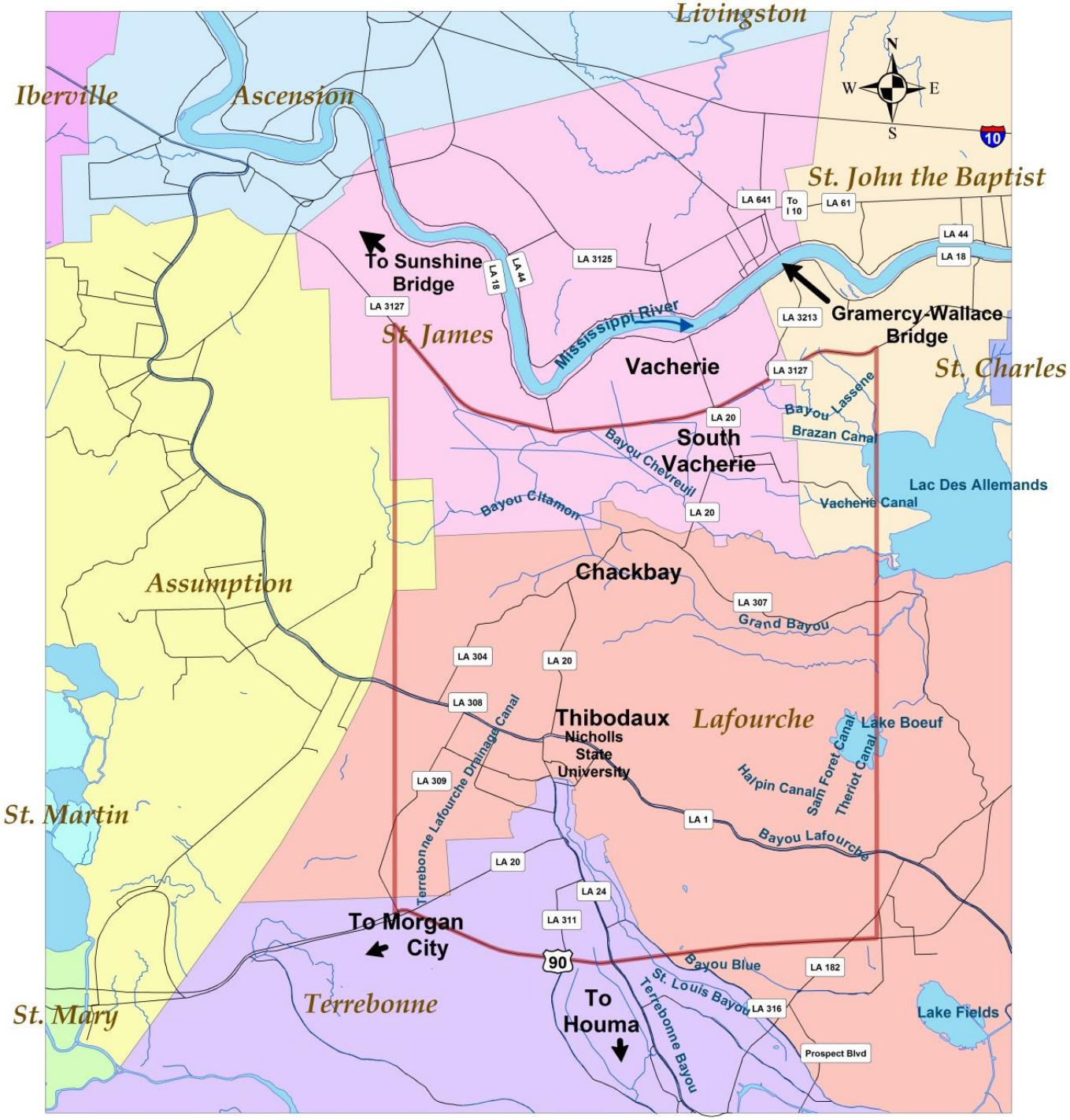
In the 2003 LSTP, the implementation of the first two lanes of the proposed Houma-Thibodaux to LA 3127 four-lane facility was classified as a Priority A mega project in funding Scenario 2. According to the Plan, "Priority A mega projects, which scored and ranked high in both the quantitative (travel demand model results) and qualitative (plan goals and objectives) evaluation, were considered highest priority and included in funding Scenario 2." It should be noted that funding Scenario 1 in the LSTP is a status quo scenario in which no new major projects could be constructed with regular trust fund revenue. Only projects earmarked by Congress as High Priority Projects, with additional federal-aid funds provided, such as this project, could be undertaken by LADOTD.

In April 2004, the LADOTD, in cooperation with the FHWA, began the process of developing an EIS with the objective of providing an improved north-south hurricane evacuation route from the Houma-Thibodaux area to I-10 via LA 3127[1], as shown in **Figure 1-1**. This new facility would serve the following Southeastern Louisiana parishes:

- Assumption;
- Lafourche;
- St. Charles;
- St. James;
- St. John the Baptist;
- St. Mary; and
- Terrebonne.

[1] "Houma-Thibodaux to LA 3127 Connection: North-South Hurricane Evacuation Corridor."

Figure 1-1
Overview Map (location of study area in broader sense)



1.2.2 Why was the project initiated?

This DEIS was initiated following the results of a study conducted in June 1999, by URS Greiner Woodward Clyde for LADOTD titled *Hurricane Evacuation Corridor Study to Connect Relocated US 90 to LA 3127 (SPN 700-99-0132).* To view this study, please see Appendix Q. The primary objective of the study was to identify environmental issues for consideration and to develop reasonable and feasible alternatives for improving hurricane evacuation efficiency while avoiding where possible, impacts to sensitive resources and ambient standards[2]. As a result, both reasonable and feasible alternative corridors worthy of further consideration were identified to meet the Purpose and Need.

Based on the study's primary Purpose and Need of improving hurricane evacuation efficiency, three alternative corridors were selected as Reasonable Alternatives. These alternative corridors were selected due to the following reasons:

- Meeting the stated Purpose and Need;
- Providing a relatively uniform distribution of hurricane evacuation traffic demand;
- Utilizing the upland natural ridge system within the study area to minimize impacts to wetland areas;
- Minimizing impacts to community and cultural resources by developing the proposed alternatives on sparse and undeveloped land;
- Access to population centers;
- Access options to hurricane evacuation shelter zones and routes north of the study area; and
- Providing the opportunity for a phased implementation approach in which defined interim alternatives could be developed that could potentially provide significant hurricane evacuation benefits while greatly minimizing initial costs.[3]

Early opportunities for public involvement enabled input from local officials and residents regarding the corridors to be incorporated into the EIS process. From this public involvement process other benefits, such as economic development generated from the proposed north-south corridor, were identified to support the development of a reasonable north-south route. However, the public comments reinforced the position that the project purpose of hurricane evacuation not be changed and that the criterions of providing the best hurricane evacuation route continue to be the only criterion for selection.

Based on the Purpose and Need and all other supporting data, all necessary funding for identifying a reliable north-south route were included in the 2003 and the interim 2008 LADOTD Capital Highway Improvement Program and the future Transportation Improvement Program (TIP).

[2] URS Greiner Woodward Clyde. *Hurricane Evacuation Corridor Study*. Metairie, LA: June 1999.

[3] URS Greiner Woodward Clyde. *Hurricane Evacuation Corridor Study*. Metairie, LA: June 1999.

1.2.3 What are the roles of LADOTD and FHWA?

LADOTD and FHWA operate as project administrators as well as decision-makers. In addition, these agencies are responsible for project oversight and management tasks specified under the Louisiana Federal-Aid Highway Program Stewardship Agreement. This agreement clarifies the roles and responsibilities of both the FHWA and LADOTD in implementing the federal aid highway program.

1.2.4 What is the study area?

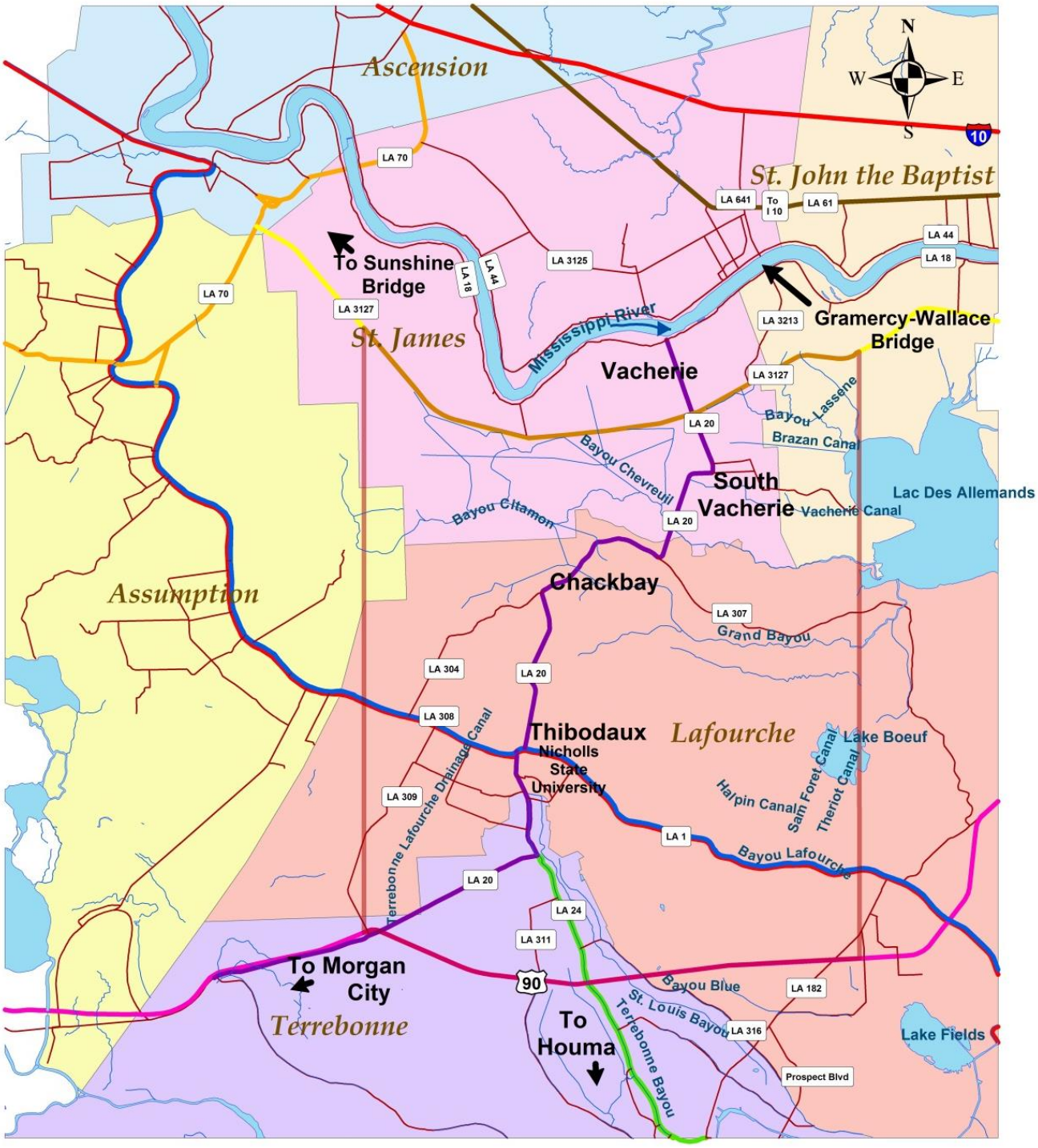
The study area is located in the Bayou Region of Louisiana between U.S. Highway 90 (US 90) and LA 3127. This portion of the state provides an abundance of natural and agricultural resources such as wetlands, waterways, floodplains, forested areas, bayous, and farmlands. This natural environment supports several plant and animal species that are indigenous to the area. The City of Thibodaux is located at the core of the study area and provides several commercial facilities, residential developments, a major university, and other amenities. The City of Houma is located to the south of the study area and also provides commercial facilities, residential developments, and other amenities to serve the inhabitants of the proposed study area.

The majority of the existing transportation network consists of two-lane roadways that are better suited for east-west travel. Some of the existing facilities have been designated as hurricane evacuation routes. Each parish within the study area designates several U.S. and Louisiana highways to be utilized as hurricane evacuation routes. The following is a list of the existing hurricane evacuation routes by parish within the study area (see **Figure 1-2** on the following page):

- Assumption – LA 1, LA 308, LA 70
- Lafourche – US 90, LA 308, LA 1
- St. James –LA 3127, LA 70
- St. John the Baptist – I-10, US 61
- Terrebonne – US 90, LA 20, LA 24, LA 3052

US 90 and I-10 provide access-controlled facilities with at least four lanes of traffic. However, the majority of the designated highways are two-lane, east-west facilities with no control of access or access management.

Figure 1-2
Study Area



1.3 THE NEPA PROCESS

1.3.1 What is NEPA?

Signed into law on January 1, 1970, the National Environmental Policy Act of 1969 established a national environmental policy and a framework for considering the environment in decision-making for federal actions. NEPA applies to federal government activities and it requires all federal agencies to:

- Assess the environmental impacts of major federal projects or decisions such as issuing permits, spending federal money, or affecting federal lands;
- Consider the environmental impacts when making decisions; and
- Disclose the environmental impacts to the public.

NEPA also established the Council on Environmental Quality, which oversees NEPA for all federal agencies. CEQ developed regulations for implementing the law (Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act [40 CFR 1500-1508]). These regulations require all federal agencies to write their own regulations for implementing NEPA.

The principle objective of NEPA and the CEQ regulations is for the federal government, and those regulated by federal agencies, to design, locate, and operate projects in ways that reduce adverse impacts and increase beneficial environmental impacts for existing and succeeding generations.[4]

More information on NEPA can be found through the CEQ publication "A Citizen's Guide to NEPA," an informational guide that provides an explanation of NEPA, how it is implemented, and how the public can participate in the assessment of environmental impacts conducted by federal agencies.[5]

1.3.2 How does FHWA implement the NEPA process?

In accordance with the CEQ regulations, FHWA implemented regulations specific to transportation projects, Environmental Impact and Related Procedures (23 CFR 771). This requires FHWA and other transportation agencies to consider potential impacts to the social and natural environment, while taking into account the public's need for safe and efficient transportation.

In addition to evaluating potential impacts, NEPA established requirements for documentation of the decisions resulting from that process. According to FHWA, the essential elements of NEPA decision-making include:

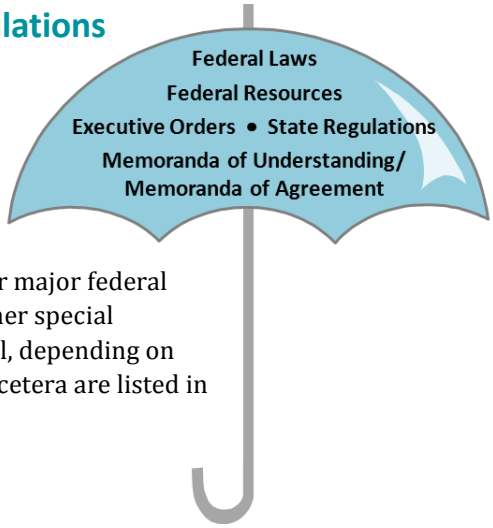
- Assessment of the social, economic, and environmental impacts of a proposed action or project;
- Analysis of a range of reasonable alternatives to the proposed project, based on the applicant's defined Purpose and Need for the project;
- Consideration of appropriate impact mitigation: avoidance, minimization, and compensation;

[4] USEPA http://www.epa.gov/region2/spmm/r2nepa.htm (Accessed 10/29/2009)

[5] CEQ, http://ceq.hss.doe.gov/publications/citizens_guide_to_nepa.html.

- Interagency participation: coordination and consultation;
- Public involvement including opportunities to participate and comment; and
- Documentation and disclosure.[6]

1.3.3 What other environmental regulations must be considered?



Many different federal and state laws, regulations, memoranda of agreement, and executive orders govern environmental review of federal transportation projects. FHWA established an "umbrella" process[7] for coordinating compliance with each law through the preparation of an EIS for major federal actions significantly affecting the environment. Other special purpose statutes and procedures may apply as well, depending on specific circumstances. These laws, regulations, et cetera are listed in Appendix A.

1.3.4 What is addressed in this DEIS?

This DEIS includes:

- The Purpose and Need of the project;
- The Reasonable Alternatives and the process by which the alternatives were developed;
- The impacts of the Reasonable Alternatives on the human and natural environment; and
- A description of the agency and public involvement that has occurred.

Design Year A selected year used to estimate future traffic volumes and produce highway design to ensure a project will meet future traffic needs. For this project, the design year is 2032.

This document considered a design year of 2032. Conceptual designs have been prepared for each of the alignments to allow equal comparison of the alternatives at each stage of project development. The negative and beneficial impacts of all alternatives were evaluated and are presented and compared in Chapter 3. The DEIS also documents involvement and input from state and federal resource and regulatory agencies, as well as project stakeholders and the public in Chapter 5.

1.3.5 What type of impacts are evaluated in this DEIS?

Both negative and beneficial impacts can occur as a result of implementing a transportation project. "The CEQ regulations (40 CFR 1508.7 and 1508.8) define the impacts and effects that must be addressed and considered by federal agencies in satisfying the requirements of the NEPA process, which includes direct, indirect, and cumulative impacts."[8] For the purpose of this DEIS, effects and impacts will be used synonymously.[9]

Direct Impacts

Direct impacts are caused by the action and occur at the same time and place. Impacts may also include those resulting from actions that may have both beneficial and detrimental effects.

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[6] FHWA, http://www.environment.fhwa.dot.gov/projdev/pd3tdm.asp, (Accessed 08/24/2009)

[7] FHWA, http://www.environment.fhwa.dot.gov/projdev/pd3tdm.asp

[8] FHWA, http://www.environment.fhwa.dot.gov/projdev/tdmimpacts.asp, Accessed 11/11/09

[9] 40 CFR 1508.8

Indirect Impacts

"Indirect impacts are caused by the action and occur later or farther away (off-site) but are still reasonably foreseeable. Indirect impacts may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."[10]

Cumulative Impacts

Defined as an impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions. The impacts of a proposed action can include ecological, aesthetic, historic, cultural, economic, air, noise, social, or health, whether direct, indirect or cumulative.[11]

1.3.6 What funding has been identified for this project?

The March 1996 Louisiana Statewide Intermodal Transportation Plan placed the Houma-Thibodaux to I-10 connection in the Tier 3 funding level of projects to pursue. This proposed project, identified as one of 11 projects throughout the state in this tier, was one of the few projects in the entire plan not consisting of a proposed existing interstate improvement. The plan noted that this facility would provide "vastly improved north-south access and enhanced evacuation capabilities." The plan also noted that, "The major obstacle to this link (i.e., the Mississippi River) has already been overcome through the completion of a new bridge between Gramercy and Wallace."

In 1998, Congress, in the TEA-21, noted that their intent for this project (listed as High Priority Project item 202, LA 024) was to "Construct Houma-Thibodaux to I-10 connector from Gramercy to Houma." The connection from I-10 (via LA 641) to LA 3127 by way of the Gramercy Bridge has been completed. Because of the above existing infrastructure, the completion of this project will connect LA 3127 to US 90 and thereby fulfill Congress' intent to construct a connector from I-10 to US 90.

The December 2003 LSTP continued to identify this regional project to be of statewide importance, including emphasis on hurricane evacuation, system linkage, and improvement to the transportation system.

In order to allow for multiple funding scenarios, it is recommended that the project implement a phasing plan. Below is the description of the two, proposed phases:

[10] 40 CFR 1508.8(b)

[11] 40 CFR 1508.7 and 1508.8

Phase 1

Funding will be secured for the following: acquisition of required rights-of-way, relocations, wetland mitigation costs, engineering design, and construction of two lanes of the proposed, preferred alignment.

Phase 2

Funding will be secured for the construction of the final two lanes of the preferred alignment. This will complete the proposed, four-lane corridor.

The implementation of the first two lanes of the proposed four-lane facility is currently classified as a Priority A mega project in funding Scenario 2 in the LSTP. According to the plan, "Priority A mega projects which scored and ranked high in both the quantitative (travel demand model results) and qualitative (plan goals and objectives) evaluation, were considered highest priority and included in funding Scenario 2." It should be noted that funding Scenario 1 in the LSTP is a status quo scenario in which no new major projects could be constructed with regular trust fund revenue. Only projects earmarked by congress as high priority with additional federal-aid funds provided could be undertaken by LADOTD.

Chapter 2.
Purpose and Need

CHAPTER 2. PURPOSE AND NEED

Environmental documents prepared under the National Environmental Policy Act (NEPA) begin with a discussion of the "Purpose and Need" of a proposed action, which provides context and criteria for the development and screening of alternatives to the proposed action. This Purpose and Need statement is essentially the foundation of the NEPA decision-making process. The purpose (solutions) and need (problems) section presents a statement explaining why the proposed action is being considered and influences the rest of the project development process, including the range of alternatives studied and ultimately, the selected preferred alternative. The Purpose and Need serves as an important screening criterion for determining whether alternatives are reasonable. All reasonable alternatives examined in detail must meet the defined project's Purpose and Need.

2.1 WHAT IS THE PURPOSE AND NEED OF THE PROJECT?

The purpose of the proposed Houma-Thibodaux to Louisiana Highway 3127 (LA 3127) Connection is to improve north-south system linkage between the Houma-Thibodaux area and the Mississippi River corridor and improve emergency and hurricane evacuation within Louisiana's bayou region through the establishment of a functional north-south transportation facility. The project is proposed to accomplish the following objectives:

The purpose of the Houma Thibodaux to LA 3127 Connection is to improve north south system linkage between the Houma Thibodaux area and the Mississippi River corridor and improve emergency and hurricane evacuation within Louisiana's Bayou Region through the establishment of a functional north south transportation facility.

- Improve north-south connectivity and mobility between U.S. Highway 90 (US 90) and LA 3127 through an increase in the number of north-south links;
- Provide north-south system redundancy by identifying alternatives that enable additional options for north-south travel when LA 20 fails;
- Provide improved north-south highway network capacity in the project area;
- Provide a direct, limited access route between the Houma-Thibodaux area and the Mississippi River corridor to improve access to and from the Houma-Thibodaux area; and
- Maximize the efficient use and operation of hurricane evacuation routes by improving system redundancy, decreasing travel time, and providing facility access, capacity, and balanced distribution of evacuation traffic among critical Mississippi River crossings.

Traffic congestion occurs when travel demand exceeds the traffic carrying capacity of a roadway.

Peak period the highest volume of traffic on a roadway within a one hour period, typically morning and evening rush hour. This represents the worst traffic conditions on an average day.

Level of Service term used to represent the perspective of drivers and is an indication of the comfort and convenience associated with driving. The LOS of a roadway is also based on the density of vehicles on a road, intersection or at an interchange, which is expressed in passenger cars per mil, per lane. Six levels of service are defined for each type of facility, from A (the best) to F (the worst).

The need for the proposed project is to remove the following deficiencies in the study area:

Inadequate north-south transportation system linkage:

- Existing north-south system linkage between the Houma-Thibodaux area and the Mississippi River corridor is limited to LA 20; a narrow, winding arterial without access management.

Inadequate capacity in the roadway network in the Thibodaux area due to existing unmet travel demand in the north-south direction:

- Existing roadway network has current peak-period congestion and Level of Service (LOS) deficiencies.
- Portions of existing LA 20 show a LOS of E, which is characterized by very poor service, during both peak hours, along with three additional primary roadways (LA 308, LA 1, and LA 70) that have sections currently operating at LOS D, which is characterized by poor service.

Lack of a north-south emergency evacuation route and north-south rerouting opportunities in the Thibodaux area:

- In times of evacuation, the traffic volumes push the roadways far beyond their capacity due to a lack of redundancy in the current network. This lack of redundancy results in hindered mobility, increased evacuation travel time, and system failure in times of emergency.

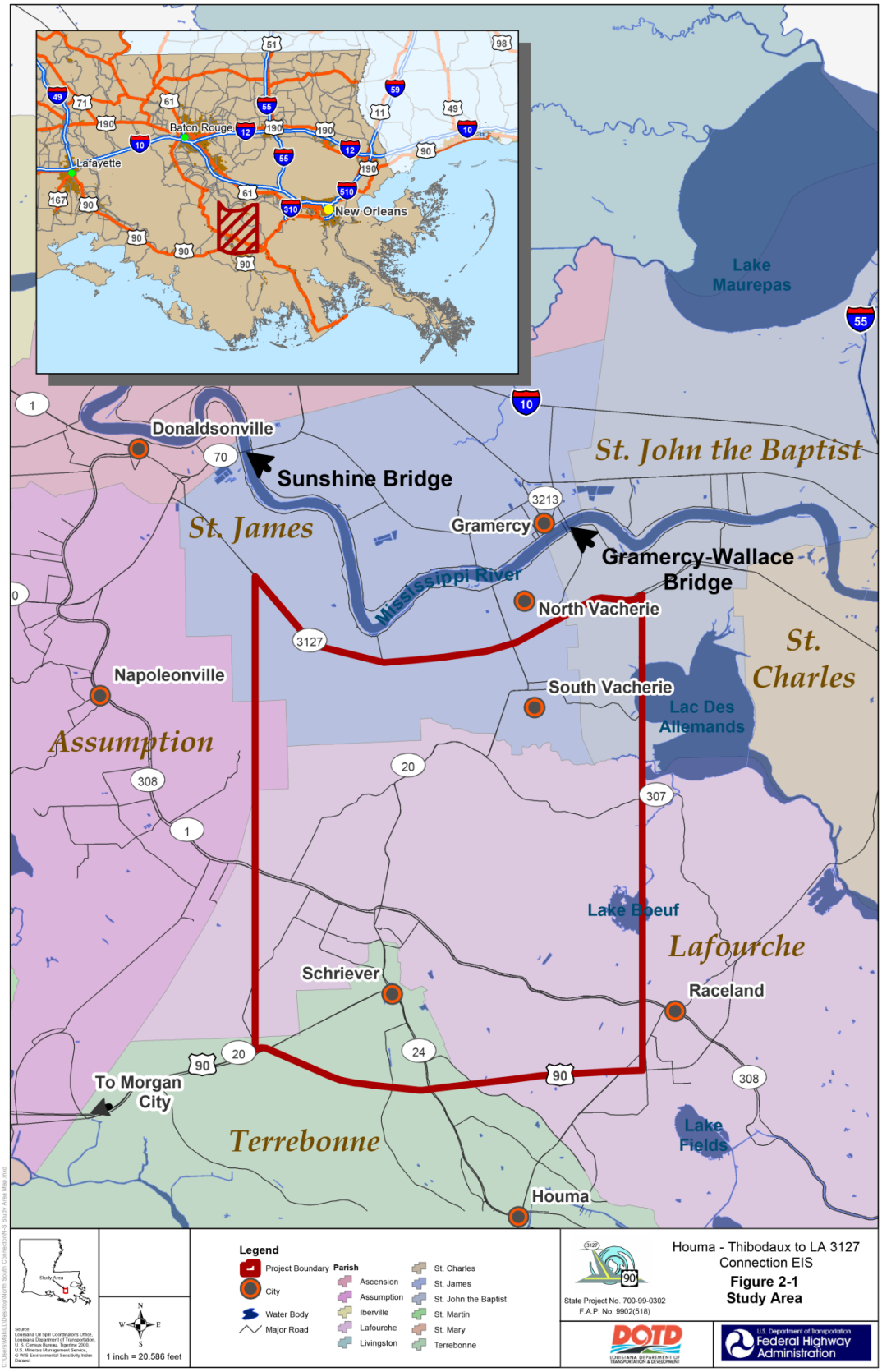
2.2 WHERE IS THE PROJECT LOCATED?

The study area is located within the part of Louisiana known as the Bayou Region (see **Figure 2-1**). This region is known for its abundance of natural features such as coastal wetlands, bayous, and both natural and man-made waterways. Due to the unique geography of this area, past and present development has mainly occurred near higher elevations and natural ridges. As a result, the roadway network within the study area is very limited and the existing transportation network provides better east-west connectivity than north-south connectivity.

2.3 WHY IS THE PROJECT NEEDED?

There are two main needs associated with the proposed action—system linkage and emergency and hurricane evacuation. These needs have been identified by reviewing recent transportation planning initiatives for the region. Providing north-south system linkage would improve connectivity, provide drivers alternative routes, and improve access to Interstate 10 (I-10) and/or future I-49. Presently, east-west roadway facilities comprise the majority of the transportation network, making these roads the main evacuation routes for the area. Because of this, it has been determined that an additional north-south connection and evacuation route is needed for the region. Providing a north-south emergency and hurricane evacuation route would improve overall evacuation times for the region, no matter what path or direction the severe weather follows. In addition it would help uniformly distribute traffic to the Sunshine and Gramercy-Wallace Bridges and maximize the use of current evacuation routes. Due to these facts, a north-south corridor/evacuation route has been identified as a major need within the study area and the region.

Figure 2-1
Study Area



2.3.1 How were these needs identified?

Transportation needs are identified through the transportation planning process. This process enables state and local governments and planning organizations, with the involvement of public and private stakeholders, to establish a vision for a region's future transportation system, define a region's transportation goals and objectives for realizing that vision, decide which needs to address, and determine the timeframe for addressing those needs. Out of the planning process emerge potential projects intended to meet the needs and achieve the vision and objectives of the plan.

The South Central Planning and Development Commission (SCPDC) and the Houma-Thibodaux Metropolitan Planning Organization (HTMPO) are the main regional planning entities that cover the majority of the study area. During the update of the Houma-Thibodaux Metropolitan Transportation Plan (MTP) 2035, adopted on May 13, 2010, an evaluation of current conditions was conducted. Current conditions, which included demographics, travel characteristics, land use, zoning, planning initiatives, and the existing transportation network, indicate that residential and business developments are relocating to northern locations of the Houma-Thibodaux Metropolitan Area. This is attributed in part to the necessity in relocating to areas less prone and less vulnerable to severe weather. The Houma-Thibodaux MTP 2035 also identified that residents living in the northern part of the HTMPO area utilize many services and facilities in Thibodaux, such as Nicholls State University and the Thibodaux Regional Medical Center; as such, better transportation access, connectivity, and services have been identified as a major need for this area. The main issue emphasized in the Houma-Thibodaux MTP 2035 for the Houma-Thibodaux Metropolitan Area was providing the most direct route to I-10. There continues to be a growing traffic demand that is underserved in a north-south direction. The Houma-Thibodaux to LA 3127 connection project would help provide a direct route to I-10.

2.3.2 How is the study area growing?

The study area consists of five parishes—Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne. The study area as a whole experienced an increase in population size between 1990 and 2000, as well as between 2000 and 2010, with the highest growth seen in Terrebonne Parish during both time periods (by approximately 7 percent). Over all, Assumption Parish experienced the smallest growth between 1990 and 2010, having less than a 1 percent growth from 2000 to 2010. The population of the study area as a whole grew by an average of approximately 5.9 percent from 1990 to 2000, with very similar growth (6.2 percent) between 2000 and 2010. The population of Louisiana, however, grew significantly less between 2000 and 2010 (approximately 1 percent) compared to the growth seen between 1990 and 2000 (approximately 6 percent). Population data and growth rates from 1990 to 2010 for the study area are presented in **Table 2.1**. The proposed project lies primarily within Lafourche and Terrebonne Parishes, which are the areas that are experiencing the largest growth. This growth contributes to the increased traffic demand and the need for improved transportation system linkages, particularly in the north-south direction.

Table 2.1
Population in the Study Area

Location	1990	2000	Growth Rate 1990 2000	2010	Growth Rate 2000 2010
Louisiana	***4,219,973***	***4,468,976***	***5.9%***	***4,533,372***	***1.4%***
Assumption	22,753	23,388	2.8%	23,421	0.1%
Lafourche	85,860	89,974	4.8%	96,318	7.1%
St. James	20,879	21,216	1.6%	22,102	4.2%
St. John the Baptist	39,996	43,044	7.6%	45,924	6.7%
Terrebonne	96,982	104,503	7.8%	111,860	7.0%
All Study Area Parishes	***266,470***	***282,125***	***5.9%***	***299,625***	***6.2%***

Source: US Census Bureau - Census 1990; Census 2000; Census 2010

2.3.3 Where do people work and how do they travel to get there?

Top employers within the study area are clustered in three main areas—the Gramercy-Wallace area, the Thibodaux area, and south of US 90 – the Houma area. **Table 2.2** presents a list of the major employers within the study area. These businesses range from 100 to nearly 2,500 employees. The majority of the major employers are in, or provide support services to, the oil and gas industry. Manufacturing companies, chemical, food, metal, and plastic are also major employers in the area. Locations of some of the top employers are shown in **Figure 2-2**.

Table 2.2
Major Employers within the Study Area

Parish	Employer	Category
Assumption	Assumption Association for Retarded Citizens, Inc.	Non-profit
Assumption	Assumption Parish School Board	Education
Assumption/Lafourche/Terrebonne	Catholic Diocese of Houma-Thibodaux	Religion
Assumption	Heritage Manor of Napoleonville	Healthcare
Assumption	Industrial Electrical	Electrical Contractor
Lafourche	Bollinger Shipyards, Inc.	Marine Transportation
Lafourche	Danos & Curole Marine Contractors	Oil and Gas Technical Services
Lafourche	Edison Chouest Offshore	Marine Transportation
Lafourche	Grand Isle Shipyard, Inc.	Marine Transportation
Lafourche	International Offshore Services, LLC	Marine Transportation
Lafourche	Nicholls State University	Education
Lafourche/Terrebonne	Rouses Supermarkets	Supermarket
Lafourche	Thibodaux Regional Medical Center	Healthcare
Lafourche/Terrebonne	Walmart	Retail
St. James	Louisiana Sugar Refining, LLC	Sugar Refinery
St. James	Mosaic Co.	Chemical Manufacturing
St. James	Motiva Enterprises, LLC	Oil and Gas
St James	Noranda Alumina, LLC	Metal Manufacturing
St. James	Occidental Chemical Corp.	Chemical Manufacturing
St. James	Zen-Noh Grain Corp.	Grain Elevator
St. John the Baptist	ArcelorMittal La Place, LLC	Metal Manufacturing
St. John the Baptist	Cargill, Inc.	Grain Elevator
St. John the Baptist	Diversified Well Logging, Inc.	Oil and Gas
St. John the Baptist	DuPont Performance Elastomers, LLC	Rubber Manufacturing
St. John the Baptist	Louisiana Machinery, Co.	Equipment and Supplies
St. John the Baptist	Marathon Ashland Petroleum, LLC	Oil and Gas
St. John the Baptist	Nalco Chemical Co.	Chemical Manufacturing
St. John the Baptist	Pinnacle Polymers	Plastics Manufacturing

Table 2.2
Major Employers within the Study Area

Parish	Employer	Category
Terrebonne	Chet Morrison Contractors	Oil and Gas Technical Services
Terrebonne	Gulf Island Fabrication, Inc.	Equipment and Supplies
Terrebonne	Leonard J. Chabert Medical Center	Healthcare
Terrebonne	Performance Energy Services, LLC	Oil and Gas Technical Services
Terrebonne	Seacor Marine, LLC	Marine Transportation
Terrebonne	Terrebonne General Medical Center	Healthcare
Terrebonne	Terrebonne Parish Government	Government
Terrebonne	Terrebonne Parish School Board	Education

Sources: Assumption Parish, "Community Profile" www.assumptionla.com/Community_Profile?view=day&lh=2&d=01&m=07&y=2011; Houma Today "Lafourche's Largest Employers" October 29, 2009; Accessed May 17, 2013: www.houmatoday.com/article/20091029/NEWS0101/910299972; River Region Economic Development Initiative (RREDI) "St James Parish" Accessed May 17, 2013: http://portsl.com/businessdevelopment/docs/StJames_Parish_Profile.pdf; (RREDI) St "St. John Parish" Accessed May 17, 2013: http://portsl.com/businessdevelopment/docs/StJohn_Parish_Profile.pdf; John the Baptist, "Major Employers", Accessed May 17, 2013: http://sjbparish.com/ecodev_demographics.php?id=162; Daily Comet "Terrebonne's Top Employers" November 13, 2012; Accessed May 17, 2013: www.dailycomet.com/article/20121113/ARTICLES/121119874?template=printpicart

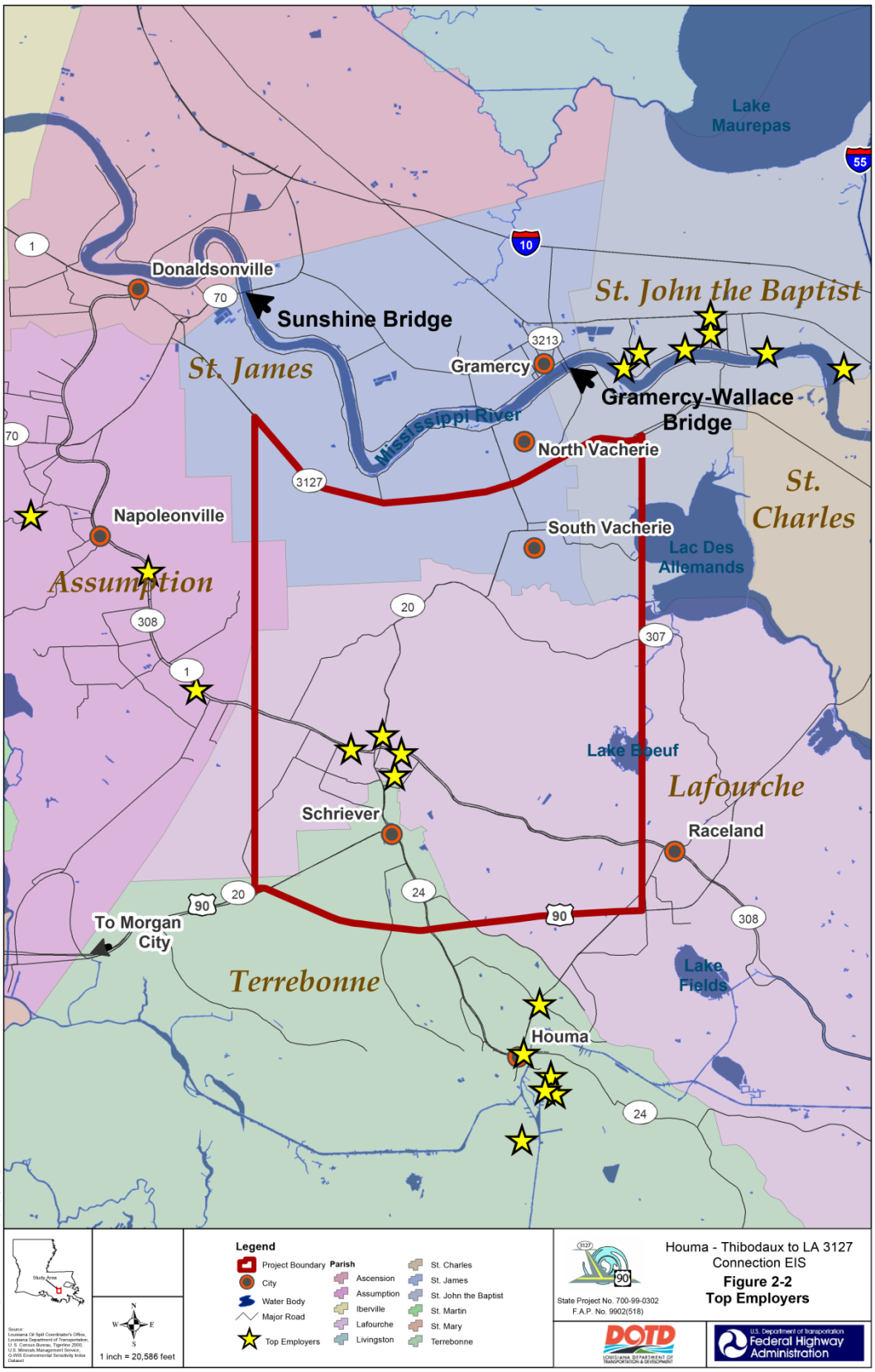
Table 2.3 shows the travel mode and average commute time for parishes within the study area. The vast majority of study area residents drive alone to their workplace. Residents within Lafourche Parish are more likely to carpool than residents throughout the study area. One percent or less of study area commuters utilize public transportation. Overall, residents are more likely to work from home than use public transportation. Residents of Terrebonne Parish are more likely to use other means of transportation, such as walking or bicycling, than other study area residents. Four of the five parishes have a commute time greater than 25 minutes, while the fifth has a commute time of 23.8 minutes, which could potentially demonstrate that people in the study area do not live close to where they work.

Table 2.3
Travel Time to Work

Location	Drove to Work Alone	Carpooled	Public Transportation	Other Means	Worked at Home	Average Commute Time
Assumption	85%	11%	1%	2%	1%	32.0 min.
Lafourche	79%	14%	1%	5%	2%	25.8 min.
St. James	85%	11%	1%	2%	0.7%	25.7 min.
St. John the Baptist	85%	10%	0.2%	4%	0.7%	27.4 min.
Terrebonne	81%	10%	0.4%	6%	2%	23.8 min.

Source: US Census Bureau - Census 2010

Figure 2-2
Top Employers



2.4 WHY IS NORTH-SOUTH TRANSPORTATION SYSTEM LINKAGE NEEDED?

Existing north-south system linkage in the region between the Houma-Thibodaux area to the south and the Mississippi River corridor area to the north, for approximately a 38-mile east-west stretch, is mainly limited to LA 20. North of Thibodaux, LA 20 is a two-lane winding roadway with narrow shoulders that serves the region as the main roadway linking the Houma-Thibodaux area to the Gramercy, Wallace, North Vacherie, and South Vacherie communities to the north. Within the Thibodaux area, the roadway becomes three and four lanes. The existing LA 20 roadway, which partly follows a narrow winding ridge through wetlands, also functions as the main street for the communities of Chackbay and South-Vacherie. The Houma-Thibodaux area is regionally served by one U.S. route and two state routes all running east and west. The Mississippi River corridor is served by one interstate, one U.S. route, and four state routes, which all run east to west, as shown in Figure 2-2.

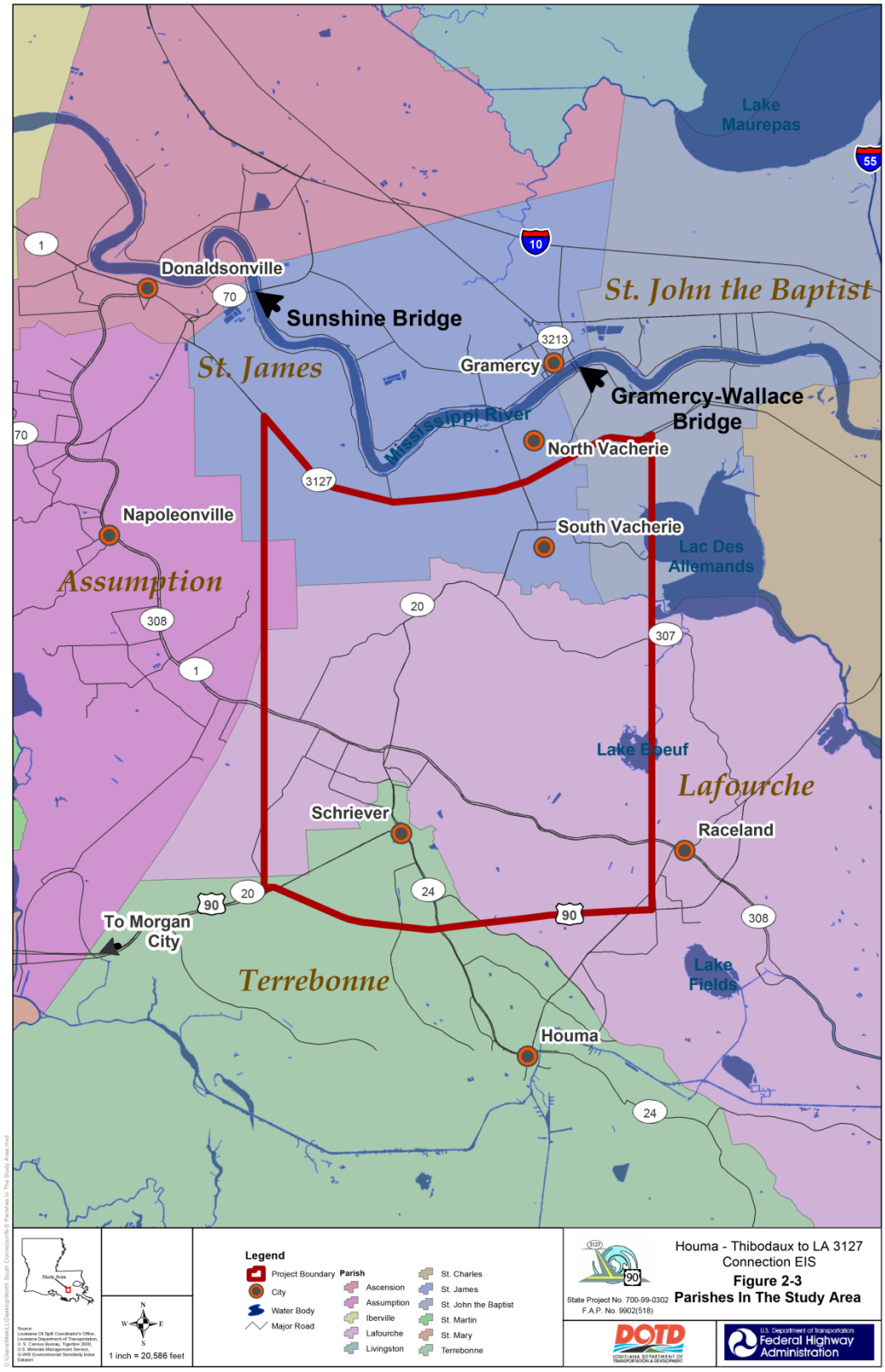
In addition to LA 20 being narrow, it has multiple driveways (access points) within these developed areas. These access points increase the number of conflict points (areas having a high potential for accidents) while limiting the efficient movement of people, goods, and services. This is especially the case for hurricane evacuation between the Houma-Thibodaux area and the central Mississippi River Corridor.

The area's overall transportation system linkage would be improved by the establishment of a functional transportation facility that provides north-south connectivity to the area's existing roadway network. A north-south facility would also improve connectivity and mobility to the established interstate system to the north (I-10), as well as the future I-49 route to the south. These improvements would directly serve the Parishes of Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne, which make up, in part, the South Central Planning and Development District as shown in **Figure 2-3**.

Three main questions were asked regarding system linkage:

- Why is improved north-south connectivity needed?
- Why provide north-south redundancy?
- Why improve access to I-10 and/or future I-49?

Figure 2-3
South Central Planning and Development District Parishes:
Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne



Transportation Connectivity – Transportation connectivity is the ability to travel directly between destinations, while increasing the connections between neighborhoods, communities, and regions.

Transportation Redundancy – Transportation redundancy is where the transportation network connections are duplicated in order to provide alternative routes in case one link in the network fails, reaches its capacity, or is blocked due to crashes, incidents, emergency situations, or maintenance activities.

2.4.1 Why is improved north-south connectivity needed?

Transportation system connectivity refers to the directness of connections and the density of links in the roadway network. A simpler definition would be the ability to travel directly between destinations, while increasing the connection and accessibility between neighborhoods, communities, and/or regions. As shown in **Figure 2-4**, east-west density and system connectivity is well established via LA 18, LA 3127, LA 308, LA 1, and US 90 within the study area.

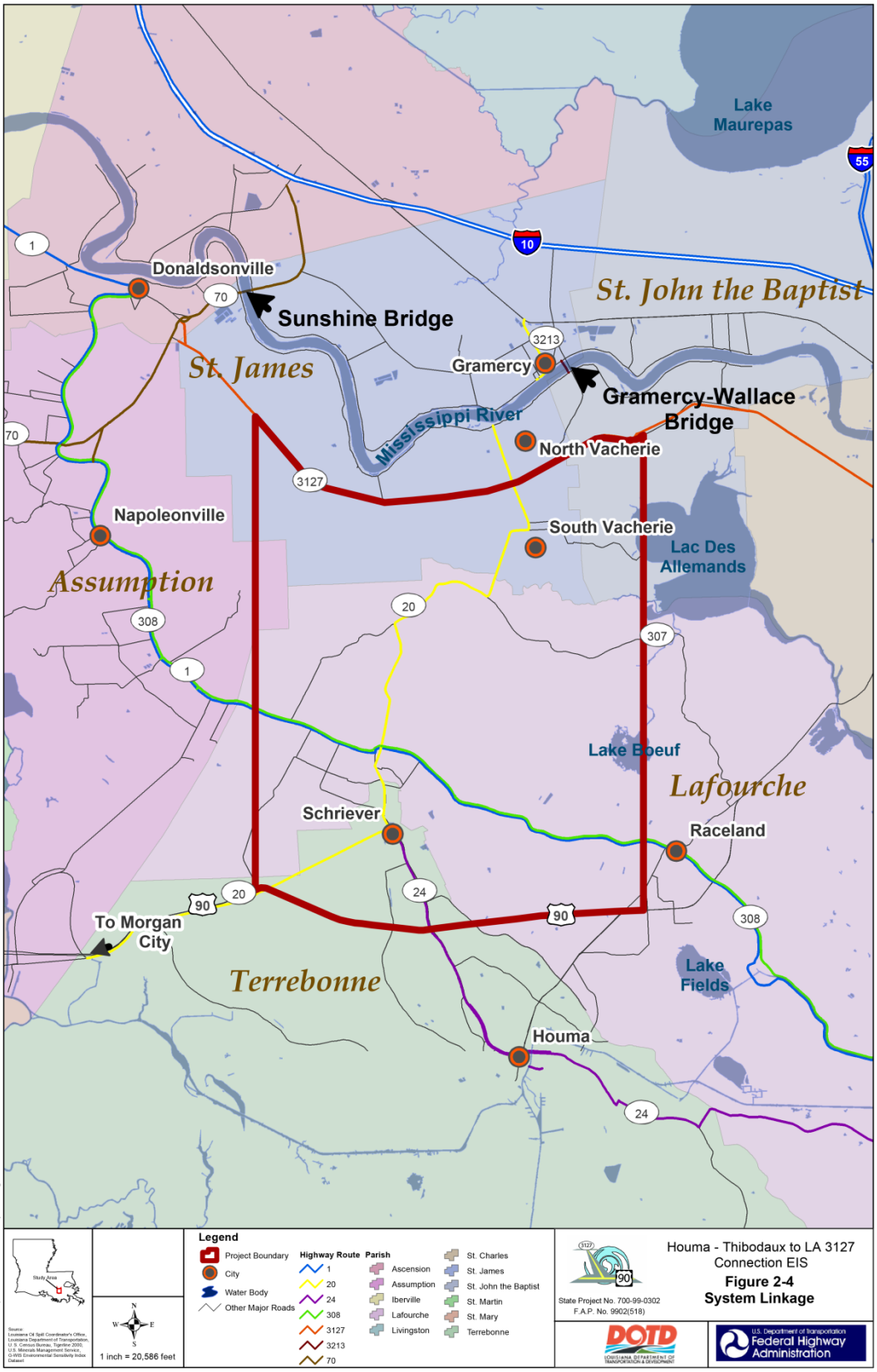
LA 20 is the only north-south connection within the study area. This arterial roadway consists of three-lane and four-lane roadway sections located in the Thibodaux area. North of Thibodaux, LA 20 consists of a two-lane roadway with no shoulders or emergency lanes. In the event of a stalled vehicle or accident/crash, one or both of the lanes may become blocked with no other options available for north-south travel. LA 20 runs north-south for most of its length through the center of the study area. This is the only continuous north-south corridor that travels from the Thibodaux area to LA 3127.

2.4.2 Why provide north-south system redundancy?

Transportation system redundancy is where transportation network connections are duplicated in order to provide alternative routes in case one link in the network fails, reaches its capacity, or is blocked due to crashes, incidents, emergency situations, or maintenance activities. The duplicated or redundant links can accommodate the diverted traffic demand. Redundancy represents flexibility with optional route choices for facility users when a link fails. The roadway network in the study area lacks redundancy in the north-south direction. Therefore, if LA 20 should become closed due to incidents such as those noted above, residents would not have a direct access north to LA 3127 from the Houma-Thibodaux area or south from the South Vacherie-Chackbay area to Houma-Thibodaux. A closure of LA 20 would also result in adverse travel distance for those who regularly use LA 20 for north-south travel.

The existing highway network has redundancy in the east-west direction as previously stated. There is also redundancy with the crossings of the Mississippi River with the Sunshine Bridge to the west of the study area, the Gramercy-Wallace Bridge north of Thibodaux, and the I-310 Bridge outside of the New Orleans area. The Sunshine and I-310 Bridges are accessible from the Houma-Thibodaux area via the existing east-west roadway network. The Gramercy-Wallace Bridge is directly accessible from the Houma-Thibodaux area only by LA 20. Access to the Gramercy-Wallace Bridge from LA 3127 has been improved with the completion of the LA 3213 connector in 2008. However, traffic diverted to this route from the east-west corridors (US 90, LA 1, and LA 308) will be limited without improvements to north-south connectivity.

Figure 2-4
The Six Primary Roadway Facilities within the Study Area
(US 90, LA 24, LA 20, LA 308, LA 1, and LA 3127)



2.4.3 Why improve access to I-10 and/or future I-49?

The Houma-Thibodaux Metropolitan Area is the only major metropolitan area not directly served by an interstate highway facility in Louisiana. When US 90 is upgraded to interstate standards and designated as I-49, the area will have an additional interstate facility traveling in an east-west direction. However, north-south connectivity to the Houma-Thibodaux area would still remain limited with the only direct access to either interstate (I-10 and future I-49) being LA 20. The lack of a high capacity interstate facility connecting the region to I-10 and/or future I-49 has negative effects in terms of regional connectivity and emergency preparedness, and may adversely affect economic development. A more direct and reliable access to the interstate system is important to industry and residents in the study area. This was a sentiment that was heard through public comments (for more information about Public Involvement, see Chapter 5). This direct access is required in order to provide reliable, timely, and cost-effective movement of goods and services to the area, region, and country. In order to access the area's interstate system to the north (I-10 and I-55), residents, employees, and truckers elect to travel US 90 via the US 90/I-310 interchange rather than traveling along LA 20 or the longer LA 1/LA 308 corridor. Existing travel distances to I-10 for the area range between 40 to 49 miles.

2.5 WHY IS ADDITIONAL NORTH-SOUTH ROADWAY CAPACITY NEEDED?

Although system linkage is a major component of mobility, other key issues need to be factored in when determining, designing, and developing the most efficient and economical transportation facility. Key factors to be included during project development and alternative analysis are issues such as roadway capacity, LOS, and safety.

2.5.1 What is roadway capacity?

Capacity
Capacity can be described as the maximum traffic flow obtainable on a given roadway using all available lanes.

The Transportation Research Board's Highway Capacity Manual (2010) defines capacity of a system element as the maximum sustainable hourly flow rate at which persons or vehicles can reasonably be expected to traverse a point or uniform section of a roadway during a specified time period under typical roadway, environmental, traffic, and control conditions. Capacity can also be described as the maximum traffic flow obtainable on a given roadway using all available lanes.

2.5.2 What are the primary roadways within the study area?

As previously stated, there are six primary roadway facilities that have been identified within the study area. These facilities include US 90, LA 24, LA 20, LA 308, LA 1, and LA 3127 (see Figure 2-4). A summary of the generalized capacities of the six identified primary roadways are listed in **Table 2.4**. These capacity estimates are based on the number of travel lanes and functional classification of each roadway.

Table 2.4
Generalized Capacities of the Primary Access Roadways

Roadway	Alignment	Facility Type	24 Hour Capacity (vehicles per day)
US 90	East-West	Expressway, 4-lane	32,000
LA 24	North-South	Principal Arterial, 4-lane	27,000
LA 20	North-South	Principal Arterial, 2-Lane	15,000
LA 308	East-West	Minor Arterial, 2-lane	11,000
LA 1	East-West	Principal Arterial, 2-lane	15,000
LA 3127	East-West	Minor Arterial, 2-lane	11,000

Source: Houma-Thibodaux Metropolitan Area Transportation Plan Update and LADOTD Summary Logs Estimates from the Traffic Analysis, which was completed for the Houma-Thibodaux to I-10 Connection.

As shown in Table 2.4 and discussed previously, the primary access corridors within the study area provide mainly east-west capacity. The existing east-west capacity is distributed throughout the study area with US 90 on the south, LA 1 and LA 308 corridors in the middle, and the LA 3127 corridor on the north. In contrast, existing north-south capacity within the study area is limited mainly to the LA 24 corridor in the south, and the LA 20 corridor in both the middle and northern portions. Presently, LA 20 underserves the current transportation demand due to capacity issues and its winding route linking US 90 with LA 3127. In addition, LA 1 and LA 308 are projected to operate at or near capacity under the projected future conditions, which would further reduce capacity within the study area's roadway network.

Results of the traffic analysis for the Houma-Thibodaux area to the LA 3127 connection indicated that the demand for north-south travel is greater than what is represented in the traffic counts on LA 20 and LA 24. The excess demand is represented in traffic counts on US 90 by motorists who elect to travel this route to access the area's interstate system (I-10 and I-55) as discussed above. The combination of current and future conditions identifies roadway capacity as a key element in analyzing system linkage within the area.

2.5.3 How do we measure congestion on our roads?

Traffic congestion occurs when travel demand exceeds the traffic-carrying capacity of a roadway. Transportation planners and engineers use performance standards, volume to capacity ratio (V/C ratio), and LOS to analyze traffic congestion on roadways.

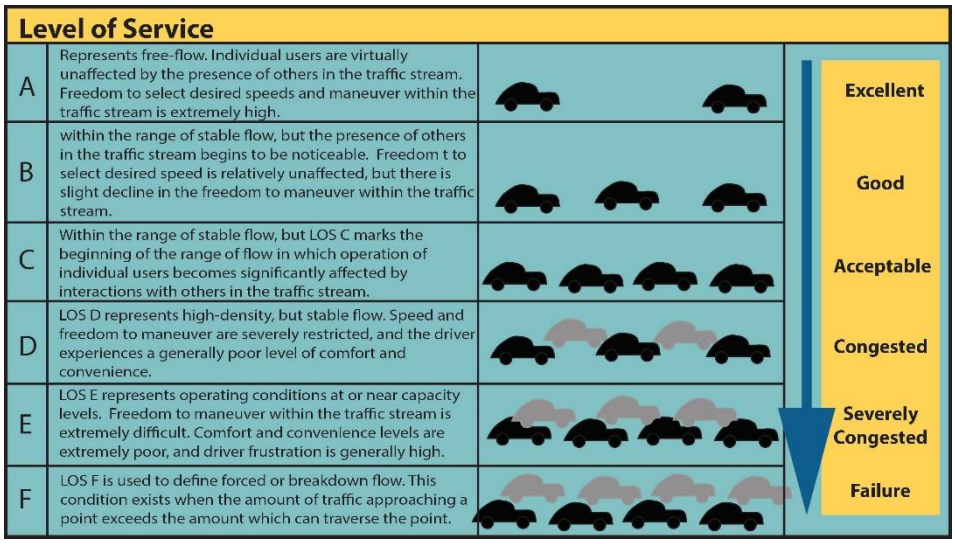
The V/C ratio indicates the percentage of total available roadway capacity that is being used during the peak traffic period. For example, a V/C ratio of 0.80 means that 80 percent of total roadway capacity is being used. A V/C ratio of 1.0 or above means that the capacity has been used up and the facility is congested. Lines of vehicles will form until demand subsides below the available capacity. This performance standard varies according to location, category, and function of the roadway.

As shown in **Table 2.5**, a V/C ratio of greater than 1.0 relates to a LOS F. LOS is a term used to represent the perspective of drivers and is an indication of the comfort and convenience associated with driving. The LOS of a roadway is also based on the density of vehicles on a road, intersection, or at an interchange, which is expressed in passenger cars per mile, per lane. Six levels of service are defined for each type of facility, from A (the best) to F (the worst), and are described in further detail in **Figure 2-5**. Table 2.5 provides the LOS classifications.

Table 2.5
V/C Ratio Range for LOS

LOS	V/C Ratio
LOS A	<0.60
LOS B	0.61 to 0.70
LOS C	0.71 to 0.80
LOS D	0.81 to 0.90
LOS E	0.91 to 1.00
LOS F	>1.00

Figure 2-5
Level of Service Definitions



Traffic models show that the primary access roadways are currently operating at acceptable levels. However, the northern section of LA 20 shows a LOS of E during both peak hours. There are also two additional primary roadways (LA 308 and LA 1) that have sections currently operating at LOS D, and are projected to operate at LOS E in the year 2032. **Table 2.6** shows both existing and projected year 2032 LOS for the six primary access roadways.

Table 2.6
Generalized Capacities of the Primary Access Roadways

Roadway	Alignment	Facility Type	Existing LOS	2032 LOS
US 90	East-West	Expressway, 4-lane	A	A
LA 24	North-South	Principal Arterial, 4-lane	B	C
LA 20	North-South	Principal Arterial, 2-Lane	E/B	E/B
LA 308	East-West	Minor Arterial, 2-lane	D	E/D
LA 1	East-West	Principal Arterial, 2-lane	C/B/D	D/C/E
LA 3127	East-West	Minor Arterial, 2-lane	C	D

Source: Houma-Thibodaux Metropolitan Area Transportation Plan Update and LADOTD Summary Logs Estimates

2.6 WHY IS EMERGENCY AND HURRICANE EVACUATION NEEDED?

In the early 1990s, states became more active in planning, identifying, and managing hurricane evacuation. Hurricane evacuation plans can be prepared at various levels of state and local governments. The present hurricane evacuation plan for the study area follows the Phased Evacuation described in the *Louisiana Citizen Awareness and Disaster Evacuation Guide* and is divided into three phases related to specific locations for the staging of evacuations. Phase 1, which is located south of the study area, recommends evacuation 50 hours prior to the onset of tropical storm force winds. Phase 2, which consists of the majority of the study area, recommends for evacuation 40 hours prior to the onset of tropical storm force winds. The area north of LA 3127 in the study area is considered Phase 3, which is recommended for evacuation 30 hours prior to the onset of tropical storm force winds.

Contra Flow
Contra flow is the process where travel lanes are reversed to flow in the opposite direction allowing for an increase in roadway capacity.

In addition to the phased evacuation, contra flow is also used to reduce evacuation times. Contra flow is the process where travel lanes are reversed to flow in the opposite direction allowing for an increase in roadway capacity. The use of contra flow is normally used with roadway facilities that are controlled access.

2.6.1 What are the current evacuation routes in the study area?

Designated evacuation routes within the study area include US 90, LA 1, LA 20, LA 308, LA 24, and LA 3127. These designated hurricane evacuation routes are the region's six primary access routes, with the majority of the routes providing east-west connectivity. Also, these roadways, with the exception of US 90, are not controlled access facilities and are not used as contra flow during hurricane evacuation. These roadways have numerous driveways, signalized intersections, and a wide range of industrial, commercial, and residential developments that can increase evacuation times. Although sections of US 90 within the study area are controlled access, the majority of the roadway facility is not.

Controlled Access
Controlled access roadways have specific locations where vehicles can enter and exit the roadway, typically at an interchange or intersection with another roadway.

Three main questions were considered when deciding to designate a route as an emergency and hurricane evacuation route:

- Why does the region need improved hurricane evacuation routes?
- Why does traffic need to be distributed to both the Sunshine and Gramercy-Wallace Bridges?
- How can a north-south route help the efficiency of current evacuation routes?

2.6.1.1 Why does the region need improved hurricane evacuation routes?

The Houma-Thibodaux region has experienced an increase in population despite the limited transportation routes in the area. The roadway network is susceptible to flooding during heavy rain, high tides, and storm surges due to the low elevation of the area. These factors result in frequent roadway flooding and traffic congestion along the limited number of hurricane evacuation routes. Public sentiment gathered from project information meetings reinforces the need for an improved hurricane evacuation route that does not flood, has sufficient capacity, and can accommodate contra flow traffic.

2.6.1.2 Why does traffic need to be distributed to both the Sunshine and Gramercy-Wallace Bridges?

The Sunshine and Gramercy-Wallace Bridges are identified as two critical transportation links that provide ability to cross the Mississippi River and provide a connection to the interstate system of roads to the north. These links provide northbound hurricane evacuation options for residents of the Houma-Thibodaux area. Currently, the east-west roads of the existing network

provide good access to the Sunshine Bridge. Due to limited north-south system connectivity, the Gramercy-Wallace Bridge is currently under-utilized. Access to the Gramercy-Wallace Bridge from LA 3127 has recently been improved with the completion of the LA 3213 connector. However, traffic diverted to this route from the east-west corridors (US 90, LA 1, and LA 308) will be limited without improvements to north-south connectivity. Because the critical links in a transportation network control the amount of time it takes to evacuate the area, the best alternatives for hurricane evacuation are those that are able to provide a more balanced distribution of traffic. This reduces the overall time it takes to evacuate an area.

2.6.1.3 How can a north-south route help improve efficiency of current evacuation?

The only designated hurricane evacuation routes for the residents of the study area are LA 1, LA 20, LA 24, LA 3127, LA 308, and US 90. No roads within the study area use contra flow during a hurricane evacuation. In addition, the study area does not have a continuous designated north-south hurricane evacuation route.

The six available routes mainly provide east-west access; none travel directly northward. US 90 is the evacuation route with the most capacity. Extending east to New Orleans, it intersects with I-310 and I-10, which, in turn, provides access to northern routes such as I-55 and I-59. In the westward direction, US 90 extends due west before turning northward towards New Iberia and eventually to I-10 in Lafayette. The future I-49 corridor will increase the capacity for hurricane evacuation traffic in this direction.

The study area lacks a north south route that would reduce the amount of time it takes for residents to relocate to areas of safety.

Since the current roadway network provides a majority of east-west connectivity and lacks north-south routes, the addition of a controlled access facility to service northward travel for evacuations would greatly increase the number of residents who can and will evacuate and reduce their travel times, getting them to safety using a more efficient and faster route.

2.6.2 What happened during the evacuation related to Hurricane Gustav?

After Hurricane Katrina, the Lafourche Parish Hurricane Needs Assessments (as part of the Louisiana Speaks Program) indicated that a north-south evacuation route to I-10 was identified as a priority issue to be addressed for the Houma-Thibodaux area to recover and prepare for future emergency situations.

Prior to Hurricane Gustav making landfall in August of 2008, the SCPDC placed traffic counters in locations that would best measure any traffic that evacuated the region. Traffic counters were placed on evacuation routes, such as US 90, LA 20, LA 1, and LA 308. The recorded traffic numbers show that a significant amount of vehicles were heading in the northern direction.

Traffic numbers recorded on August 30, 2008 show that on LA 20 just south of LA 3127 in South-Vacherie, a total of 12,497 vehicles were recorded; while on LA 1 north of Thibodaux, a total of 6,530 vehicles were recorded; and on LA 308 just north of Thibodaux, a total of 5,686 vehicles were recorded headed toward LA 70. In comparison, a total of 16,895 vehicles were recorded as traveling east/west on US 90.

Table 2.7 shows existing traffic volumes and corresponding LOS for five of the six primary roadways in the study area. No data was collected for LA 24. This data is from the Traffic Analysis, which was completed for the Houma-Thibodaux to I-10 Connection. It shows existing traffic volumes along with corresponding LOS and also shows the traffic volumes under evacuation conditions on August 30, 2008. While there are no corresponding LOS assignments for the evacuation traffic volumes, clearly the volumes of traffic push the roadways beyond their capacity.

Table 2.7
Generalized Capacities of the Primary Access Roadways

Roadway (segment)	Alignment	Facility Type	Existing Traffic Volume and LOS	Evacuation Traffic Volumes (August 30, 2008)
US 90	East-West	Expressway, 4-lane	6,425 LOS A	16,895
LA 20 (South of LA 3127)	North-South	Principal Arterial, 2-Lane	4,153 LOS E	12,497
LA 308 (North of Thibodaux)	East-West	Minor Arterial, 2-lane	2,550 LOS D	5,686
LA 1 (North of Thibodaux)	East-West	Principal Arterial, 2-lane	4,420 LOS C	6,530
LA 3127 (East of LA 20)	East-West	Minor Arterial, 2-lane	2,412 LOS C	11,288

Source: South Central Planning and Development Commission, Traffic Count Stations Studied During Hurricane Gustav

The addition of a controlled access northbound route for evacuations could greatly increase the number of residents who can/will evacuate and reduce their travel times, getting them to safety in a faster and more effective manner.

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Chapter 3.
Development of Alternatives

CHAPTER 3. DEVELOPMENT OF ALTERNATIVES

This chapter presents the development and screening process of alternatives for the Houma-Thibodaux to Louisiana Highway 3127 (LA 3127) Connection Draft Environmental Impact Statement (DEIS). Alternatives that failed to meet the Purpose and Need of the project were eliminated from further consideration. The alternatives were also scored against human and environmental screening criteria. Alternatives that were identified as reasonable were further evaluated and refined.

3.1 INTRODUCTION

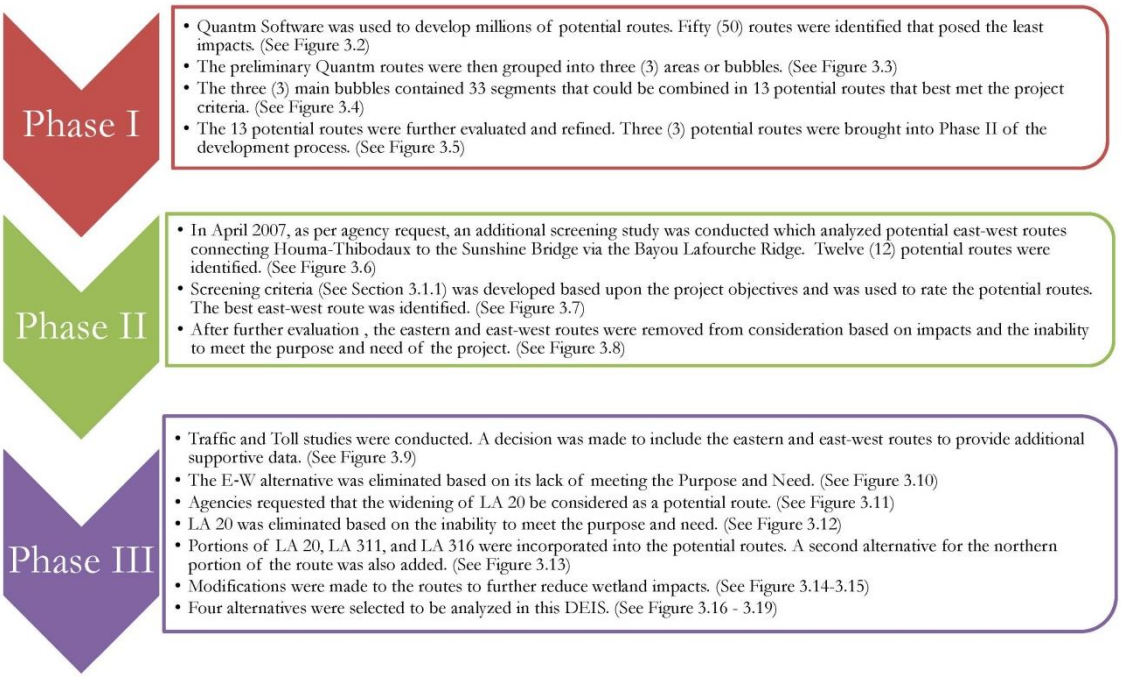
In conjunction with the Louisiana Department of Transportation and Development (LADOTD) and the Federal Highway Administration (FHWA), the project team developed guidelines for the engineering design criteria used in developing the alternatives for the Houma-Thibodaux to LA 3127 Connection. The LADOTD Roadway Design Procedures and Details (2009) and the American Association of State Highway and Transportation Officials (AASHTO) "Green Book" (2001) were used to establish engineering design criteria that complies with state and federal guidelines for vehicle safety and mobility. For the purpose of developing the preliminary alternatives, it was assumed that all new location alternatives would be a four-lane divided, limited-access (freeway) with a corridor width of 300 feet. This assumption for the need of a corridor width of 300 feet was confirmed through traffic forecasts and modeling. Models used were Houma transportation model (TRANPLAN) and LADOTD statewide model.

The development of alternatives for the Houma-Thibodaux to LA 3127 Connection DEIS used a three-phase evaluation process. The first phase involved defining the study area, compiling screening criteria and constraints data, and using Quantm™ Alignment Optimization Software (Quantm™) to develop conceptual routes. The second phase presented the potential routes to the various agencies and the public to obtain feedback associated with the routes. During this phase, the study area was expanded and additional routes were developed based on the feedback and comments provided by the resource agencies. The third phase reviewed the recommended routes against the Purpose and Need, to define the routes that would be further analyzed within the DEIS.

3.2 HOW WERE THE ALTERNATIVES DEVELOPED?

The development of the Reasonable Alternatives was broken up into three phases. **Figure 3-1** illustrates the development process, while outlining the major decisions of each phase. For a full history of the alternative development process, see the *Alternative Development History Technical Memorandum* in Appendix D.

Figure 3-1
Alternative Development History



3.2.1 How were the alternatives evaluated?

In order to evaluate the alternatives against the Purpose and Need of the project and to identify the associated environmental consequences, screening criteria was developed and considered based upon the project objectives. Alignments were evaluated against screening criteria categories and ranked on a scale of high, medium, and low. Throughout the development process, routes that were identified as potential alternatives were assessed through this criteria. Potential alternatives that scored poorly against the screening criteria were eliminated from further consideration. Alternatives that were identified as reasonable were further evaluated and refined. The screening criteria used are listed in **Section 3.2.4.1**. See the *Alternative Development History Tech Memo* for more detailed information on the evaluation and elimination process used to arrive at the reasonable build alternatives.

3.2.2 Phase I

The first phase involved defining the study area, compiling screening criteria and constraints data, and using Quantm™ Alignment Optimization Software to develop conceptual routes.

During 2005, the project team collected data and developed maps to describe the existing conditions of the study area. Preliminary scopes for evaluating existing traffic and preliminary toll studies were also developed.[1]

The project used Quantm™ as the starting point in developing conceptual routes within the study area. Quantm™ is a route optimization tool that allows users to test numerous corridors and segments within a defined set of constraints and design criteria.

Quantm™ is a geographic information system (GIS) platform used as a planning analysis tool, which generates possible alignments between two fixed points. The software navigates routes

[1] Houma-Thibodaux to LA 3127 Connection: Environmental Impact Statement-Project Update. August 2009

through a geographical area using a digital terrain model (having x, y, and z coordinates), unit costs, engineering design criteria (e.g., side slopes, maximum/minimum grades), and user defined constraints. Quantm™ generated numerous alternative alignment segments that allowed engineers, planners, and environmental scientists the opportunity to balance potential environmental and social impacts against project costs and engineering factors. Since Quantm™ is a GIS-based platform, numerous state, federal, and local agencies were contacted and provided their GIS data to the project team. Aerial photography was also obtained for the study area. This photography along with the GIS data served as the base data for the alternatives development process.

Quantm™ utilized two sets of criteria, engineering and environmental, to identify preliminary corridors. Establishing this criterion allowed the tool to generate potential alignment segments for the Houma-Thibodaux to LA 3127 Connection.

Engineering Criteria

The first set of criteria consisted of items such as design speed, horizontal and vertical geometry, typical sections, and right-of-way (ROW) widths (see **Table 3.1**). Quantm™ can also approximate the construction cost of each alignment. By supplying Quantm™ with cost data such as pavement costs, cut and fill costs, bridging costs, and overpass costs, a methodology can be achieved that allows consistent analysis of construction costs among the various alignment segments.

Table 3.1
Louisiana Department of Transportation and Development Design Standards for F3 Freeway

Item No.	Item	F 3
1	Design Speed (mph)	70
2	Level of Service	B3
3	Number of Travel Lanes (minimum)	4
4	Width of Travel Lanes (feet)	12
5	Width of Shoulders (where used) (feet) (A) Outside (B) Inside	 10 6
6	Type of Shoulders	Paved
7	Width of Median (feet) (A) Depressed (B) Continuous Barrier (4 lane) Continuous Barrier (6 lane)	 60-90 14 26
8	Foreslope Ratio	6:1
9	Back Slope Ratio	4:1
10	Pavement Cross Slope (feet per feet [ft/ft])	0.025
11	Stopping Sight Distance (feet)	625-850
12	Maximum Superelevation (ft/ft)	0.10
13	Maximum Horizontal Curvature (w/Superelevation)	3^00 '
14	Maximum Grade (%)	3
15	Minimum Vertical Clearance (feet)	16
16	Width ROW (feet) (A) Depressed Median) (B) Median Barrier (C) Minimum Fro Edge of Bridge Structure	 300 As Needed 15-20
17	Bridge Design Load	HS-20
18	Width of Bridges (feet) (minimum) (face-to-face bridge rail)	40
19	Guardrail Required at Bridge Ends	Yes
20	Horizontal Clearance (feet) (from edge of travel lane) (A) 4:1 Foreslope (B) 6:1 Foreslope	 N/A 34

Environmental Criteria

Environmental data such as National Wetland Inventory, National Historic Registered sites, communities, and protected lands were also used by the tool. These data sets can be used as constraints (areas that would be avoided by the tool) to generate the potential alignments.

Data used as constraints:

- Lakes, rivers, stream, and reservoirs;
- National Wetland Inventory Quadrangle maps;
- Primary and secondary highways;
- Places (city and towns);
- Railroads, airports (controlled and uncontrolled);
- Landfills;
- Mines and quarries;
- Dams;
- Major utilities (i.e., pipelines, electrical transmission lines, etc.);
- Managed lands;
- Forested areas;
- Churches, schools, and cemeteries;
- Historic and archaeological sites; and
- Indian reservations and tribal land.

3.2.3 What were the Quantm™ results?

- Quantum Software was used to develop millions of potential routes. Fifty routes were identified that posed the least impacts upon environmental resources (see **Figure 3-2**).
- The project team used Quantm™ to develop costing data and assumptions to create maps that reflect the preliminary Quantm™ routes were then grouped into three areas or bubbles—the Western, Central, and Eastern alignments (see **Figure 3-3**).
- The three main bubbles contained 33 segments that could be combined in 13 potential routes that best met the project criteria (see **Figure 3-4**. Note that the letters on the figure correspond to the beginning/end points of the aforementioned segments).
- The 13 potential routes were further evaluated and refined. Three potential routes were brought forward into Phase II of the alternative development process (see **Figure 3-5**).

On May 2, 2006, a resource agency meeting was held at South Central Planning and Development Commission (SCPDC) to present the methodology used for selecting corridors and the corresponding traffic and toll studies. Following the May 2006 meeting, agencies were provided the opportunity to review and comment on the corridor and alignment selections. Out of the agency review process came considerable agency concern that corridors traversing what is known as the Bayou Lafourche Ridge connecting Houma-Thibodaux to the Sunshine Bridge were not given due consideration as viable alternatives meeting the project's Purpose and Need. As a result, in July 2006 LADOTD stopped work on the environmental impact statement (EIS) in order to address the issue.

Figure 3-2
Quantm™ Outputs

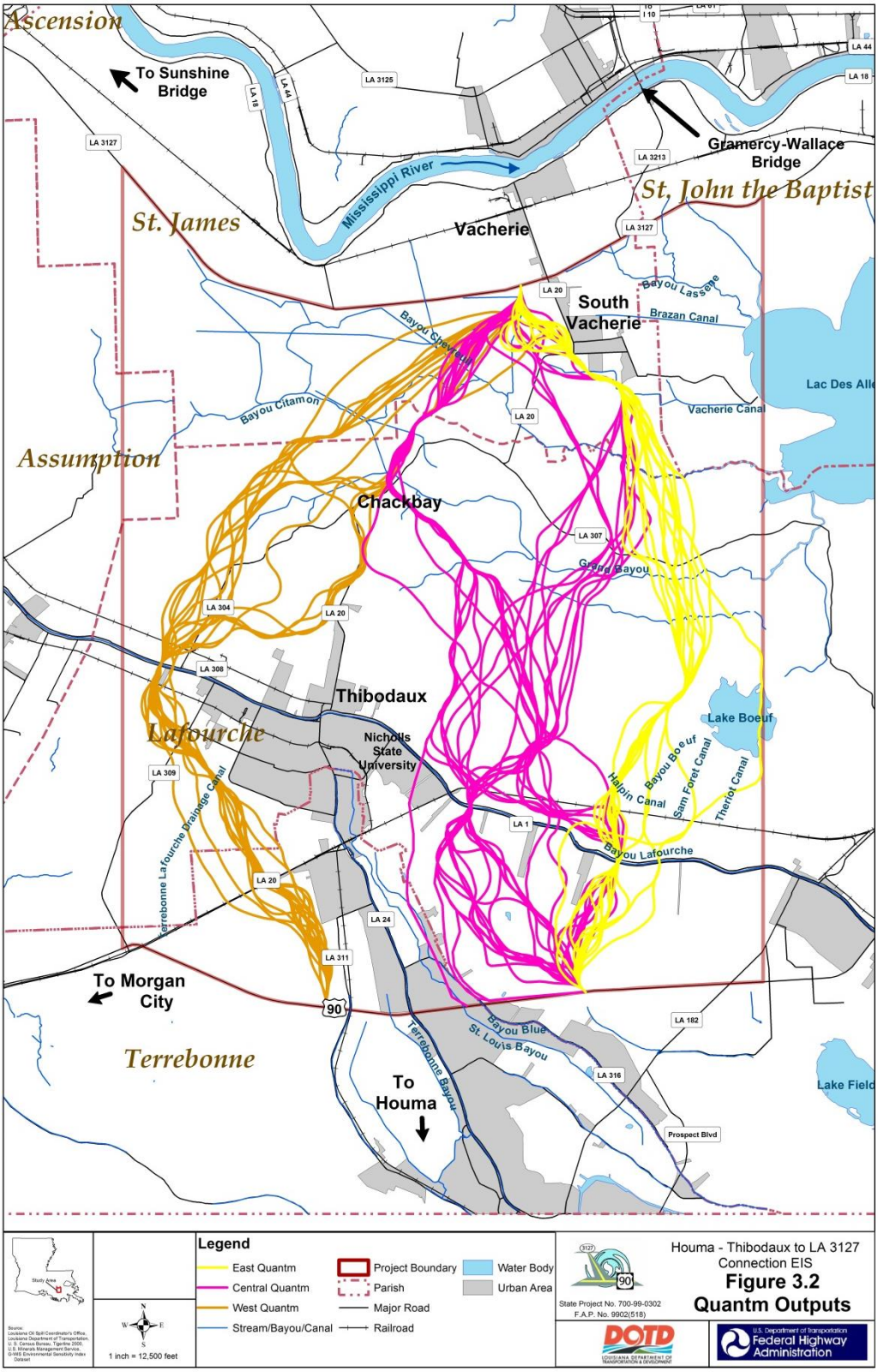


Figure 3-3
Quantm™ Bubbles

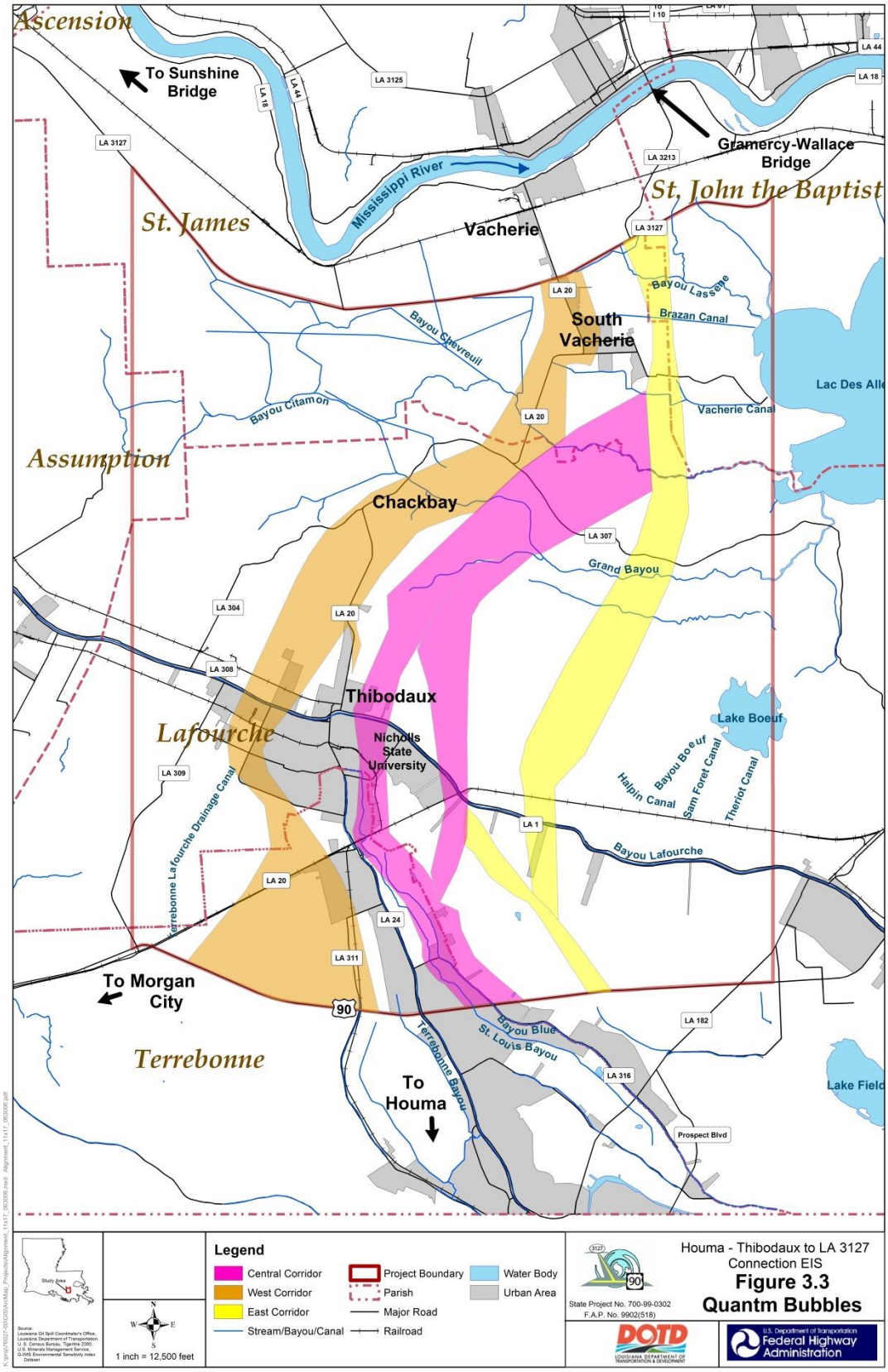


Figure 3-4
Quantm™ Potential Routes

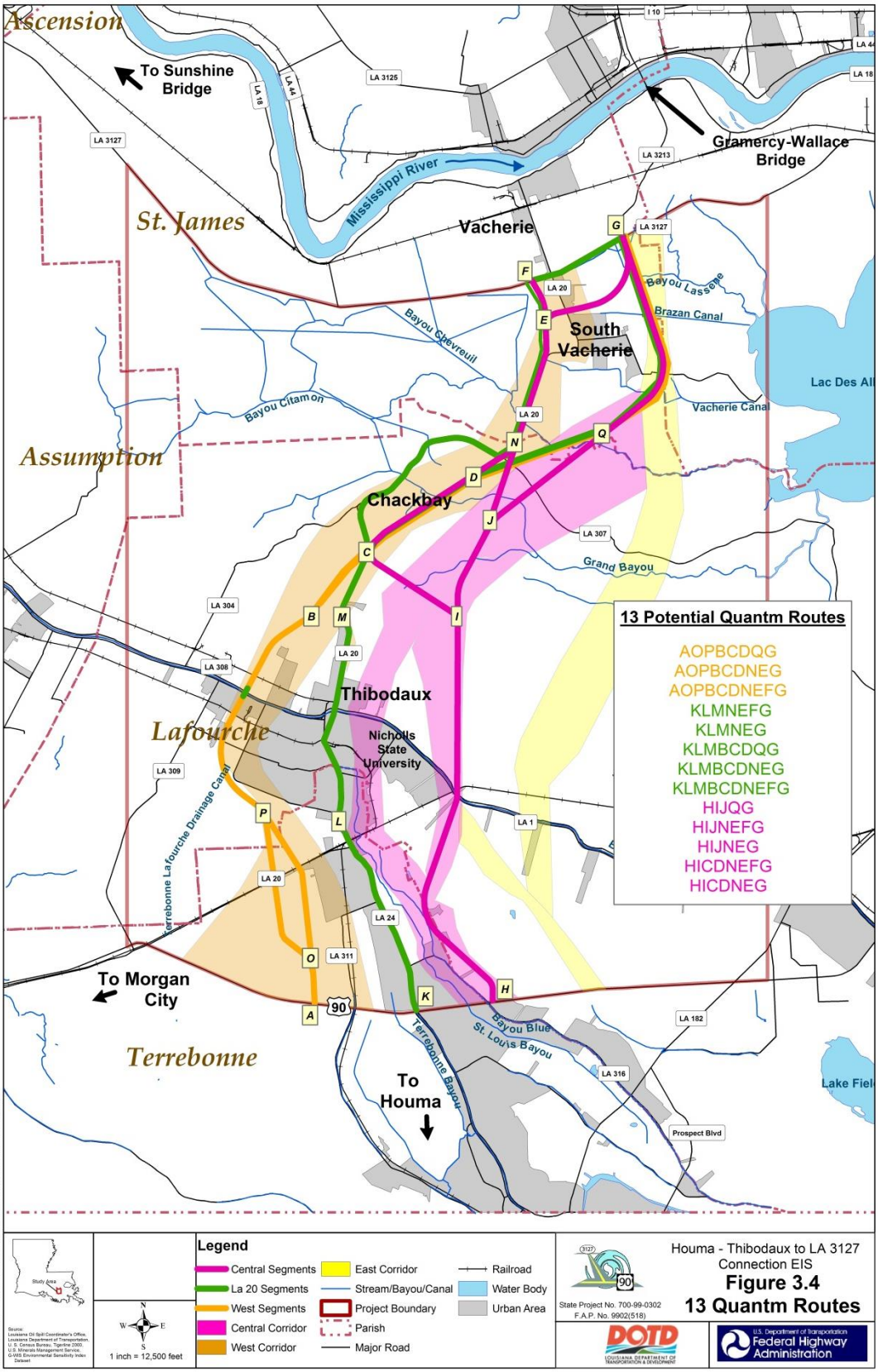
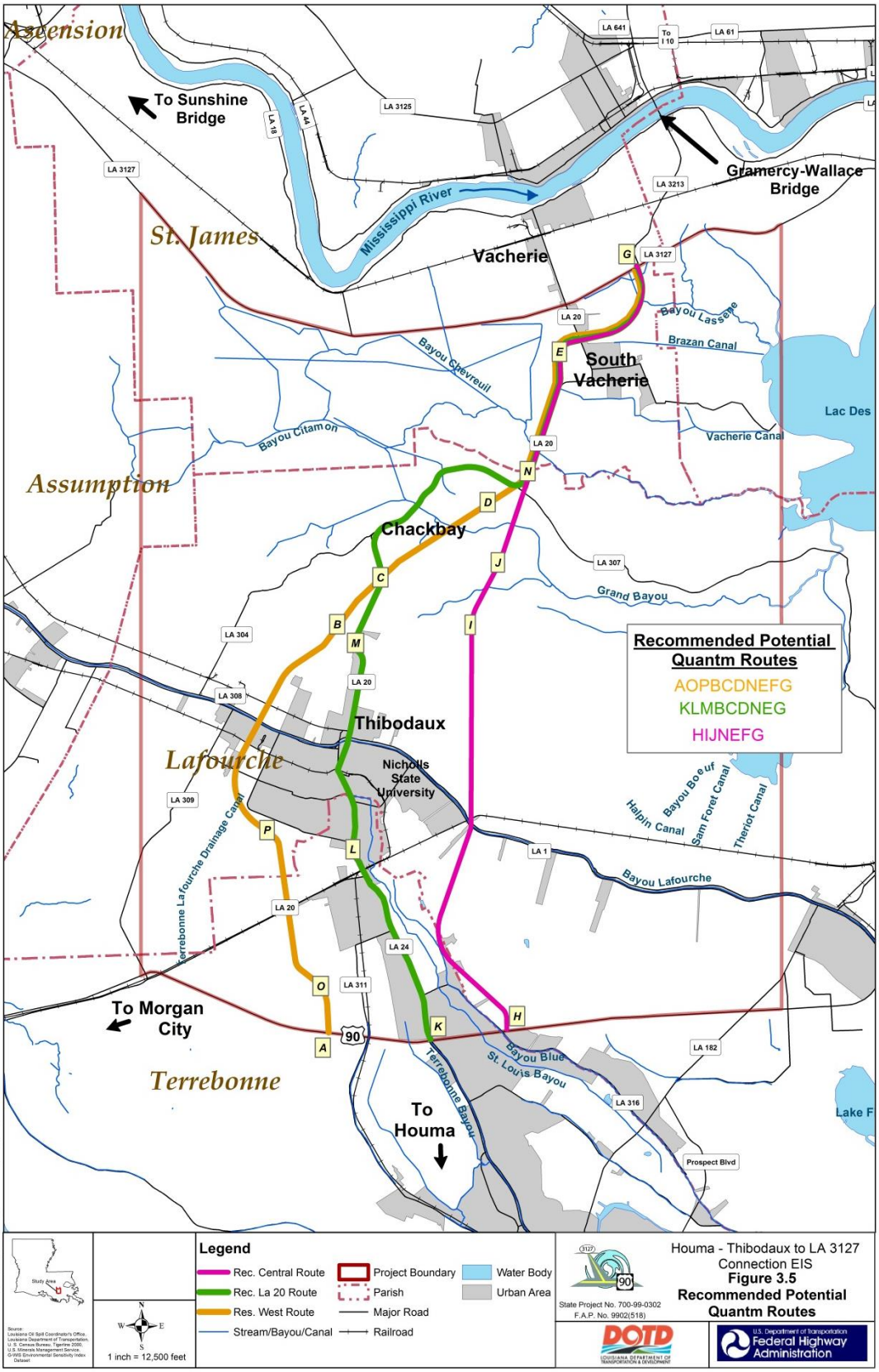


Figure 3-5
Recommended Potential Quantm Routes



3.2.4 Phase 2

LADOTD asked for a preliminary screening study in April 2007 (see Appendix E, *Final Screening Report, Preliminary Alternatives Screening Study for an East-West Corridor from Houma-Thibodaux to the Sunshine Bridge, March 2009*) to evaluate east-west alternatives that connected Houma-Thibodaux to the Sunshine Bridge via Bayou Lafourche Ridge. This study described the process employed in developing the alternative corridors, the screening criteria, and the methodology used for evaluating the corridors. Based on the Purpose and Need presented in 2006, two additional factors, North-South System Linkage and Hurricane Evacuation, were taken into consideration during the analysis. Twelve potential east-west routes were evaluated in this study (see **Figure 3-6**).

During this phase, the study area was expanded to include the area known as the Bayou Lafourche Ridge from Houma-Thibodaux area northwest to the Sunshine Bridge (see **Figure 3-7**). In addition to Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne parishes, the broadened study area included the parishes of Ascension, Assumption, and Lafourche. As a result of this study, additional routes were developed based on the feedback and comments provided by the resource agencies. This effort, which focused on minimizing impacts to cultural, agricultural, and environmental resources, resulted in four potential east-west corridors being identified. Two of the four corridors were expansions of existing facilities: LA 1 and LA 308. The remaining two corridors were placed along the ridges separating prime farmland and the environmentally protected wetlands along the northern and southern boundaries of the ridge. The four alternatives were limited access corridors with widths of 300 feet each.

The screening criteria used (see Section 3.2.4.1) to screen the east-west corridors, from which the best east-west route was identified (see **Figure 3-8**). In addition, the various segments that resulted from the Phase 1 process were also screened using these criteria. Using the developed criteria, engineers, planners, and environmental scientists were able to generate the best segment combinations for contiguous alignments in order to create a range of east-west alternatives.

Comments received during the April 2008 agency meeting resulted in requesting an additional study comparing the effectiveness of a north-south alternative versus an east-west alternative at moving traffic in the north direction (January 2009 Traffic Study, see Appendix F). This study evaluated forecasted traffic conditions for a north-south and east-west alternative utilizing the statewide travel demand model. Results from the study indicated the ability of an east-west alternative to divert traffic from the north-south corridor and thus alleviate present capacity issues, in addition to facilitating regional trips to as far north as Baton Rouge. [2]

Given the relative performance of the east-west corridor compared to the north-south corridor with respect to travel demand, and its ability to reasonably achieve the project's stated Purpose and Need, it was recommended that the northernmost east-west alternative be carried forward to a more detailed level of analysis in the DEIS.

[2] "Houma-Thibodaux to LA 3127 Connection: Environmental Impact Statement-Project Update." August 2009

Figure 3-6
Expanded Project with 12 East-West Segments

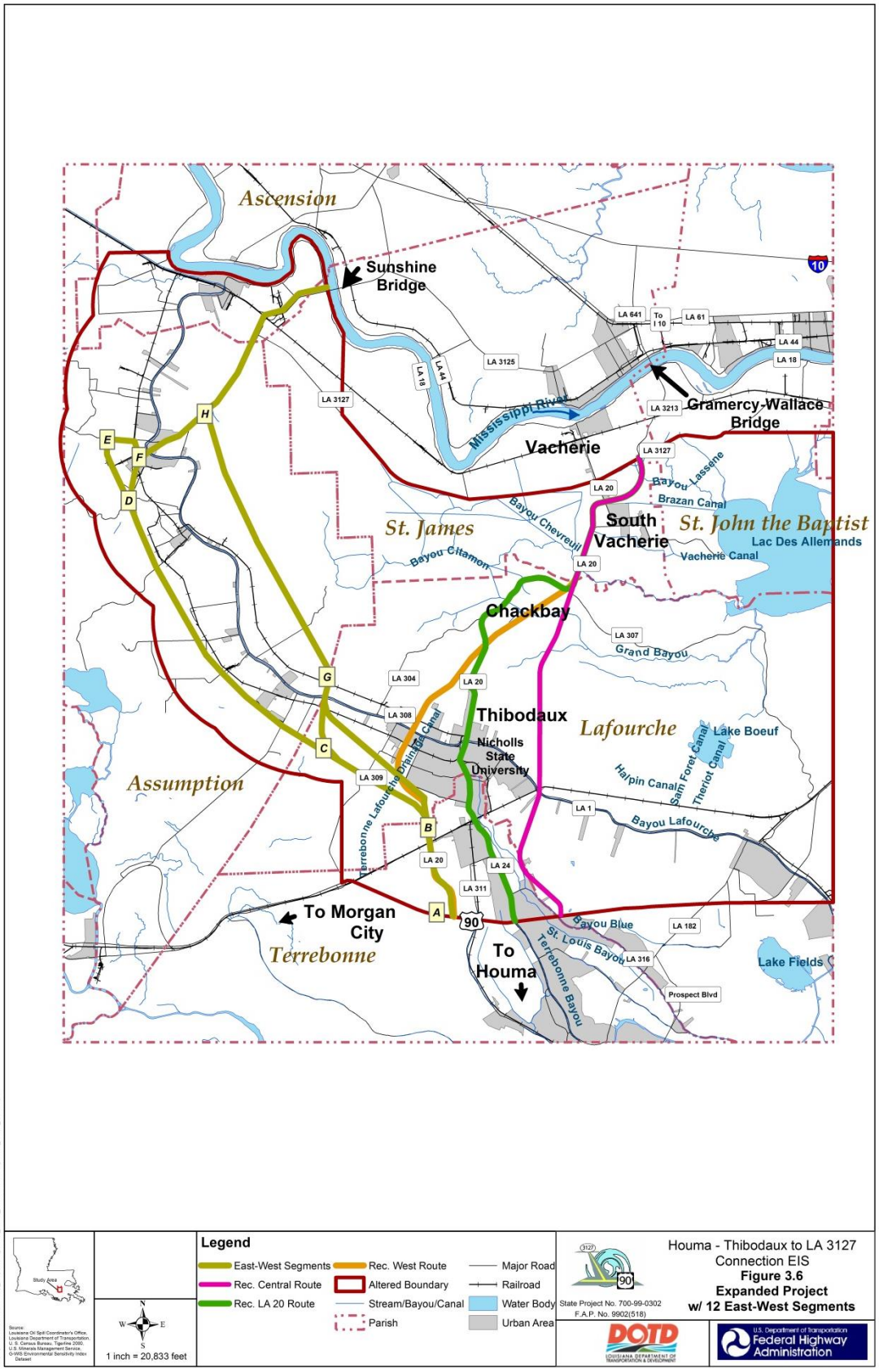


Figure 3-7
Recommended East-West Alignment

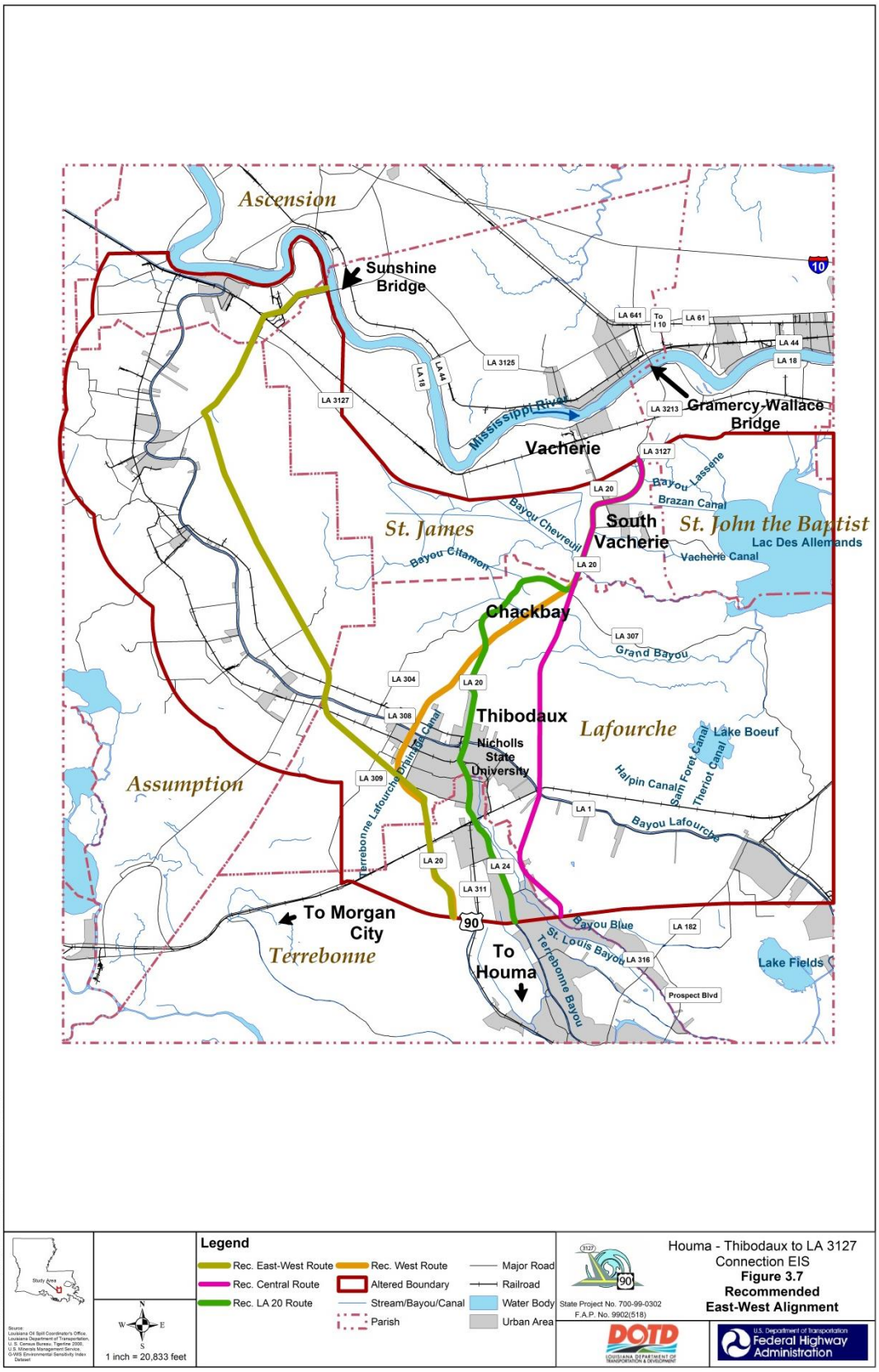
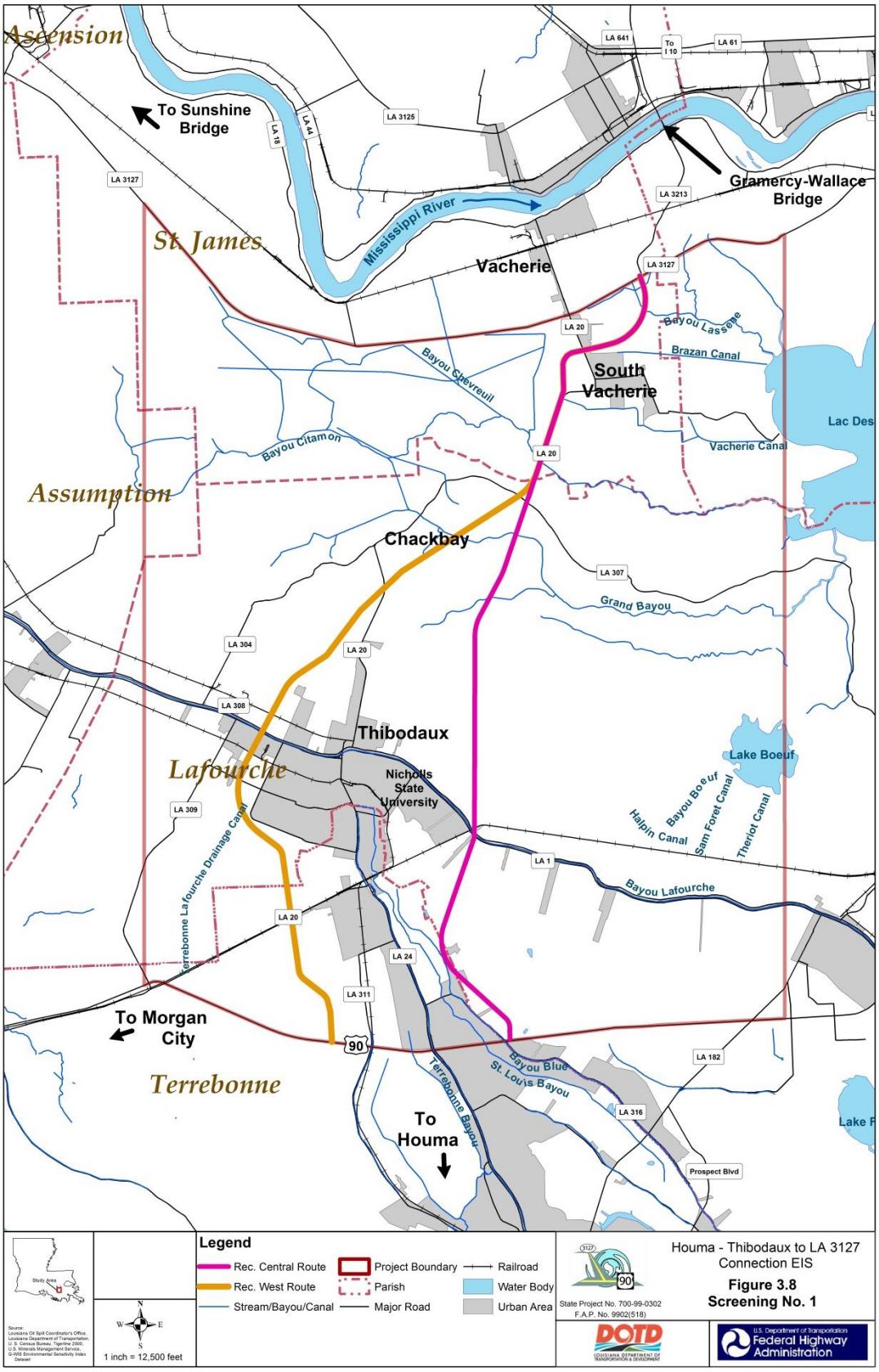


Figure 3-8
Screening No. 1



3.2.4.1 What screening criteria and constraints data were developed?

In order to evaluate the alternatives against the Purpose and Need of the project and to identify the environmental consequences associated, screening criteria was developed and considered based upon the project objectives. The screening criteria have been arranged under the headings of "Purpose and Need" and "Environmental." The Purpose and Need heading was divided into two principle elements: system linkage and hurricane evacuation. Likewise, the Environmental heading was divided into two principle elements: human environment and natural environment.

Purpose and Need

System Linkage:

- Improves north-south connectivity;
- Provides north-south system redundancy;
- Provides improved north-south highway network capacity; and
- Provides a direct, limited access route between the Houma-Thibodaux area and the Mississippi River corridor.

Hurricane Evacuation:

- Improves hurricane evacuation routes within the study area;
- Uniformly distributes traffic between the Sunshine and Gramercy-Wallace Bridges; and
- Maximizes efficient use and operation of hurricane evacuation routes and the transportation network.

Environmental

Human Environment:

- Minimizes the impacts on the surrounding community;
- Minimizes the amount of relocations;
- Minimizes the impacts on agricultural and farmland;
- Minimizes the impacts on cultural resources;
- Minimizes noise impacts;
- Minimizes the impacts on hazardous materials sites, pipelines, and wells; and
- Minimizes the impacts on protected lands.

Natural Environment:

- Minimizes impacts on invasive species;
- Minimizes impacts on Wild and Scenic Rivers;
- Minimizes impacts on threatened and endangered species;
- Minimizes impacts on essential fish habitats;
- Minimizes impacts on water quality;
- Minimizes impacts on floodplains; and
- Minimizes impacts on wetlands.

Every effort to lessen environmental impacts was priority in the development process, specifically impacts to surrounding wetlands. In areas where avoidance is not possible, a mitigation plan will be implemented for the Preferred Alternative, which will be determined in the FEIS.

3.2.5 Phase 3

The third phase evaluated the recommended routes against the Purpose and Need to define the routes that would be carried through and analyzed in the DEIS. In November 2009, the revised Notice of Intent (see **Appendix B**) was issued to restart the DEIS project work with the expanded study area boundary (as shown in Figure 3-6) and the new northernmost east-west alternative. An agency coordination meeting was held in March 2010 to discuss the results of the supplemental screening study along with future agency and public coordination.

Following the March 2010 agency meeting, existing traffic and toll studies were revised to reflect the expanded study area boundary; see **Appendix F and G**, respectively. The northernmost east-west route was included to provide additional supportive data (see **Figure 3-9**). The results of the revised traffic study determined that the east-west alternative had an insignificant impact on projected north-south travel through the region.

In addition, the revised toll study demonstrated that tolling would still be an unfeasible option since projected toll revenues would not provide adequate funding for the project as a whole.

Based on the results of the revised traffic study, the project Purpose and Need was refined in an effort to better define north-south connectivity, which was then presented at the agency coordination meeting held in November 2010.[3] During this meeting, it was recommended that the eastern and east-west alternatives be eliminated from further consideration based on the results of the revised traffic study (see Figure 3-8).

In January 2011, additional Purpose and Need information was presented to agencies for comment. In a response to the agency comments, the project team maintained the position to eliminate the east-west alternative from further consideration based on its inability to meet the Purpose and Need. Based on agency comments, it was also decided that the proposed project should utilize existing routes as much as possible along portions of the remaining alternatives.

- The east-west alternatives were eliminated again based on their lack of meeting the Purpose and Need (see **Figure 3-10**).
- Agencies requested that the widening of LA 20 be considered as a potential route (see **Figure 3-11**).
- LA 20 was eliminated from study based on the inability to meet the Purpose and Need (see **Figure 3-12**).
- Portions of LA 20, LA 311, and LA 316 were incorporated into the potential routes. A second alternative for the northern portion of the route was also added (see **Figure 3-13**).

In May 2011, the Western, Central, North A, and North B Alternatives were presented to LADOTD for comment. In August 2011, a meeting with LADOTD was held to discuss comments submitted by LADOTD and FHWA regarding the alternatives. Based on the submitted comments, the Western, Central, and Northern alternatives were revised submitted to LADOTD in September 2011.

[3] "Houma-Thibodaux to I-10 Connection: EIS-Project Update" (HTMPO Policy Committee). April 2011.

Figure 3-9
Traffic/Toll Evaluation on Four Alignments

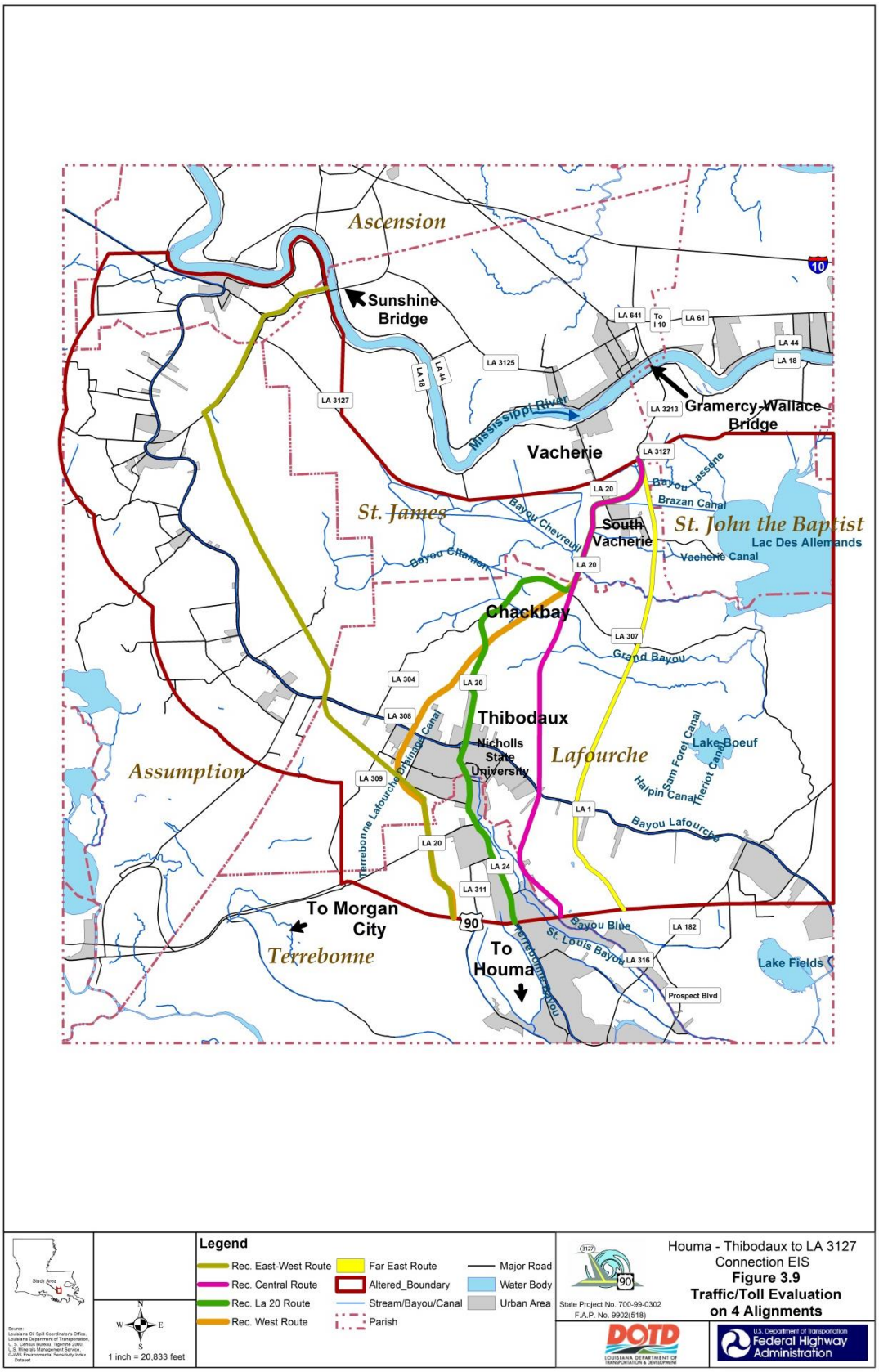


Figure 3-10
Screening No. 2

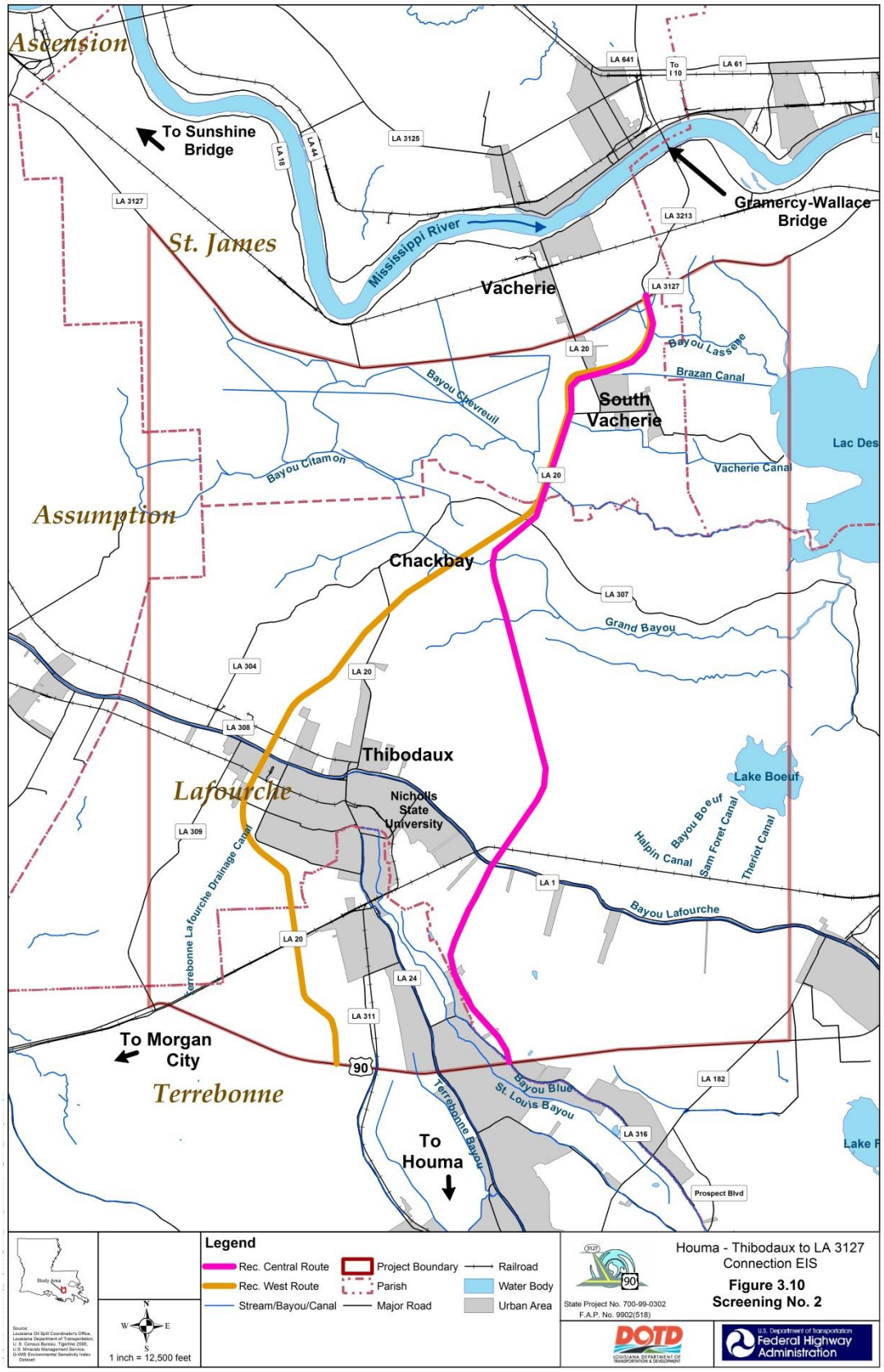


Figure 3-11
Additional Consideration and Refinement of Previous Alignments

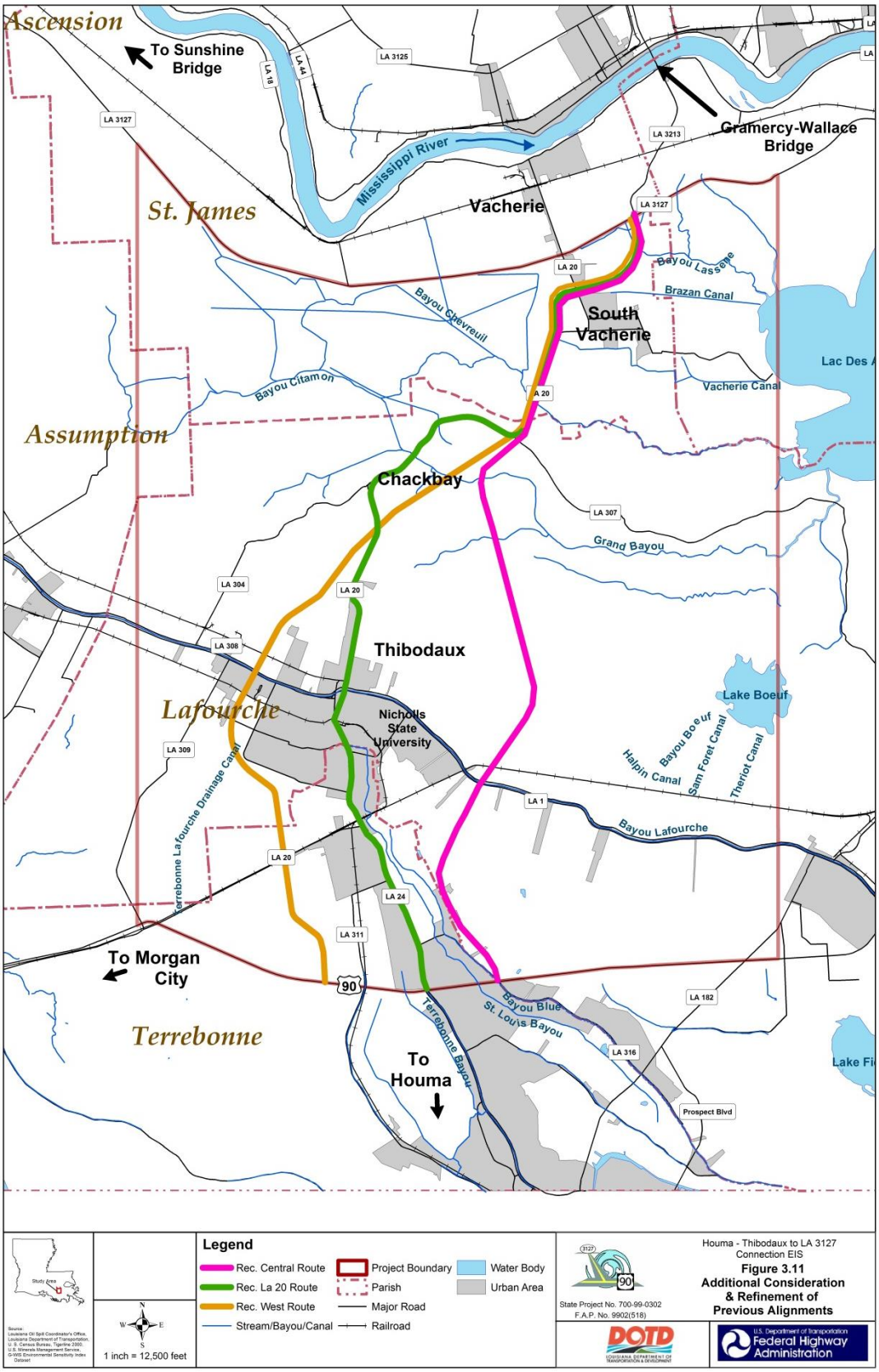


Figure 3-12
Screening No. 3

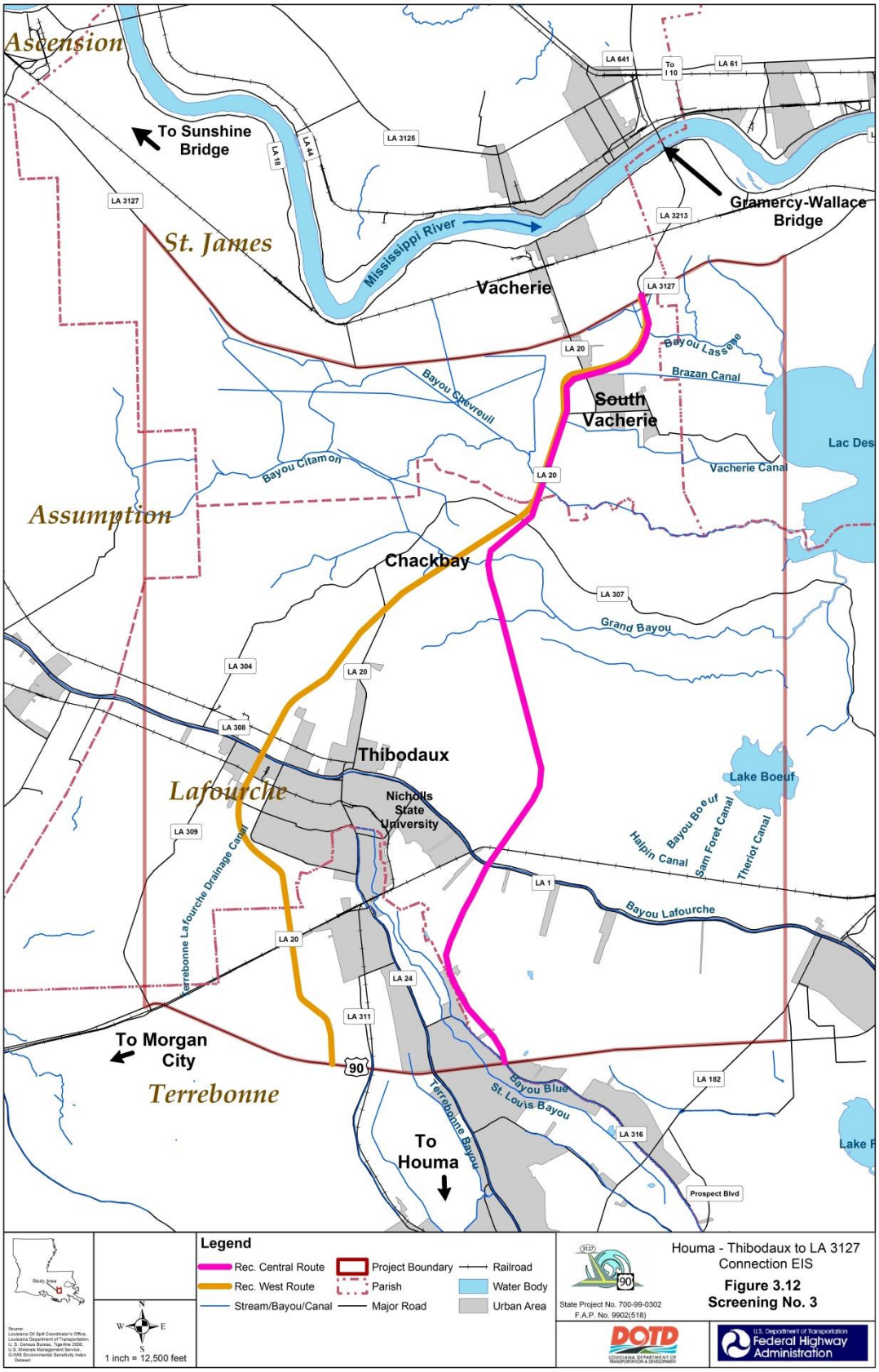
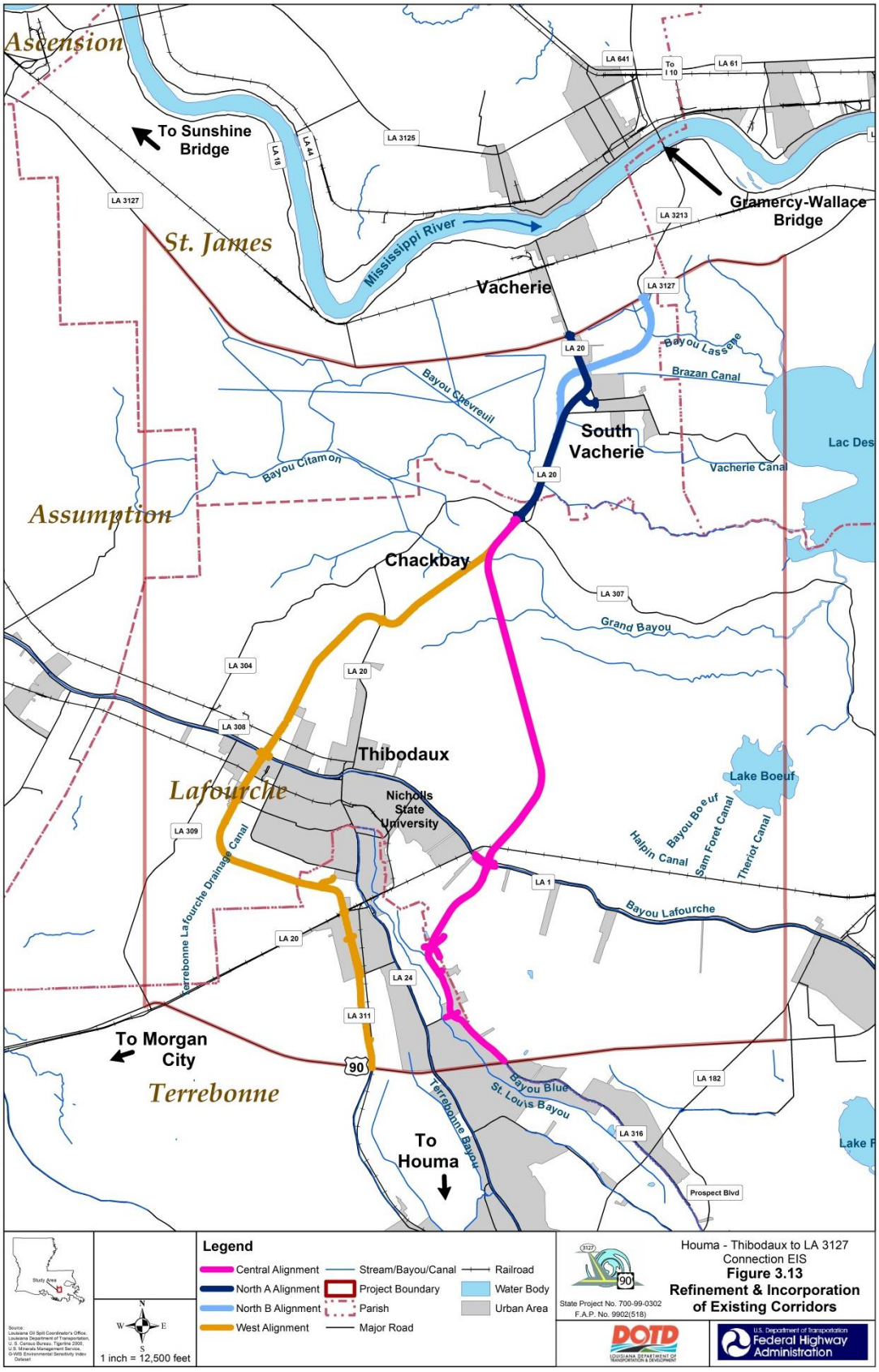


Figure 3-13
Refinement and Incorporation of Existing Corridors



A meeting with LADOTD and FHWA was held in March 2012 to discuss the Reasonable Alternatives. Components of the preliminary costs estimates for ROW, relocations, mitigations, and construction were discussed to obtain comments and suggestions from agencies for adjustments to the alternatives. In addition, consideration was given to the ability of each alternative to meet the Purpose and Need, impacts to the human and natural environments, traffic demands, and current and future development of the study area. Subsequently, LADOTD and FHWA made the decision to carry forward the Western and North A alternatives to the agency meeting for additional input.

- The study area was reduced again because the additional east-west routes were eliminated based on feedback and comments provided by the resource agencies.

The Agency Coordination Meeting was held at the SCPDC in late March 2012. During this meeting, an overview of the project's history and current standing in regards to the National Environmental Policy Act of 1969 (NEPA) process was presented and discussed. This meeting represented Coordination Point 3, which is the final agency coordination prior to the DEIS (for more information see Chapter 5). The meeting's overall objective was to discuss the results of the alternative screening and the selection of the Reasonable Alternatives.

Based on comments provided from U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (EPA), and U.S. Fish and Wildlife Service (USFWS), agencies were more supportive of the Western Alternative over the Eastern Alternative; however, some adjustments would need to be made to the alignment to avoid additional impacts and to provide an interchange in the intersection with LA 20. Further modifications to the routes were made to reduce wetland impacts (see **Figure 3-14**). As a result of the agency comments, minor adjustments were made to the alignment for the Western Alternative. The updated Western Alternative was presented to LADOTD in July 2012. LADOTD also provided a response to USACE meeting comments in August 2012.

The four alternatives being taken into detailed study for this DEIS are as follows:

- ***Alternative 1 (Western Alignment + North Alignment "A")*** proposes to connect US 90 and LA 3127 by incorporating the existing alignment along LA 311 (Western Alignment) with LA 20 (Segment North A) as well as new construction, resulting in a 26.6-mile, four-lane divided roadway. The northern terminus of *Alternative 1 (Western Alignment + North Alignment "A")* will be the intersection of LA 20 and LA 3127 and the southern terminus will be the intersection of LA 311 and US 90 (see **Figure 3-15**).

- ***Alternative 2 (Western Alignment + North Alignment "B")*** proposes to connect US 90 and LA 3127 by incorporating the existing alignment along LA 311, but will not utilize segment North A as in *Alternative 1 (Western Alignment + North Alignment "A")* to reach LA 3127. Instead, *Alternative 2 (Western Alignment + North Alignment "B")* connects the Western Alignment with Segment North B resulting in a 28.8-mile four-lane, divided roadway (see **Figure 3-15**).

Figure 3-14
Modified Western Alignment

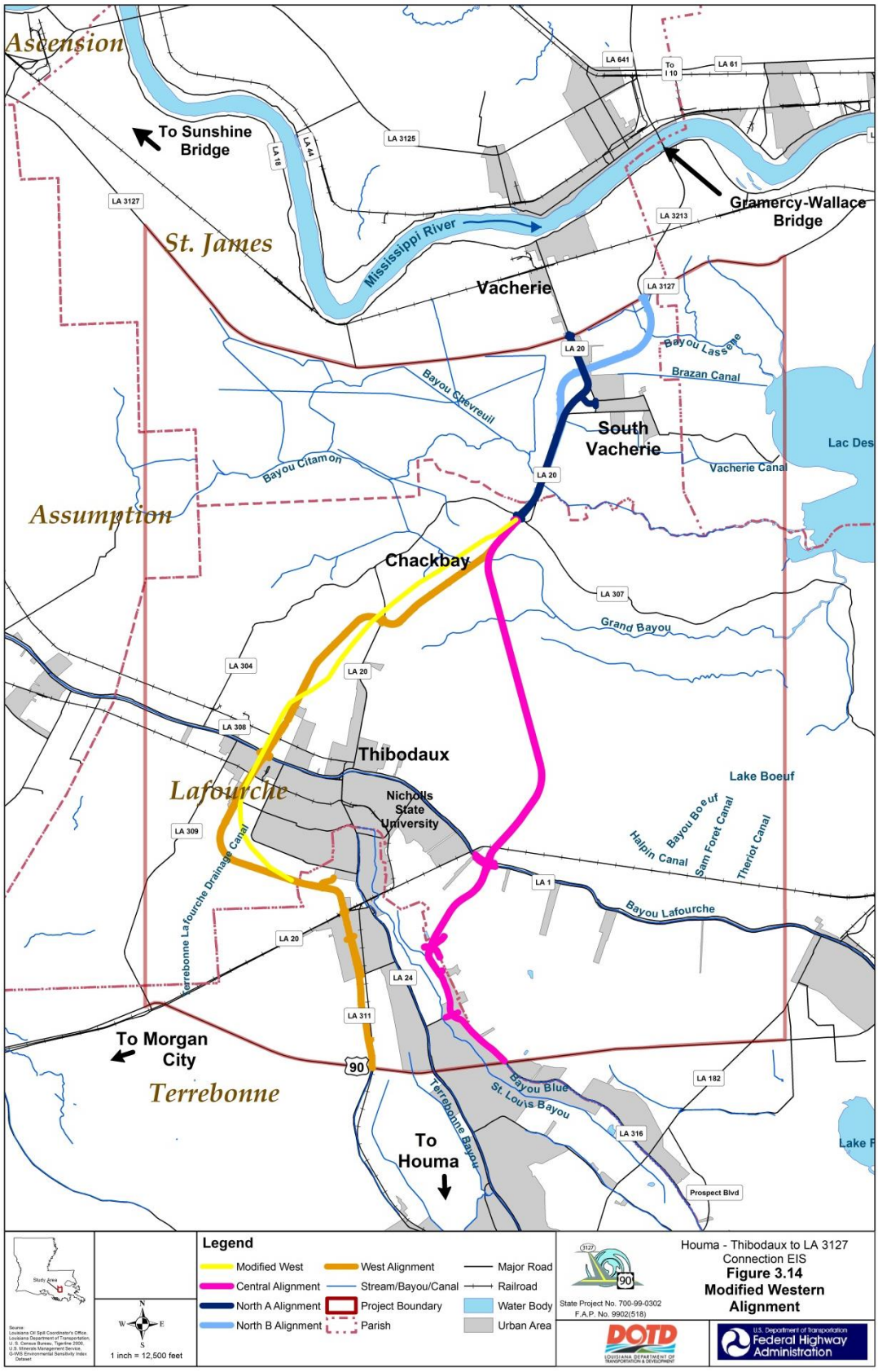
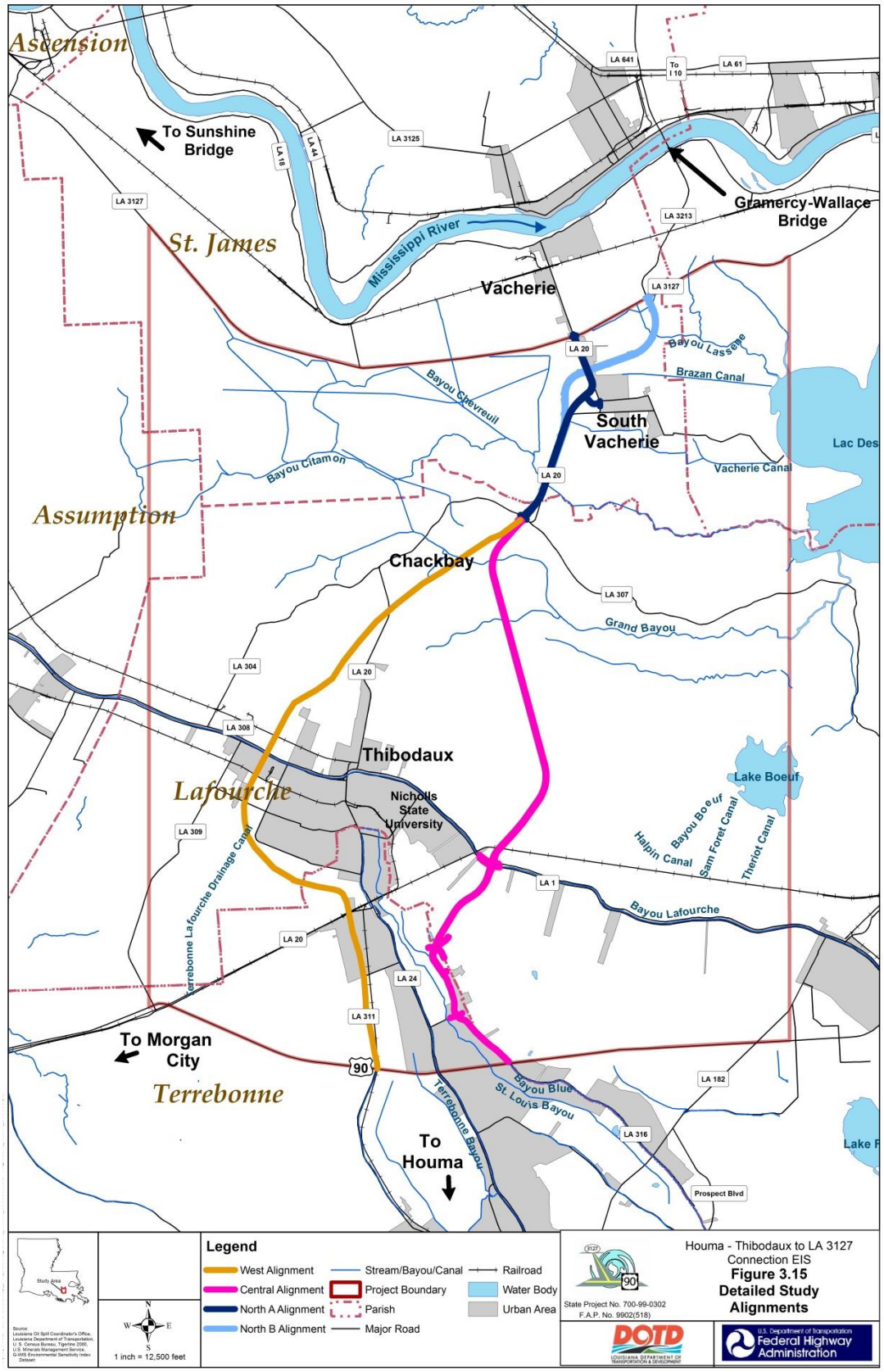


Figure 3-15
Four Reasonable Alternatives



- ***Alternative 3 (Central Alignment + North Alignment "A")*** proposes to connect US 90 and LA 3127 by incorporating the existing alignment along LA 316 (Central Alignment) and LA 20 (Segment North A) as well as construction on a new location, resulting in a 22.6-mile, four-lane divided roadway. The northern terminus of *Alternative 3 (Central Alignment + North Alignment "A")* will be the intersection of LA 20 and LA 3127 and the southern terminus will be the intersection of US 90 and LA 316 (see **Figure 3-15**).

- ***Alternative 4 (Central Alignment + North Alignment "B")*** proposes to connect US 90 and LA 3127 by incorporating the existing alignment along LA 316 (Central Alignment) and connect to segment North B. The connection of the Central Alignment and segment North B will result in a 24.8-mile four-lane, divided roadway (see **Figure 3-15**).

For a full history of the alternative development process, see the Alternative Development History Technical Memorandum in Appendix D.

3.3 THE PRELIMINARY ALTERNATIVES

3.3.1 What alternatives were considered but eliminated?

Eastern Alignment

During the initial Quantm™ trials of Phase I, the potential for an eastern alignment was identified. Over the course of Phase I, screening criteria were refined multiple times (final screening criteria can be found in Section 3.2.4.1) in order to ensure that the alignment alternatives would pose the least possible impact. Through this process, it was determined that an eastern alignment failed to meet the Purpose and Need for the project. To ensure there were no additional benefits to the existing transportation network from an alignment located within the eastern part of the study area (from a traffic standpoint), an eastern alignment was included in a toll feasibility study (see Appendix G). Following the results of the toll feasibility study, the eastern alignment was removed from further study not only due to environmental impacts, but due to poor performance in the traffic analysis as well.

At the end of Phase II, it was determined to revise and update both the tolling and traffic studies due to the time that had elapsed and changes that may have occurred within the study area. The eastern alignment was included in the updates to the tolling and traffic studies. The tolling and traffic analyses remained consistent. Again, the eastern alignment was removed due to its poor performance from a traffic perspective and was not further studied.

East-West Alignment

Out of the review process following Phase I of the screening study came considerable agency concern that corridors traversing what is known as the Bayou Lafourche Ridge connecting Houma-Thibodaux to the Sunshine Bridge (east-west connections) were not given due consideration as viable options to meet the project's Purpose and Need. As a result, the agencies requested that east-west alignments be considered. In April 2007, an additional screening study was conducted that analyzed potential corridors connecting Houma-Thibodaux to the Sunshine Bridge via the Bayou Lafourche Ridge. A total of 12 potential routes were developed that met the project criteria. It was determined that a viable east-west alignment exists that would connect Houma-Thibodaux to the Sunshine Bridge. The northernmost east-west alignment (N1) provided additional capacity between US 90 and I-10; however, its inability to provide north-south system redundancy and improved connectivity to the underutilized Gramercy-Wallace Bridge makes it less effective than a direct north-south route at achieving the project's stated Purpose and Need. The east-west alignment was also brought into Phase III of the screening study despite concerns about the alternatives ability to meet the Purpose and Need of the project. Ultimately, the east-

west alignment was removed from further consideration due to its inability to meet the Purpose and Need of the project.

Widening of LA 20

During Phase III of the screening process, through comments provided by USFWS and USACE, the idea arose that the widening of LA 20 could serve as a stand-alone alternative. After consideration, it was determined that the widening of LA 20 as a stand-alone alternative would result in significant residential and commercial relocations and did not meet the Purpose and Need and was therefore removed from further consideration. However, portions of existing alignment (LA 20, LA 311, and LA 316) were incorporated into the four remaining alignments to provide greater connectivity and upgrades to existing infrastructure.

3.3.2 TSM, ITS, and mass transit alternatives

Traffic Systems Management

FHWA guidance requires the analysis of Transportation System Management (TSM) for the purposes of completing an EIS. TSM can be defined as improvements to an existing transportation facility or facilities that improve the flow of traffic. A TSM Alternative would feature limited, lower cost construction activities designed to maximize the efficiency and capacity of the existing highway system. These types of improvements include, but are not limited to, optimization of signal timing, intersection improvements, turning lanes, and grade separation. While these modifications would improve the current north-south highway network capacity and efficiency, the TSM Alternative fails to provide north-south system redundancy and improve overall capacity. This alternative failed to meet critical objectives from the Purpose and Need of the project; therefore, a TSM Alternative was not considered as a Reasonable Alternative.

ITS

Intelligent Transport Systems (ITS) feature advance applications and technologies to provide innovation in the area of transportation and traffic engineering. Examples of such technologies include speed limit and red light cameras, variable speed limits, and travel time notifications. In 2001, U.S. Department of Transportation (USDOT) published *The FHWA's Final Rule on the National ITS Architecture* and *The FHWA's Policy on the National ITS Architecture*. The purpose of these two documents was to encourage the use of and provide guidelines for future developments to incorporate ITS technologies through the implementation of Regional ITS Systems. While the addition of ITS alone does not meet the Purpose and Need of the project, every effort will be taken to include innovation through the use of ITS in the Reasonable Alternatives.

Mass Transit Alternative

A mass transit alternative, such as a bus or rail system, is generally only considered in urban areas with a population of over 200,000 (USDOT 1987), or where concentrated trip origins or destinations make mass transit a Reasonable Alternative. Mass transit would not be a Reasonable Alternative because of failure to meet the project's Purpose and Need to provide north-south system redundancy for automobile traffic, provide improved north-south network capacity, or to maximize the efficient use and operation of hurricane evacuation routes.

3.4 THE NO-ACTION ALTERNATIVE

Council of Environmental Quality (CEQ) regulations require that an agency "include the alternative of no-action" as one of the alternatives considered in an EIS (40 CFR 1502.14[d]). FHWA guidance states that a no-build alternative "may be a Reasonable Alternative, especially where the impacts are high and the need is relatively minor." The no-build alternative allows the evaluation of the study area in its current condition without potential impacts related to construction of the proposed project. The no-build alternative establishes a baseline of traffic, environmental, and human conditions to which the build alternatives can be compared.

3.4.1 No-build alternative

The No-build Alternative consists of the anticipated roadway network and forecast land use in 2032 without the completion of a build alternative. The LA 20 corridor currently provides north-south connectivity, but is a narrow, winding arterial road without access management. Portions of existing LA 20 show a Level of Service (LOS) E during both peak hours[4]. LOS E represents operating conditions at or near capacity levels. Freedom to maneuver within the traffic stream is extremely difficult. Comfort and convenience levels are extremely poor, and driver frustration is generally high. In the 2032 design year, due in part to continued economic growth, portions of LA 20 will continue to exhibit LOS E during peak hours, thus failing to meet the capacity needs of future users. **Table 3.2** on the following page shows the projected 2032 traffic conditions for the no-build alternative. In the future the roadway also fails as it cannot handle the capacity of a wide-scale evacuation in times of emergency, such as hurricanes. In recent years, contraflow has not been initiated on LA 20 during hurricane evacuations due to the absence of controlled access[5], but LA 20 must still handle the majority of the traffic volume. This causes severe bottle necking and delays. In order to improve LA 20, in terms of access management and capacity, significant widening and lack of ROW would cause the relocation of numerous businesses and residences. As you will see later, this was considered but it was eliminated based on its inability to meet the Purpose and Need of the project. Selection of a No-build Alternative would ultimately avoid major expenditure and impacts to the surrounding areas, but fails to meet the Purpose and Need of the project. Throughout the alternative screening process, the no-build alternative is included as a potential alternative to new construction.

[4] Houma-Thibodaux Metropolitan Area Transportation Plan Update and LADOTD Summary Logs Estimates

[5] "Purpose and Need" Chapter 2. Houma-Thibodaux to LA 3127 Connection Draft Environmental Impact Statement.

Table 3.2
No-build Traffic Conditions

Roadway	Limits	Direction	Measurement	Existing 2010	Projected 2032
LA 311	US 90 to LA 24	Northbound	LOS (AM/PM)	D/D	E/E
			ADT	4400	7100
		Southbound	LOS (AM/PM)	D/D	E/E
			ADT	4300	7000
LA 24	US 90 to LA 311	Northbound	LOS (AM/PM)	A/B	B/C
			ADT	11100	18600
		Southbound	LOS (AM/PM)	A/A	B/B
			ADT	11300	19400
	LA 311 to LA 20	Northbound	LOS (AM/PM)	B/B	C/C
			ADT	10900	18200
		Southbound	LOS (AM/PM)	B/B	C/C
			ADT	11700	20000
LA 316	US 90 to LA 24	Eastbound	LOS (AM/PM)	B/B	C/C
			ADT	700	3700
		Westbound	LOS (AM/PM)	B/B	C/C
			ADT	700	3700
LA 648	LA 20 to LA 1	Northbound	LOS (AM/PM)	D/D, B/C	E/E, C/D
			ADT	6700, 2800	12400, 5400
		Southbound	LOS (AM/PM)	D/D, B/C	E/E, C/D
			ADT	6400, 2800	11800, 5200
LA 3185	LA 20 to LA 1	Northbound	LOS (AM/PM)	C/C	D/E
			ADT	3700	7400
		Southbound	LOS (AM/PM)	C/C	D/E
			ADT	3600	7400
LA 20	US 90 to LA 24	Northbound	LOS (AM/PM)	B/B	A/B
			ADT	2200	1900
		Southbound	LOS (AM/PM)	B/B	A/B
			ADT	2100	1800
	LA 308 to LA 304	Northbound	LOS (AM/PM)	A/A, E/E	B/B, E/E
			ADT	9000, 5800	15000, 8100
		Southbound	LOS (AM/PM)	A/B, E/E	C/C, E/E
			ADT	10700, 2700	17900, 8000
	LA 304 to LA 307	Northbound	LOS (AM/PM)	E/E	E/E
			ADT	4300	5200
		Southbound	LOS (AM/PM)	E/E	E/E
			ADT	4300	5200
	LA 307 to LA 643	Northbound	LOS (AM/PM)	E/E	E/E
			ADT	3300	5100
		Southbound	LOS (AM/PM)	E/E	E/E
			ADT	3300	5100
	LA 643 to LA 3127	Northbound	LOS (AM/PM)	E/E	E/E
			ADT	5300	6400
		Southbound	LOS (AM/PM)	E/E	E/E
			ADT	5300	6300
LA 3127	LA 20 to LA 3213	Eastbound	LOS (AM/PM)	D/C	D/D
			ADT	2000	3000
		Westbound	LOS (AM/PM)	D/C	D/D
			ADT	2100	3000

LOS = Level of Service
ADT = Average Daily Traffic

3.5 HOW WAS THE PUBLIC INVOLVED IN DEVELOPMENT OF THE ALTERNATIVES?

The first public meeting was held at 7:00 p.m. on Thursday, July 15, 2004. The purpose of the meeting was to inform the general public on the progress and schedule of the studies currently underway, present and explain the project overview including Purpose and Need, and to solicit input from the public. The comments directed to the federal and state officials, and the consultant team for consideration, paraphrased and broadly summarized, included:

- A route that would take motorists north into the St. James Parish area, because some of the stretches of I-10 east of the Gramercy-Wallace Bridge are vulnerable to flooding should be considered.
- The southern boundary of the project area, US 90, does not extend to the south enough to allow the residents of Terrebonne Parish ready access to the evacuation route.

On November 18, 2004 the second public involvement meeting was held in order to provide information on the progress of the project and to receive input from the public. Following a presentation by Buchart Horn, comments and questions were taken from those in attendance and included:

- Attendees felt that the scope of work for the project should be extended to include I-10.
- Multiple attendees indicated that a direct route to the Gramercy-Wallace Bridge was the most desirable.

On November 27, 2007, a public meeting was held to present the East-West Alignment alternatives. Maps were presented of the potential alternative routes to give the public a visual representation of the project. Some comments and questions addressed by the public included:

- Great concern was shown for the amount of wetlands that would be affected by the construction of any of the proposed routes.
- Some attendees showed interest in a northern terminus that would be equidistant between the Sunshine Bridge and the Gramercy-Wallace Bridge in order to obtain an even capacity distribution, while others wanted to only focus on the Gramercy-Wallace Bridge.

On March 9, 2010, a meeting was held to provide the public with an update on the current phase of the project, coordination efforts to date, upcoming public involvement opportunities, and to illicit comments on the alternatives presented. Some comments and questions addressed by the public included:

- Attendees showed concern for potential impacts to wetlands.
- Attendees continued support for routes that would provide greater access to the Gramercy-Wallace Bridge.
- Attendees showed continued support for the project and voiced what ways they felt the project would benefit the area.

3.6 HOW WERE THE AGENCIES INVOLVED IN THE DEVELOPMENT OF THE ALTERNATIVES?

On July 13, 2004 a formal interagency scoping meeting was held in the offices of the SCPDC followed by a field visit. A PowerPoint presentation was made to outline the scope of the project. Areas that were addressed and comments and concerns raised by the agencies during this meeting include:

- USACE and EPA raised concerns regarding the conclusions reached in a prior 1999 URS report, particularly regarding the elimination of the Gramercy-Wallace connection.
- USACE stated that avoidance of all major impacts is necessary (such as wetlands, cultural areas, endangered species, etc.). It was noted that the 1999 URS report would be used to address avoidance.
- USACE suggested that consideration be given to the evacuation route running along the Bayou Lafourche Ridge and the expansion of the study area to accommodate traffic south of US 90.
- USACE concluded their comments stating that they feel that LADOTD has eliminated alternatives that should be considered in the NEPA process. EPA asked if the URS study could be summed up so they can see why some of the alternatives were ruled out, i.e., Bayou Lafourche Ridge Alternative. It was also noted that I-49 future developments and the Donaldsonville to the Gulf study recommendations, to name just a few of the other projects in the area, need to be addressed.
- USFWS suggested strong consideration of using elevated structures through the wetland areas because fill would have significant immediate and long-term impacts both from a biologic and hydrologic standpoint. It was noted that access to the facility must be controlled regardless, and elevation of the roadway is the best way to provide that access control.

On November 18, 2004, an agency coordination meeting was held at the SCPDC. Specific focus was placed on outlining design criteria and identifying known constraints.

- USACE pushed for a route that would follow the Bayou Lafourche Ridge. The route would extend beyond the project area, but following the west side of the Mississippi River would allow for the avoidance of Baton Rouge for increased efficiency in times of evacuation.
- USACE stated that a transportation link should be the primary purpose of this project since the corridor will be used as such a majority of the time. Defining the purpose of the project as a hurricane evacuation route is too broad and allows for too many alternatives.
- USACE also voiced great concern regarding the potential impact to wetlands that the project could incur. USACE stated that they were revising the methods of wetland mitigation and requested that direct and indirect impacts be considered.

On May 2, 2006 a resource agency meeting was held at the SCPDC. The methodology used to select the three north-south corridors in addition to the traffic analysis and toll study were presented to the agencies at this meeting. Out of the review process came considerable agency concern that corridors traversing what is known as the Bayou Lafourche Ridge connecting Houma-Thibodaux to the Sunshine Bridge (east-west connections) were not given due consideration as viable options to meet the project's Purpose and Need. As a result, the agencies requested that east-west alignments be considered for the proposed project.

On November 18, 2010, an Agency Coordination Meeting was held at the SCPDC. The purpose of this coordination meeting was to present the results of a revised traffic analysis. Also presented at this coordination meeting was a refined project Purpose and Need, prepared in response to the updated traffic results, and the alternatives recommended to be carried into the DEIS.

On March 27, 2012, LADOTD and FHWA staff, local officials, agency representatives, and the project consultant participated in a coordination meeting for the project. Based on this meeting, USACE presented comments (March 30 and May 9, 2012) related to the project and the environmental process. Modifications to the western project alignment were made to address comments presented during the agency meeting (Figure 3.14). The alignment shown in yellow displays the improvements of the original western alignment. The improvements allow for the minimization of impacts along the western alignment.

3.7 THE REASONABLE ALTERNATIVES

3.7.1 Which alternatives were designated as the reasonable build alternatives?

The four alternatives selected as the reasonable build alternatives are described in the following sections. Please refer to **Figure 3-20** and **Figure 3-21** at the end of this chapter for typical sections based on the design roadway classifications.

3.7.1.1 Alternative 1 (Design, Traffic, and Cost)

Design

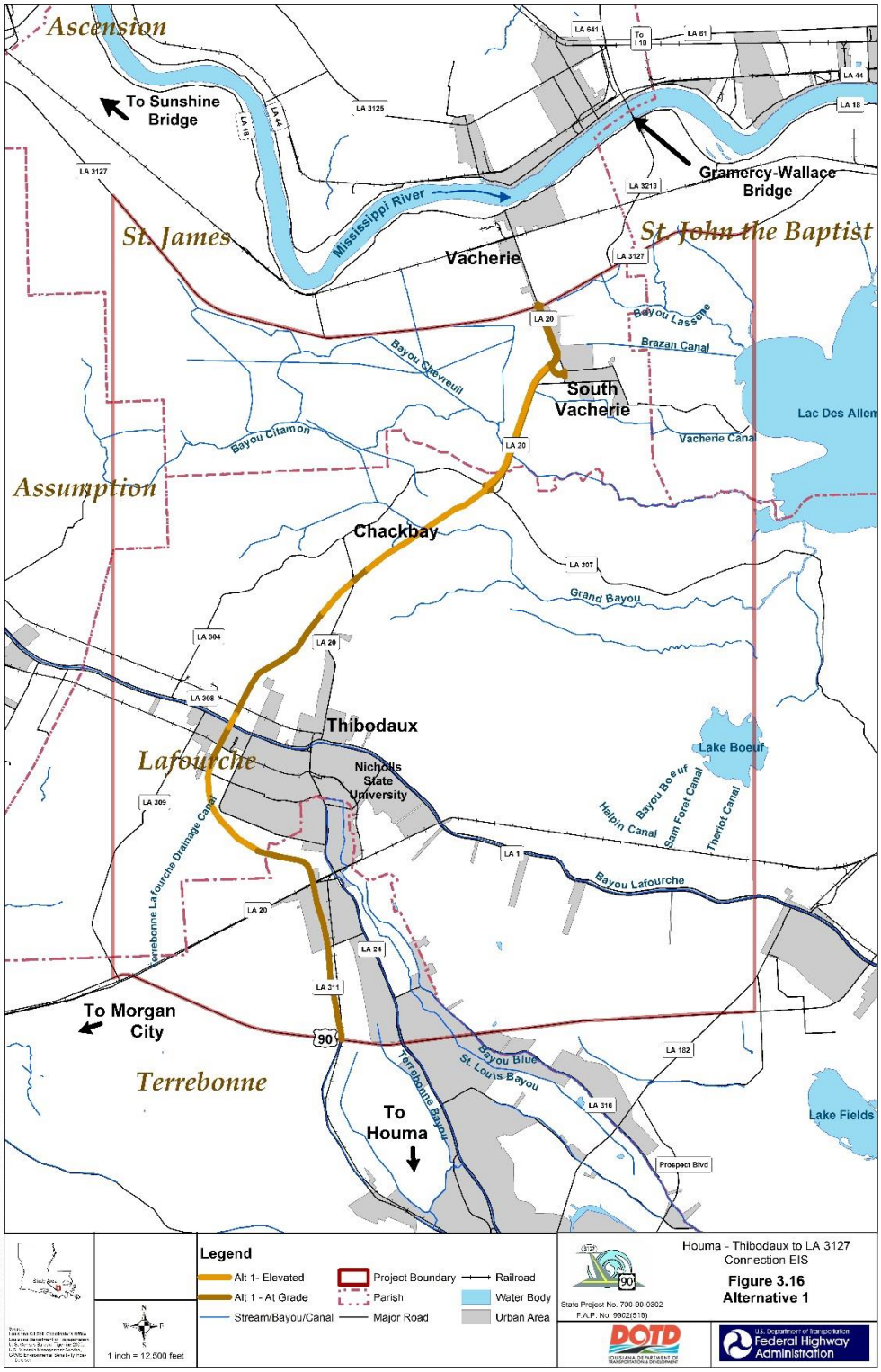
Alternative 1 (Western Alignment + North Alignment "A") proposes to connect US 90 and LA 3127 by incorporating the existing alignment along LA 311 (Western Alignment) with LA 20 (Segment North A) as well as new construction, resulting in a 26.6-mile, four-lane divided roadway. The northern terminus of *Alternative 1 (Western Alignment + North Alignment "A")* will be the intersection of LA 20 and LA 3127 and the southern terminus will be the intersection of LA 311 and US 90 (see **Figure 3-16**).

Western Alignment

Beginning at the southern terminus, *Alternative 1 (Western Alignment + North Alignment "A")* will maintain the existing interchange and will move in a generally northern direction along LA 311. North of the interchange, the raised grass median transitions from the existing 28-foot width to 16-feet in width, remaining within the range deemed acceptable by LADOTD UA-2 design criteria.

The alignment will continue in a generally northern direction for 4.3 miles before intersecting with LA 20 and Amtrak Rail before shifting westward and transitioning to a UA-4 design. Under the guidance of LADOTD UA-4 design criteria, the median will transition from a 16-foot raised, grass median to a 53-foot depressed, grass median and will maintain four lanes. Shortly after the transition to a UA-4 roadway, the alignment will move onto a proposed bridge structure. Potential wetlands have been identified in this area, so to minimize impact it is suggested that the alignment be elevated. The elevated alignment will continue in the westerly direction for 3 miles before reaching the end of the bridge structure, where the alignment will transition back to the previously described UA-4 design, and shifting to a northeasterly direction.

Figure 3-16
Alternative 1 (Western Alignment + North Alignment "A")



The alignment will continue in the northeasterly direction, overpassing LA 1, Bayou Lafourche, and LA 308 with a proposed bridge structure. Shortly after the interchange, the alignment will leave the bridge structure and promptly transition to a RA-2 roadway classification, with the median remaining a 53-foot depressed, grass median. The alignment will then continue in the northeasterly direction for approximately 2 miles before again moving onto a proposed bridge structure. Again, elevation of the roadway is suggested in this area to minimize impacts to potential wetlands. The alignment will continue on the bridge structure until reaching LA 20, where it will transition back to at-grade roadway.

Shortly after the intersection with LA 20, the alignment will move onto a proposed bridge structure to accommodate for more potential wetlands. The elevated alignment will continue in the northeasterly direction, eventually crossing Bayou Boeuf, and will come to a proposed diamond interchange with LA 20 for a second time. This second intersection of LA 20 marks the end of the Western Alignment portion of *Alternative 1 (Western Alignment + North Alignment "A")* and begins the North A portion of *Alternative 1 (Western Alignment + North Alignment "A")*.

Segment North A

The alignment will continue in a northeasterly direction on the bridge structures, crossing Chevreuil Bayou, and will shift slightly to run parallel with the existing LA 20 corridor. The alignment running parallel to the existing LA 20 allows for continued access throughout construction, with the intention of using the new alignment to replace portions of LA 20 once complete. Approximately 2 miles after crossing Chevreuil Bayou, the alignment will stray from the existing LA 20 corridor for approximately 1 mile. Within this section, proposed, intersecting roadways will allow for access to existing properties, and the alignment will transition from the bridge structure to at-grade roadway before reconnecting to the existing LA 20 corridor. The alignment will continue along the existing LA 20 corridor for approximately 1.5 miles before reaching its northern terminus at the current intersection of LA 20 and LA 3127.

Traffic

Alternative 1 (Western Alignment + North Alignment "A") is projected to operate at a LOS A in the 2032 design year. See **Table 3.3** on the following page for information on the projected 2032 LOS and ADT. With the 2032 Alternative 1, an improved LOS can be expected on LA 311 from the projected 'No-Build' conditions. LA 20 is still expected to operate at LOS E in the northern portion of the study area. However, a reduction in the delay is expected as the volumes were reduced along the corridor with the addition of the Western Alignment. See **Appendix F** for further information on projected traffic conditions.

Table 3.3
Alternative 1 Future Traffic Conditions

Limits	Direction	Measurement	Projected 2032
US 90 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	4100
	Southbound	LOS (AM/PM)	A/A
		ADT	4700
LA 20 to LA 1/LA 308	Northbound	LOS (AM/PM)	A/A
		ADT	3400
	Southbound	LOS (AM/PM)	A/A
		ADT	4600
LA 1/LA 308 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	1800
	Southbound	LOS (AM/PM)	A/A
		ADT	2500
LA 20 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	4800
	Southbound	LOS (AM/PM)	A/A
		ADT	5600
LA 20 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	4600
	Southbound	LOS (AM/PM)	A/A
		ADT	5400

Cost

A preliminary cost estimate was prepared for the purpose of this DEIS. The construction costs were estimated by using projects of a comparable scale as a guide. **Table 3.4** below outlines the preliminary costs associated with *Alternative 1 (Western Alignment + North Alignment "A").*

Table 3.4
Alternative 1 Cost Estimate

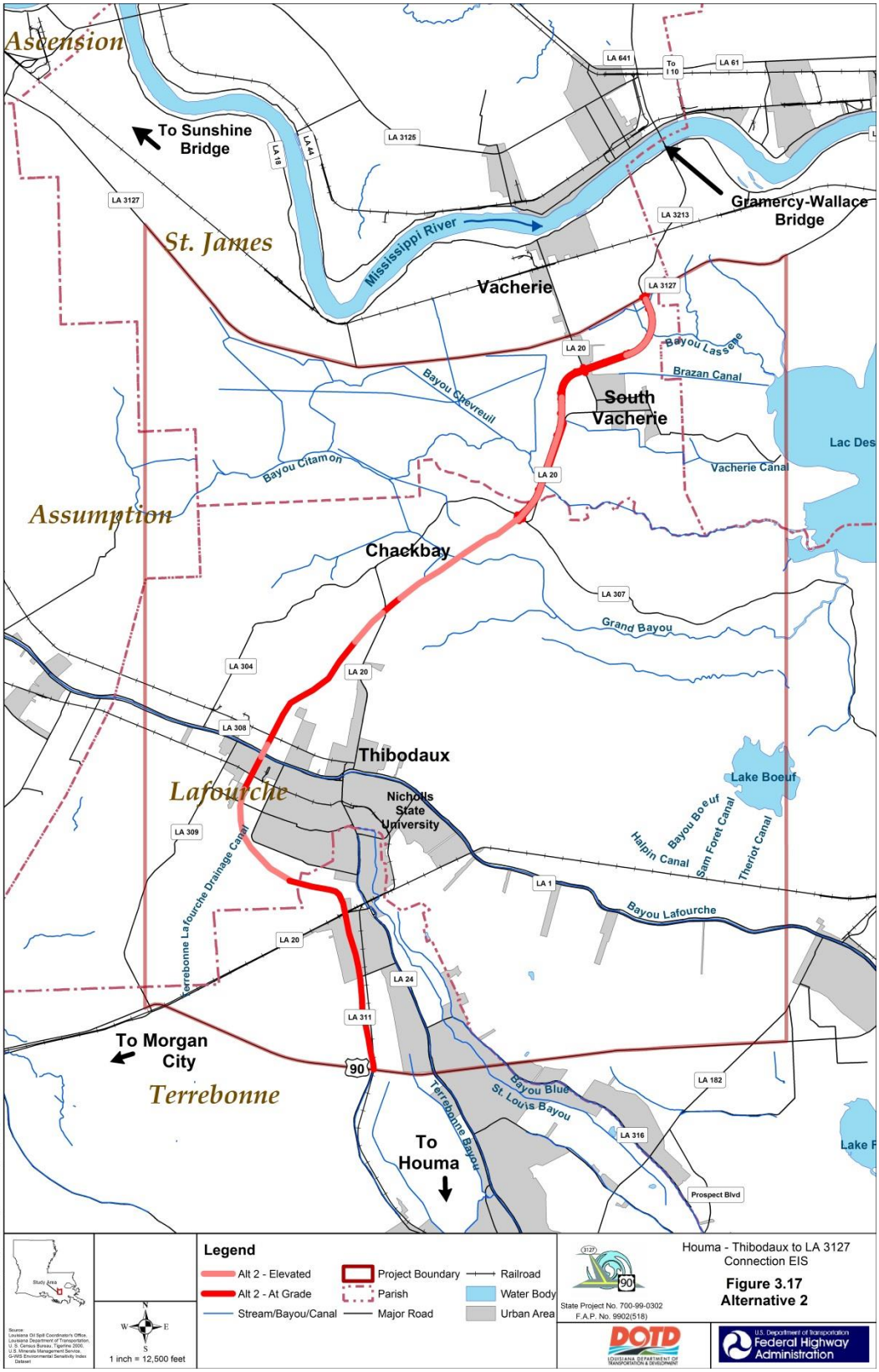
Project	Cost
Construction Cost	$581,042,088
Required Right-of-Way	$110,500,000
Wetlands Mitigation	$12,750,000
Relocation	$5,400,000
Design	$50,000,000
TOTAL COST	**$759,692,088**

3.7.1.2 Alternative 2 (Design, Traffic, and Cost)

Design

Alternative 2 (Western Alignment + North Alignment "B") proposes to connect US 90 and LA 3127 by incorporating the existing alignment along LA 311 (Western Alignment as described in **Section 3.7.1.1, Design**), but will not utilize segment North A as in *Alternative 1 (Western Alignment + North Alignment "A")* to reach LA 3127. Instead, *Alternative 2 (Western Alignment + North Alignment "B")* connects the Western Alignment with Segment North B resulting in a 28.8-mile four-lane, divided roadway (see **Figure 3-17**).

Figure 3-17
Alternative 2 (Western Alignment + North Alignment "B")



Segment North B

Arriving at the end of the Western Alignment (as fully described in **Section 3.7.1.1, Design**), *Alternative 2 (Western Alignment + North Alignment "B")* will now connect to segment North B for the remainder of the alignment. Similar to segment North A, the alignment will continue in a northeasterly direction on the bridge structures, crossing Chevreuil Bayou, and will shift slightly to run parallel with the existing LA 20 corridor. The alignment running parallel to the existing LA 20 allows for continued access throughout construction, with the intention of using the new alignment to replace portions of LA 20 once complete. Approximately 2 miles after crossing Chevreuil Bayou, the alignment will stray from the existing LA 20 corridor for approximately 1 mile. Within this section, proposed, intersecting roadways will allow for access to existing properties, and the alignment will transition from the bridge structure to at-grade roadway before momentarily reconnecting to LA 20. The alignment will then leave the LA 20 corridor and shift easterly as at-grade roadway on a new location. The alignment will soon move onto bridge structures in order to minimize impact to potential wetlands. The alignment will remain elevated as it shifts northerly and continues until it reaches its northern terminus at the intersection of LA 3127 and LA 3213.

Traffic

Alternative 2 (Western Alignment + North Alignment "B") is projected to operate at a LOS A in the 2032 design year. See **Table 3.5** for information on the projected 2032 LOS and ADT. With the 2032 *Alternative 2 (Western Alignment + North Alignment "B")*, an improved LOS can be expected on LA 311 from the projected 'No-Build' conditions. LA 20 is still expected to operate at LOS E in the northern portion of the study area; however, a reduction in the delay is expected as the volumes were reduced along the corridor with the addition of the Western Alignment and segment North B. *Alternative 2 (Western Alignment + North Alignment "B")* will further alleviate congestion on the northern portion of LA 20 since segment North B does not incorporate LA 20. See Appendix F for further information on projected traffic conditions.

Table 3.5
Alternative 2 Future Traffic Conditions

Limits	Direction	Measurement	Projected 2032
US 90 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	4100
	Southbound	LOS (AM/PM)	A/A
		ADT	4700
LA 20 to LA 1/LA 308	Northbound	LOS (AM/PM)	A/A
		ADT	3400
	Southbound	LOS (AM/PM)	A/A
		ADT	4600
LA 1/LA 308 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	1800
	Southbound	LOS (AM/PM)	A/A
		ADT	2500
LA 20 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	4800
	Southbound	LOS (AM/PM)	A/A
		ADT	5600
LA 20 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	4600
	Southbound	LOS (AM/PM)	A/A
		ADT	5400
LA 20 to LA 3127	Northbound	LOS (AM/PM)	A/A
		ADT	4000
	Southbound	LOS (AM/PM)	A/A
		ADT	4600

Cost

A preliminary cost estimate was prepared for the purpose of this DEIS. The construction costs were estimated by using projects of a comparable scale as a guide. **Table 3.6** below outlines the preliminary costs associated with *Alternative 2 (Western Alignment + North Alignment "B").*

Table 3.6
Alternative 2 Cost Estimate

Project	Cost
Construction Cost	$655,277,218
Required Right-of-Way	$116,700,000
Wetlands Mitigation	$14,940,000
Relocation	$5,100,000
Design	$50,000,000
TOTAL COST	**$842,017,218**

3.7.1.3 Alternative 3 (Design, Traffic, and Cost)

Design

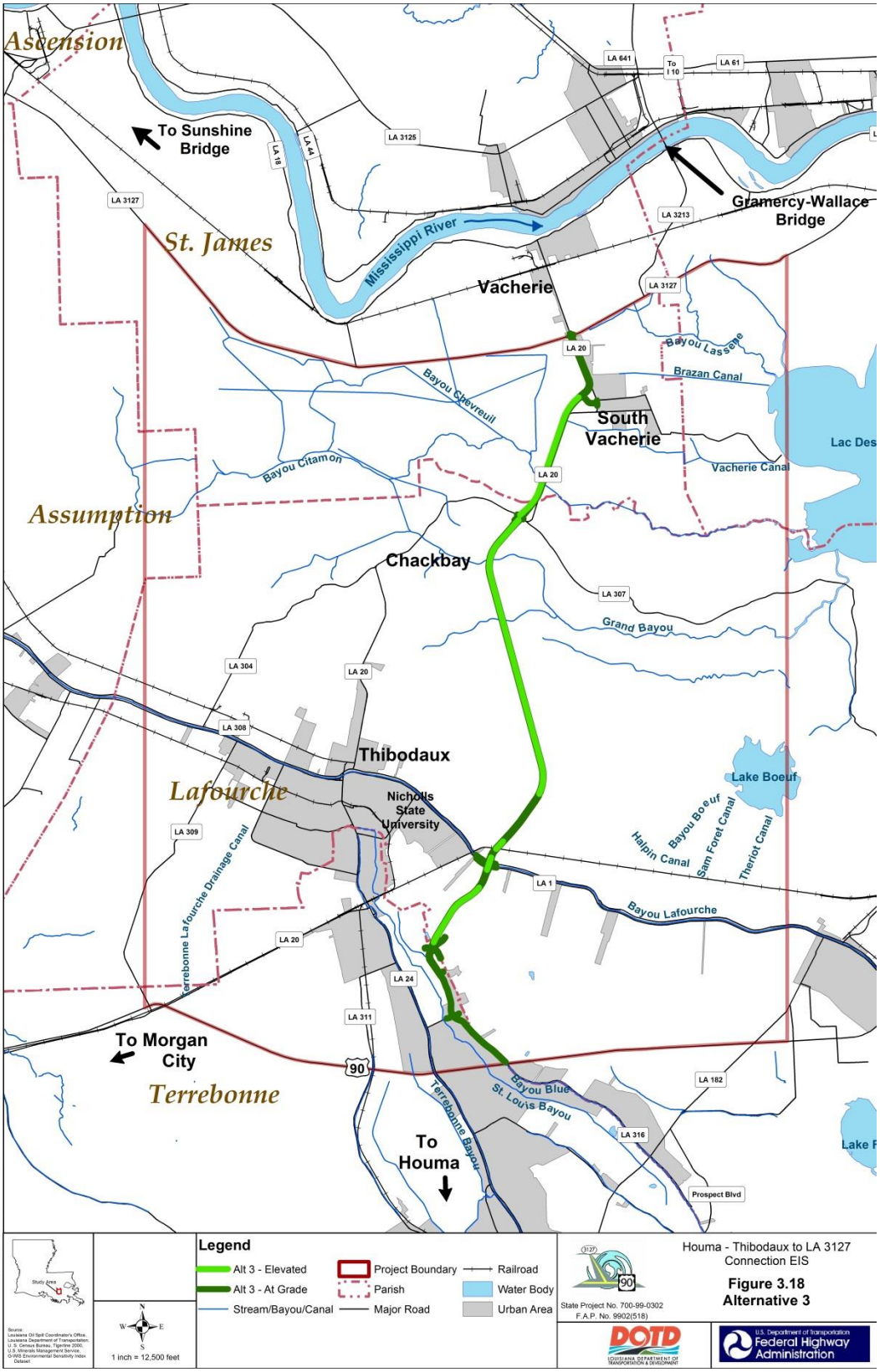
Alternative 3 (Central Alignment + North Alignment "A") proposes to connect US 90 and LA 3127 by incorporating the existing alignment along LA 316 (Central Alignment) and LA 20 (Segment North A as described in **Section 3.7.1.1, Design**) as well as construction on a new location, resulting in a 22.6-mile, four-lane divided roadway. The northern terminus of *Alternative 3 (Central Alignment + North Alignment "A")* will be the intersection of LA 3213 and LA 3127 and the southern terminus will be the intersection of US 90 and LA 316 (**Figure 3-18**).

Central Alignment

Beginning at the southern terminus, *Alternative 3 (Central Alignment + North Alignment "A")* will maintain the existing interchange and will move in a northwesterly direction along LA 316. North of the interchange, the raised grass median transitions from 28 feet to 16 feet in width, remaining within the range deemed acceptable by LADOTD UA-2 design criteria. For this portion of the Central Alignment a lane width of 11 feet has been proposed in order to minimize impact to surrounding properties.

The alignment will continue in a northwesterly direction along the existing LA 316 corridor for approximately 2 miles before arriving at the intersection of LA 316 and Bayou Blue Bypass Road, leaving the LA 316 corridor and following Bayou Blue Bypass Road. At this point the median will decrease to 6 feet to minimize impact to surrounding properties. The alignment will follow the existing Bayou Blue Bypass Road for approximately 1.2 miles before departing to at-grade roadway on a new location in order to continue in the northwesterly direction. Shortly after this departure, the median will transition to a 45-foot depressed, grass median and the alignment will shift to the northeasterly direction.

Figure 3-18
Alternative 3 (Central Alignment + North Alignment "A")



Continuing in the northeasterly direction, in approximately 0.5 miles, the alignment will come to a signalized intersection with Waterplant Road. Shortly after this intersection, the alignment will elevate onto proposed bridge structures in order to overpass Grand Coteau Bayou and Burma Road and to minimize impacts to potential wetlands. The alignment's classification will also transition to a UA-4 design. The alignment will continue on bridge structures in the northeasterly direction for approximately 2 miles before transitioning back to at-grade roadway on a new location, still with a UA-4 classification with a 45-foot depressed, grass median.

The alignment will continue in the northeasterly direction for approximately 0.5 miles before overpassing LA 1, Bayou Lafourche, and LA 308 with a proposed bridge structure. Shortly after leaving this bridge structure, the alignment will continue in the northeasterly direction and enter a short bridge structure in order to overpass the Southern Pacific Railroad before again returning to at-grade roadway on a new location with a 45-foot depressed, grass median. The alignment will continue on for approximately 1.7 miles before entering another bridge structure and promptly transitioning to a RA-2 classification. In order to minimize impacts to the wetlands in the area, the alignment will continue in a northerly direction for approximately 8 miles, overpassing Lepeans Canal and Choctaw Road within that span, before reaching a proposed diamond interchange with LA 20. This intersection marks the end of the Central Alignment portion of *Alternative 3 (Central Alignment + North Alignment "A")* and the beginning of the Segment North A portion of *Alternative 3 (Central Alignment + North Alignment "A")*.

Segment North A

Refer to **Section 3.7.1.1, Design** for a full description of Segment North A. *Alternative 3 (Central Alignment + North Alignment "A")* will reach its northern terminus at the intersection of LA 20 and LA 3127.

Traffic

Alternative 3 (Central Alignment + North Alignment "A") is projected to operate at a LOS A in the 2032 design year. See **Table 3.7** below for information on the projected 2032 LOS and ADT. With the 2032 *Alternative 3 (Central Alignment + North Alignment "A")*, improvements in LOS can be expected along LA 20 southbound north of LA 308. Although LA 20 in the northern portion of the study area is expected to operate at a LOS E for both peaks, reductions in delay can be expected as the traffic volumes in this section were reduced with the introduction of this alignment. LA 316 and LA 648 are still expected to operate at the same LOS as the No Build condition. However, a reduction in the delay is expected as the volumes were reduced along the corridor with the addition of the central alignment. See Appendix F for further information on projected traffic conditions.

Table 3.7
Alternative 3 Future Traffic Conditions

Limits	Direction	Measurement	Projected 2032
LA 316 to LA 308/LA 1	Northbound	LOS (AM/PM)	A/A
		ADT	3900
	Southbound	LOS (AM/PM)	A/A
		ADT	3800
LA 308/LA 1 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	4600
	Southbound	LOS (AM/PM)	A/A
		ADT	4600
LA 20 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	4200
	Southbound	LOS (AM/PM)	A/A
		ADT	4700

Cost

A preliminary cost estimate was prepared for the purpose of this DEIS. The construction costs were estimated by using projects of a comparable scale as a guide. **Table 3.8** below outlines the preliminary costs associated with Alternative 3.

Table 3.8
Alternative 3 Cost Estimate

Project	Cost
Construction Cost	$568,186,806
Required Right-of-Way	$97,500,000
Wetlands Mitigation	$13,830,000
Relocation	$5,650,000
Design	$50,000,000
TOTAL COST	**$735,166,806**

3.7.1.4 Alternative 4 (Design, Traffic, and Cost)

Design

Alternative 4 (Central Alignment + North Alignment "B") will begin with the Central Alignment (as fully described in **Section 3.7.1.3, Design**) and connect to segment North B (as fully described in **Section 3.7.1.2, Design**). The connection of the Central Alignment and segment North B will result in a 24.8-mile four-lane, divided roadway (see **Figure 3-19**).

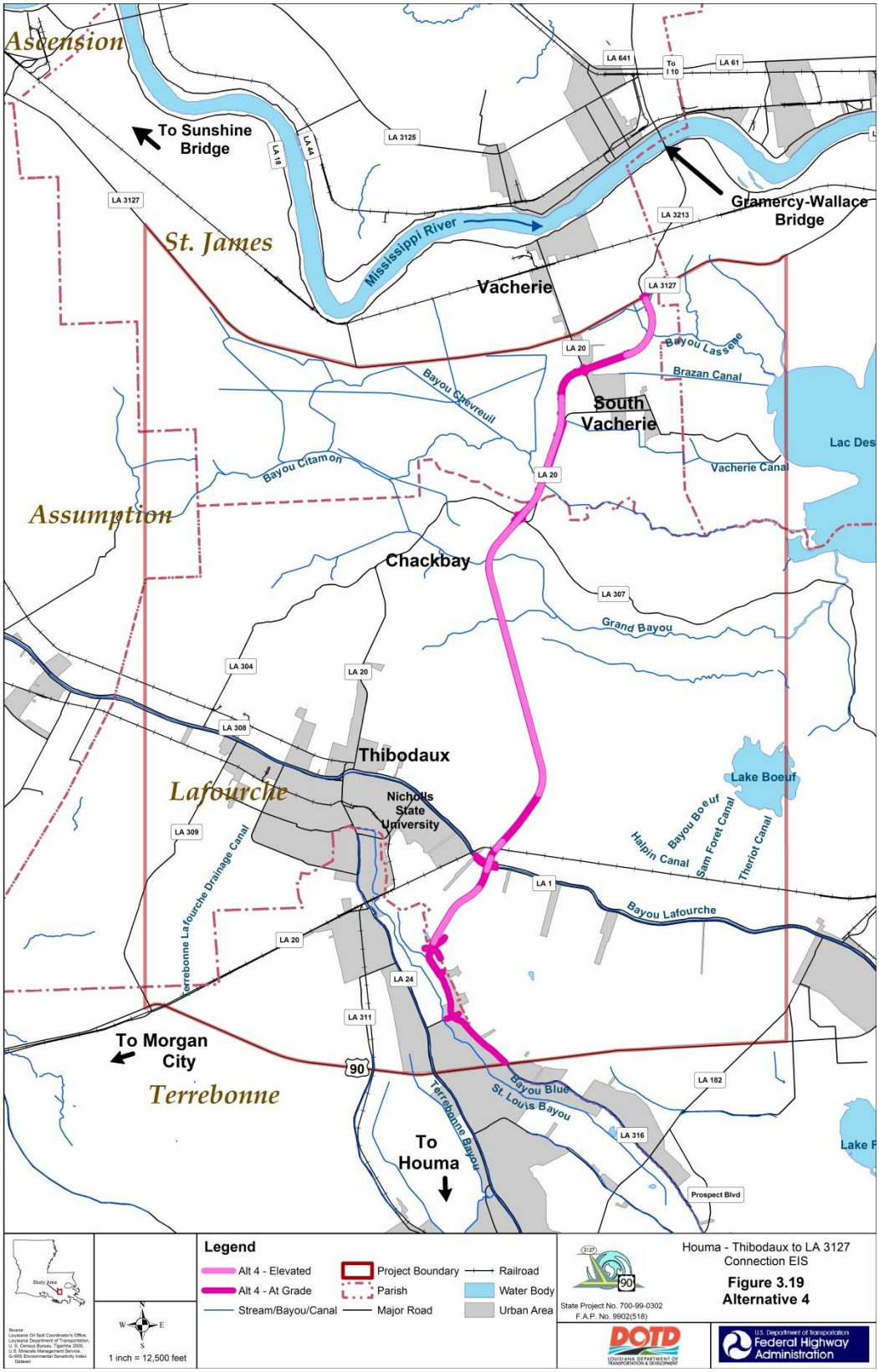
Traffic

Alternative 4 (Central Alignment + North Alignment "B") is projected to operate at a LOS A in the 2032 design year. See **Table 3.9** below for information on the projected 2032 LOS and ADT. With the 2032 *Alternative 4 (Central Alignment + North Alignment "B")*, improvements in LOS can be expected along LA 20 southbound north of LA 308. Although LA 20 in the northern portion of the study area is expected to operate at a LOS E for both peaks, reductions in delay can be expected as the traffic volumes in this section were reduced with the introduction of this alignment. LA 316 and LA 648 are still expected to operate at the same LOS as the No Build condition. However, a reduction in the delay is expected as the volumes were reduced along the corridor with the addition of the central alignment. *Alternative 4 (Central Alignment + North Alignment "B")* will further alleviate congestion on the northern portion of LA 20 since segment North B does not incorporate LA 20. See **Appendix F** for further information on projected traffic conditions.

Table 3.9
Alternative 4 Future Traffic Conditions

Limits	Direction	Measurement	Projected 2032
LA 316 to LA 308/LA 1	Northbound	LOS (AM/PM)	A/A
		ADT	3900
	Southbound	LOS (AM/PM)	A/A
		ADT	3800
LA 308/LA 1 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	4600
	Southbound	LOS (AM/PM)	A/A
		ADT	4600
LA 20 to LA 20	Northbound	LOS (AM/PM)	A/A
		ADT	5300
	Southbound	LOS (AM/PM)	A/A
		ADT	5200
LA 20 to LA 3127	Northbound	LOS (AM/PM)	A/A
		ADT	4100
	Southbound	LOS (AM/PM)	A/A
		ADT	4400

Figure 3-19
Alternative 4 (Central Alignment + North Alignment "B")



Cost

A preliminary cost estimate was prepared for the purpose of this DEIS. The construction costs were estimated by using projects of a comparable scale as a guide. **Table 3.10** below outlines the preliminary costs associated with *Alternative 4 (Central Alignment + North Alignment "B")*.

Table 3.10
Alternative 4 Cost Estimate

Project	Cost
Construction Cost	$641,997,558
Required Right-of-Way	$103,800,000
Wetlands Mitigation	$16,170,000
Relocation	$5,350,000
Design	$50,000,000
TOTAL COST	**$817,317,558**

3.7.2 How do the reasonable build alternatives meet the Purpose and Need?

In order to facilitate in the selection of the preferred build alternative, the four alternatives that were deemed the reasonable build alternatives were again evaluated against the screening criteria listed in **Section 3.2.4.1**. This allowed for the evaluation of the alternatives' ability to fulfill the Purpose and Need of the project. Each criterion was evaluated as high, medium, or low impacts with high meaning best fulfills the criteria and low meaning worst fulfills the criteria. **Table 3.11** outlines the results of this evaluation.

Table 3.11
Summary of Purpose and Need

Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4
System Linkage				
Improves north-south connectivity	High	High	High	High
Provides north-south system redundancy	Medium	High	Medium	High
Provides improved north-south highway network capacity	Medium	High	Medium	High
Provides a direct, limited access route between the Houma-Thibodaux area and the Mississippi River Corridor	High	High	High	High
Hurricane Evacuation				
Improves hurricane evacuation routes within the study area	High	High	High	High
Uniformly distributes traffic between the Sunshine and Gramercy-Wallace Bridges	High	Medium	High	Medium
Maximizes efficient use and operation of hurricane evacuation routes and the transportation network	High	Medium	High	Medium

Since all four alternatives meet the Purpose and Need criteria set forth by the screening process, the environmental criteria should be heavily weighted when choosing a preferred build alternative. The selection of the Preferred Alternative should be based upon which alternative poses the least impact to the surrounding human and natural environment.

Figure 3-20 and **Figure 3-21** depict typical sections based on the design roadway classifications.

Figure 3-20
US-2 Roadway Classification Typical Section

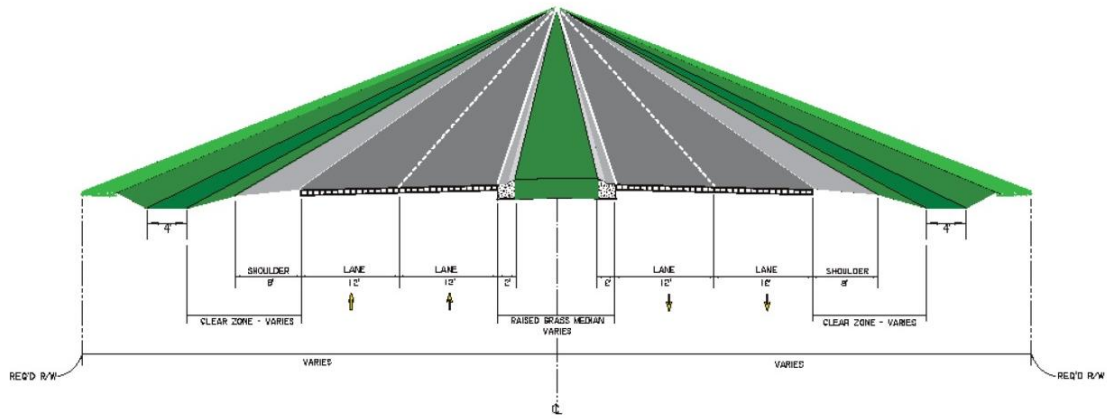
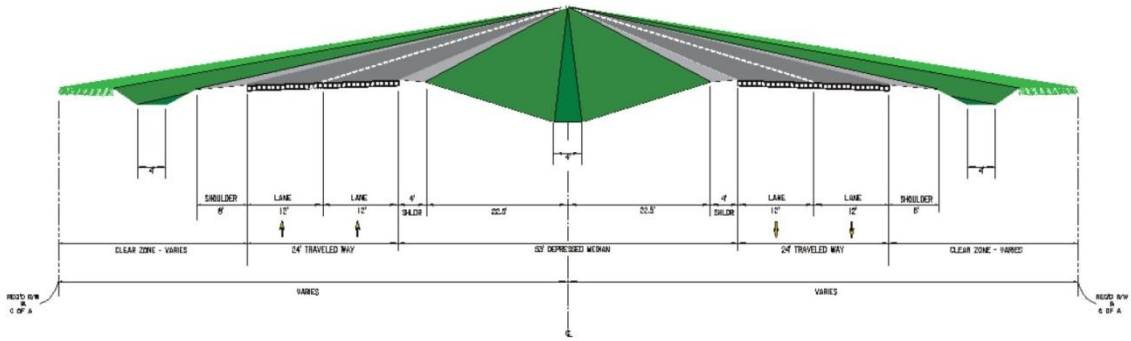


Figure 3-21
UA-4 and RA-2 Roadway Classification Typical Section



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Chapter 4.
Existing Conditions and Environmental Consequences

CHAPTER 4. EXISTING CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

The National Environmental Policy Act (NEPA) requires federal agencies to evaluate many categories of potential social, economic, and natural impacts for all Reasonable alternatives under considerations for a proposed project. The purpose of the NEPA process and the Draft Environmental Impact Statement (DEIS) is to provide the decision-makers with the best available information to make an informed decision about the project.

4.1 INTRODUCTION

This chapter provides a description of the current conditions in the study area and a description of impacts that could be expected for the human and natural environment, with and without the proposed project. Both negative and beneficial impacts can occur as a result of implementing transportation improvements. Various conditions are studied to determine the effects that may occur on both people and the environment as a result of the implementation of the proposed Reasonable Alternatives. After all environmental impacts associated with each alternative have been identified and evaluated, a Preferred Alternative can be recommended.

Three types of potential impacts were evaluated for each Reasonable Alternative—direct, indirect, and cumulative impacts.

Direct Impacts are caused by the project and occur at the same time and place.

Indirect impacts are caused by the project and occur later in time or are farther removed in distance than direct impacts, but are still "reasonably foreseeable."

Cumulative impacts are impacts on the environment resulting from the incremental impact of the project when added to other past, present, and reasonably foreseeable future projects regardless of what agency or person undertakes them.

4.1.1 What are direct impacts?

Direct impacts are those that are caused by the action/project and occur at the same time and place. Impacts from any actions may be both beneficial and detrimental.

4.1.2 What are indirect impacts?

Indirect impacts are caused by the action/project and occur later or farther away (off-site), but are still reasonably foreseeable. Indirect effects may include effects related to changes in the pattern of land use, population density or growth rate, and related effects on air, water, and other natural systems, including ecosystems.

4.1.3 What are cumulative impacts?

Cumulative impacts are defined as impacts on the environment that result from the incremental impact of the action/project when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taken place over a period of time.

4.1.4 How were indirect and cumulative effects evaluated?

The analysis of indirect and cumulative impacts was conducted in accordance with guidance established in the *National Cooperative Highway Research Program (NCHRP) Report 466, Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects*. This report lays out eight steps for scoping, identifying the direction and goals of the study area, gathering data on the study area's notable features, identifying impact-causing activities of the proposed project, identifying and analyzing indirect effects, and assessing the consequences of those effects.[1]

4.1.5 Where is the project located?

The study area is located within the part of Louisiana known as the Bayou Region (see **Figure 4-1**). This region is known for its abundance of natural features such as coastal wetlands, bayous, and natural and man-made waterways. Due to the unique geography of this area, past and present development has mainly occurred near higher elevations and natural ridges. As a result, the roadway network within the study area is very limited and the existing transportation network provides better east-west connectivity than north-south connectivity.

4.1.6 What is the human environment?

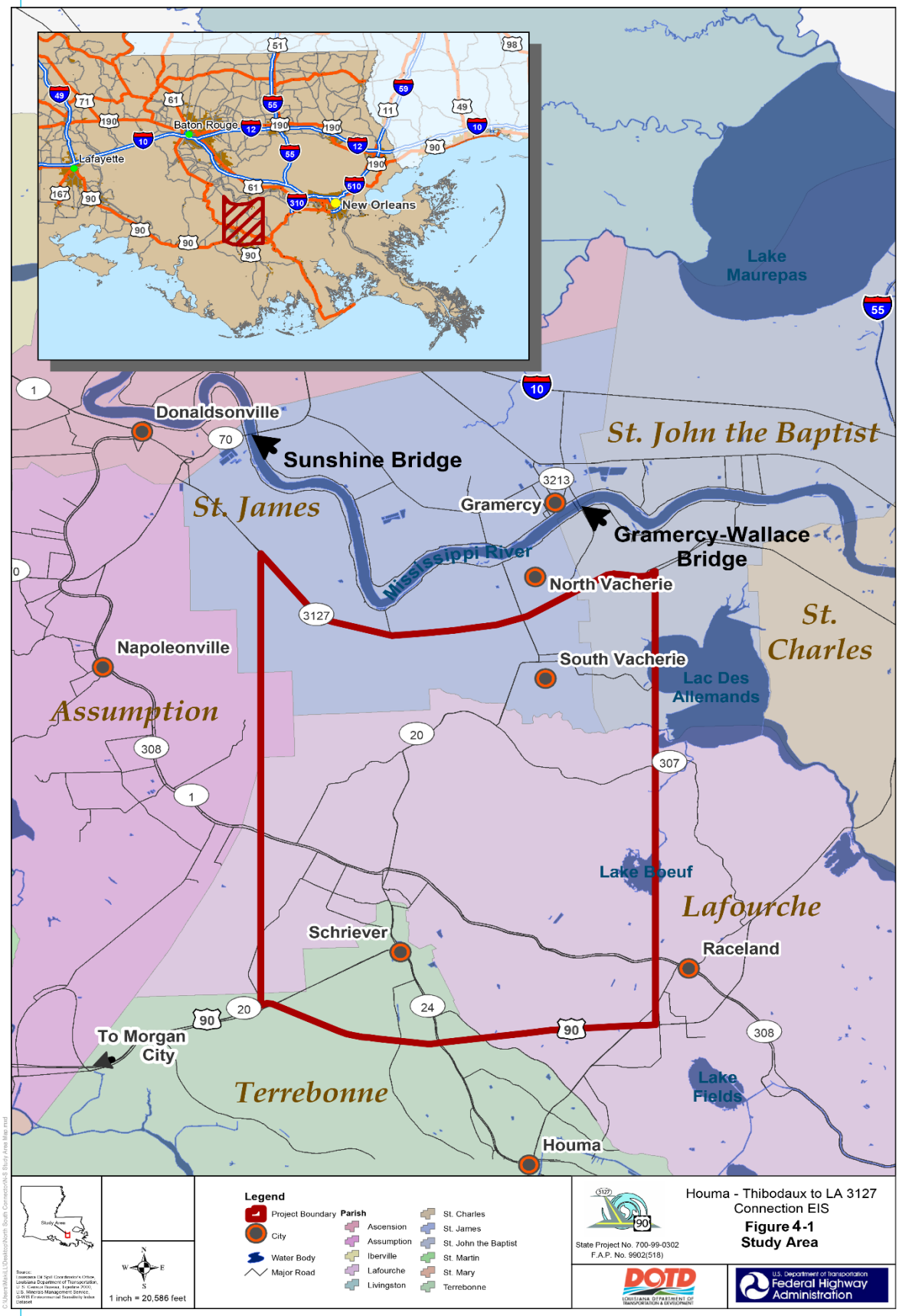
The Council on Environmental Quality (CEQ) states that the "human environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment" (40 CFR 1508.14). Evaluation of the human environment includes assessments of existing land use, socioeconomic characteristics and communities, and potential changes as a result of the proposed project.

The efforts of transportation agencies—planning, project development, implementation, operation, and maintenance—affect communities. The consideration of social impacts help decision-makers understand how proposed activities will likely affect communities and provides opportunities for public input. When public agencies and officials understand how decisions affect their constituents, they can more easily avoid or minimize negative impacts and promote positive impacts.[2]

[1] NCHRP Report 466, Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects.

[2] The CIA Website http://www.ciatrans.net/cia_faq.html, last accessed 11/20/13

Figure 4-1


Baton Rouge
Lafayette
New Orleans
Lake Maurepas
Donaldsonville
Sunshine Bridge
St. John the Baptist
St. James
Gramercy
Gramercy-Wallace Bridge
Mississippi River
North Vacherie
St. Charles
Napoleonville
South Vacherie
Lac Des Allemands
Assumption
Lake Boeuf
Lafourche
Schriever
Raceland
To Morgan City
Terrebonne
Lake Fields
Houma
Legend
Project Boundary
City
Water Body
Major Road
Parish
Ascension
Assumption
Iberville
Lafourche
Livingston
St. Charles
St. James
St. John the Baptist
St. Martin
St. Mary
Terrebonne
1 inch = 20,586 feet
Houma - Thibodaux to LA 3127 Connection EIS
Figure 4-1
Study Area
State Project No. 700-99-0302
F.A.P. No. 9902(518)
DOTD
Federal Highway Administration

4.2 LAND USE

4.2.1 What local planning and development agencies contribute to land use planning within the study area?

Land Use can be defined as human activities such as agriculture, forestry, and building construction that alter land surface. Social scientists and land managers define land use more broadly to include the social and economic purposes and contexts for and within which lands are managed (or left unmanaged), such as subsistence versus commercial agriculture; rented versus owned; or private versus public land.

The State of Louisiana is geographically made up of eight regional planning and development districts that are responsible for improving the physical and social needs of its regional district. Each district is governed by a board that is comprised of community leaders from the public and private sectors. The South Central Planning and Development Commission (SCPDC) is the main regional planning entity that covers the majority of the study area. The six-parish region of SCPDC includes representatives from Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, and Terrebonne Parishes.

The majority of the study area is also located within the jurisdiction of the Houma-Thibodaux Metropolitan Planning Organization (HTMPO). An MPO is a federally-mandated entity that oversees planning for federally-funded transportation projects and programs. In addition to the planning and development district and the HTMPO, various parishes that are located in the study area also provide localized oversight for future growth and development within their respective parishes. This oversight is usually guided through a comprehensive plan and implemented through land use controls, such as subdivision ordinances and zoning.

4.2.1.1 South Central Planning and Development Commission

The SCPDC's mission has been defined as, "simply to help member parishes and municipalities plan for the future."[3] In doing so, SCPDC provides services consisting of economic development, building code enforcement, transportation planning, and community planning services within its region. SCPDC is also the Economic Development District (EDD) for the region, which enables it to receive economic development assistance from the U.S. Department of Commerce, Economic Development Administration (EDA). As part of this assistance, EDA requires the development of a "Comprehensive Economic Development Strategy" (CEDS) that is the result of strategic economic development planning among collaborating public and private sector partners.

According to the CEDS, the six-parish region of SCPDC "continues to be part of one of the world's most productive industrial corridors, with the largest concentration of oil, natural gas, and chemical production in the country." Historically, the regional economy has been based on the area's natural resources, agriculture, and natural and built waterways. The region was also involved in the development of mechanized sugar cane harvesting and offshore oil exploration and production techniques.[4]

The 2012 CEDS estimated an overall growth rate of about 6 percent from 2000 to 2009 for the six-parish district. Broken down further, Terrebonne and St. Charles experienced the most growth, while Lafourche and St. John the Baptist experienced a relatively similar increase in growth. Assumption and St. James had the least growth by gaining less than 1 percent in population during this same time period. However, the number of new subdivisions and building permits indicate that Assumption and St. James may have been undercounted. Lafourche and

[3] South Central Planning and Development Commission, Mission Statement. http://www.scpdc.org/?page_id=260, Last accessed May 7, 2013.

[4] South Central Planning Development Commission. Comprehensive Economic and Development Strategy 2012. Page 3. http://www.scpdc.org/wp-content/uploads/CEDS_2009_Final.pdf. Last accessed May, 7, 2013.

Terrebonne experienced a moderate gain in population relative to the four other parishes in the CEDS.[5]

In regard to the effects of the 2005 hurricane season on the SCPDC region, population growth since 2005 seemed to accelerate in Lafourche and Terrebonne Parishes, while development also occurred in Assumption and St. James Parishes that previously had little or no growth. Key factors in this growth appear to be the affordable cost of land and construction in the areas compared to other areas of the state. This is probably due to population increases, as well as upgrades in utilities and other infrastructure after the 2005 storms.[6]

Additionally, just like the rest of the country, the SCPDC region experienced an increase in unemployment due to the global recession, but estimates show that the parishes of Lafourche and Terrebonne had the lowest unemployment rates, with numbers around 6 and 5 percent, respectively, for the parishes in March of 2012 (see **Table 4.1**). The parishes of St. James and Assumption had the highest unemployment rates, with St. James having above the national average of 8.4 percent in March of 2012.[7]

Table 4.1
Unemployment Rates in the Study Area

Location	Jan. 2009	Dec. 2009	Jan. 2010	Dec. 2010	Jan. 2011	Dec. 2011	Jan. 2012	Feb. 2012	Mar. 2012
Louisiana	7.1%	9.4%	11.4%	10.8%	13.3%	9.4%	11.5%	10.4%	10.1%
Assumption	3.6%	5.2%	6.0%	4.9%	6.3%	4.2%	5.3%	4.9%	5.9%
Lafourche	5.0%	6.7%	7.7%	6.3%	8.0%	6.0%	6.7%	6.1%	6.2%
St. James	9.3%	10.1%	11.7%	11.4%	13.6%	10.4%	11.9%	11.0%	10.9%
St. John the Baptist	6.7%	9.3%	10.7%	9.4%	11.1%	7.7%	8.9%	8.2%	8.2%
Terrebonne	3.8%	5.5%	6.5%	5.3%	6.4%	4.3%	5.3%	5.0%	5.0%
SCPDC Average	5.9%	7.7%	9.0%	8.0%	9.8%	7.0%	8.3%	7.6%	7.72%
Louisiana	5.7%	7.2%	8.2%	7.2%	8.6%	6.4%	7.5%	7.1%	7.0%
United States	8.5%	9.7%	10.6%	9.1%	9.5%	8.3%	8.8%	8.7%	8.4%

Source: LA Works. Note: January increases reflect post-Christmas seasonal drop in employment.

SPDPC has also outlined goals and objectives in its CEDS to further its regional economy and ensure the most efficient and sustainable land development patterns. The goals include the following:

- Goal 1: Improve the region's public infrastructure in order to support and sustain a viable economy and environment;
- Goal 2: Create and retain quality jobs and foster a more diversified economy;
- Goal 3: Improve the region's overall capacity to make efficient land use decisions;
- Goal 4: Improve the region's overall capacity to make economic development decisions;

[5] South Central Planning Development Commission. Comprehensive Economic and Development Strategy 2012. Page 7. http://www.scpdc.org/wp-content/uploads/CEDS_2009_Final.pdf. Last accessed May, 7, 2013.

[6] ibid.

[7] South Central Planning Development Commission. Comprehensive Economic and Development Strategy 2012. Page 7-9. http://www.scpdc.org/wp-content/uploads/CEDS_2012_Final.pdf. Last accessed May 5, 2013.

- Goal 5: Improve the fiscal capacity of local government to make the region financially attractive for economic development;
- Goal 6: Protect and conserve the region's natural resources and promote more equitable use of these resources for business and recreation;
- Goal 7: Pre-plan to improve the region's emergency operations and recovery systems.

Besides defining these goals and objectives, SCPDC collaborated with member parishes and municipalities in updating or developing their comprehensive plans and land use controls, as well as supporting programs that encourage development near existing centers of business and industry.

4.2.1.2 Houma-Thibodaux Metropolitan Planning Organization

In regards to transportation planning, SCPDC houses the region's metropolitan planning organization, which is the federally-mandated organization designated specifically for the planning and administration of federally-funded transportation projects and programs in an urban region consisting of 50,000 or more people. The HTMPO consists of representatives from local government jurisdictions in Assumption, Lafourche, and Terrebonne Parishes, as well as representatives from the Federal Highway Administration (FHWA), Federal Transit Association (FTA), and the Louisiana Department of Transportation (LADOT).

Like every MPO, HTMPO is guided by its long-range, metropolitan transportation plan (MTP). The MTP is a comprehensive, long-range planning document that guides the implementation of projects and programs for all modes of transportation in the HTMPO region over a 25-year period. The most recent planning process began with an assessment of current conditions in late 2008, including demographic information, travel characteristics, land use and zoning, and existing transportation systems.

The assessment also gave insight into recent land use and growth trends in the aftermath of the 2008 hurricane season. The study indicated that residential and business development has relocated to northern locations in the HTMPO area, which are located in the southern region of the state, inland from the bayou (e.g., near the cities of Houma and Thibodaux) that are less prone to the vulnerability of severe weather. It also found that residents living in Assumption Parish, the northern part of the HTMPO study area, utilized many services and facilities in Thibodaux, such as Nicholls State University and the hospital; as such, better transportation access, connectivity, and services are needed. Representatives from Lafourche Parish emphasized the issues of poor connectivity north-south through Thibodaux and the need for a route between Thibodaux and the Mississippi River corridor. These are views that are expressed by many residents of the affected communities.[8]

4.2.2 What is a Comprehensive Plan?

Comprehensive Plan A document used by local, county, and regional bodies in the land planning process that contains a statement of objectives, projections, and short and long term planning strategies and goals.

Typically for rural communities and counties, planning for land use and future growth is limited. Land use planning in the study area has been achieved through a larger initiative, the development of a comprehensive plan, and/or through the implementation of local land use controls.

A comprehensive plan guides the creation of the planning and land development regulations into the future. It is essentially a long-range plan for a jurisdictional area that considers all factors related to development and infrastructure (e.g., land uses, housing, transportation, environmental

[8] Houma-Thibodaux MTP 2035. Chapter 2: Regional Visioning Process. Adopted May 13, 2010. http://www.htmpo.org/2035MTPUpdate/FinalReport/04_Chapter2.pdf, Last accessed September 7, 2013.

considerations, and public infrastructure) to accommodate future populations in the most efficient and effective manner. The comprehensive plan looks at existing conditions, identifies trends and issues, and identifies a vision, goals, and objectives to guide future growth based on the communities' values.

On the other hand, land use controls provide for regulations and standards that must be upheld for both existing and proposed development. This can include any number of directives, such as subdivision regulations, zoning laws, historical preservation guidelines, and building codes, in order to properly limit development in certain areas while encouraging development in other areas.

The following sections provide the overall characteristics and existing land uses that have been established within each of the parishes overlapping the study area. Where a long-range plan or comprehensive plan exists, key parts are identified in order to illuminate land use issues and trends.

4.2.3 What are the overall characteristics and existing land uses for each parish within the study area?

4.2.3.1 Assumption Parish

Assumption Parish, located just northwest of Lafourche and Terrebonne Parishes, consists of a total area of 365 square miles. The parish begins just south of Ascension Parish and the Mississippi River and is distinguished by Bayou Lafourche, which essentially bisects the parish in a north-south direction. Similar to Lafourche Parish, Assumption Parish grew up along the Bayou Lafourche Ridge, with the higher elevations of land proving most suitable for agriculture and housing. According to the U.S. Census Bureau, the population of Assumption Parish was 23,421 in 2010 and estimated at 23,026 in 2012. In keeping with its French, Spanish, and Roman Catholic heritage, Assumption Parish was named for the Festival of the Assumption of the Blessed Virgin Mary.[9]

The economy of Assumption is primarily based on agriculture, with the growth of sugar cane being the principal crop grown. Today, Assumption Parish not only employs people in the agricultural industry, but also in manufacturing, health care and social assistance, retail, and construction/mining.

To control present and future land uses and development, Assumption Parish has standard building and construction regulations, floodplain management, and subdivision ordinances. However, Assumption Parish does not presently have any zoning regulations, but does have a recent comprehensive plan that was completed in 2008 that calls for the development of zoning regulations to guide future development. As its vision attests, Assumption Parish desires future growth to remain consistent with its rural character.

As part of the analysis for the comprehensive plan, land uses and development trends were identified. Specifically, commercial uses are dispersed along Bayou Lafourche and the freeway frontages of LA 1 and LA 308 at major highway intersections, especially in Labadieville, Napoleonville, and Plattenville. Industrial uses, on the other hand, are concentrated towards the southern tip near U.S. Highway 90 (US 90).

Identified in the comprehensive plan, future land use includes a continued focus on residential land uses along LA 1 and LA 308, the development of commercial corridors along LA 70, LA 1, and LA 308 just north of LA 999 (should a new airport be placed in the northern extent of the parish),

[9] Assumption Parish. Comprehensive Plan. Page 14-17. 2008.

and also the development of recreational areas along Lake Verret and Bayou Lafourche. Mixed-use nodes of development were also identified in Bayou L'Ourse, Labadieville, Supreme, Napoleonville, Pierre Part, the intersection of LA 1 and LA Spur 70, and the intersection of LA 1 and LA 70.[10]

4.2.3.2 Houma

Located just south of US 90 and the study area, Houma is centrally located at LA 24 and LA 182 about 15 miles south of Thibodaux. As the parish seat of Terrebonne, Houma is the largest principal city in the Houma-Bayou Cane-Thibodaux Metropolitan Statistical Area (MSA). Houma is located outside of the study area.

4.2.3.3 Houma-Thibodaux Metropolitan Area

The greater Houma–Bayou Cane-Thibodaux MSA is often referred to as the Houma-Thibodaux area. In relation to the study area, the principal, incorporated cities of the Houma-Bayou Cane-Thibodaux MSA, including Thibodaux and Houma, are important to consider as they act as a core for social and economic integration.

4.2.3.4 Lafourche Parish

Lafourche Parish, located in southeastern Louisiana encompassing a total area of 1,469 square miles, was named after Bayou Lafourche (Lafourche is French for "the fork"), which diverges from the Mississippi River in Ascension Parish, forming a river fork, and runs the length of the parish into the Gulf of Mexico.[11] According to the U.S. Census Bureau, the population of Lafourche Parish was 96,318 in 2010 and was estimated at 97,029 in 2012.[12]

The history of Bayou Lafourche spans back to the time when French, Spanish, and German families settled on its banks in the early 1700s. These early settlers explored the descending fork of the Mississippi that was named "LaFourche Des Chetimachas" by mapmakers. This distributary bayou, whose name was shortened to "Lafourche," had many uses for the early settlers including serving as a means of communication, a method of transportation, and a source of fresh water. An influx of settlers was triggered by two 19th Century events along the bayou. The first event was the discovery of the sugar milling process, which allowed the cultivation of sugar as a cash crop in south Louisiana. Secondly, the Louisiana Purchase, or the transaction of the state from France to the United States in 1803, opened the area to American and Protestant settlers. A larger market for the sugar cane crop was generated from Louisiana's entrance into the union, which in turn created an increase in settlers, sugar plantations, and markets along the bayou.

Primary sectors of Lafourche s economic base, which contain the greatest amount of employment, are retail trade, healthcare, and social assistance.

Because of the concentrated settlement along Bayou Lafourche, with its 77 continuous miles of densely spaced houses, Bayou Lafourche is known as the "Longest Street in the World."[13] Laws to control land development required that each landowner be responsible for the construction and upkeep of a bayou levee fronting their land due to the frequent bayou overflows that occurred during early settlement. As such, land grants for farms and plantations were established with a width of less than 600 feet, but with a depth of approximately a mile and a half, essentially giving each landowner access to the bayou and less amount of levee to maintain.[14]

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[10] ibid.

[11] Lafourche Parish Government. http://www.lafourchegov.org/AboutLafourche.aspx, Last accessed May 10, 2013.

[12] U.S. Census Bureau, 2012 Population Estimates, Census 2010.

[13] Houma Today, Terrebonne Parish Louisiana, "Bayou Lafourche, "The longest Main Street in the world" http://www.houmatoday.com/article/20100215/LIVING03/100219554 Last accessed May 7, 2013.

[14] Lafourche Parish Government. http://www.lafourchegov.org/AboutLafourche.aspx, Last accessed May 10, 2013.

Presently, Lafourche Parish is based on a natural resources and agricultural economy. In particular, Lafourche includes the major industries of oil and gas production, sugar refinery, shipbuilding, and commercial fishing.[15] According to the 2010 Census, the primary sectors of Lafourche's economic base, which contain the greatest amount of employment, are retail trade, healthcare, and social assistance. The next largest sector is transportation and warehousing. There are a total of 1,923 establishments for all sectors of Lafourche Parish's economy. This translates into 27,330 paid employees.[16]

Lafourche land use controls include building and construction regulations, as well as direction for floodplain development. The planning and zoning chapter of the code of ordinances for Lafourche Parish include provisions for airport hazard zoning, subdivision regulations, coastal zone management, mobile home park regulations, construction of pipelines and canals, seismic activities, and recreational vehicle (RV) parks. The code stipulates that the "Commission shall prepare a master developmental plan for a physical development of and provision of services to the Parish of Lafourche," and after approval by the governing authority, "be administered by the Lafourche Parish Planning Commission.[17] Along with a master development plan, the code also cites that a long-term goal for the Planning Commission is to have a zoning plan and ordinance. However, no zoning or master development plan (or comprehensive plan) currently exists. According to the SCPDC *Comprehensive Economic and Development Strategy*, one of SCPDC's objectives is to explore a possible land use master plan for Lafourche Parish. This Land Use Plan, known as "Plan LaFourche Comprehensive Resiliency Plan," is presently under development and receiving public input. [18]

4.2.3.5 St. James Parish

St. James Parish, bisected by the Mississippi River, is just west of Ascension and Assumption Parishes and approximately 258 square miles midway between New Orleans and Baton Rouge. St. James, like the other river parishes, grew along the Mississippi River, where higher elevations exist for more suitable development. The parish seat is a community called Convent on the north side of the Mississippi River. According to the U.S. Census Bureau, the population of St. James Parish was 22,102 in 2010 and estimated to be 21,722 in 2012.

St. James is predominantly rural, with small concentrations of population centered in the municipalities of Gramercy, Lutcher, St. James, Vacherie, Convent, Hester, Paulina, and Uncle Sam. Previously, the parish was considered a part of the New Orleans MSA; however, St. James Parish is now one of the state's non-MSA parishes. The City of Gramercy had a population of 3,563 in 2012, while the neighboring City of Lutcher had a population of 3,588.

Historically, St. James has been driven by the agricultural industry and service-related employment; however, multiple oil refineries, petroleum facilities, and agricultural industries have relocated within the parish, which is part of the petrochemical and industrial corridor along the Mississippi River. In fact, most of the local employment exists in farm-based and industrial jobs, which are subjected to seasonal and temporary employment opportunities, low wages, and a vulnerability to price pressures internationally.

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[15] South Central Planning and Development Commission. http://www.scpdc.org/index.php?page_id=133, Last access May 7, 2013.

[16] Lafourche Parish Government. http://www.lafourchegov.org/AboutLafourche.aspx, Last accessed May 7, 2013.

[17] U.S Census Bureau, 6.U.S Economic Census County Business Patterns, Geography Area Series: 2010 BusinessPatterns,NAICScodeshttp://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=BP_2010_00A1&prodType=table Last accessed May 7, 2013.

[18] South Central Planning Development Commission. Comprehensive Economic and Development Strategy 2012 Page 31. Last accessed May 7, 2013.

In 2011, St. James Parish completed their comprehensive planning process in cooperation with SCPDC.[19] The study team has evaluated existing conditions such as land uses and demographics and has put together a steering committee to help guide the further development of the comprehensive plan. St. James presently incorporates traditional land use control mechanisms, such as floodplain management regulations, subdivision ordinances, and state building codes.

According to the St. James Existing Land Use Map that was developed for the comprehensive planning efforts, the most suitable land for development exists along the Mississippi River and in the communities of North Vacherie and South Vacherie along LA 20 and LA 643.[20]

4.2.3.6 St. John the Baptist

St. John the Baptist Parish is located just east of St. James Parish along the Mississippi River, and consists of approximately 348 square miles. The settlement within the present-day parish was one of the earliest, established by a group of Germans in the 1720s, leading to the name "La Cote des Allemands" or "The German Coast."[21]

According to the U.S. Census Bureau, the population of St. John the Baptist Parish was 45,924 in 2010 and was estimated at 46,310 in 2012.[22] The populations of St. John the Baptist are concentrated along the east bank of the Mississippi River. St. John the Baptist has an agricultural based economy, which is heavy in commercial, industrial, and light manufacturing based jobs.[23] Industrial facilities include a chemical plant, sugar refinery, grain elevators, and an oil refinery.[24]

St. John the Baptist has established zoning regulations and presently incorporates other land use control mechanisms, such as floodplain management regulations, subdivision ordinances, and state building codes. Additionally, St. John presently has a future land use report, which is focused on the planning for future land uses based on existing land use and development trends. The land use report is the first step in developing a comprehensive plan for the parish, which will address all elements pertinent to the growth of the parish (e.g., land uses, housing, transportation, environmental considerations, and public infrastructure.)

4.2.3.7 Terrebonne Parish

Terrebonne Parish is located just west of Lafourche Parish and encompasses approximately 2,080 square miles. According to the U.S. Census Bureau, the population of Terrebonne Parish was 111,860 in 2010 and was estimated at 111,893 in 2012.[25] Terrebonne shares a very similar cultural and societal influence as Lafourche. Originally settled by primarily French, Acadian, and French-Canadian, like Lafourche Parish, an influx of American colonists followed to populate the area after the Louisiana Purchase in 1803. When the parishes were first delineated, this area was part of Lafourche Parish. Terrebonne Parish was formed after the division of this area in 1822.

Houma, the parish seat, was founded in 1834. The seafood and timber industry dominated in the 19th Century followed by a dependence on the oil and gas industry until the bust of the 1980s, at

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[19] St. James Parish Comprehensive Plan http://www.scpdc.org/?page_id=313, last accessed December 5, 2013

[20] St. James Parish Comprehensive Plan- Vision 2030. South Central Planning & Development Commission. Pages 4-27.

[21] St. John the Baptist Parish. History. http://www.sjbparish.com/about_history.asp, Last accessed August 6, 2010.

[22] U.S. Census Bureau, 2012 Population Estimates, Census 2010.

[23] St. John the Baptist Parish. Land Use Plan. Last access May 9, 2013.

[24] St. John the Baptist Parish. History. http://www.sjbparish.com/visitors_general.php?id=81, Last accessed November 25, 2013.

[25] U.S. Census Bureau, 2012 Population Estimates, Census 2010. http://www.tpcg.org/view.php?f=main&p=history, Last accessed August 25, 2010.

Primary sectors of Terrebonne s economic base, which contain the greatest amount of employment, are retail trade, healthcare, and social assistance. The next largest sector is professional, scientific, and technical services.

which point its economy became more diversified. Terrebonne Parish accounts for 20 percent of Louisiana's seafood and tourism has become a large part of its economic base. According to the 2010 Census, the primary sectors of Terrebonne's economic base, which contain the greatest amount of employment, are retail trade, healthcare, and social assistance. The next largest sector is professional, scientific, and technical services. There are a total number of 2,910 establishments for all sectors of Terrebonne Parish's economy. This translates into 48,991 paid employees. The Acadian culture, diverse environment and wildlife, plantation homes, excellent food, and close proximity to New Orleans, Baton Rouge, and Lafayette make this area an excellent central location for the visitor who wishes to see all the sights and sounds of southern Louisiana.[26]

Like Lafourche Parish, Terrebonne Parish has standard building and construction regulations, as well as direction for floodplain development. Other regulations include standards for subdivision development, coastal zone management, and zoning regulations within the City of Houma. Overall, the land use controls and subdivision ordinances are guided by Terrebonne Parish's comprehensive plan, which was completed between 2001 and 2003. An update of Terrebonne Parish's Comprehensive Master Plan, Vision 2030 has since been adopted in February 2013. The goals pertaining to land use in this update include using available land in an efficient manner, effective land use controls in places with the greatest need, and locating appropriately sized shopping opportunities that are convenient to neighborhoods to reduce the number of automobile trips taken for such reasons. Additionally, in regard to land use, the comprehensive plan includes an inventory and projection effort done at both the parish level and the "development zone" level, which was based on population projections, topography, potential for flooding, existing and proposed infrastructure, developable land, and development trends.[27]

The development zones of Terrebonne Parish are based on 18 unique areas of development or communities that "originated as a result of its vast and intricate system of waterways, topography, natural resources, and economic base."[28] In particular, portions of the zones delineated as zone 9 (Schriever and Gray), zone 12 (State Highway 311), and zone 13 (Chacahoula) fall within the Houma-Thibodaux to LA 3127 study area.

Development zone 9 includes the unincorporated communities of Schriever and Gray, between Thibodaux and Houma, and consists primarily of land at higher elevations. In particular, this area is predicted to experience residential and commercial growth along US 90. An increase in commercial development is predicted for the area surrounding the intersection of LA 24 and US 90.

[26] Vision 2030 - Terrebonne Parish Comprehensive Plan Update, Chapter 12: Action Plan. Adopted February 2013. http://www.tpcg.org/view.php?f=planning&p=vision2030. Last access May 6, 2013

[27] Code of Ordinances. Parish of Terrebonne, Louisiana- Chapter 28 , Zoning , Article III, Districts http://library.municode.com/index.aspx?clientId=10737 Last accessed May 9, 2013.

[28] Code of Ordinances. Parish of Terrebonne, Louisiana- Chapter 28 , Zoning , Article III, Districts http://library.municode.com/index.aspx?clientId=10737 Last accessed May 9, 2013.

Development zone 12, which exists along LA 311, has the most open and developable land in Terrebonne Parish and is projected to increase in population by 50 percent with subsequent increases in development, including residential subdivisions along LA 311 and commercial uses at major intersections. As population increases in this area, LA 311 is anticipated to be widened to four lanes providing easy access to US 90 and the commercial center of Houma. Land use in the area surrounding the intersection of US 90 and LA 311 are controlled by a single land owner who developed a master plan that eluded towards commercial development at this intersection within the next 20 years. The majority of property on LA 311 through Houma is subject to Terrebonne Parish's zoning regulations for R-1 single family residential, C-2 general commercial, and I-1 light industrial districts.[29]

Development zone 13 consists of areas surrounding the Chacahoula Ridge and Bull Run Road. This area is more remote and rural and there are no significant infrastructure projects that may affect land use under consideration. A slight increase in single family residential development and mobile homes is projected to result from the area's proximity to jobs in nearby Morgan City, which is a short car ride away on US 90.[30]

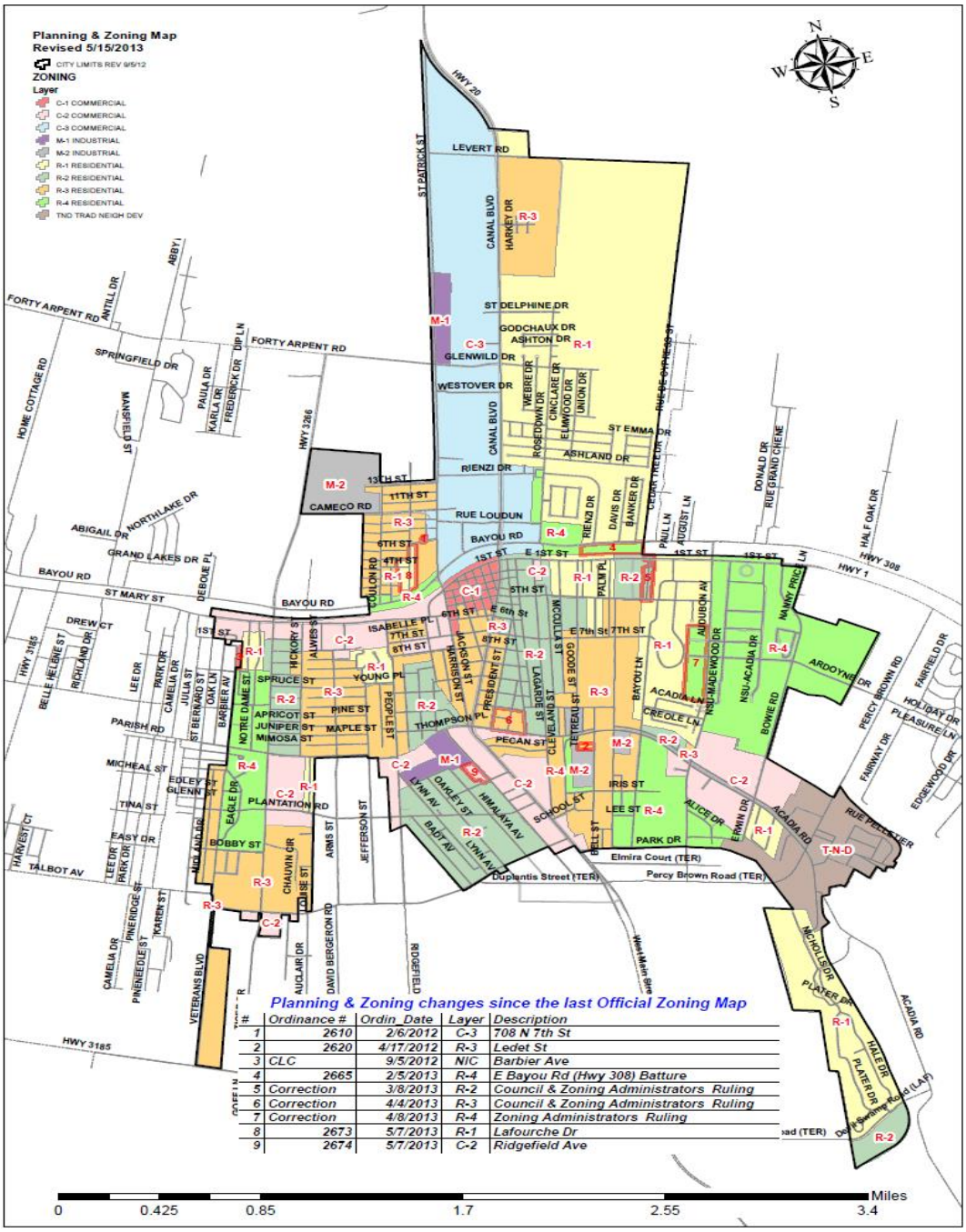
4.2.3.8 Thibodaux

Thibodaux is an incorporated city located at the crossroads of LA 1, LA 208, and LA 20 within the study area in the northwestern portion of Lafourche Parish bordering Terrebonne Parish. Although the City of Thibodaux does not appear to have a comprehensive plan, it has established zoning districts that are defined in the city's zoning ordinance. As shown in **Figure 4-2**, which is the City of Thibodaux's zoning map reflecting the various zoning districts, commercial land uses are generally located along major thoroughfares, such as LA 1 and LA 308, LA 20, and LA 648. A designated historic district, which is the historic central business district and includes the parish courthouse, is identified as "C-1" south of 1st Street to roughly 6th Street and bordered west to east by Jackson Street and Canal Boulevard. The other land uses exist in an eclectic mix throughout the municipal boundaries.

[29] Terrebonne Comprehensive Master Plan. Volume 1: Action Plan. Chapter 2: Action Plan. Pages 7-8. October 2013.

[30] Vision 2030-Terrrebonne Comprehensive Master Plan. Volume 1: Action Plan. Chapter 12: Action Plan. Pages 44-59. October 2013.

Figure 4-2
City of Thibodaux Zoning Map



Planning & Zoning changes since the last Official Zoning Map

#	Ordinance #	Ordin_Date	Layer	Description
1	2610	2/6/2012	C-3	708 N 7th St
2	2620	4/17/2012	R-3	Ledet St
3	CLC	9/5/2012	NIC	Barbier Ave
4	2665	2/5/2013	R-4	E Bayou Rd (Hwy 308) Batture
5	Correction	3/8/2013	R-2	Council & Zoning Administrators Ruling
6	Correction	4/4/2013	R-3	Council & Zoning Administrators Ruling
7	Correction	4/8/2013	R-4	Zoning Administrators Ruling
8	2673	5/7/2013	R-1	Lafourche Dr
9	2674	5/7/2013	C-2	Ridgefield Ave

4.2.4 What portion of each parish is located within the study area?

As stated previously, the study area for the Houma-Thibodaux to LA 3127 encompasses approximately 163,560 acres in southeastern Louisiana, including parts of Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne parishes. **Table 4.2** summarizes the total number of acres and relative proportion for each parish that comprise the study area. As shown, the parishes of Lafourche and St. James together make up the vast majority of the study area.

Table 4.2
Parishes in the Study Area

Parish	Acreage	Percent of Study Area
Assumption	3,641	1.6%
Lafourche	142,867	64.6%
St. James	40,360	18.3%
St. John the Baptist	13,316	6.0%
Terrebonne	20,858	9.4%
Study Area Total:	**221,042**	**100.0%**

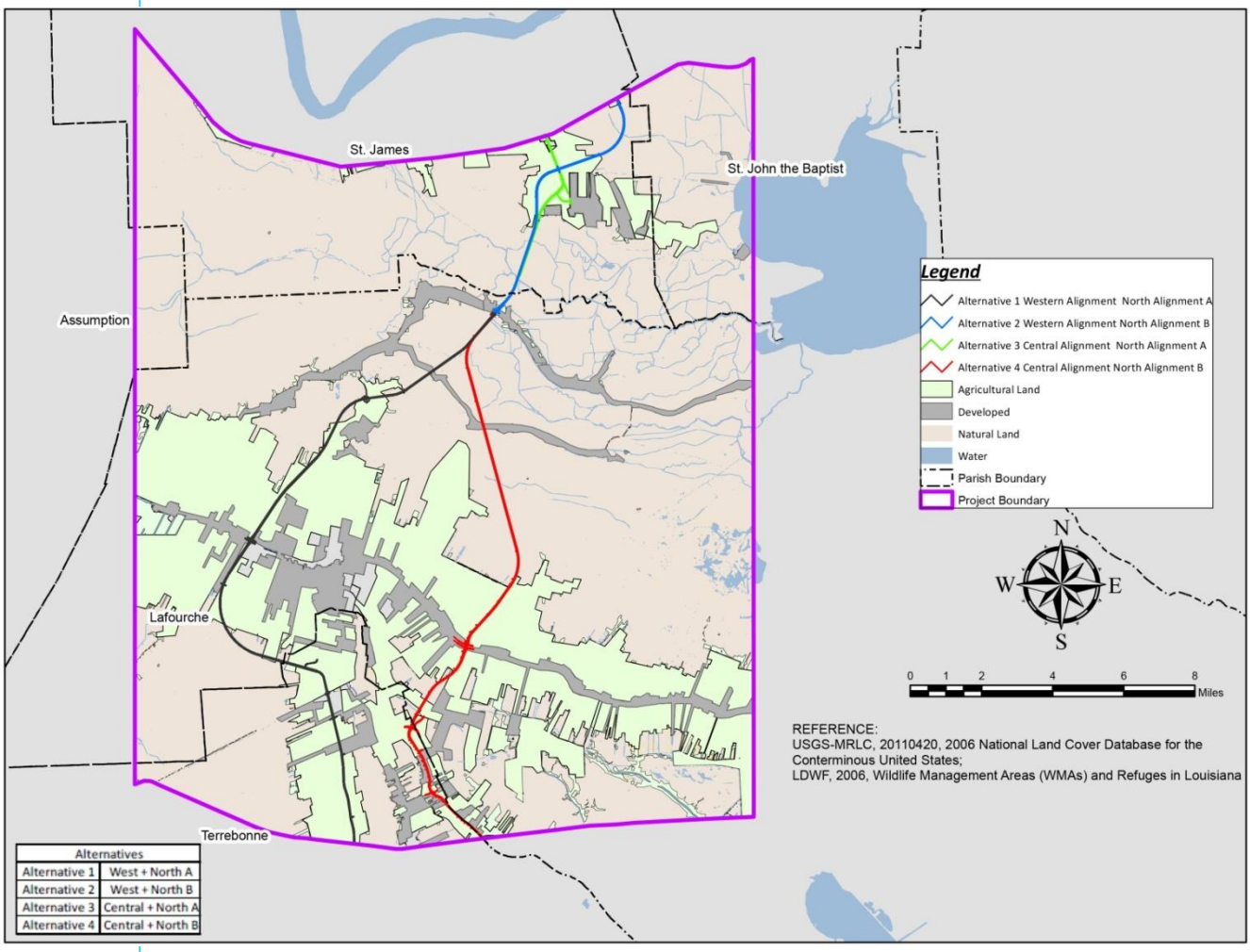
4.2.5 What are the land use classifications within the study area?

Based on land coverage data maintained by the National Oceanic and Atmospheric Administration (NOAA) through the Coastal Change Analysis Program (C-CAP), land use can be divided into three broad categories—agricultural land, developed land, and natural land. The approximate acreages and broad percentages that are located within the study area are shown in **Table 4.3**. Also, **Figure 4-3** displays the land coverage information, showing the general areas of agricultural land, developed land, and natural areas.

Table 4.3
Broad Land Use Classifications within the Study Area

Land Cover Class	Acreage		
Agriculture - Cropland - Grassland	4,247.69	Agricultural Land	approx. 57,219 total acres or 26% of the study area
Agriculture or Cropland	52,971.45		
Vegetated Urban	703.18	Developed Land	approx. 17,670 total acres or 8% of the study area
Industrial	16.24		
Multifamily Residential	66.08		
Non - Vegetated Urban	25.38		
Parks or Open Space	143.89		
Single-Family Residential	15,267.97		
Civic or Institutional	295.17		
Commercial	1,152.60		
Fresh Marsh	11,961.51	Natural Land	approx.146,184 total acres or 66% of the study area
Upland Barren	10.22		
Upland Forest - Deciduous	244.87		
Upland Forest - Mixed	85.74		
Upland Scrub/Shrub - Mixed	77.61		
Water	5,439.78		
Wetland Forest -Deciduous	126,721.11		
Wetland Scrub/Shrub - Deciduous	995.71		
Wetland Scrub/Shrub - Evergreen	640.16		
Wetland Scrub/Shrub - Mixed	7.89		
Total Acres within Study Area:	**221,042**		

Figure 4-3
Agricultural, Developed, and Natural Lands in the Study Area



4.2.5.1 Agricultural Land

The most suitable land for agriculture occurs in proximity to the naturally elevated lands adjacent to the waterways. Roughly 26 percent of the study area is used for cultivating crops or as grazing land. Sugar cane is the prevailing crop grown in this area, with a tradition dating back to colonial times. The production of sugar cane is still vital to this area and continues to contribute significantly to its economic structure.

4.2.5.2 Developed Land

From its colonial beginnings, generations of people have traditionally settled along the Bayou Lafourche Ridge serving past populations as a major water thoroughfare for transportation purposes. Today, the major highways of LA 1 and LA 308 run parallel to Bayou Lafourche on each side, providing the major north-south transportation link from Interstate 10 (I-10) to US 90.

Land within the study area is still primarily rural, with most development concentrated in small communities and the larger city of Thibodaux. Developed land consists of only about 8 percent of the study area, with the predominant proportion consisting of low-intensity development, as defined by NOAA. Most medium-to-high intensity development occurs adjacent to the major roadway thoroughfares, while the lower intensity development occurs on rural streets feeding into the major roadways.

4.2.5.3 Natural Areas

Due to its proximity to the Gulf, as well as the construction of man-made access canals for past oil and gas exploration,[31] the study area is comprised of almost 146,184 acres of natural areas. This is roughly 66 percent of the study area. The majority of the natural areas consist of forested wetland.[32]

As noted in Table 4.3 above, the study area also contains approximately 5,439 acres (or about 2.5 percent of the study area) of open water, including Bayou Lafourche that traverses the study area from the Mississippi River in the north past US 90 to the southeast and the large lake of Lac Des Allemands northeast of the study area. The bayous and larger watershed systems deriving from the Mississippi River are particularly important, as the waterways have historically provided the natural sediment deposits that created the higher elevations in the region.[33] These higher elevations along the fingerlike ridges, in turn, provide the most suitable land for urban and agricultural land uses.

4.2.6 What are the impacts to land use?

Existing land uses were identified using geographic information system (GIS) files provided by Buchart-Horn. Land use in the area was defined as one of four types—agricultural, bottomland, cypress forest, and developed. Because of the level of detail of available land use data in the area, additional information on land cover was gathered from the United States Geological Survey's (USGS) Multi-Resolution Land Characteristics data. Direct effects to land use were assessed with GIS by evaluating types of land uses and land cover located under build alternatives. Indirect effects were assessed by evaluating past land use trends of the region in conjunction with both the

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[31] Terrebonne Parish: Appeal of FEMA's 2009 Preliminary DFIRMS. September 2009. Chapter 2 page 1. http://www.tpcg.org/view.php?f=planning, Last accessed August 5, 2010.

[32] NOAA.C-CAPLandCoverClassificationScheme. http://www.csc.noaa.gov/digitalcoast/data/ccapregional/_pdf/ccap_class_scheme.pdf. Last accessed August 11, 2010.

[33] Terrebonne Parish: Appeal of FEMA's 2009 Preliminary DFIRMS. September 2009. Chapter 2 page 1. http://www.tpcg.org/view.php?f=planning, Last accessed August 5, 2010.

type and probability of planned developments and type and intensity of induced development resulting from the build alternatives and other regional projects.

4.2.7 What are the impacts to land use as a result of the No-build Alternative?

No changes to land use would occur as a result of the No-build Alternative.

4.2.8 What are the impacts to land use as a result of the Build Alternatives?

The predominant land use along all four build alternatives is agricultural use. Alternatives 1 and 2 are developed along 5 percent of their alignments, with the remaining areas undeveloped as either bottomland or cypress forest. The alignments of *Alternative 3 (Central Alignment + North Alignment "A")* and *Alternative 4 (Central Alignment + North Alignment "B")* are predominantly undeveloped as bottomland or cypress forest with approximately 10 and 12 percent of land use considered developed, respectively. Percentages for the existing land use of the build alternatives are detailed in **Table 4.4**.

Table 4.4
Percent of Land Use Along Build Alternatives

Land Use	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Agricultural	52.6%	44.8%	44.0%	42.2%
Bottomland	<1%	<1%	0%	<1%
Cypress Forest	36.3%	52.3%	46.8%	44.9%
Developed	10.4%	3.1%	10.3%	12.2%

Existing land cover information provides a more detailed look at the types of land use in the areas of the build alternatives. Percentages for the existing land cover of the build alternatives are detailed in **Table 4.5** on the following page**.**

Alternative 1 (Western Alignment + North Alignment "A")

Alternative 1 (Western Alignment + North Alignment "A") has the highest percentage of undeveloped lands with approximately 53 percent agricultural, and 36 percent cypress forest. The remaining land cover is single-family residential and commercial where the route crosses through downtown Thibodaux and Schriever. Single-family residential land uses in the community of Chackbay, Lafourche Parish are also intersected by this alternative.

Alternative 2 (Western Alignment + North Alignment "B")

Alternative 2 (Western Alignment + North Alignment "B") has a comparable proportion to *Alternative 3 (Central Alignment + North Alignment "A")* of agricultural land with 45 percent. The remainder of *Alternative 2 (Western Alignment + North Alignment "B")* is nearly 3 percent developed and 52 percent undeveloped cypress forest.

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 (Central Alignment + North Alignment "A") is predominantly undeveloped with approximately 47 percent considered cypress forest. The remainder of *Alternative 3 (Central Alignment + North Alignment "A")* is 44 percent agricultural and approximately 10 percent developed.

Alternative 4 (Central Alignment + North Alignment "B")

Alternative 4 (Central Alignment + North Alignment "B") has the smallest percentage of undeveloped area of all of the build alternatives with 45 percent cypress forest. With more than 12 percent of the alternative considered developed, *Alternative 4 (Central Alignment + North Alignment "B")* has the highest percentage of developed land cover. The remaining land cover, approximately 42 percent, is agricultural land.

Table 4.5
Percent Land Cover Along Build Alternatives

Land Use	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Open Water	<1%	<1%	<1%	<1%
Developed, Open Space	0%	<1%	<1%	<1%
Developed, Single-Family Residential	4.4%	3.1%	4.7%	12.2%
Developed, Multi-Family Residential	0%	0%	0%	0%
Developed, Commercial	6.0%	0%	5.6%	0%
Developed, Civic or Institutional	0%	0%	0%	0%
Deciduous Forest	0%	0%	0%	0%
Evergreen Forest	0%	0%	0%	0%
Mixed Forest	<1%	0%	0%	<1%
Shrub/Scrub	<1%	0%	<1%	0%
Grassland/ Herbaceous	0%	0%	0%	0%
Pasture Hay	3.6%	3.7%	6.6%	1.3%
Cultivated Crops	49.0%	41.0%	35.0%	40.8%
Woody Wetlands	36.3%	52.3%	46.8%	44.9%
Emergent Herbaceous Wetlands	0%	0%	0%	0%

Construction of a new transportation corridor would result in the direct conversion from existing use to transportation use. As the longest alternative, *Alternative 2 (Western Alignment + North Alignment "B")* has the greatest amount of land and therefore has the potential to have the largest direct impact to land use.

4.2.9 What indirect and cumulative impacts are anticipated?

The controlled access of the proposed Houma-Thibodaux to LA 3127 may adversely affect access in some areas and provide new, beneficial access to other areas that currently have none. These access changes may change travel patterns and affect growth concentrated at access points to the Houma-Thibodaux to LA 3127. It is likely that retail services (e.g., fueling stations and restaurants) will be the first development projects followed by additional residential development in non-wetland areas that are attractive to north-south commuters. Any development project will have to be approved by city or parish planning agencies to ensure the development is compatible with the surrounding land uses.

Adverse impacts are truly a concern in Terrebonne Parish as 90 percent of land area is considered environmentally sensitive. According to Terrebonne Parish's Vision 2030 Plan, the City of Houma's increased economic development opportunities are predicted to rebound the post-storm related lagging population levels that were apparent pre-2010. The influx of population growth will create demand for housing in this area of the parish. The population cohort that is predicted to drive the most, and thereby have the greatest implications for land use over the next 20 years, is that of senior citizens. It is thought that the desired communities of this "Baby Boomer" population are those that provide walkability and convenience. The parish also intends to utilize much of its environmentally sensitive areas as recreational space. Residential, commercial, and industrial developments are predicted to outpace agricultural development and take the form of traditional growth patterns on higher elevations.

The build alternatives for the Houma-Thibodaux to LA 3127 will serve as a reliever route to the LA 20 route. As such, it is possible that development along the build alternatives could be similar. Existing development along LA 20 either consists of single-family residential with frontage directly onto LA 20, or, in the lower areas, does not currently have development. The developed lots generally consist of small plots of pasture or cultivated crops with one to few buildings. However, with the limited access designed for the Houma-Thibodaux to LA 3127, it is less likely that a similar level of development will occur along the Houma-Thibodaux to LA 3127.

4.3 TRAVEL PATTERNS

4.3.1 What are the existing primary corridors within the study area?

The existing transportation network in the study area has limited traffic facilities due to the regions' low topography with numerous bayous and coastal wetland areas. Land development is concentrated along higher elevated natural ridges, which results in circuitous routes for the area. **Figure 4-4** below lists the six primary corridors located within the project area: LA 3127, US 90, LA 1, LA 308, LA 24, and LA 20.

LA 3127 is an east-west corridor located along the northern boundary of the study area. It is a two-lane roadway that begins at LA 70 and terminates at US 90, roughly following the Mississippi River.

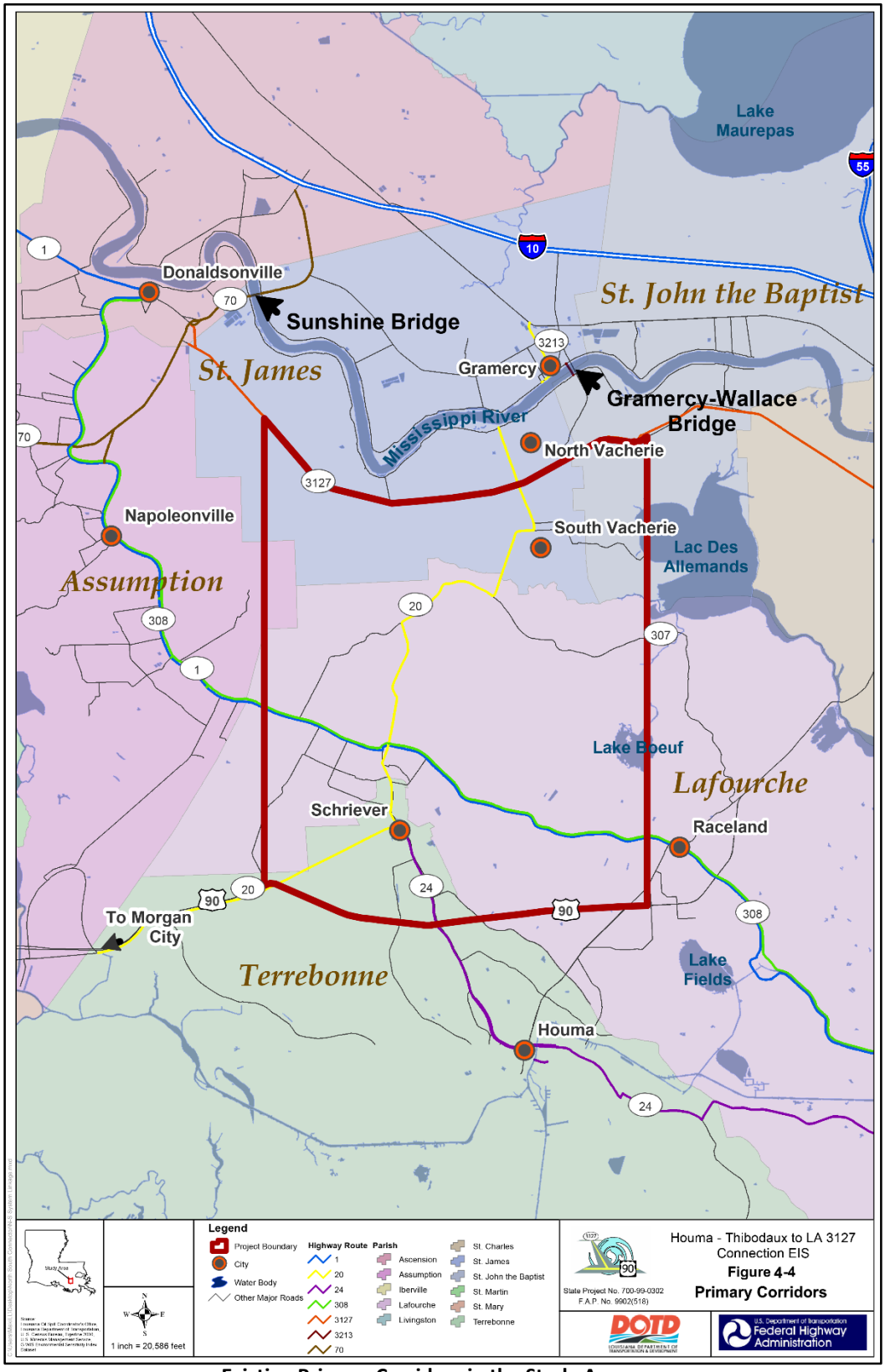
US 90 is an east-west corridor located along the southern boundary of the study area. It is a four-lane divided roadway and the only controlled access facility within the study area. Connecting New Orleans and Lafayette, US 90 is also the most heavily traveled route.

LA 1 and LA 308 are two-lane roadways that parallel the east and west banks of Bayou Lafourche. These roadways bisect the study area in a northwestern-to-southeastern direction. LA 1 and LA 308 travel through Thibodaux connecting US 90 and LA 70.

LA 24 is a four-lane, north-south roadway that starts with an interchange at US 90 as it enters the study area and terminates at LA 20. LA 24 is divided by the Bayou Terrebonne into two one-way segments.

LA 20 is generally a north-south roadway that travels through the center of the study area. Within the study area, LA 20 operates as a two-lane, three-lane, and four-lane highway. LA 20 begins with an interchange at US 90 and then is a two-lane facility until the intersection with LA 24 where it becomes a four-lane facility through Thibodaux. LA 20 transitions to a three-lane facility before intersecting with LA 304 and transitioning back to a four-lane facility. Finally, LA 20 becomes a two-lane facility through Chackbay and South Vacherie before exiting the study area. LA 20 is the only route through the low areas between Thibodaux and South Vacherie within the study area.

Figure 4-4



Existing Primary Corridors in the Study Area

Facility type and 24-hour capacity of these primary corridors are listed in **Table 4.6**.

Table 4.6
Generalized Capacities of the Primary Access Roadways

Roadway	Alignment	Facility Type	24 Hour Capacity (vehicles per day)
US 90	East-West	Expressway, 4-lane	32,000
LA 24	North-South	Principal Arterial, 4-lane	27,000
LA 20	North-South	Principal Arterial, 2-Lane	15,000
LA 308	East-West	Minor Arterial, 2-lane	11,000
LA 1	East-West	Principal Arterial, 2-lane	15,000
LA 3127	East-West	Minor Arterial, 2-lane	11,000

Source: Houma-Thibodaux Metropolitan Area Transportation Plan Update and LADOTD Summary Logs Estimates from the Traffic Analysis, which was completed for the Houma-Thibodaux to I 10 Connection.

Existing conditions for the year 2010 were determined by collecting new traffic counts along key roadways within the study area combined with data provided by SCPDC. This data was used to determine Levels of Service (LOS) for various roadways. In general, traffic volume demand is highest in the southern and middle portions of the study area and the lowest in the northern portion of the study area where there is less development and fewer transportation corridors.

Review of LOS in the study area indicates that most of the primary corridors are operating with an acceptable LOS (a LOS D or better) with the exception of the two-lane portion of LA 20, which operates at a LOS E during peak hours. Traffic models show that several of the primary corridors (LA 20, LA 308, LA 1, and LA 70) will be operating at a LOS E in the future year of 2032. Existing and 2032 LOS for all of the primary corridors in the region are shown in **Table 4.7**.

Table 4.7
Generalized Capacities of the Primary Access Roadways

Roadway	Alignment	Facility Type	Existing LOS	2032 LOS
US 90	East-West	Expressway, 4-lane	A	A
LA 24	North-South	Principal Arterial, 4-lane	B	C
LA 20	North-South	Principal Arterial, 2-Lane	E/B	E/B
LA 308	East-West	Minor Arterial, 2-lane	D	E/D
LA 1	East-West	Principal Arterial, 2-lane	C/B/D	D/C/E
LA 3127	East-West	Minor Arterial, 2-lane	C	D

Source: Houma-Thibodaux Metropolitan Area Transportation Plan Update and LADOTD Summary Logs Estimates

LA 20 is currently the only north-south route between Houma-Thibodaux and the Mississippi River/Vacherie areas. Presently, LA 20 underserves the transportation demand due to capacity issues and a circuitous route linking US 90 and LA 3127. The demand for north-south travel is likely greater than the existing traffic volumes suggest for LA 20. This additional demand is represented by motorists who elect to use US 90 to I-10 or I-55 rather than using the existing circuitous, two-lane corridor of LA 20.

4.3.2 What changes to travel patterns would occur as a result of the project?

Travel patterns in the study area are affected by their proximity to a city or town, but are characterized as longer-distance trips than what would be expected in more urbanized areas.

Residents in rural regions travel to local municipalities for shopping, school, services, and social events. Common regional destinations in the project area include Houma, Schriever, and Thibodaux to the south and the developed regions along the Mississippi River including North Vacherie, Garyville, Laplace, Reserve, and Donaldsonville to the north. Traffic volumes will peak in and around these areas.

Because of the rural character of the study area, modes of travel other than private vehicle are much less prominent. Bicycle lanes are not provided on primary routes and the rural character and longer trips minimize the potential of pedestrian travel.

The implementation of any of the four proposed alternatives would result in minimal congestion.

The implementation of any of the four proposed alternatives would result in minimal congestion. As anticipated, north-south connectivity and mobility between US 90 and LA 3127 would improve through an additional north-south link. Access between the Thibodaux-Houma area and the Mississippi River Corridor would be enhanced by a direct, limited access route. The existing north-south system linkage (LA 20)—a winding, narrow arterial with no access management—is inadequate. The majority of the areas surrounding the alternatives consist of pastoral or forested land. Additionally, should the need to evacuate due to a hurricane occur, any of the alternatives would cause traffic to operate with greater efficiency through decreased travel time, greater access to facilities, increased roadway capacity, and balanced distribution of evacuation traffic among the critical Mississippi River crossings.

4.3.3 What are the impacts to travel patterns as a result of the No-build Alternative?

No changes to travel patterns would occur as a result of the No-build Alternative.

4.3.4 What are the impacts to travel patterns as a result of the Build Alternatives?

Overall, traffic patterns concerning each alternative are likely to be improved with the additional north-south linkage. The anticipated changes to traffic patterns to each alternative are as follows:

Alternative 1 (Western Alignment + North Alignment "A")

Alternative 1 (Western Alignment + North Alignment "A") would cross LA 20 at Schriever before diverting west to where it passes through the outskirts of downtown Thibodaux. Since this is the most developed portion of the alignment, the majority of traffic is anticipated to be experienced in this area. At the US 90 portion or the southern termini of this alternative, traffic would be diverted through rural or slightly developed areas.

Alternative 2 (Western Alignment + North Alignment "B")

Alternative 2 (Western Alignment + North Alignment "B") begins in the outskirts of South Vacherie at the intersection of LA 644. This alternative would be a slightly longer route to LA 3127 than *Alternative 3 (Central Alignment + North Alignment "A")*, further removed from development and primarily surrounded by pastoral and forested land. Utilizing this northern alternative as opposed to *Alternative 3 (Central Alignment + North Alignment "A")* may result in a slightly greater alleviation of traffic on LA 20 due to the diversion through pastoral and forested land from the intersection of LA 20 on the outskirts of South Vacherie.

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 (Central Alignment + North Alignment "A"), like *Alternative 2 (Western Alignment + North Alignment "B"),* begins just outside of South Vacherie at the intersection of LA 644. At this point, traffic would take a more direct or shorter course to LA 3127, which provides access to three bridge crossings of the Mississippi River; from east to west, these are the Luling Bridge in

St. Charles Parish, the Gramercy-Wallace Bridge in St. John Parish, and the Sunshine Bridge in Ascension Parish. The surroundings of this route would primarily consist of pastoral land with limited development. As such, any increase in through traffic from this north-south alignment should not cause congestion or differ much from what is already experienced on LA 20.

Alternative 4 (Central Alignment + North Alignment "B")

As mentioned in Section 4.2.8, *Alternative 4 (Central Alignment + North Alignment "B")* has the smallest proportion of undeveloped land of all the build alternatives with approximately 45 percent woodland. The southern termini of this alignment are at the intersection of LA 90 and LA 316. This alignment may experience an increase of north-south bound traffic through Gray before taking an eastern turn into Lafourche Parish. The remainder of this alignment crosses through pastoral and wooded land until it reaches the outskirts of Schriever where it would transition into either the northern portion of either *Alternative 2 (Western Alignment + North Alignment "B")* or *Alternative 3 (Central Alignment + North Alignment "A")* of the proposed Houma-Thibodaux to LA 3127 connection. Overall, more traffic would be diverted from LA 20 through lesser populated surroundings as opposed to that of *Alternative 1 (Western Alignment + North Alignment "A")*. Given the remote surroundings of *Alternative 4 (Central Alignment + North Alignment "B")* very little impact traffic is anticipated to this southern portion of the proposed Houma-Thibodaux to LA 3127 connection.

The controlled access of the proposed Houma-Thibodaux to LA 3127 connector may adversely affect access in some areas and provide new, beneficial access to other areas that currently have none. These access changes may change travel patterns locally as crossroad termination is proposed on low-volume roads where local service and local access exists with alternate routes. This direct effect will inconvenience the fewest number of residents in the study area based on roadway volume. However, some of the effects on residents could be substantial depending on the proximity and length of an alternate route. These changes are related to short trips and generally don't contribute much to the overall travel patterns of an area that are characterized by longer trips.

Some intersecting roadways with sufficient volume will be provided access to the project. Most of these access points will occur with a controlled intersection, meaning a traffic light will be installed. The three largest volume areas will be provided access through ramps as part of diamond interchanges (US 90, LA 1/LA 308, and LA 20). Other roadways with sufficient volume will be grade separated. These roadways will not have access to the project and will not be terminated or rerouted. Rerouting of existing roadways will be considered when adjacent crossroads are within a reasonable distance. Major intersections are listed in **Table 4.8**.

Table 4.8
Major Intersections along Proposed Alternatives

Roadway	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
US 90	Interchange	Interchange	Interchange	Interchange
LA 311	Intersection	Intersection	—	—
St. George Road	Controlled Intersection	Controlled Intersection	—	—
LA 20 (at Broadway Avenue)	Controlled Intersection	Controlled Intersection	—	—
Main Project Road (Relocated)	Controlled Intersection	Controlled Intersection	—	—
Talbot Avenue	Controlled	Controlled	—	—
LA 316	—	—	Controlled Intersection	Controlled Intersection
Bayou Blue Bypass Road	—	—	Intersection	Intersection
Waterplant Road (Relocated)	—	—	Controlled Intersection	Controlled Intersection
Burma Road	—	—	Grade-Separated	Grade-Separated
LA 1/LA 308	Interchange	Interchange	—	—
LA 20 (at Woodland Drive)	Controlled Intersection	Controlled Intersection	—	—
Southern Pacific Railroad	—	—	Grade-Separated	Grade-Separated
Choctaw Road	Grade-Separated	Grade-Separated	Grade-Separated	Grade-Separated
LA 20 (at Uncle Bebe Lane)	Interchange	Interchange	Interchange	Interchange
LA 20 (Relocated at LA 644)	Intersection	—	Intersection	—
LA 3127	Controlled Intersection	Controlled Intersection	Controlled Intersection	Controlled Intersection

Traffic volume growth was modeled between 2010 and 2032 and a 2032 build condition volume was determined for the build alternatives. With the introduction of the build alternatives, the traffic volume on the existing roadway network were generally reduced as traffic was redistributed to the proposed corridor. With the build alternatives offering an additional north-south route, volumes on the heavily-traveled LA 20 corridor are expected to result in the largest reduction in volumes.

All four build alternatives are expected to operate at a LOS A for the build conditions. It is anticipated that *Alternative 3 (Central Alignment + North Alignment "A")* and *Alternative 4 (Central Alignment + North Alignment "B")* would also result in improvements in the LOS of LA 316 and LA 648 as well as LA 20 north of LA 308. It is anticipated that *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 2 (Western Alignment + North Alignment "B")* would also result in the improvements in the LOS of LA 311 and LA 316.

Under all build alternatives, it is expected that LA 20 in the most northern portion of the project would still operate as a LOS E. However, reduction in delays is expected as traffic volumes in this area are expected to go down.

4.3.5 What indirect and cumulative impacts are anticipated?

Indirect effects to travel patterns should be minor and beneficial as new roadways with uncontrolled access are constructed to meet local demand. Cumulative effects to travel patterns when compared to the No-build Alternative should be beneficial as the project will provide improved mobility in the project area, particularly in the north-south direction, which is lacking under current conditions. Additionally, induced development and roadway development should also improve access for local residents and businesses. Details on roadway terminations, intersections, and specific changes to travel patterns will be evaluated for the Preferred Alternative.

4.4 COMMUNITIES

4.4.1 What are the community characteristics of the study area?

The study area is located in southeastern Louisiana, south of the Mississippi River between Baton Rouge and New Orleans, and includes portions of five parishes—Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne Parishes. The study area is roughly bounded by US 90 to the south, LA 3127 and the Mississippi River to the north, LA 1/LA 308 and Bayou Lafourche to the west/southwest, and LA 307 and Lac des Allemands to the east.

The Mississippi River bisects Ascension, St. Charles, St. James, and St. John the Baptist Parishes, the four parishes known as the "River Parishes," two of which, St. James and St. John the Baptist, comprise the northern portion of the study area along the river between Baton Rouge and New Orleans. Bayou Lafourche, paralleled by LA 1 to its west and LA 308 to its east, flows through parts of Ascension, Assumption, and Lafourche Parishes. Development is concentrated along the study area's peripheral roadways, including residential, commercial, mixed-use development within the city and town limits, surrounded by cultivated agricultural fields. The Mississippi River corridor supports industrial development in the northern portion of the study area. The center and the eastern/southeastern fringe of the study area consist primarily of undeveloped woody wetlands.

4.4.1.1 Assumption Parish

Assumption Parish is located west of the Mississippi River and the adjacent industrial corridor between Baton Rouge and New Orleans. The parish is predominantly agriculture-based, with some related industrial activity, such as sugar processing and refining. Napoleonville is the parish seat and the only incorporated community in the parish. Napoleonville village and several other small unincorporated communities, including Belle Rose, Labadieville, Paincourtville, and Supreme, are located in the study area along the banks of Bayou Lafourche.

4.4.1.2 Lafourche Parish

Lafourche (French for "the fork") Parish is named after Bayou Lafourche, which forms a fork where it flows out of the Mississippi River in Ascension Parish and runs the length of Lafourche Parish into the Gulf of Mexico. Bayou Lafourche is nicknamed the "Longest Street in the World" because of the many continuous miles of closely spaced homes along the bayou. There are three incorporated municipalities in Lafourche Parish, one of which is located within the study area. Thibodaux, the parish seat, is located along the banks of Bayou Lafourche in the northwestern part of the parish.

4.4.1.3 St. James Parish

St. James Parish is one of the four "river parishes" located between New Orleans and Baton Rouge and bisected by the Mississippi River. The western portion of the parish, below LA 3127, is located within the study area, including the unincorporated town of South Vacherie. The unincorporated community of Convent is the parish seat.

4.4.1.4 St. John the Baptist Parish

St. John the Baptist Parish is located between St. Charles and St. James Parishes, and is also one of the four "river parishes" bisected by the Mississippi River. Though the river actually separates the parish into northern and southern parts, the former is referred to as the "east bank" and the latter as the "west bank." Eight communities comprise St. John Parish, none of which are located in the study area.

4.4.1.5 Terrebonne Parish

Terrebonne Parish is one of the largest and one of the southernmost Louisiana parishes. Houma, the parish seat, is the only incorporated city in Terrebonne Parish. The northernmost portion of the parish, north of US 90 and the Houma city limits, is within the study area boundary.

4.4.2 How is the study area growing?

Population data and growth rates from 1990 to 2010 for the study area are presented in **Table 4.9**. All of the study area parishes experienced an increase in population size between 1990 and 2000, as well as between 2000 and 2010, with the highest growth seen in Terrebonne Parish during both time periods (by approximately 8 percent and 7 percent, respectively). St. James Parish experienced the smallest growth between 1990 and 2000 (approximately 2 percent), while Assumption Parish grew the least from 2000 to 2010 (less than 1 percent). The population of the study area parishes as a whole grew by an average of approximately 6 percent from 1990 to 2000, with very similar growth (6.2 percent) between 2000 and 2010. The population of Louisiana, however, grew less between 2000 and 2010 (approximately 1 percent) compared to the growth seen between 1990 and 2000 (approximately 6 percent).

Table 4.9
Population Data for the Study Area

Location	1990	2000	Growth Rate 1990 2000	2010	Growth Rate 2000 2010
Louisiana	4,219,973	4,468,976	5.9%	4,533,372	1.4%
Assumption	22,753	23,388	2.8%	23,421	0.1%
Lafourche	85,860	89,974	4.8%	96,318	7.1%
St. James	20,879	21,216	1.6%	22,102	4.2%
St. John the Baptist	39,996	43,044	7.6%	45,924	6.7%
Terrebonne	96,982	104,503	7.8%	111,860	7.0%
All Study Area Parishes	***266,470***	***282,125***	***5.9%***	***299,625***	***6.2%***

Source: US Census Bureau - Census 1990; Census 2000; Census 2010

4.4.3 What is the ethnic make-up of the study area?

Racial characteristics of the study area parishes are presented in **Table 4.10**. Based on U.S. Census 2000 and 2010 data, the population of the study area parishes as a whole is predominantly white, with minority races comprising an average of approximately 24 percent of the population in 2000 and approximately 25 percent in 2010. The minority percentage of the population in the study area increased slightly from 2000 to 2010, with the largest increase seen in St. John the Baptist Parish. While St. John the Baptist and St. James Parishes have minority populations greater than the statewide average of approximately 32 percent, the study area as a whole remains below the statewide average. Lafourche Parish has the smallest minority population, and St. John the Baptist Parish has the largest minority population.

Table 4.10
Racial Characteristics of the Study Area

Location	2000				2010			
	Total Population	White	Black/ African American	Other Races	Total Population	White	Black/ African American	Other Races
Louisiana	4,468,976	63.9%	32.5%	3.6%	4,533,372	62.6%	32.0%	5.4%
Assumption	23,388	67.2%	31.5%	1.3%	23,421	66.8%	30.5%	2.8%
Lafourche	89,974	82.9%	12.6%	4.5%	96,318	79.4%	13.2%	7.4%
St. James	21,216	50.0%	49.4%	0.6%	22,102	48.0%	50.6%	1.4%
St. John the Baptist	43,044	52.6%	44.8%	2.7%	45,924	42.5%	53.5%	4.0%
Terrebonne	104,503	74.1%	17.8%	8.1%	111,860	70.3%	18.9%	10.8%
All Study Area Parishes	**282,125**	**71.2%**	**23.7%**	**5.1%**	**299,625**	**69.1%**	**25.4%**	**5.3%**

Source: US Census Bureau - Census 1990; Census 2000; Census 2010

Ethnicity and ancestry characteristics of the study area parishes are presented in **Table 4.11**. The study area, which is located in the Acadian region of Louisiana and considered the heart of "Cajun Country," has a significant Cajun population. Cajuns are an ethnic group mainly living in Louisiana and consisting of the descendants of the Acadian exiles. The Acadians were French-speaking people evicted by the British in the period 1755 to 1763 because of the French and Indian War. Acadia consisted of present-day Nova Scotia, parts of eastern Quebec, other Canadian maritime provinces (New Brunswick and Prince Edward Island), and modern day Maine.

Table 4.11
Ethnicity and Ancestry Characteristics of the Study Area

Location	2000					2010		
	Total Population	Acadian/Cajun Population[1]		Hispanic/ Latino Population		Total Population	Hispanic/ Latino Population	
		Population	Percent	Population	Percent		Population	Percent
Louisiana	4,468,976	44,960	1.0%	107,738	2.4%	4,533,372	193,988	4.2%
Assumption	23,388	763	3.3%	284	1.2%	23,421	146	0.6%
Lafourche	89,974	3,773	4.2%	1,284	1.4%	96,318	3,709	3.8%
St. James	21,216	213	1.0%	130	0.6%	22,102	264	1.1%
St. John the Baptist	43,044	--	--	1,230	2.9%	45,924	2,191	4.7%
Terrebonne	104,503	2,132	2.0%	1,631	1.6%	111,860	4,470	3.9%
All Study Area Parishes	**282,125**	**6,881**	**2.4%**	**4,559**	**1.6%**	**299,625**	**10,780**	**3.5%**

Source: US Census Bureau - Census 1990; Census 2000; Census 2010

[1]The population threshold on the Summary File 4 data set is 100. Data is not available for some geographic areas because the population of the selected race or ethnic group, or ancestry group, is less than the threshold. The SF4 data set for Census 2010 is not available (as of May 2013).

Cajuns are recognized by the U.S. government as an official ethnic group, defined as a group of people classed according to common racial, national, tribal, religious, linguistic, or cultural origin or background. Cajun ethnicity was officially recognized by the U.S. government in 1980 per a discrimination lawsuit filed in federal district court (Roach v. Dresser Industries Valve and

Instrument Division [494 F.Supp. 215, D.C. La., 1980]), and it is protected by Title VII's ban on national origin discrimination. Unfortunately, the Cajun population in the area is likely under-represented in the Census statistics. Unlike other ethnicities, there is not a Census ethnicity option to check for Acadian/Cajun American. Many Cajuns consider themselves as white Americans which can lead to some statistical inaccuracies when it relates to Cajuns.

As shown in Table 4.11, approximately 2 percent of the population of the study area parishes as a whole is of Acadian/Cajun ancestry. Assumption and Lafourche Parishes had the largest Cajun populations, at approximately 3 and 4 percent, respectively. St James and St. John the Baptist Parishes had the smallest Cajun populations, with percentages less than the Census thresholds of available data. Ancestry data for the 2010 Census is not yet available (as of May 2013).

Approximately 4 percent of the study area population is Hispanic/Latino, according to the 2010 Census. The Hispanic/Latino population in the study area has more than doubled since the 2000 Census, which is consistent with the statewide average growth during the same period (see Table 4.11).

4.4.4 What are the general housing characteristics of the study area?

General housing characteristics of the study area are presented in **Table 4.12**, and characteristics of the housing market are presented in **Table 4.13**. The majority of the study area parishes as a whole (approximately 86 percent) are comprised of owner-occupied housing, and the percentage of owner-occupied housing in each study area parish is higher than the statewide average. Terrebonne Parish has the highest percentage of renter-occupied housing at approximately 28 percent. Assumption Parish has the highest percentage of vacant housing, approximately 16 percent.

Table 4.12
Study Area General Housing Characteristics

Location	Total Housing Units	Owner Occupied	Renter Occupied	Vacant	Single Family Detached	Mobile Home	Median Value (2000)	Median Value (2008 2010)
Louisiana	1,967,882	67.2%	32.8%	12.0%	65.2%	13.3%	$77,500	$137,900
Assumption	10,361	81.6%	18.4%	15.6%	60.5%	30.4%	$58,400	$90,700
Lafourche	38,645	75.8%	24.2%	8.0%	70.4%	23.3%	$71,100	$126,300
St. James	8,470	83.9%	16.1%	8.7%	73.8%	17.5%	$69,300	$124,100
St. John the Baptist	17,522	79.2%	20.8%	8.8%	78.8%	10.2%	$79,000	$150,500
Terrebonne	43,914	68.2%	27.8%	8.6%	70.4%	16.7%	$72,200	$128,900
All Study Area Parishes	**118,912**	**85.8%**	**20.8%**	**10.7%**	**71.0%**	**18.4%**	**—**	**—**

Source: US Census Bureau, Census 2000; 2009- 2011 American Community Survey 3-Year Estimates

Table 4.13
Study Area Housing Market Characteristics

Location	Active Listings	Average Listing Price	Median Listing Price
Assumption	102	$158,166	$49,000
Lafourche	554	$186,808	$125,000
St. James	65	$124,487	$109,500
St. John the Baptist	344	$183,794	$149,000
Terrebonne	678	$224,008	$152,500

Source: US Census Bureau - Census 2010. Population for whom poverty status is determined.

Most homes in the study area parishes are located in rural areas (with some suburban), are moderately valued, and are single-family detached homes built between 1950 and 1990.

According to Census 2000 data, median owner-occupied home values for the study area parishes were between $58,400 (Assumption) and $79,000 (St. John the Baptist), with a statewide average of $77,500. The Census 2009-2011 American Community Survey 3-Year Estimates report median owner-occupied home values ranging from $90,700 (Assumption) to $150,500 (St. John the Baptist) and a statewide average of $137,900.

Real estate listings were reviewed to determine the availability and estimated market value of homes in the study area, as shown in Table 4.13. There were approximately 1,743 active listings of one- to five-bedroom homes throughout the study area parishes in August 2010, with average listing prices by parish ranging from $124,487 to $224,008. Median listing prices by parish range from $49,000 to $152,500.

4.4.5 How would communities be impacted by the project?

Community cohesion is a measure of the level and quality of interaction among the people of a community, generally indicated by the degree that people know and care about their neighbors and by their participation in community activities.

Community impacts were evaluated using GIS, aerial photography, and field reconnaissance. A GIS dataset was created for the project to inventory, map, and analyze the various community resources and constraints throughout the study area (e.g., residential structures, community facilities, demographic data, etc.), and to avoid or minimize impacts to the communities during development of the build alternative alignments.

Beyond the direct effects of required relocations, community impacts are typically considered in the context of the effect a project has on community cohesion. Community cohesion is a measure of the level and quality of interaction among the people of a community, generally indicated by the degree that people know and care about their neighbors and by their participation in community activities. The more interaction, the more cohesive the social relationships and patterns usually are.

4.4.6 What are the impacts to communities as a result of the No-build Alternative?

No communities would be impacted by the No-build Alternative.

4.4.7 What are the impacts to communities as a result of the Build Alternatives?

The build alternatives pass through a predominantly rural landscape, with development concentrated along major roadways, primarily within city and town limits, surrounded by

cultivated agricultural fields and undeveloped, wooded wetlands. The build alignments all pass directly through or near Schriever, Thibodeaux, Chackbay, and South Vacherie.

While the majority of the build alternative alignments are on new locations, all of the build alternatives include sections that will widen existing roads (e.g., LA 311, LA 316, and LA 20) and require relocation of residences and businesses. All of the build alternatives do, however, avoid a significant number of impacts by going around the Thibodeaux city limits. New location sections of the build alternatives primarily cross through cultivated fields or undeveloped wetlands, except for some areas where existing roads will be crossed (e.g., LA 20, LA 308/1). While clusters of residences have been avoided by the build alternatives, some relocations will be required at some of the new intersections. For more information about relocations, please see Section 4.9.

With the exception of inside the Thibodeaux city limits, where the road network is on a grid, the majority of the neighborhoods in the study area are comprised of single, dead-end streets accessed from major routes and collector roads; connectivity between the residential streets is limited, with few to no interconnected roads or sidewalks.

The build alternatives could impact community cohesion if the alignments separate residents, block access or mobility patterns, or set certain areas of neighborhoods apart from others. Due to the general lack of interconnectivity between residential streets and limited north-south connectivity that currently exists in the study area, there is the potential for significant impacts to community cohesion. The type and severity of the impacts will primarily depend on whether or not tie-ins to local side roads and drives are provided and how they are configured, which will be determined during detailed design of the Preferred Alternative. The areas with the greatest potential for impact are the neighborhoods with single access points off of the existing sections of the proposed Central and Western alignments. However, mitigation measures would be incorporated into the design to address any significant impacts that are identified.

4.4.8 What indirect and cumulative impacts are anticipated?

Indirect and cumulative impacts consider the effects to residences and communities that may result from induced development from the project, and will be directly proportional to anticipated changes in land use induced from the build alternatives. Local governments have the ability to manage growth through land use and development policies that promote quality, compatible growth and a balanced land use mix, and the ability to travel directly between destinations, with access to services that are currently absent or only distantly available, is expected to benefit the residents in the study area communities overall.

4.5 PUBLIC FACILITIES AND SERVICES

4.5.1 What type of community services and facilities are located within the study area?

Community services and facilities include resources such as hospitals, schools, government facilities, public service and safety providers, recreational resources, churches, and cemeteries. These types of local resources are typically considered very important in terms of a community's culture and quality of life. Most of the community facilities in the study area are located within city and town limits. Recreational resources are more scattered throughout the study area.

4.5.2 What healthcare services are located within the study area?

Limited primary healthcare needs are provided for directly within the study area. Major and emergency medical care is available at a total of 16 hospitals located throughout the five study area parishes, several of which are within the study area boundaries including Assumption Community Hospital in Napoleonville, Thibodaux Regional Medical Center, and Ochsner St. Anne

General Hospital in Raceland, Lafourche Parish. Just outside the study area boundaries are Terrebonne General Medical Center in Houma, and St. James Parish Hospital, River Parishes Hospital (St. John the Baptist) on the east bank of the Mississippi River.

4.5.3 What educational facilities are located within the study area?

Primary and secondary education is provided by each of the five parish public school districts, as well as several private schools throughout the study area. The parish school districts also operate various alternative schools, adult education centers, and vocational schools in the study area. Post-secondary/higher education is offered at the Lafourche Campus of Louisiana Technical College and Nicholls State University in Thibodaux. The majority of schools and other educational facilities in the study area are located within city and town limits.

4.5.3.1 What educational facilities are located within Assumption Parish, within the study area?

Eight educational facilities are located within the portion of Assumption Parish that is within the study area—Belle Rose Primary School, Labadieville Primary School, Napoleonville Primary School, St. Elizabeth School, Belle Rose Middle School, Labadieville Middle School, Napoleonville Middle School, and Assumption High School.

4.5.3.2 What educational facilities are located within Lafourche Parish, within the study area?

Fourteen educational facilities are located within the portion of Lafourche Parish that is within the study area—St. Genevieve School, Lafourche Juvenile Justice Center, Thibodaux High School, St. Charles Elementary, Nicholls State University, St. Mary's School, Raceland Middle School, Raceland Upper Elementary, Raceland Lower Elementary, Bayou Boeuf Elementary School, Bayou Lafourche Marine Institute, Central Lafourche High School, Sixth Ward Middle School, and Chackbay Elementary.

4.5.3.3 What educational facilities are located within St. James Parish, within the study area?

Five educational facilities are located within the portion of St. James Parish that is within the study area—Fifth Ward Elementary School, Sixth Ward Elementary School, Vacherie Elementary School, Vacherie Primary School, and St. James High School.

4.5.3.4 What educational facilities are located within St. John the Baptist Parish, within the study area?

No schools within St. John the Baptist Parish are located within the study area boundary. The study area is within the attendance zone for West St. John Elementary School, which includes the entire portion of the parish located on the west bank.

4.5.3.5 What educational facilities are located within Terrebonne Parish, within the study area?

Three educational facilities are located within the portion of Terrebonne Parish located within the study area—Andrew Price Alternative School, Schriever Elementary School, and Caldwell Middle School. Additional schools are located just outside the study area boundary, including H.L. Bourgeois High School, Evergreen Junior High School, and Coteau Bayou Blue Elementary.

4.5.4 What public safety services are located within the study area?

Law enforcement and protection in the study area is provided by the five parish sheriff's departments, as well as local police departments in Napoleonville, Thibodaux, and Houma. Fire protection is provided by the Napoleonville Volunteer Fire Department in Assumption Parish,

North Vacherie and South Vacherie Volunteer Fire Departments in St. James Parish, West Bank Volunteer Fire Department in St. John the Baptist Parish, and Schriever Volunteer Fire Department in Terrebonne Parish. Local 911 service for police and fire is available, and paramedics are provided by Acadian Ambulance Service throughout the study area.

4.5.5 What recreational resources are located within the study area?

Many types of outdoor and indoor recreational resources are available throughout the study area. The Assumption Parish Agricultural Complex and Arena is located in Napoleonville, and its facilities include Grande Arena, Petite Arena, and a concession stand. Thibodaux community parks include Andolsek Park, Adley Landry Water Reservoir, Daigle Park, Eagle Drive Park, Midland Park, Edwin H. Chiasson Memorial Park, Martin Luther King Park, and Peltier Park.

Most of the study area is made up of bayous, lakes, and rivers of the Atchafalaya Basin, which offer boating, fishing, camping, wildlife viewing, and other outdoor recreational opportunities year round. Public boat launching facilities are located on Bayou Lafourche, Lac des Allemands, and the Bonnet Carré Spillway.

4.5.6 What sensitive community and cultural resources are located within the study area?

Several hundred churches of various denominations are located throughout the study area. Notable cultural resources in the study area include the Oak Alley Plantation in St. James Parish. Oak Alley Plantation, a National Historic Landmark, is a historic plantation located on the west bank of the Mississippi River in the Vacherie community. It is named after its distinguishing feature, a canopied path created by a double row of live oaks about 800 feet long, which was planted in the early 18th Century, leading towards the Mississippi River.

4.5.7 What community services and facilities would be impacted by the project?

Impacts to community services and facilities were evaluated using GIS, aerial photography, and field reconnaissance. A GIS dataset was created for the project to inventory, map, and analyze the various community resources and constraints throughout the study area, and to avoid or minimize impacts during development of the build alternative alignments.

4.5.8 What are the impacts to community services as a result of the No-build Alternative?

No community services or facilities would be impacted by the No-build Alternative.

4.5.9 What are the impacts to community services as a result of the Build Alternatives?

Alternative 1 (Western Alignment + North Alignment "A")

One community child care facility, Ms. Patti's Playhouse on Playhouse Court in Schriever, would be relocated by *Alternative 1 (Western Alignment + North Alignment "A")*.

Alternative 2 (Western Alignment + North Alignment "B")

One community child care facility, Ms. Patti's Playhouse on Playhouse Court in Schriever, would also relocated by *Alternative 2 (Western Alignment + North Alignment "B")*

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 (Central Alignment + North Alignment "A") would not impact any community services or facilities.

Alternative 4 (Central Alignment + North Alignment "B")

Alternative 4 (Central Alignment + North Alignment "B") would not impact any community services or facilities.

4.5.10 What indirect and cumulative impacts are anticipated?

Indirect and cumulative effects from induced development will be directly proportional to anticipated changes in land use induced from the build alternatives. Land use changes that would affect any community services or facilities are not anticipated. The controlled access of the proposed Houma-Thibodaux to LA 3127 may adversely affect access in some areas and provide new, beneficial access to other areas that currently have none. These access changes may change travel patterns and affect growth concentrated at access points to the Houma-Thibodaux to LA 3127.

4.6 ECONOMICS

4.6.1 What is the economic make-up of the study area?

The study area is located within portions of Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne Parishes. According to the 2010 Census, approximately 16 percent of the study area parishes as a whole have incomes below the poverty level, which is less than the statewide average of approximately 19 percent. Lafourche Parish has the lowest percentage at approximately 14 percent, which is significantly lower than the statewide average, while Terrebonne Parish has the highest percentage at approximately 18 percent, which is comparable to the statewide average. St. James Parish has the highest median household income of study area parishes, while Assumption Parish has the lowest, yet still has a median household income above the statewide average. Poverty and income characteristics of the study area, based on 2010 Census data, are presented in **Table 4.14**.

Table 4.14
Poverty and Income Characteristics of the Study Area (for the year 2010)

Location	Total Population	Persons Below Poverty Level		Median Household Income
		Population	Percent	
Louisiana	4,533,372	824,906	18.7 %	$43,484
Assumption	23,421	3,951	17.1%	$44,583
Lafourche	96,318	13,584	14.4%	$48,398
St. James	22,102	3,310	15.3%	$58,128
St. John the Baptist	45,924	6,976	15.5%	$50,736
Terrebonne	111,860	19,848	18.0%	$47,859
All Study Area Parishes	**299,625**	**47,669**	**15.9%**	**—**

Source: US Census Bureau - Census 2010.
[1] Population for whom poverty status is determined.

4.6.2 What are the economic conditions of the study area?

Within the five study area parishes, there are more than 130,000 employed individuals. As shown in **Table 4.15**, the greatest proportion of employed residents work within the educational services, health care and social assistance industries, followed by the retail trade and manufacturing industries. A higher proportion of study area residents are employed in the manufacturing, agriculture, forestry, fishing and hunting, and mining industries than state residents overall.

Table 4.15
Proportion of the Study Area Population by Industry as Compared to the State Overall

Industry	Study Area	Louisiana
Civilian employed population 16 years and over	**130,302**	**1,978,701**
Educational services, and health care and social assistance	19.0%	23.6%
Retail trade	12.3%	11.8%
Manufacturing	11.4%	8.0%
Construction	9.9%	8.3%
Agriculture, forestry, fishing and hunting, and mining	8.4%	4.4%
Arts, entertainment, and recreation, and accommodation and food services	8.1%	10.0%
Transportation and warehousing, and utilities	7.0%	5.2%
Professional, scientific, and management, and administrative and waste management services	6.3%	8.3%
Other services, except public administration	5.9%	5.2%
Finance and insurance, and real estate and rental and leasing	4.3%	5.3%
Public administration	3.6%	5.8%
Wholesale trade	2.8%	2.8%
Information	1.2%	1.5%

Source: US Census Bureau, 2009-2011 American Community Survey, 3-Year Estimates, S2403

There are nearly 28,000 businesses within the five parish study area, approximately 78 percent of which are "non-employer businesses," which are mostly self-employed individuals with no paid employees. **Table 4.16** demonstrates that nearly 72 percent of all businesses in the study area are located within just two parishes—Lafourche and Terrebonne.

Table 4.16
Number of Business Establishments within the Study Area

Parish	Employer Establishments	Non employer Establishments*	Total
Assumption	251	1,490	1.741
Lafourche	1,923	6,930	8,853
St. James	317	1,312	1,629
St. John the Baptist	733	3,728	4,461
Terrebonne	2,910	8,211	11,121
Total	6,134	21,671	27,805

*A non-employer business is one that has no paid employees, has annual business receipts of $1,000 or more ($1 or more in construction industries), and is subject to federal income taxes. Most non-employers are self-employed individuals operating very small unincorporated businesses. (U.S. Census Bureau, www.census.gov/epcd/nonemployer/view/define.html)
Sources: U.S. Census Bureau, 2010 County Business Patterns; U.S. Census Bureau, 2010 Non-employer Statistics

Approximately 97 percent of the more than 6,100 employer establishments within the study area have less than 100 employees. According to the U.S. Census Bureau, Terrebonne Parish accounts for almost half of the major employers within the study area. **Table 4.17** below provides the number of major employers by parish.

Table 4.17
Number of Business Establishments within the Study Area with at least 100 Employees

Parish	100 to 499 Employees	500 to 999 Employees	≥1,000 Employees	Total
Assumption	4	0	0	**4**
Lafourche	37	2	0	**39**
St. James	16	2	0	**18**
St. John the Baptist	22	2	0	**24**
Terrebonne	75	4	3	**82**
Total	**154**	**10**	**3**	**167**

Source: US Census Bureau, 2010 County Business Patterns

Table 4.18 presents a list of the largest employers within the study area. These businesses range from 100 to nearly 2,500 employees. Most of these businesses are in, or provide support services to, the oil and gas industry. Manufacturing companies, chemical, food, metal, and plastic are also major employers in the area.

Top employers within the study area are clustered in three main areas—the Gramercy/Wallace area, the Thibodaux area, and south of US 90, the Houma area.

Table 4.18
Major Employers within the Study Area

Parish	Employer	Category
Assumption	Assumption Association for Retarded Citizens, Inc.	Non-profit
Assumption	Assumption Parish School Board	Education
Assumption/Lafourche/Terrebonne	Catholic Diocese of Houma-Thibodaux	Religion
Assumption	Heritage Manor of Napoleonville	Healthcare
Assumption	Industrial Electrical	Electrical Contractor
Lafourche	Bollinger Shipyards, Inc.	Marine Transportation
Lafourche	Danos & Curole Marine Contractors	Oil and Gas Technical Services
Lafourche	Edison Chouest Offshore	Marine Transportation
Lafourche	Grand Isle Shipyard, Inc.	Marine Transportation
Lafourche	International Offshore Services, LLC	Marine Transportation
Lafourche	Nicholls State University	Education
Lafourche/Terrebonne	Rouses Supermarkets	Supermarket
Lafourche	Thibodaux Regional Medical Center	Healthcare
Lafourche/Terrebonne	Walmart	Retail
St. James	Louisiana Sugar Refining, LLC	Sugar Refinery
St. James	Mosaic Co.	Chemical Manufacturing
St. James	Motiva Enterprises, LLC	Oil and Gas
St James	Noranda Alumina, LLC	Metal Manufacturing
St. James	Occidental Chemical Corp.	Chemical Manufacturing
St. James	Zen-Noh Grain Corp.	Grain Elevator
St. John the Baptist	ArcelorMittal La Place, LLC	Metal Manufacturing
St. John the Baptist	Cargill, Inc.	Grain Elevator
St. John the Baptist	Diversified Well Logging, Inc.	Oil and Gas
St. John the Baptist	DuPont Performance Elastomers, LLC	Rubber Manufacturing
St. John the Baptist	Louisiana Machinery, Co.	Equipment and Supplies
St. John the Baptist	Marathon Ashland Petroleum, LLC	Oil and Gas
St. John the Baptist	Nalco Chemical Co.	Chemical Manufacturing
St. John the Baptist	Pinnacle Polymers	Plastics Manufacturing
Terrebonne	Chet Morrison Contractors	Oil and Gas Technical Services
Terrebonne	Gulf Island Fabrication, Inc.	Equipment and Supplies
Terrebonne	Leonard J. Chabert Medical Center	Healthcare
Terrebonne	Performance Energy Services, LLC	Oil and Gas Technical Services
Terrebonne	Seacor Marine, LLC	Marine Transportation
Terrebonne	Terrebonne General Medical Center	Healthcare
Terrebonne	Terrebonne Parish Government	Government
Terrebonne	Terrebonne Parish School Board	Education

Sources: Assumption Parish, "Community Profile" www.assumptionla.com/Community_Profile?view=day&lh=2&d=01&m=07&y=2011; Houma Today "Lafourche's Largest Employers" October 29, 2009; Accessed May 17, 2013: www.houmatoday.com/article/20091029/NEWS0101/910299972; River Region Economic Development Initiative (RREDI) "St James Parish" Accessed May 17, 2013: http://portsl.com/businessdevelopment/docs/StJames_Parish_Profile.pdf; (RREDI) St "St. John Parish" Accessed May 17, 2013: http://portsl.com/businessdevelopment/docs/StJohn_Parish_Profile.pdf; John the Baptist, "Major Employers", Accessed May 17, 2013: http://sjbparish.com/ecodev_demographics.php?id=162; Daily Comet "Terrebonne's Top Employers" November 13, 2012; Accessed May 17, 2013: www.dailycomet.com/article/20121113/ARTICLES/121119874?template=printpicart

4.6.3 What are the economic development agencies and plans within the study area?

Each of the five parishes within the study area is a member of the South Central Planning and Development Commission, a regional planning and economic district. The SCPDC annually prepares a Comprehensive Economic Development Strategies (CEDS) report to aid in the coordination of economic development efforts.

Two regional economic development agencies support economic growth in the study area—South Louisiana Economic Council (SLEC) and the Greater New Orleans, Inc. (GNO, Inc.). SLEC serves the Bayou Region, which includes three of the parishes within the study area (Assumption, Lafourche, and Terrebonne). GNO, Inc. serves southeastern Louisiana; its 10-parish region includes St. James and St. John the Baptist Parishes. These agencies provide technical assistance and business incentive programs.

In 2002, Terrebonne Parish developed "A Strategic Plan for Economic Development." In addition, Assumption, St. James, St. John the Baptist, and Terrebonne Parishes have developed, and Lafourche Parish is in the process of developing, comprehensive plans or land use plans that incorporate economic development, transportation, and land use considerations and goals.

4.6.4 What are the impacts to economics as a result of the No-build Alternative?

The No-build Alternative would not impact the existing economic conditions of the study area.

4.6.5 What are the impacts to economics as a result of the Build Alternatives?

Alternative 1 (Western Alignment + North Alignment "A")

Under *Alternative 1 (Western Alignment + North Alignment "A")*, approximately 32,451 linear feet of roadway would be expanded, and approximately 109,211 linear feet of roadway would be built. The right-of-way (ROW) acquisition could result in business displacement of an estimated eight commercial establishments (as explained in Section 4.9). Relocation would be completed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended. Existing businesses along the alignment may experience temporary construction impacts such as noise, dust generation, and impeded vehicular access due to detours.

Alternative 2 (Western Alignment + North Alignment "B")

Under *Alternative 2 (Western Alignment + North Alignment "B")*, approximately, 25,301 linear feet of roadway would be expanded, and approximately 127,819 linear feet of roadway would be built. The ROW acquisition could result in business displacement of approximately seven commercial establishments (as described in Section 4.9). Relocation would be completed in accordance with the Uniform Act, as amended. Existing businesses along the alignment may experience temporary construction impacts such as noise, dust generation, and impeded vehicular access due to detours.

Alternative 3 (Central Alignment + North Alignment "A")

Under *Alternative 3 (Central Alignment + North Alignment "A")*, approximately, 34,150 linear feet of roadway would be expanded, and approximately 85,336 linear feet of roadway would be built. The ROW acquisition could result in business displacement of an estimated three commercial establishments (as explained in Section 4.9). Relocation would be completed in accordance with the Uniform Act, as amended. Existing businesses along the alignment may experience temporary construction impacts such as noise, dust generation, and impeded vehicular access due to detours.

Alternative 4 (Central Alignment + North Alignment "B")

Under *Alternative 4 (Central Alignment + North Alignment "B")*, approximately, 27,000 linear square feet of roadway would be expanded, and approximately 104,155 linear feet of roadway would be built. The ROW acquisition could result in business displacement of approximately two commercial establishments, the lowest number of potential relocations among the build alternatives (Section 4.9). Relocation would be completed in accordance with the Uniform Act, as

amended. Existing businesses along the alignment may experience temporary construction impacts such as noise, dust generation, and impeded vehicular access due to detours.

4.6.6 What indirect and cumulative impacts are anticipated?

The build alternatives would serve to improve connectivity and capacity within and through the study area, easing commutes for employees and shortening travel times for shipping and trucking companies, as well as potential customers. The indirect effects of the build alternatives could include bringing more people to the area and attracting new development along the proposed alignment. New development could entail the construction of new businesses, or the relocation of existing businesses, so as to take advantage of the changes in traffic patterns.

4.7 NONDISCRIMINATION - TITLE VI AND ENVIRONMENTAL JUSTICE

Many of the impacts of early transportation projects adversely affected minority and low-income populations in greater ways than other races and economic groups. This was partly due to low-income populations and neighborhoods being located near downtowns and other common destinations, which could be ideal locations for transportation projects. These were typically minority neighborhoods with a perceived lack of political power and representation. As a result, low income and minority populations and neighborhoods were adversely impacted more often than other populations and neighborhoods. FHWA, in an attempt to address discrimination in the development and implementation of transportation projects, has developed a nondiscrimination program based on federal statutes, regulations, and Executive Orders.

4.7.1 What is Title VI of the Civil Rights Act of 1964?

Title VII of the Civil Rights Act of 1964, for employers with 15 or more employees, prohibits any employment decision, including recruitment, hiring, and firing or layoffs, based on national origin, race and color as well as sex, or religion, stereotypes and assumptions about abilities, traits, or the performance of individuals of certain racial groups.

The cornerstone of the United States' nondiscrimination law is Title VI of the Civil Rights Act of 1964. The act states that "No person in the United States, shall on the ground of race, color, or national origin, be excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving Federal financial assistance" (42 USC 2000d). FHWA, in an effort to prevent discrimination, has developed a program called the, Title VI Compliance Program (Program). The Program is based on Title VI of the 1964 Civil Rights Act. However, FHWA's Program is not limited to just the prohibitions of Title VI. It includes other civil rights provisions of federal statutes and related authorities that prohibit discrimination in programs and activities receiving federal financial assistance (23 CFR 200.5(p)). These other statutes, regulations, and Executive Orders have expanded the Program to include other civil rights:

- The Federal-Aid Highway Act of 1973 (23 USC 324) prohibits discrimination based on sex (gender);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 4601) prohibits unfair and inequitable treatment of persons displaced or property to be acquired;
- Section 504 of the Rehabilitation Act of 1973 (29 USC 24) prohibits discrimination on the basis of disability as does the Americans with Disabilities Act of 1990 (ADA);
- The Age Discrimination Act of 1975 prohibits age discrimination; and
- Civil Rights Restoration Act of 1987 clarified the intent of Title VI to include all programs and activities of federal-aid recipients and contractors whether those programs and activities are federally-funded or not.

Minority and Low Income Populations

Minority Black, Hispanic, Asian, American Indian, and Alaskan Native.

Minority Population Any readily identifiable groups of minority persons living in geographical proximity, and geographically dispersed/transient person similarly affected by a proposed Federal program, policy or activity.

Low Income Person whose household income (community or group, whose average household income) is at or below U.S. Department of Health and Human Services poverty guidelines.

The Implementation Regulations (49 CFR 21 and 23 CFR 200) provide guidelines for implementing the Program under Title VI of the Civil Rights Act of 1964 and related civil rights laws and regulations, and conducting Title VI program compliance reviews relative to the federal-aid highway program. The Program includes Executive Orders 12898 and 13166. The 1994 Executive Order 12898 mandates the need to address equity and fairness, Environmental Justice, toward low-income and minority persons and populations; the 2000 Executive Order 13166 directs federal agencies to ensure people who have Limited English Proficiency (LEP) have meaningful access to services.

Recent memorandums from Loretta King, Acting Assistant Attorney General for Civil Rights, U.S. Department of Justice, have reinforced the need to strengthen the enforcement of Title VI and ensure that activities associated with the American Recovery and Reinvestment Act of 2009 are in compliance.

In summary, the FHWA's Title VI Program assures nondiscrimination on the basis of race, color, national origin, disability/handicap, sex, age, and (low) income status in programs or activities receiving financial assistance, whether those programs or activities are FHWA funded or not. The goal of the program is to promote nondiscrimination in federally-assisted programs and activities. This is based on:

- The fundamental principle that all human beings are created equal;
- The constitutional guarantee that all persons are entitled to equal protection of the laws; and
- The need to involve impacted persons in the decision-making process.

Table 4.19
Title VI: The Law versus FHWA's Program

Title VI of Civil Rights Act of 1964	FHWA Title VI Program
Race	Race
Color	Color
National Origin (*includes Limited English Proficiency*)	National Origin (includes *Limited English Proficiency*)
	Sex (Gender)
	Displaced Persons or Property
	Handicap/Disability
	Age
	Low-Income & Minorities

4.7.2 What is environmental justice?

As described above, Environmental Justice, as identified in the 1994 Executive Order 12898, mandates the need to address equity and fairness toward low-income and minority persons and populations and is a part of FHWA's Title VI Program. The President directed all federal agencies to make Environmental Justice part of their missions and to identify and address the effects of their programs, policies, and activities on minority and low-income populations. "Environmental Justice as identified in Executive Order 12898 is an attempt to address disproportionately high and adverse human health or environmental impacts that projects funded by the federal government may have on minority and low-income populations." Environmental Justice is a policy that has three major parts:

1. Avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects of the project, on minority populations and low-income populations.

2. Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

3. Ensure minority and low-income populations receive their equal share of the benefits from the project.

FHWA defines minority and low-income populations as the following:

"Minority means a person who is:

- Black (having origins in any of the black racial groups of Africa);
- Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race);
- Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or
- American Indian and Alaskan Native (having origins in any of the original people of North America and who maintain cultural identification through tribal affiliation or community recognition)."

Low-income means: a household income at or below the U.S. Department of Health and Human Services (DHHS) poverty guidelines.

Census 2000 and 2010 data were used to identify the minority and low-income composition of the study area parishes, as shown in **Tables 4.20 through 4.22**. In 2000 and 2010, Lafourche Parish had the smallest proportion of minority persons at approximately 17 percent and 21 percent, respectively. St. James Parish had the largest proportion of minorities in 2000, at approximately 50 percent, while St. John the Baptist Parish had the largest minority proportion in 2010, at approximately 58 percent. In 2010, Lafourche Parish population had the lowest percentage of people living below the poverty level, at approximately 14 percent, while Terrebonne Parish had the highest percentage at approximately 18 percent. Similarly, St. James Parish had the highest median household income of study area parishes, and Assumption Parish had the lowest.

Simple justice requires that public funds, to which all taxpayers of all races [colors, and national origins] contribute, not be spent in any fashion which encourages, entrenches, subsidizes or results in racial [color or national origin] discrimination.
President John F. Kennedy, 1963

Table 4.20
Comparison of Parish and Block Group Minority Populations (for the year 2010)[1]

Census 2010 Geography[2]	Total Population	Minority Race Population	Hispanic or Latino[3] Population
Lafourche Parish	**96,318**	**20.6%**	**3.8%**
Census Tract 207.02			
Block Group 1	1,624	**37.3%**	3.7%
Block Group 2	1,512	14.4%	1.1%
Census Tract 207.04			
Block Group 1[a]	1,875	3.5%	1.2%
Block Group 2[b]	2,166	10.4%	1.0%
Block Group 3[c]	1,211	13.8%	2.1%
Census Tract 208			
Block Group 2	1,653	3.8%	1.6%
Block Group 3	1,286	3.2%	0.5%
Census Tract 209, Block Group 1	928	8.6%	2.5%
Census Tract 219.01, Block Group 2[d]	4,513	13.7%	2.8%
Census Tract 219.02			
Block Group 2[e]	1,318	12.3%	1.6%
Block Group 3[f]	1,513	17.3%	4.9%
St. James Parish	**22,102**	**52.0%**	**1.2%**
Census Tract 405, Block Group 1[g]	726	**77.5%**	**6.5%**
Census Tract 406, Block Group 2	1,212	**71.1%**	3.4%
Census Tract 407, Block Group 3	1,523	29.4%	0.9%
Terrebonne Parish	**111,860**	**29.7%**	**4.0%**
Census Tract 1.01			
Block Group 1	1,302	**54.1%**	3.5%
Block Group 2	2,395	33.5%	3.8%
Block Group 3[h]	1,666	18.5%	3.1%
Block Group 4[h]	1,121	11.9%	2.3%
Census Tract 1.02, Block Group 2	1,560	**37.5%**	1.8%
Census Tract 17, Block Group 1	1,507	23.0%	2.6%

Source: US Census Bureau, Census 2010

[1] Census tract percentages that are five percent or more above representative parish percentages are denoted by bold text, indicating a relatively high proportion of minority persons in that block group.

[2] Some census tract and block group boundaries and/or numbers have changed due to redistricting since the 2000 Census:
- [a] Former Block Group 5, Census Tract 207.01
- [b] Former Block Group 4, Census Tract 207.01
- [c] Former Block Group 1, Census Tract 207.01
- [d] Portion of former Block Group 5, Census Tract 219
- [e] Portion split from former Block Group 5, Census Tract 219 merged with former Block Group 2, Census Tract 219
- [f] Former Block Group 1, Census Tract 219
- [g] Former Block Group 2, Census Tract 405
- [h] Former Block Group 3, Census Tract 1.01 was split into two block groups (3 and 4)

[3] Hispanic/Latino populations are an ethnic group and are not considered a single racial group. Hispanics may be of any race.

Table 4.21
Comparison of Parish and Census Tract Low-Income Populations (for the year 2010)[1]

Census 2010 Geography	Total Households	Household Incomes Below Poverty Guidelines[2]
Lafourche Parish	**34,474**	**28%**
Census Tract 202.02	1,112	13.4%
Census Tract 204	763	**43.6%**
Census Tract 205	2,136	**33.5%**
Census Tract 207.02	1,209	**28.4%**
Census Tract 207.03	1,647	19%
Census Tract 207.04	2,167	25.5%
Census Tract 208	1,705	28.4%
Census Tract 209	758	**43.5%**
Census Tract 210	1,101	**34.1%**
Census Tract 219.01	2,003	23.5%
Census Tract 219.02	1,567	20.8%
St. James Parish	**7,578**	**25.4%**
Census Tract 405	725	**38.1%**
Census Tract 406	889	24.4%
Census Tract 407	1,362	16.5%
Terrebonne Parish	**39,040**	**26.3%**
Census Tract 1.01	2,148	16.9%
Census Tract 1.02	1,255	**34.9%**
Census Tract 17	3,230	10.1%

Source: US Census Bureau, ACS 5-Year Estimates 2007-2011

[1] Census Tract percentages that are five percent or more above representative parish percentages are denoted by bold text, indicating a relatively high proportion of low-income persons in that block group.

[2] DHHS poverty guidelines for a three-person household in 2010 were $18,310

Table 4.22
Other Title VI Protected Populations (for the year 2010)[1]

Census 2010 Geography	65 Years and Over	Disabled[2]	Limited Ability to Speak English[3]
Lafourche Parish	**8.5%**	**15.1%**	**4.0%**
Census Tract 202.02	6.0%	—	0.9%
Census Tract 204	13.6%	—	0%
Census Tract 205	8.9%	—	1.8%
Census Tract 207.02	2.5%	—	4.6%
Census Tract 207.03	6.8%	—	4.5%
Census Tract 207.04	3.8%	—	1.4%
Census Tract 208	6.6%	—	3.1%
Census Tract 209	5.0%	—	0.1%
Census Tract 210	9.8%	—	1.5%
Census Tract 219.01	6.4%	—	4.9%
Census Tract 219.02	6.3%	—	1.5%
St. James Parish	**10.1 %**	**13.6%**	**1.5%**
Census Tract 405	4.8%	—	0.3%
Census Tract 406	11.7%	—	3.6%
Census Tract 407	6.0%	—	2.2%
Terrebonne Parish	**8.1%**	**16.7%**	**2.4%**
Census Tract 1.01	7.0%	—	2.5%
Census Tract 1.02	4.3%	—	1.5%
Census Tract 17	6.3%	—	1.8%

[1] *Source: US Census Bureau, American Community Survey 2009-2011 3-Year Estimates*

[2] Percentage of the population 5 years and over with a disability.

[3] Percentage of the population 5 years and over who speak English "not well" or "not at all."

— Denotes data disability data not available at the Census Tract level for 2010.

4.7.3 What minority, low-income, or other protected population groups would be impacted by the project?

Block group level data was used to determine the presence of minority and low-income populations in proximity to the build alternatives to determine populations that may be affected by the proposed project. A block group is the smallest geographic unit for which demographic data is readily available.

The block group data were compared to data for the study area parishes as reference populations. The percentage of persons classified as minority in each block group were calculated and compared to the county percentage to determine if a block group contained a high proportion of minority persons. Likewise, the percentage of households in each block group with incomes at or below the DHHS poverty guidelines were calculated and compared to the parish percentage to determine if the block group contained a high proportion of low-income persons. Block groups that had percentages more than 5 percent higher than the parish averages were considered to have relatively high minority and/or low-income proportions.

Census 2010 data on race and ethnicity was used in the analysis of potential impacts to minority populations. Income and poverty data from the 2010 Census was used to analyze potential impacts to low-income populations. The 2010 Census reported the income levels of households in 2010. The average household size in the study area parishes and block groups is three persons. The DHHS poverty guidelines for a three-person household in 2010 were $18,310. Therefore, the household incomes listed in the "Less than $10,000," "$10,000 to $14,999," and "$15,000 to $24,000" categories in 2010 Census were used in the analysis.

The proposed build alternative alignments pass through three parishes—Lafourche, St. James, and Terrebonne. Potential environmental justice impacts for minority populations were analyzed for 20 block groups (based on Census 2010 geographies) traversed by the alternative alignments; potential environmental justice impacts for low-income populations were analyzed for 18 block groups traversed by the alignments (based on Census 2010 geographies). The data used in the analyses are summarized in **Tables 4.20** and **4.22**, which indicate there are five block groups with relatively high minority populations, one of which also has a relatively high low-income population (Block Group 1, Census Tract 1.01, Terrebonne Parish), that are crossed by the build alternatives.

Census tract level data was also used to identify the presence of other Title VI protected groups (e.g., the elderly, disabled, etc.) that may be impacted by the proposed project. The 17 Census Tracts with 2010 geographies traversed by the alignments were analyzed using available data summarized in **Table 4.23**. A relatively high proportion of disabled persons were identified in Terrebonne Parish. St James Parish has a high proportion of minorities with approximately 77 percent in Census Tract 405, Block Group 1 and 71 percent in Census Tract 406, Block Group 2. No other high proportions of population groups protected under Title VI were identified.

4.7.4 What are the impacts to Title VI and Environmental Justice populations as a result of the No-build Alternative?

No minority, low-income, or other protected population groups would be directly or indirectly impacted by the No-build Alternative.

4.7.5 What are the impacts to Title VI and Environmental Justice populations as a result of the Build Alternatives?

Each alternative was evaluated to determine the proximity of any individuals in these protected population groups relative to the alignment, and whether there were any impacts that the individuals could potentially bear in greater numbers or intensity than other population groups (e.g., relocations and community effects, travel pattern changes, noise and air quality, etc.). Five block groups were identified that have high proportions of minority, low-income, and/or disabled persons. **Table 4.23** describes the potential for impact within the five block groups for each build alternative. **Figure 4-5** shows the socioeconomic and minority status of the study area based on 2010 Census information.

Table 4.23
Potential for Environmental Justice and Title VI Impacts by the Alternative Alignments

Census Tract/ Population	North A Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
207.02, 1 Lafourche **Minority**	—	—	—	New location through cultivated fields and woody wetlands around the western edge of Thibodaux, parallel to the W. Thibodaux Bypass/LA 3185; short segment just south of Bayou Lafourche is adjacent to residential areas.
405.00, 1/2 St. James **Minority**	Very small new location section through woody wetland in easternmost tip of the block group.	Very small new location section through woody wetland in easternmost tip of the block group.	—	—
406.00, 2 St. James **Minority & Disabled**	Short section along existing LA 20 with cultivated fields on both sides; several businesses are located at LA 3127 intersection at the northern terminus.	Small new location section through cultivated fields and marshland.	—	—
1.01, 1 Terrebonne **Minority & Low-Income**	—	—	Very small new location section in cultivated field at southernmost tip of block group.	—
1.02, 2 Terrebonne **Minority**	—	—	Primarily along existing LA 316/ Bayou Blue Bypass Rd, with dense residential development on both sides, with short new location section through cultivated fields at north end of the block group.	—

Figure 4-5
Socioeconomic and Minority Status within the Study Area

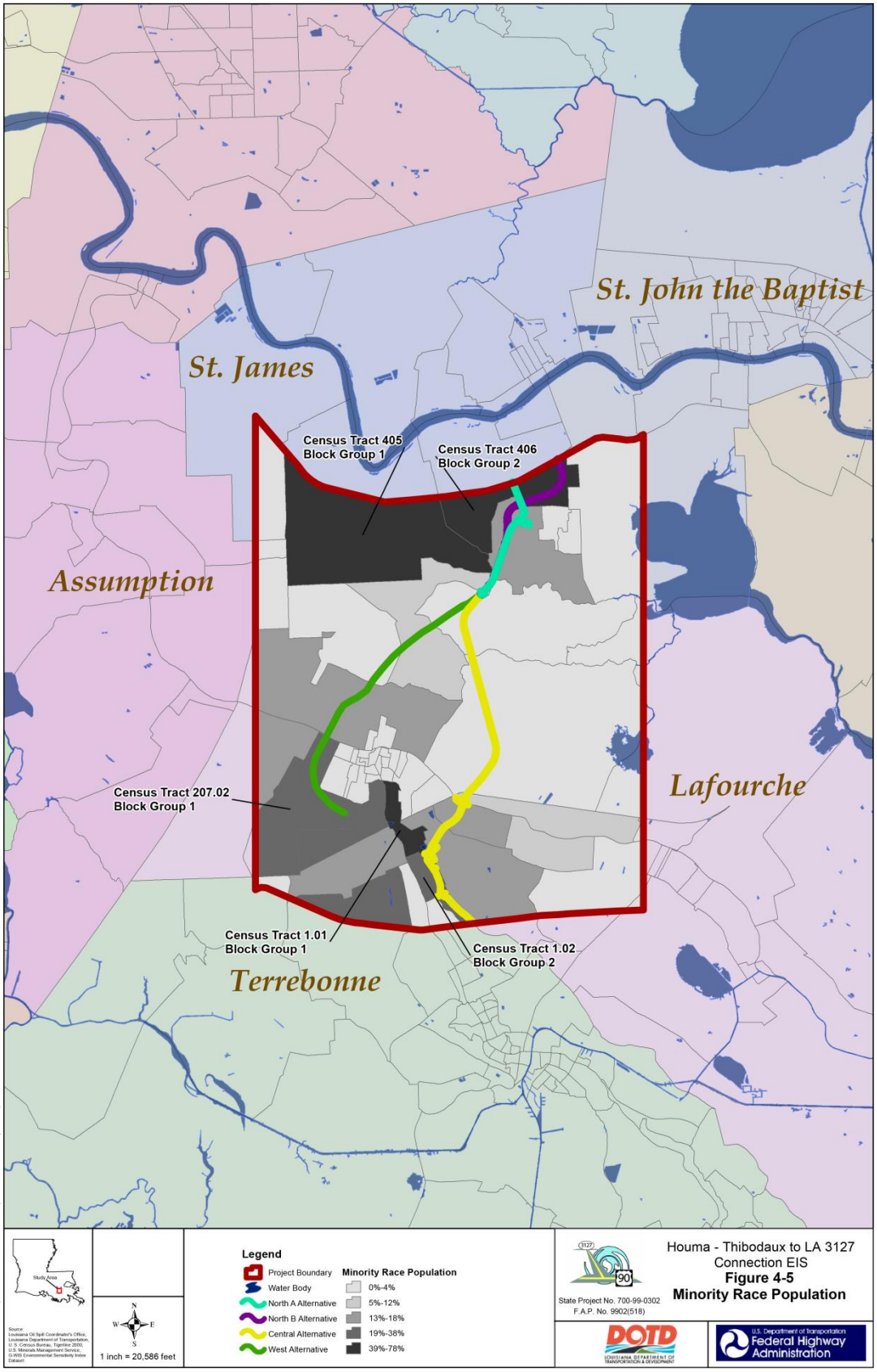
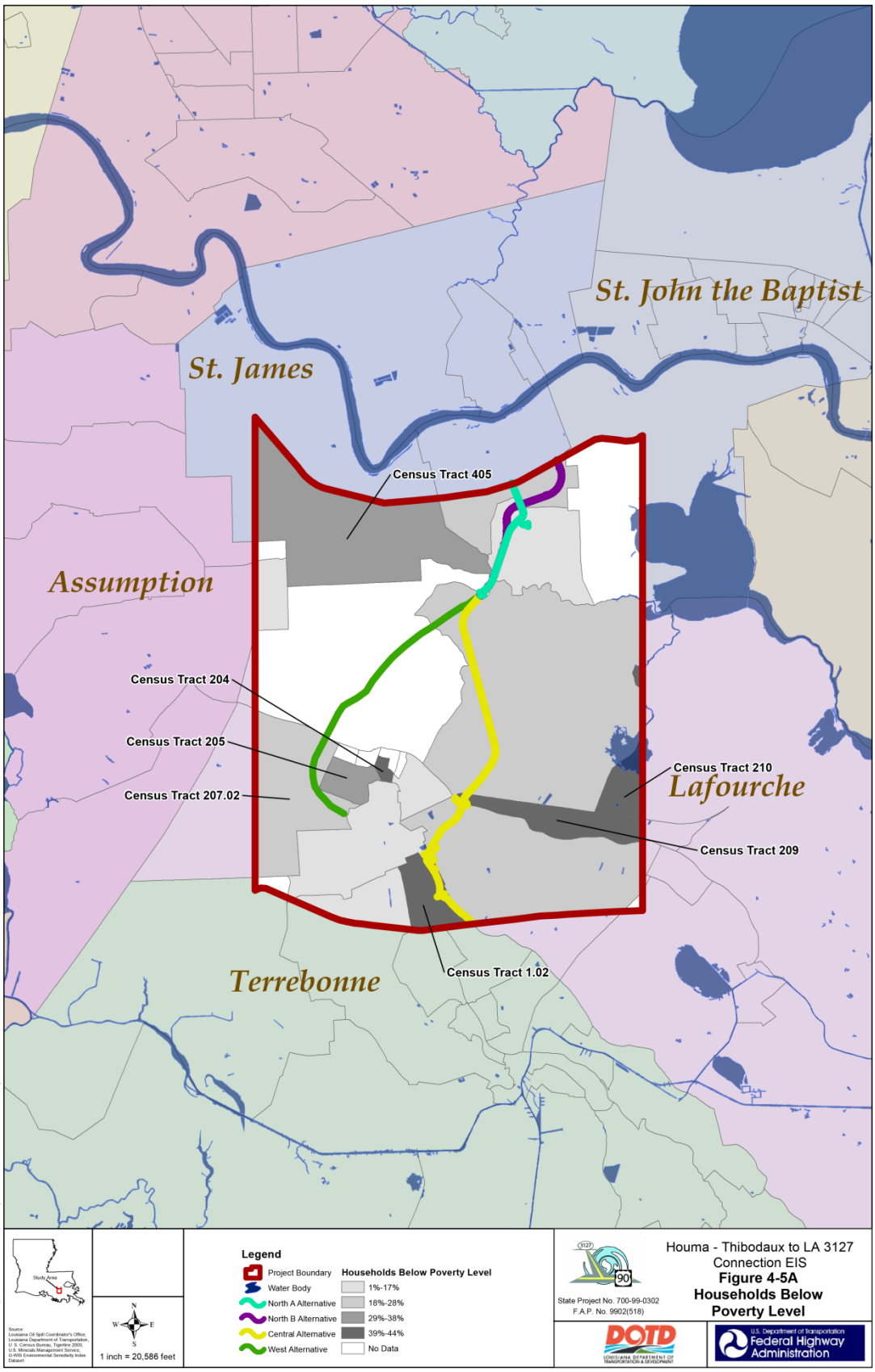


Figure 4-5a
Households Below the Poverty Level within the Study Area



Alternative 1 (Western Alignment + North Alignment "A")

Alternative 1 (Western Alignment + North Alignment "A") crosses three of the five block groups that have high proportions of minority, low-income, and/or disabled persons. *Alternative 1 (Western Alignment + North Alignment "A")* would directly impact one minority population (Census Tract 1.02, Block Group 2 in Terrebonne Parish). Direct impacts include increased vehicular traffic and noise from the new roadway adjacent to the residential areas; potential changes in access or travel patterns; and potential effects on community cohesion. Increased traffic and noise impacts are not concentrated in any one community, but rather are distributed throughout the alignment. Impacts to access, travel patterns, and community cohesion would vary along the alignment, and will depend on whether tie-ins to local side roads and drives are provided and how they are configured, which will be determined during detailed design of the Preferred Alternative. Avoidance and minimization measures would be incorporated into the design to address any significant impacts that are identified. Thus, no disproportionate adverse impacts to this minority population are anticipated from this alternative.

Alternative 2 (Western Alignment + North Alignment "B")

Alternative 2 (Western Alignment + North Alignment "B") also crosses three of the five identified block groups. *Alternative 2 (Western Alignment + North Alignment "B")* would also directly impact one minority population (Census Tract 1.02, Block Group 2 in Terrebonne Parish). Direct impacts include increased vehicular traffic and noise from the new roadway adjacent to the residential areas; potential changes in access or travel patterns; and potential effects on community cohesion. Increased traffic and noise impacts are not concentrated in any one community, but rather are distributed throughout the alignment. Impacts to access, travel patterns, and community cohesion would vary along the alignment, and will depend on whether tie-ins to local side roads and drives are provided and how they are configured, which will be determined during detailed design of the Preferred Alternative. Avoidance and minimization measures would be incorporated into the design to address any significant impacts that are identified. Thus, no disproportionate adverse impacts to this minority population are anticipated from this alternative.

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 (Central Alignment + North Alignment "A") crosses four of the five identified block groups. *Alternative 3 (Central Alignment + North Alignment "A")* would directly impact one minority population (Census Tract 207.02, Block Group 1 in Lafourche Parish). Direct impacts include residential displacement and relocation; increased vehicular traffic and noise; potential changes in access or travel patterns; and potential effects on community cohesion. Relocations and increased traffic and noise impacts are not concentrated in anyone community, but rather are distributed throughout the alignment. Impacts to access, travel patterns, and community cohesion would vary along the alignment, and will depend on whether tie-ins to local side roads and drives are provided and how they are configured, which will be determined during detailed design of the Preferred Alternative. Avoidance and minimization measures would be incorporated into the design to address any significant impacts that are identified. Thus, no disproportionate adverse impacts to this minority population are anticipated from this alternative.

Alternative 4 (Central Alignment + North Alignment "B")

Alternative 4 (Central Alignment + North Alignment "B") also crosses four of the five identified block groups. *Alternative 4 (Central Alignment + North Alignment "B"),* like *Alternative 3 (Central Alignment + North Alignment "A")*, would directly impact one minority population (Census Tract 207.02, Block Group 1 in Lafourche Parish). Direct impacts include residential displacement and relocation; increased vehicular traffic and noise; potential changes in access or travel patterns; and potential effects on community cohesion. Relocations and increased traffic and noise impacts are not concentrated in any one community, but rather are distributed throughout the alignment.

Impacts to access, travel patterns, and community cohesion would vary along the alignment, and will depend on whether tie-ins to local side roads and drives are provided and how they are configured, which will be determined during detailed design of the Preferred Alternative. Avoidance and minimization measures would be incorporated into the design to address any significant impacts that are identified. Thus, no disproportionate adverse impacts to this minority population are anticipated from this alternative.

None of the build alternatives would directly impact any low-income or other protected population groups.

4.7.6 What indirect and cumulative impacts are anticipated?

Indirect effects to minority and low-income populations will depend on the type and intensity of development that may be induced in the study area after the project is constructed. The improved access and connectivity the project will provide could lead to increased commercial and residential development in the study area; however, the minority and low-income populations are located in portions of the study area where development potential is limited either by existing development or the presence of large, wooded wetlands. Additionally, the new roadway will be limited-access, which would limit development and the resulting indirect impacts by concentrating the location of new establishments around intersections and new interchanges.

The ability to travel directly between destinations, with access to services that are currently absent or only distantly available, may be improved for residents of these communities, along with potential increased connections between neighborhoods and communities. Cumulative effects to the rural nature of the study area could result if substantial additional development occurs in the area, but are not anticipated, given the existing limiting factors for development.

4.8 PEDESTRIAN AND BICYCLE FACILITIES

4.8.1 What existing pedestrian and bicycle facilities exist within the study area?

No bicycle routes or walking trails are found within the study area. The existing road system consists of primary and secondary rural roadways that have limited or no shoulders, making it difficult to accommodate pedestrians or bicyclists.

Although there are no comprehensive or master plans specifically for bicycles or pedestrians in the study area, there is acknowledgement of their needs through the "complete streets movement" in some of the recently adopted comprehensive plan updates for parishes within the study area. A complete street is one that takes into consideration all travel modes—automobile, transit, bicycle, and pedestrian. As an example, Terrebonne Parish has incorporated complete street provisions into the transportation element of their Vision 2030 plan. The ability to provide transportation choice is a trademark of an effective community. One aspect is to accommodate cyclists and pedestrians through incorporating safety improvements designed to reduce vehicular and pedestrian conflicts, such as raised medians and the redesign of intersections and sidewalks. There are trends to suggest that the amount riders, or those who have access to a car but choose to utilize alternate means such as walking or biking, will increase. St James Parish is also taking into account the future needs of cyclists and pedestrians by making recommendations to have more facilities through the preparation of a bicycle and pedestrian plan.

The HTMPO released a Metropolitan Transportation Plan in 2010 that contains a bicycle and pedestrian element. At the time of the adoption of this plan, the pedestrian and bicycle objectives were to establish a vision and goal statement, conduct an assessment of current conditions and needs while identifying activities required to meet the visions and goals, and to implement bicycle

and pedestrian elements in the statewide and MPO transportation plan and transportation improvement program. Achieving these objectives would be accomplished through evaluating progress and involving the public. This plan element intends to lay the groundwork for a more comprehensive bicycle and pedestrian plan, as well as include non-motorized transportation goals in the overall transportation process. To further achieve these non-motorized transportation goals the Houma-Thibodaux area aims to:

- Create a bicycle and pedestrian advisory panel;
- Include bicycle and pedestrian facilities in all street projects;
- Build ADA-compliant pedestrian facilities;
- Connect existing pedestrian infrastructure;
- Evaluate current regulations that pertain to bicyclists, pedestrians, and bicycle/ pedestrian; and
- Build infrastructure and update as needed.

By undertaking these actions in the Houma-Thibodaux region, the presence of pedestrian and bicycle facilities in the study area is very probable via the occurrence of future infrastructure improvements.

4.8.2 What are the impacts to pedestrian and bicycle facilities as a result of the No-build Alternative?

The No-build Alternative would have no effect on pedestrian or bicycle facilities in the study area.

4.8.3 What are the impacts to pedestrian and bicycle facilities as a result of the Build Alternatives?

The four build alternatives would have little to no effect on pedestrian or bicycle facilities in the study area. These proposed build alternatives may have the following implications given the context of the surrounding land use:

Alternative 1 (Western Alignment + North Alignment "A")

Alternative 1 (Western Alignment + North Alignment "A") is likely to provide an increase of traffic through Thibodaux. There will inevitably be more demand for bicycle and pedestrian facilities in the developed areas. Thibodaux does not presently have plans for bicycle and pedestrian infrastructure along this route. Given the presence of commercial and residential uses in this segment of the corridor, and as suggested by recent population and demographic trends, alternative means of transportation should be considered. The majority of this alignment in the study area bisects agricultural and pastoral land through Lafourche and Terrebonne Parishes, and terminates near the St. James Parish boundary. The greatest feasibility for bicycle and pedestrian infrastructure will occur in developed areas surrounding this alignment.

Alternative 2 (Western Alignment + North Alignment "B")

Alternative 2 (Western Alignment + North Alignment "B") is surrounded primarily by dense woodland until it reaches South Vacherie. At this point in the alignment, the land uses transition to cropland with some instances of single family residential. Given the rural context of this alignment, the likelihood of implementing bicycle and pedestrian facilities is improbable.

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 (Central Alignment + North Alignment "A") most likely will not have implications for bicycle and pedestrian infrastructure as the majority of the alignment crosses through rural areas consisting of forested and pastoral land. Very few commercial or civic entities exist along this route; therefore, it is highly unlikely that bicycle and pedestrian facilities will surface.

Alternative 4 (Central Alignment + North Alignment "B")

Alternative 4 (Central Alignment + North Alignment "B") would be mostly surrounded by single-family residential uses and some urban parks in areas where it crosses downtown Houma. A few pockets of single-family or low-density development also occur along this alignment outside of Thibodaux. Given the rural context of the majority of this alignment, it is highly unlikely that there would be any implications toward bicycle and pedestrian infrastructure.

4.8.4 What indirect and cumulative impacts are anticipated?

Indirect and cumulative impacts consider the effects to pedestrian and bicycle facilities that may result from induced development from the project, and will be directly proportional to anticipated changes in land use induced from the build alternatives. Local governments have the ability to manage growth through land use and development policies that promote quality, compatible growth, and a balanced land use mix. The ability to travel directly between destinations, providing access to services for non-motorized transportation that are currently absent or only distantly available, is expected to benefit pedestrians and cyclists in the study area communities overall. As a result of controlled land use and increased economic development, greater demand for bicycle and pedestrian facilities will arise. Infrastructure improvements as an indirect result of growth will have to accommodate cyclists and pedestrians where feasible. Thus, with anticipated growth, the demand and supply of bicycle and pedestrian facilities will increase in the study area.

4.9 RELOCATIONS

4.9.1 What are the relocation impacts?

All relocation activities follow the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, which ensures that decent, safe, and sanitary replacement housing will be provided for all displaced residents. In general, relocation is considered to be necessary when a) a residence or business would be directly in the required ROW of a proposed project, b) access would be eliminated, or c) when the project would cause a change or reduction in use of the property significant enough to cause a considerable loss of value of the property. Relocation programs available through LADOTD to displaced residents include relocation assistance, relocation moving payments, and relocation replacement housing payments or rent supplement. Comparable housing will be provided for all displaced residents.

Based on the preliminary review of the housing inventory and market data, there appears to be a large and adequate supply of replacement housing available for potential displacements. Relocation programs available through LADOTD to displaced residents include relocation assistance, relocation moving payments, and relocation replacement housing payments or rent supplement. Comparable housing will be provided for all displaced residents.

During ROW acquisition, each property that will be required for purchase will be assigned a relocation officer from LADOTD, who will be the point of contact for the resident during transition from existing to new housing. No person or family will be displaced until comparable replacement housing has been offered or provided to the displaced resident within a reasonable time prior to displacement. In the event comparable replacement housing is not available, or when unavailable within the displaced resident's financial means, the Last Resort Housing Program may be used by LADOTD to help provide housing. This program provides states flexibility in implementing

relocation programs in order to ensure all displaced residents will be provided decent, safe, and sanitary housing.

4.9.2 What are the relocation impacts as a result of the No-build Alternative?

The No-build Alternative would not result in any immediate relocations; however, to provide for the rising travel demand in the area, future widening improvements could require relocations.

4.9.3 What are the relocation impacts as a result of the Build Alternatives?

The proposed project will be mostly new alignment over uninhabited areas, with the exception of widening some portions of existing roadways with surrounding residential developments. It is not expected that the project will have any major disruptive effect on the surrounding human environment, with the exception of some residential and commercial relocations. An effort was made to minimize relocations during the development of each alternative. **Table 4.24** lists the number of relocations for each alternative. These numbers are preliminary and will be verified when the Preferred Alternative is identified in the Final EIS.

Table 4.24
Potential Relocations

Roadway	No build Alternative	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Commercial	0	8	7	3	2
Residential	0	31	29	24	22
Total	**0**	**39**	**36**	**27**	**24**

Alternative 1 (Western Alignment + North Alignment "A")

Alternative 1 (Western Alignment + North Alignment "A") could result in the most commercial and residential relocations among all of the alternatives, with a total of 39.

Alternative 2 (Western Alignment + North Alignment "B")

Alternative 2 (Western Alignment + North Alignment "B") is estimated to lead to the second highest number of relocations, both commercial and residential, among the alternatives, with a total of 36.

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 (Central Alignment + North Alignment "A") could result in 27 commercial and residential relocations.

Alternative 4 (Central Alignment + North Alignment "B")

Alternative 4 (Central Alignment + North Alignment "B") is projected to result in the fewest number of commercial and residential relocations among the alternatives, with a total of 24.

Details on the types of properties that will be potentially relocated can be found in the Conceptual Stage Relocation Plan Tech Memo. Further steps will be taken to minimize potential impacts as the project progresses to the final phases.

4.9.4 What indirect and cumulative impacts are anticipated?

Potential indirect and cumulative impacts associated with relocations could be present in the event that additional infrastructure projects are initiated in the area. If other improvement projects fall within this study area, those relocation needs would potentially affect the available housing for this project's relocations. Relocations would have to be coordinated between the projects to ensure that all displaced residential and commercial owners are provided with fair and comparable relocation housing. Future industrial growth is anticipated along Alternatives 1 and 2 within the rural, farmlands. Recent activity near the intersection of US 90 and LA 311 suggests continued growth along the corridor which could become additional relocations in the future. At this time though, there appears to be no other major improvement projects that fall within the study area. Therefore, there is currently no concern for the occurrence of these potential indirect and cumulative impacts.

4.10 AGRICULTURAL AND FARMLAND

4.10.1 What are the existing agricultural and farmland characteristics of the study area?

The National Agricultural Land Study of 1980 determined that millions of acres of farmland were being converted to non-agricultural uses and federal programs were responsible for a large percentage of this conversion. In 1981, Congress enacted the Agriculture and Food Act of 1981 (PL 97-98), containing the Farmland Protection Policy Act (FPPA), to address this problem. The goal of the FPPA is to minimize the unnecessary and irreversible conversion of agricultural lands to non-agricultural uses.[33]

The Louisiana Department of Agriculture and Forestry was contacted during the Solicitation of Views in a letter dated July 29, 2004 and did not provide comments. However, Form AD-1006 (Farmland Conversion Impact Rating), which assesses non-soil related criteria 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, will be completed for the Preferred Alternative once selected and submitted to the State Soil Scientist with the Natural Resources Conservation Service (NRCS). The completed form from the State Soil Scientist will be included in the Final EIS.

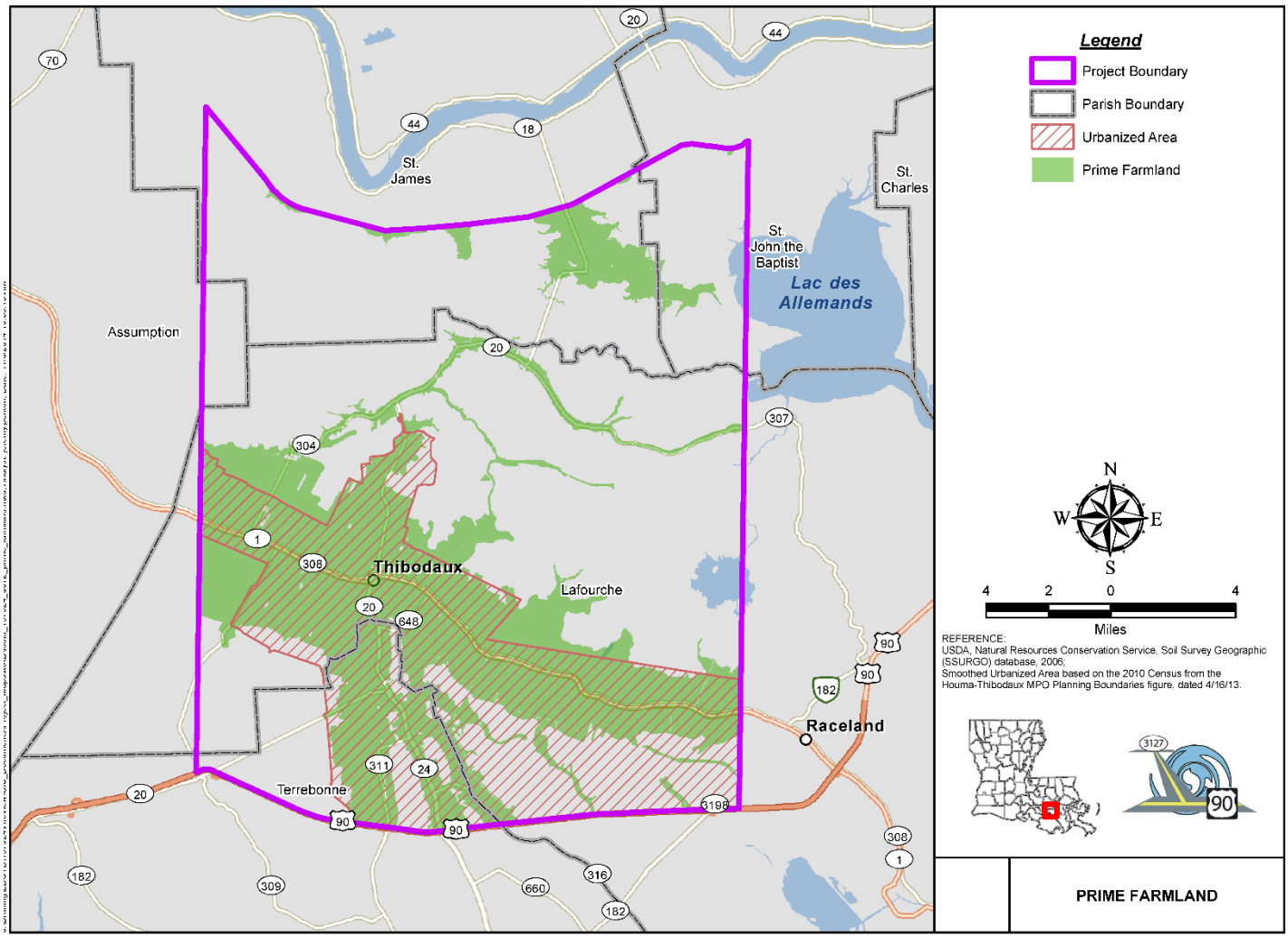
As defined in the FPPA, farmland means prime or unique farmlands; however, it does not include land that is committed to urban development or water storage or land that lies within an urbanized area.

When considering impacts to farmland, prime farmland is of primary concern. Prime farmland is land with high quality soil having the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor.[34] **Figure 4-6** shows the location of prime farmland within the study area. The figure also depicts the urbanized boundary as defined by the HTMPO based on 2010 Census data.

[33] U.S. Department of Agriculture-Natural Resources Conservation Service. (2013). Farmland Policy Protection Act. Retrieved from http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/fppa/?cid=nrcs143_008275. Last accessed October 24, 2013.

[34] Carver, A.D. and Yahner, J.E. (1997). Defining Prime Agricultural Land and Methods of Protection. Retrieved from http://www.extension.purdue.edu/extmedia/AY/AY-283.pdf. Last accessed October 24, 2013.

Figure 4-6
Prime Farmland



Historically, the land located within the boundaries of the study area has been used for agricultural purposes including cropland, woodland for timber, and pasture for livestock.[35] Today, the area continues to benefit from highly productive farmlands that support a variety of agricultural enterprises. The primary crop within the study area is sugarcane, with over 110,000 acres in production for the five parishes in the study area.[36] Sugarcane is also the number one plant commodity in the entire State of Louisiana.[37] In 2013, the total value of Louisiana sugarcane was $770.7 million. The gross farm value in 2013 for sugarcane in Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne Parishes was $107,648,827.[38] **Figure 4-7** details the location of land under cultivation within the study area. Not all agricultural lands are used to grow crops. **Table 4.25** displays agricultural subsets of farms for each of the five parishes in the study area.

Table 4.25
Percent Distribution of Agricultural Land in Farms by Parish

Parish	Cropland (%)	Woodland (%)	Pasture (%)	Other Uses (%)
Assumption	80.9	12.3	N/A	6.8
Lafourche	59.4	7.1	23.8	9.70
St. James	77.7	N/A	7.1	15.1
St. John the Baptist	71.4	N/A	N/A	N/A
Terrebonne	12.4	N/A	6.66	80.92

N/A: Not Available
Source: National Agricultural Statistics Service

4.10.2 What are the impacts to agricultural and farmland as a result of the No-build Alternative?

The No-build Alternative would result in no loss of prime farmland soils or other agricultural resources.

4.10.3 What are the impacts to agricultural and farmland as a result of the Build Alternatives?

At-grade construction would result in the loss of agricultural lands within the ROW, segregation of farmlands, and unusable residual farming properties. Elevated portions of the build alternatives would result in the loss of agricultural lands immediately under the alignment, but could allow for the continued use of the agricultural land within the ROW. **Figure 4-8** shows the location of prime farmland that would be converted to non-agricultural use by the proposed project alternatives.

[35] Matthews, S.D. (1984). Soil Survey of Lafourche Parish, Louisiana. Washington, D.C.: United States Department of Agriculture, Soil Conservation Service.

[36] Louisiana State University Agricultural Center. (2012). Agriculture & natural resources summary. Retrieved from http://www.lsuagcenter.com/agsummary/home. Last accessed October 24, 2013.

[37] Legendre, B. (2011). Louisiana Sugarcane Burning. Retrieved from http://www.lsuagcenter.com/en/crops_livestock/crops/sugarcane/publications/louisiana+sugarcane+burning.htm. Last accessed October 24, 2013.

[38] Louisiana State University Agricultural Center. (2013). Agriculture & natural resources summary. Retrieved from http://www.lsuagcenter.com/agsummary/home. Last accessed September 8, 2014.

Figure 4-7
Land Under Cultivation

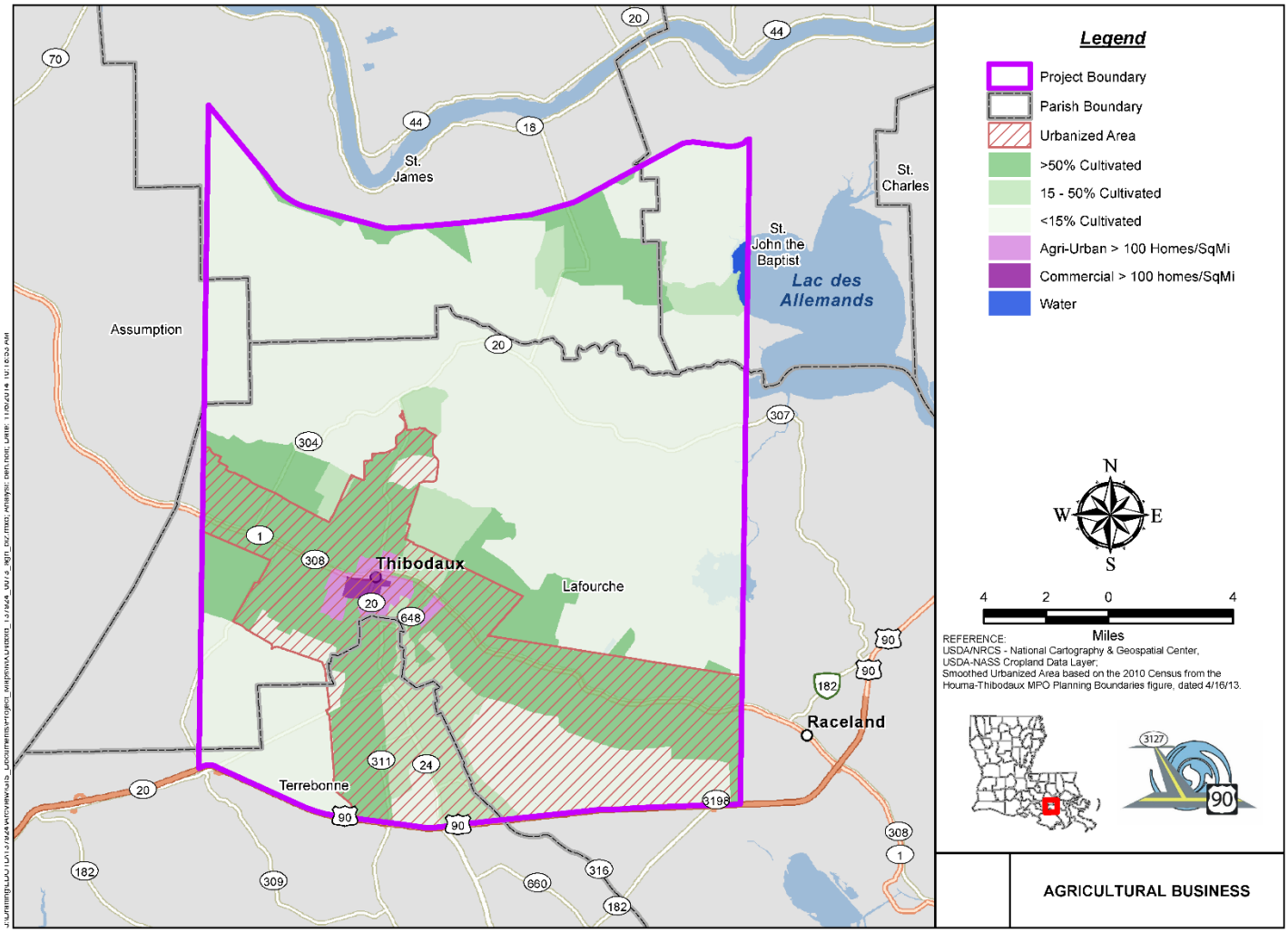
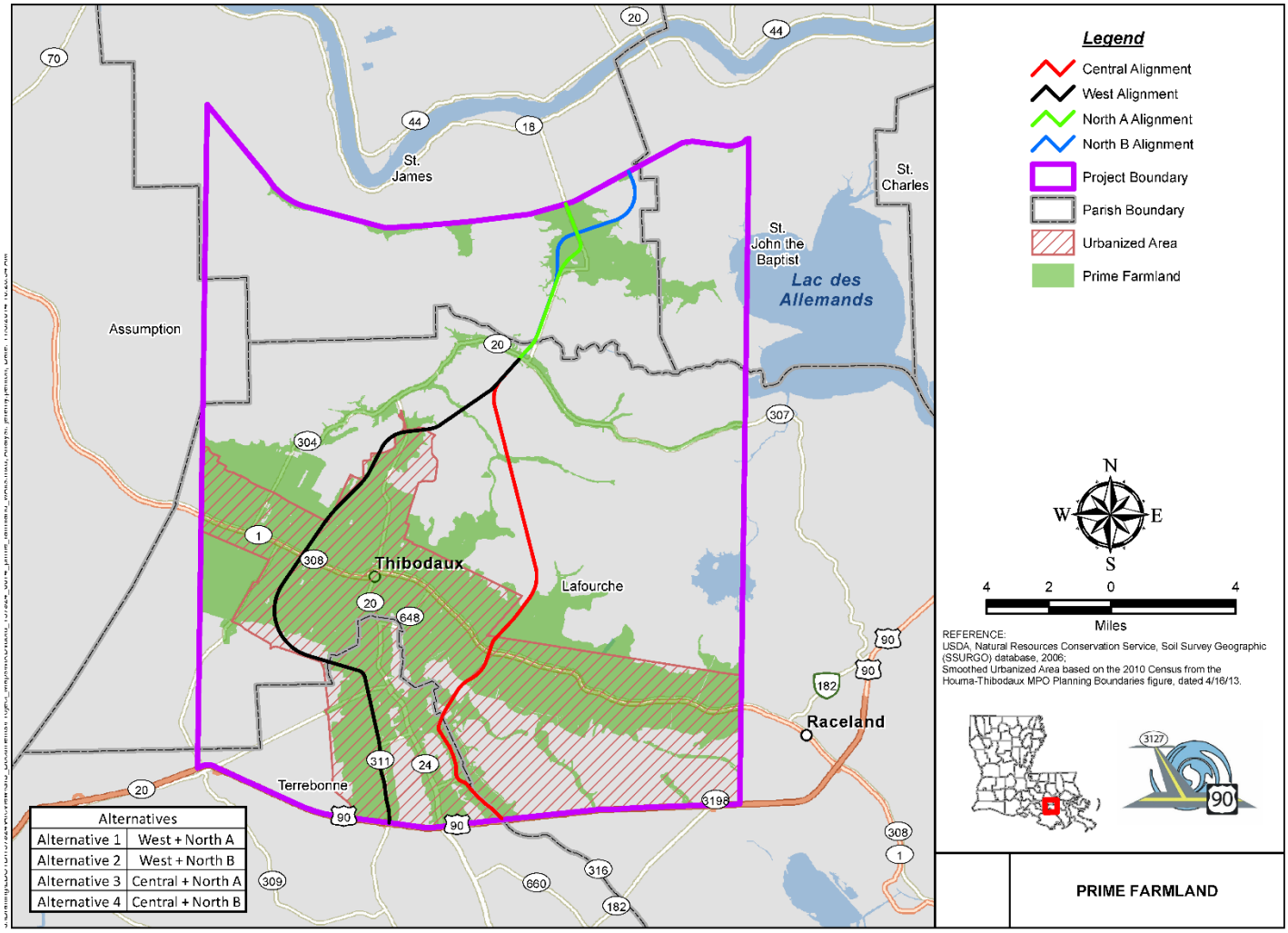


Figure 4-8
Prime Farmland with Alternatives



Alternative 1 (Western Alignment + North Alignment "A")

Alternative 1 (Western Alignment + North Alignment "A") would result in the complete loss of 127.07 acres of prime farmland soils from at-grade construction and the partial loss of 34.21 acres of prime farmland soils from the elevated portion of the proposed alternative. Approximately 251.06 acres of agricultural land used to cultivate crops would be lost by construction of this proposed alternative in both urban and rural areas.

Alternative 2 (Western Alignment + North Alignment "B")

Alternative 2 (Western Alignment + North Alignment "B") would result in the loss of 139.86 acres of prime farmland soils from at-grade construction. Approximately 37.85 acres of prime farmland soils will be partially lost to the elevated portion of the proposed alternative. This alternative would result in the loss of 284.99 acres of agricultural land used to cultivate crops in both urban and rural areas.

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 (Central Alignment + North Alignment "A") would result in the complete loss of 52.84 acres of prime farmland soils and the partial loss of 33.44 acres of prime farmland soils. This alternative would result in the loss of 163.59 acres of agricultural land used for cultivated crops and pasture in both urban and rural areas.

Alternative 4 (Central Alignment + North Alignment "B")

Alternative 4 (Central Alignment + North Alignment "B") would result in the loss of 65.63 acres of prime farmland soils from at-grade construction. Approximately 37.08 acres of prime farmland soils would be partially lost to the elevated portion of this alternative. The proposed alternative would result in the loss of 197.52 acres of agricultural land used for cultivated crops and pasture in both urban and rural areas.

4.10.4 What indirect and cumulative impacts are anticipated?

Agricultural businesses make up a significant portion of the economy in the study area and employ over 1 percent of the workforce within the five parishes.[39] Farms within the five parishes generate approximately $150 million in annual income.[40] Agricultural businesses consist of farms, farm services, farm equipment/supply retailers, agro-chemical retailers, farm equipment manufacturers/wholesalers, sugar products manufacturers, sugar refiners/mills, lumber companies, agricultural products transporters, and feed dealers. Agricultural commodities produced and sold by farms traditionally fall into three major categories—plant enterprises, animal enterprises, and wildlife and fisheries enterprises. **Table 4.26** describes the agricultural enterprise market value for each of the five parishes located within the study area.

[39] Louisiana Department of Economic Development. (2009). Louisiana parish profiles. Retrieved from http://www.louisianasiteselection.com/SelectProfile.aspx. Last Accessed October 24, 2013.

[40] National Agricultural Statistics Service. (2007). 2007 Census of Agriculture. Washington, D.C.: United States Department of Agriculture.

Table 4.26
Agricultural Enterprise Market Value by Parish in Dollars

Parish	Plant Enterprise	Animal Enterprise	Wildlife and Fisheries Enterprise	Total
Assumption	$53,225,333	$1,137,390	$3,725,871	$58,088,594
Lafourche	$72,072,173	$14,724,291	$39,383,712	$126,180,176
St. James	$40,545,005	$278,521	$1,835,364	$42,658,890
St. John the Baptist	$13,804,034	$437,669	$311,843	$14,553,546
Terrebonne	$22,912,623	$2,423,770	$67,371,010	$92,707,403

Source: Louisiana State University Agricultural Center

The bisection of fields and the change in accessibility of farmlands where at-grade construction would occur could adversely impact these farmlands and result in a decline in the value of those farmlands. At-grade construction of the build alternatives could also alter the drainage within the adjacent fields adversely affecting the productivity of those fields. Therefore, the proposed project may adversely affect the agricultural economy of the study area. The proposed project would allow increased access to the area that would stimulate regional growth and lead to future loss of agricultural lands through urban development.

4.11 CULTURAL RESOURCES

The discussion of cultural resources in this section is based on preliminary data. Detailed cultural resource surveys will be conducted upon the identification of the preferred alternative.

4.11.1 What is the historical background of the study area?

For the purposes of the cultural resources investigations, the study area for the Houma-Thibodaux to LA 3127 connection lies within the Mississippi River deltaic plain. The deltaic plain is composed of numerous and often overlapping delta complexes. The Teche and Lafourche delta complexes are responsible for creating the land in the region of the study area. Based on the age of the Teche complex, the earliest archaeological sites that might be located in the region would date to the end of the middle Archaic period; however, no sites dating earlier than the Marksville period (A.D. 1-400) have been recorded in the study area. **Table 4.27** provides summaries of the prehistoric periods that have been defined in this region of southern Louisiana. Also, general parish histories are provided in **Tables 4.28 through 4.30**. The tabular format was chosen in order to keep this text as concise as possible.

Table 4.27
Prehistoric Periods in South Louisiana

Period	Date Range	Culture/Traits
Marksville	A.D. 1	Sedentary groups, hunting and gathering supplemented by local crops; conical burial mounds with exotic grave goods; distinctive pottery types; part of the Hopewellian Interaction Sphere with culture groups in the Ohio and Illinois River Valleys; Issaquena culture during the late Marksville period
Baytown	A.D. 400 - A.D. 700	Troyville culture; large regional mound centers; possible increase in social status differentiation, although no evidence of hierarchy among sites; population growth; distinctive pottery types; hunting and gathering supplemented by local plants
Coles Creek	A.D. 700 - A.D. 1200	Small ceremonial centers surrounded by variously sized villages and hamlets; no evidence of hierarch among sites; mounds flat-topped and pyramidal rather than conical, and mounds supported religious or civic buildings; distinctive pottery types; continued hunting and gathering supplemented with local plants, some evidence for the use of squash and maize
Mississippi	A.D. 1200 - A.D. 1700	Definite evidence of ranked, chiefdom-level political organization; hierarchy among mound sites; palisaded sites; reliance on domesticated food crops such as maize, beans, and squash, supplemented by hunting and fishing; distinctive shell-tempered pottery; Plaquemine culture defined prior to contact with Europeans;

Table 4.27
Prehistoric Periods in South Louisiana

Period	Date Range	Culture/Traits
		Delta-Natchez phase sites include European trade goods

Table 4.28
Summary of Lafourche Parish History

Period	Date Range	Culture/Traits
Colonial 1699-1803	1699	Louisiana founded in 1699. Lafourche Parish is part of the Chawasha Indian homelands. The territory along Bayou Lafourche from Ascension Parish to the Gulf of Mexico was called the Lafourche Settlement; this included the present-day parishes of Assumption, Lafourche, and Terrebonne. The northwest portion of present-day Lafourche Parish saw very little settlement before 1765
	1755-1763	Great Expulsion (*le Grand Dérangement)* of the French settlers of Acadia (Nova Scotia, New Brunswick, Prince Edward Island, Quebec, and the U.S. state of Maine).
	1763	France transfers Louisiana to Spain under the terms of the Treaty of Paris
	1765	The first of the displaced Acadians began to settle along the west bank of Bayou Lafourche between the modern towns of Donaldsonville and Labadieville. Creoles of French and German descent also migrated to the parish.
	1780s	600 Acadians who had been exiled in France settled along the Lafourche between modern-day Labadieville and Lafourche Crossing.
	1800	Spain returns Louisiana to France
	1803	Louisiana Purchase occurs. Napoleon sells Louisiana to the United States of America
Antebellum 1803-1860	1803	American territory; Anglo-Americans settled on the west bank of Bayou Lafourche; Lafourche Parish concentrated heavily on commercial sugar.
	1807	Louisiana legislature divides Louisiana into 19 parishes. Lafourche County was divided into Assumption Parish and Parish of Lafourche Interior
	1812	Louisiana becomes a state
	1822	Terrebonne Parish created from Lafourche Parish
	1853	Parish of Lafourche Interior was shortened to "Lafourche Parish"
	1820s-1860s	Lafourche Parish was integrated into the commercial sugar-growing economy of southern Louisiana and experienced great prosperity. On the eve of the Civil War 49 percent of the population was enslaved African-Americans
Civil War	1860-1865	The Federal and Confederate forces throughout the war occupied Lafourche Parish. Several skirmishes occurred and Thibodaux (parish seat) sustained heavy damages. Like the rest of Louisiana and the South, Lafourche Parish suffered from the loss of capital invested in slaves, the collapse of land values, the destruction of cultivation and processing equipment, and the disruption of the agricultural labor system.
Late Nineteenth Century	1866-1900	Reconstruction adds social tension and civil unrest to efforts to re-develop the economy of the South; sugarcane agriculture remains important; wage-laborers often live within same plantation quarters used prior to Emancipation; increased mechanization dramatically reduces full-time labor requirements during the latter part of the century; also rise of centralized sugar factories to process cane from numerous growers.
	1889 and 1892	The invention of the pull-boat and the overhead railway skidder enabled industrial logging of swamp cypress timber. The result was revolutionary in the swamp regions with a great impact on the ecosystem and human population of south Louisiana.
Twentieth Century	1901-2000	Large-scale, industrial cypress logging was virtually over in south Louisiana by 1925. After 1945, technological innovations in the cultivation and harvesting of sugar cane largely eliminated the traditional gang labor methods and concentrated dwelling patterns of laborers that had characterized sugar plantations since the Civil War. By the 1920's the economy benefited from cultivating sugar, corn, sweet and Irish potatoes. The parish was also known for

Table 4.28
Summary of Lafourche Parish History

Period	Date Range	Culture/Traits
		its game and fur industry. Industries included sugar factories, a cotton gin, moss factory, sawmills, and oil and gas production.

Table 4.29
Summary of St. James Parish History

Period	Date Range	Culture/Traits
Colonial	1699	Louisiana founded in 1699
1699-1803	1720	The first French grant in the area of St. James Parish had 100 inhabitants. Few Europeans settled in the St. James area for several decades
	1755-1763	Great Expulsion (*le Grand Dérangement)* of the French settlers of Acadia (Nova Scotia, New Brunswick, Prince Edward Island, Quebec, and the U.S. state of Maine).
	1763	France transfers Louisiana to Spain under the terms of the Treaty of Paris. A small number of immigrants settled in the area prior to the transfer.
	1764	The first group of Acadians arrived in Louisiana and settled in St. James Parish. Due to the density of Acadian settlers, St. James became known as the "First Acadian Coast"
	1785	Another influx of Acadians arrived who had been exiled in France
	1800	Spain returns Louisiana to France
	1803	Louisiana Purchase occurs. Napoleon sells Louisiana to the United States of America
Antebellum 1803-1860	1803	American territory; Anglo-Americans were attracted to the wealth of the area. St. James Parish concentrated heavily on commercial sugar monoculture, in addition to corn, livestock, and copious amounts of assorted lumber.
	1805	Legislative Council of the Territory of Orleans determined that St. James and Ascension parishes be combined into the county of Acadia
	1807	Louisiana legislature divides Louisiana into 19 parishes. St. James and Ascension Parish are reestablished.
	1812	Louisiana becomes a state
	1820s-1860s	Lafourche Parish was integrated into the commercial sugar-growing economy of southern Louisiana and experienced great prosperity. On the eve of the Civil War 70 percent of the population was enslaved African-Americans.
Civil War	1860-1865	The Federal and Confederate forces throughout the war occupied Lafourche Parish. Confederate property was seized and Federal troops at times ransacked private homes and property. Like the rest of Louisiana and the South, St. James Parish suffered from the loss of capital invested in slaves, the collapse of land values, the destruction of cultivation and processing equipment, and the disruption of the agricultural labor system.
Late Nineteenth Century	1866-1900	Reconstruction adds social tension and civil unrest to efforts to re-develop the economy of the South; sugarcane agriculture remains important; wage-laborers often live within same plantation quarters used prior to Emancipation; increased mechanization dramatically reduces full-time labor requirements during the latter part of the century; also rise of centralized sugar factories to process cane from numerous growers. With the construction of railroads the economy diversified.
	1889 and 1892	The invention of the pull-boat and the overhead railway skidder enabled industrial logging of swamp cypress timber. The result was revolutionary in the swamp regions with a great impact on the ecosystem and human population of south Louisiana.
Twentieth Century	1901-2000	Large-scale, industrial cypress logging was virtually over in south Louisiana by 1925. After 1945, technological innovations in the cultivation and harvesting of sugar cane largely eliminated the traditional gang labor methods and concentrated dwelling patterns of laborers that had characterized sugar plantations since the Civil War. St. James Parish was, and is, the only place in the world where perique tobacco is produced. Sugar remained and still is the most important crop and is the second. By 1950, St. James Parish was also a moderate petroleum producer. In recent decades, large petroleum refineries, fertilizer plants, and other chemical and industrial plants have been constructed along the Mississippi River in St. James Parish. In addition truck farming and livestock production contribute to the economy.

Table 4.30
Summary of Terrebonne Parish History

Period	Date Range	Culture/Traits
Colonial	1699	Louisiana founded in 1699
1699-1803	1720	The coastal salt marshes of southern Terrebonne Parish were very lightly inhabited throughout the colonial period because of their unsuitability for agriculture. Land claims were made on the basis of long-lot surveys on alluvial wooded land and prairie.
	1755-1763	Great Expulsion (*le Grand Dérangement)* of the French settlers of Acadia (Nova Scotia, New Brunswick, Prince Edward Island, Quebec, and the U.S. state of Maine).
	1765-85	Acadians settled in Terrebonne Parish there until after 1785
	1800	Spain returns Louisiana to France
	1803	Louisiana Purchase occurs. Napoleon sells Louisiana to the United States of America
Antebellum 1803-1860	1803	American territory; The crops grown by most planters were rice and sugar, although indigo had once been a popular venture. Sugar, while still a complicated production process, quickly emerged as the economic powerhouse in St. John
	1807	Louisiana legislature divides Louisiana into 19 parishes.
	1812	Louisiana becomes a state
	1822	Terrebonne was separated from Lafourche Parish. The area of Terrebonne Parish is the largest parish in contemporary Louisiana. About 88 percent of the total parish land area is marsh. That year the Parish police jury was authorized to open a canal from Bayou Lafourche westward to Bayou Terrebonne. This began continued canal, waterway, and lock construction to present day.
	1855	The New Orleans, Opelousas, and Great Western Railway Company line was completed through Terrebonne and was an economic stimulus to the whole parish
	1820s-1860s	Terrebonne Parish was integrated into the commercial sugar-growing economy of southern Louisiana and was the dominant agricultural activity. On the eve of the Civil War 50 percent of the total Terrebonne population was enslaved African Americans.
Civil War	1860-1865	Terrebonne was spared major devastation and destruction during the war, Federal troops at times ransacked private homes and property, and the railroad allowed for constant troop movement. Like the rest of Louisiana and the South, Terrebonne Parish suffered from the loss of capital invested in slaves, the collapse of land values, the destruction of cultivation and processing equipment, and the disruption of the agricultural labor system.
Late Nineteenth Century	1866-1900	Reconstruction adds social tension and civil unrest to efforts to re-develop the economy of the South; sugarcane agriculture remains important; wage-laborers often live within same plantation quarters used prior to Emancipation. Consequently, other crops were also grown in commercial quantities; fishing became more important in Terrebonne; fishermen also harvested quantities of oysters; a shrimp-drying process had been introduced.
	1889 and 1892	The invention of the pull-boat and the overhead railway skidder enabled industrial logging of swamp cypress timber. The result was revolutionary in the swamp regions with a great impact on the ecosystem and human population of south Louisiana.
Twentieth Century	1901-2000	The economic profile of Terrebonne Parish has become more diversified, as agriculture has been joined by sizable extractive industries in the economic profile of the parish. These twentieth-century industries have included fishing, seafood canning, trapping, lumbering, ship-and boat building and perhaps most importantly, petroleum production.

4.11.2 What type of cultural resources are located within the study area?

Earth Search, Inc. (ESI) has undertaken background research to identify and tabulate the cultural resources that have been previously recorded within the study area for the proposed Houma-Thibodaux to LA 3127 connection project. The original overall study area included portions of six parishes—Ascension, Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne. Background research consisted of a comprehensive literature search and records review. This included examination of records on file at the Louisiana Divisions of Archaeology and Historic Preservation, Baton Rouge, Louisiana. Cultural resources reports, site files, and National Register of Historic Places (NRHP) records were reviewed for the study area. Research also included the examination of geomorphological data and maps. Together the research provides a framework for the development of a predictive/probability model for encountering undocumented cultural resources. Some of the parameters considered in the development of the model include landform type and age, known site locations, and distance to natural waterways. Also, the results of the background research were used to develop and refine proposed roadway alternatives that would minimize impacts to the cultural resources.

The initial research for the overall study area revealed that 144 archaeological sites have been recorded within the study area. The vast majority of these have been recorded as a result of systematic cultural resources surveys. There have been at least 63 cultural resources investigations performed in the study area. Research at the Louisiana Division of Historic Preservation concluded that there are 45 NRHP properties and one NRHP district within the study area.

About half of the sites that have been previously recorded have been evaluated in terms of NRHP criteria. The majority of these are not considered eligible for nomination to the NRHP. Only nine of the sites have been listed on the NRHP. Five of the sites are considered eligible for nomination and another ten are potentially eligible. The NRHP eligibility of the remaining sites has not been established.

The vast majority of the sites date to the historic era. These include sites dating from the colonial period through the mid-20th Century. Many sites date to the 19th Century when sugarcane agriculture dominated the study area and are associated with the various plantations and farmsteads that developed along Bayou Lafourche. The prehistoric sites (n=20) appear to date to the Marksville period (A.D. 1-A.D. 400 or 1949 B.P.-1550 B.P.) or later. This is consistent with the current understanding of landform development in the area (Saucier 1994).

As noted above, 45 NRHP properties and one district were identified during the research. The district is the Donaldsonville Historic District. The Donaldsonville Historic District includes 635 structures and has a mixed commercial-residential character. The majority of the buildings date to the period between 1865-1933.

At least 14 of the NRHP properties are plantation houses or associated plantation structures. There are also six churches that have been made NRHP properties. The majority of the NRHP listed properties are residences.

4.11.3 What are the impacts to cultural resources as a result of the No-build Alternative?

There are no impacts to cultural resources as a result of the No-build Alternative.

4.11.4 What are the impacts to cultural resources as a result of the Build Alternatives?

In order to refine the data in relation to the highway alternatives under consideration, a 1-mile (1.6 kilometer [km]) buffer was established around each. Within this reduced area, it was determined that 17 cultural resources surveys have been undertaken previously. In addition, 21 archaeological sites have been recorded in the buffer area. Research at the Louisiana Division of Historic Preservation concluded that there are six NRHP properties within the study area. In addition, some 134 buildings greater than 50 years of age have been recorded previously.

Western Alternative

There are four previously recorded sites (16TR93, 16TR95, 16TR96, and 16LF268) located adjacent to the proposed Modified Western Alternative. Magnolia Plantation (16TR93) listed on the NRHP. The NRHP eligibility of 16TR95 and 16TR96 has not been determined. Site 16LF268 is considered ineligible for the NRHP. In addition, eight buildings greater than 50 years of age have been recorded adjacent to this alternative. Most of these are associated with Magnolia and Minerva (16TR96) plantations.

Central Alternative

One site (16TR162) is adjacent to the proposed Central Alternative. The NRHP eligibility of the site is undetermined. There are also five buildings greater than 50 years of age recorded adjacent to the alternative.

North "A" Alternative

No archaeological sites or NRHP properties have been recorded adjacent to this alternative. There are five buildings, located in the Lower Vacherie area, that have been documented previously adjacent to the proposed alternative.

North "B" Alternative

Like the North A alternative, no archaeological sites or NRHP properties have been recorded adjacent to this alternative. Five buildings, associated with Webre Steib Plantation, have been recorded adjacent to the alternative.

4.11.4.1 Cultural resources survey

As discussed above, the initial cultural resources investigations were limited to background research to determine the existing conditions of previously recorded cultural resources, to define high and low probability areas for undocumented cultural resources, and to develop a research design to guide future investigations. Assessment of impacts to historic resources cannot be determined until survey of the Preferred Alternative is undertaken.

4.11.4.2 Archaeological survey

ESI recommends a Phase I survey of the Preferred Alternative, once such is chosen. This should include pedestrian survey and systematic subsurface testing. Archaeological survey of the Preferred Alternative will consist of an appropriate number of parallel transects. Along each transect, shovel tests will be excavated at 30 meter (m) (98.4 foot) intervals in areas of high probability and at 50 m (164 foot) intervals in areas of low probability. Shovel tests will measure approximately 30 centimeters (cm) by 30 cm (12 inch by 12 inch) and will be excavated to sterile subsoil or to a maximum depth of 50 cm (20 inch). Wherever possible, excavated soils will be screened through 1/4-inch mesh. Very clayey soils will be carefully "trowel-sorted" and examined for artifacts. The soil characteristics and stratigraphic associations of all positive shovel tests and a representative number of negative shovel tests will be recorded. All cultural materials will be collected and returned to the laboratory for analysis and curation. All tests will be backfilled upon

completion. Areas with greater than 80 percent surface visibility will be pedestrian surveyed supplemented with judgmental shovel tests.

Positive shovel tests and any surface scatters of material noted during survey will be flagged and treated as potential sites. Site definition will consist of the excavation of additional shovel tests to determine the vertical and horizontal site extent. A positive transect shovel test or the center of the artifact scatter will be utilized as datum. Additional shovel tests will be excavated at 10 m (33 foot) gridded intervals. Site boundaries will be established by the excavation of two consecutive negative shovel tests along each line. Testing will be restricted to the project corridor.

Systematic surface collections within gridded units will be made at all sites exhibiting surface scatters. If surface scatters are extensive, all diagnostic artifacts will be collected; additionally, a 100 percent collection will be made from a 2 m by 2 m (6.6 foot by 6.6 foot) square area at each site to address artifact density and distribution between sites. Photographs will be taken using a high resolution digital camera. A georeferenced site map will be drafted for each previously unrecorded resource. Site maps will include the locations of all shovel tests, the extent of surface scatter, site limits, and any topographic features or landmarks visible. Global positioning system (GPS) data will be collected with a Trimble GeoExplorer XT Series hand-held unit. Louisiana Site Forms will be completed for each site, and the locations of the sites will be marked on the appropriate U.S. Geological Survey (USGS) 7.5-foot quadrangle. Sites will be evaluated as eligible or ineligible for nomination to the NRHP.

If previously recorded resources lie within the proposed alternative, they will be revisited. Additional testing will be performed as necessary to collect data concerning the current site conditions. This testing will be similar to the site delineation strategy described above. Appropriate Louisiana Site Update Forms will be prepared for each previously recorded resource. The results of the archaeological survey, including evaluation of the NRHP status of the sites and assessment of effects of the Preferred Alternative on any historic properties will be presented in the technical report of investigations.

4.11.4.3 Architectural survey

The Area of Potential Effect (APE) for the purposes of the standing structure will include a 0.25-mile (400 m) buffer of the alternative centerline (0.125-mile [200 m] to either side of the centerline). All standing structures greater than 50 years of age within the APE will be recorded utilizing Louisiana Historic Resources Inventory forms. The structures will be evaluated in terms of NRHP criteria. The results of the architectural survey, including evaluation of the NRHP status of the structures and assessment of effects of the Preferred Alternative on any historic properties, will be presented in the technical report of investigations.

4.11.5 What indirect and cumulative impacts are anticipated?

Indirect and cumulative impacts to historic properties are not anticipated, but they cannot be assessed prior to survey of the Preferred Alternative. These, if any, will be discussed in the technical report.

4.12 AIR QUALITY

4.12.1 What are the traffic patterns within the study area?

The existing roadway network in the study area limits north to south movement, resulting in circuitous routes. The proposed project will add a north-south connector between LA 3127 and US 90 to improve connectivity, especially for emergency evacuation events. The existing (2010) and projected design year 2032 no-build and build Annual Average Daily Traffic (AADT) volumes in the study area is shown in **Table 4.31**. In 2032, traffic volumes are expected to grow from

existing levels. In general, the projected design year volumes show that traffic on currently available north-south corridors would be rerouted to the proposed project. The study area is located within the part of Louisiana known as the Bayou Region (see Figure 4-1). This region is known for its abundance of natural features such as coastal wetlands, bayous, and also includes both natural and man-made waterways. Due to the unique geography of this area, past and present development has mainly occurred near higher elevations and natural ridges. Due to this fact the roadway network within the study area is very limited and the existing transportation network provides better east-west connectivity than north-south connectivity.

Table 4.31
Annual Average Daily Traffic in the Study Area

Roadway Segment	Existing (2010)	No Build (2032)	Western Alignments (2032)		Central Alignments (2013)	
	AADT	AADT	AADT	% Change from No Build	AADT	% Change from No Build
East-West Corridors						
LA 3127 (East of LA 20)	4,100	6,000	5,000	-17%	5,000	-17%
LA 308 (East of LA 309)	8,900	10,900	10,700	-2%	10,500	-4%
LA 1 (East of LA 309)	10,400	13,400	13,100	-2%	12,500	-7%
US 90 (West of LA 311)	14,800	25,300	24,900	-2%	25,200	0%
North-South Corridors						
LA 316 (LA 24 to US 90)	5,400	7,400	5,800	-22%	5,800	-22%
LA 648 (East of LA 20)	13,100	24,200	22,700	-6%	20,500	-15%
LA 20 (South of LA 3127)	10,600	12,700	10,500	-17%	10,400	-18%
LA 20 (South of LA 304)	11,500	16,100	11,200	-30%	11,800	-27%
LA 20 (N of LA 308)	19,700	32,900	32,100	-2%	24,100	-27%
LA 20 (US 90 to LA 24)	4,300	3,700	4,200	14%	3,400	-8%
LA 24 (North of LA 311)	22,600	38,200	33,800	-12%	34,200	-10%
LA 311 (US 90 to LA 24)	8,700	14,100	8,300	-41%	13,100	-7%
LA 3185 (South of LA 1)	7,300	14,800	15,100	2%	14,600	-1%
LA 309 (South of LA 1)	2,000	2,800	2,200	-21%	2,800	0%
Project (South of LA 3127)			8,600		8,500	
Project (North of LA 307)			9,200		10,500	
Project (LA 307 to LA 20)			10,200			
Project (LA 20 to LA 308)			4,800		9,200	
Project (LA 1 to LA 20)			8,000			
Project (LA 20 to US 90)			8,800		7,700	

Source: Urban Systems, Inc. 2010.

The proposed project has four alternatives—*Alternative 1 (Western Alignment + North Alignment "A"), Alternative 2 (Western Alignment + North Alignment "B"), Alternative 3 (Central Alignment + North Alignment "A")*, and *Alternative 4 (Central Alignment + North Alignment "B").* Alternatives 1 and 2 are variations of the Western Alignment and Alternatives 3 and 4 are variations of the Central Alignment. The variations involve two possible northern alignments between LA 3127 and LA 20. The northern alignment between LA 3127 and LA20 for Alternatives 2 and 4 are slightly longer (by approximately 2 miles) than Alternatives 1 and 3, but they are in the general vicinity of one another near the existing intersection of LA 20 and LA 3127. For the purposes of this analysis, both Western Alignments (Alternatives 1 and 2) were considered similar and both

Central Alignments (Alternatives 3 and 4) were considered similar; therefore, impacts are discussed in terms of Western Alignments and Central Alignments.

4.12.1.1 What is the attainment status of the study area?

The United States Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six principal air pollutants, which are called "criteria" pollutants. The criteria pollutants are carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$), ozone (O_3), sulfur dioxide (SO_2), and lead. Units of measure for the standards are parts per million (ppm) by volume, milligrams per cubic meter of air (mg/m^3), and micrograms per cubic meter ($\mu g/m^3$) of air.

The study area is within Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne Parishes. These five parishes are in attainment and have been determined to comply with the NAAQS; therefore, State Implementation Plans and Transportation Conformity (40 CFR Parts 51 and 93) are not applicable.

4.12.1.2 What are vehicle pollutants found in the study area?

Changing traffic patterns are a primary concern when determining the impact of a new roadway or an existing highway facility. Motor vehicles emit CO, nitrogen oxides (NOx), hydrocarbons (HC), PM_{10}, $PM_{2.5}$, SO_2, and lead (listed in order of decreasing emission rate). Motor vehicles are considered to be the major source of CO in the project area.

In addition to the criteria, EPA regulates air toxics that are also monitored by NAAQS. Most air toxics originate from human-made sources including;

- On-road mobile sources (e.g., cars, trucks, and construction equipment);
- Non-road mobile sources (e.g., airplanes);
- Area sources (e.g., dry cleaners); and
- Stationary sources (e.g., factories, refineries, and power plants).

EPA has also recognized emissions of air toxics from mobile sources as a potential environmental and health concern. The interim guidance released by FHWA dated February 2007 requires discussion of Mobile Source Air Toxics (MSATs) in NEPA documents. The guidance was updated in September 2009 and December 2012.

Carbon Monoxide

Motor vehicles are considered the major source of CO in the project area. However, there are no existing violations of CO in the project area.

Ozone and Nitrogen Dioxide

Motor vehicles are regarded as sources of HC and NOx. HC and NOx emitted from vehicles are carried into the atmosphere where they react with sunlight to form O_3 and NO_2. Automotive emissions of HC and NOx are expected to decrease in the future due to the continued installation and maintenance of pollution control devices on new cars. However, regarding area-wide emissions, these technological improvements may be offset by the increasing number of cars in the area.

The photochemical reactions that form O_3 and NO_2 require several hours to occur. For this reason, the peak levels of O_3 generally occur 10 to 20 km (approximately 6 to 12 miles) downwind of the source of HC emissions. Urban areas as a whole are regarded as sources of HC, not individual streets and highways. The emissions of all sources in an urban area mix in the atmosphere, and in the presence of sunlight, this mixture reacts to form O_3, NO_2, and other photochemical oxidants.

Particulate Matter and Sulfur

Motor vehicles are not regarded as significant sources of PM_{10}, $PM_{2.5}$, and SO_2. Nationwide, highway sources account for less than 7 percent of particulate matter emissions and less than 2 percent of SO_2 emissions. PM_{10}, $PM_{2.5}$, and SO_2 emissions are predominantly the result of non-highway sources (e.g., industrial, commercial, and agricultural).

Lead

Automobiles without catalytic converters can burn regular gasoline. The burning of regular gasoline emits lead as a result of regular gasoline containing tetraethyl lead, which is added by refineries to increase the octane rating of the fuel. Newer cars with catalytic converters burn unleaded gasoline, thereby eliminating lead emissions. Also, EPA has required the reduction in the lead content of leaded gasoline. The overall average lead content of gasoline in 1974 was approximately 0.53 gram per liter. By 1989, this composite average had dropped to 0.003 gram per liter. The Clean Air Act Amendments of 1990 made the sale, supply, or transport of leaded gasoline or lead additives unlawful after December 31, 1995.

4.12.1.3 What are Mobile Source Air Toxics?

Motor vehicles contribute significantly to emissions of acrolein, benzene, 1,3-butadiene, diesel PM (including diesel exhaust organic gases), formaldehyde, naphthalene, and polycyclic organic matter. Of these compounds, FHWA considers diesel PM as the dominant MSAT of concern.

The current guidance on MSATs is FHWA's *Interim Guidance Update on Air Toxic Analysis in NEPA Documents*, released on December 6, 2012. This guidance advises on when and how to analyze MSATs in the NEPA process for highway projects. This guidance is interim because MSAT science is still evolving. Currently, there are limitations on tools and techniques for evaluating potential project-level health risks from MSAT exposure. FHWA regularly updates the guidance based on new scientific data.

FHWA has developed a tiered approach for analyzing MSATs in NEPA documents, depending on the specific project circumstances:

- No analysis for projects with no potential for meaningful MSAT effects;
- Qualitative analysis for projects with low potential MSAT effects; or
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

MSAT science is still evolving and the available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternative evaluated in the EIS. Due to these limitations, the following discussion is included in accordance with CEQ regulations (40 CFR 1502.22) regarding incomplete or unavailable information.

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation, rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. EPA is in the continual process of assessing human health effects,

exposures, and risks posed by air pollutants. Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI).

The methodologies for forecasting health impacts include emissions modeling, dispersion modeling, exposure modeling, and then final determination of health impacts—each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70-year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that timeframe, since such information is unavailable. It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways, to determine the portion of time that people are actually exposed at a specific location, and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds and, in particular, for diesel PM.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by EPA as provided by the Clean Air Act to determine whether more stringent controls are required to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision-makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities, plus improved access for emergency response, that are better suited for quantitative analysis.

4.12.2 What are the impacts to air quality as a result of the No-build Alternative?

No impacts to air quality are anticipated if the No-build Alternative is implemented.

4.12.3 What are the impacts to air quality as a result of the Build Alternatives?

The proposed project includes construction of a north-south limited-access primary route to improve connectivity in the north-south directions, especially for emergency evacuation events. As shown previously in Table 4.31, the design year AADT is projected to be less than 140,000 to 150,000 vehicles per day, which is the FHWA criterion for a qualitative analysis; the project is expected to have low potential MSAT effects.

Vehicle mix is not anticipated to change due to this project; therefore, MSATs emitted would be proportional to the vehicle miles traveled (VMT). Although locally along the proposed alignments, MSAT emissions would increase from the addition of motor vehicle traffic, and therefore increased VMT, MSAT emissions along existing corridors are anticipated to decrease due to rerouted trips. Overall, VMT may be reduced for those who, without the project, had to take longer routes to travel north-south. **Table 4.32** shows estimated daily VMT on the proposed build alternatives. Also, speed may increase due to additional capacity increasing the efficiency of the transportation network.

Table 4.32
Estimated Daily Vehicle Miles Traveled on the Build Alternatives

	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Project VMT (mi)	273,360	296,004	237,930	261,030

Emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent from 2010 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turn over, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great, even after accounting for VMT growth, that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

However during construction, the localized use of construction equipment has the potential to temporarily adversely impact air quality. Although the potential impact is only temporary during the construction phase, the potential impacts should be addressed with the use of best management practices.

Alternative 1 (Western Alignment + North Alignment "A")

Alternative 1 (Western Alignment + North Alignment "A") is not expected to cause a projected violation of the CO, O_3, NO_2, or lead NAAQS. In addition, because emissions of PM_{10}, $PM_{2.5}$, and SO_2 from automobiles are very low, the traffic on this alternative will not cause air quality standards for PM_{10}, $PM_{2.5}$, and SO_2 to exceed the NAAQS. The study area is in attainment for all criteria pollutants; therefore, 40 CFR Parts 51 and 93 are not applicable. *Alternative 1 (Western Alignment + North Alignment "A")* is not anticipated to create any adverse effects on the air quality of this attainment area.

Furthermore, no significant MSAT impacts are anticipated from this alternative. Air toxics analysis is a continuing area of research. At this time, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited.

During construction of this alternative, all materials resulting from clearing and grubbing, demolition, or other operations will be removed from the project, burned, or otherwise disposed of by the contractor. Any burning done will be done in accordance with applicable local laws and

ordinances and regulations of the state. Care will be taken to ensure burning will be done at the greatest distance practical from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will be performed under constant surveillance. Also, during construction, measures will be taken to reduce the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents.

Alternative 2 (Western Alignment + North Alignment "B")

Alternative 2 (Western Alignment + North Alignment "A"), like *Alternative 1 (Western Alignment + North Alignment "A"),* is not anticipated to cause the NAAQS for CO, O_3, NO_2, lead, PM_{10}, $PM_{2.5}$, or SO_2 to be exceeded, nor is it anticipated to create any adverse effects on the air quality of this attainment area.

Furthermore, based on the limited existing tools and techniques, no significant MSAT impacts are anticipated from this alternative.

During construction of this alternative, all materials resulting from clearing and grubbing, demolition, or other operations will be removed from the project, burned, or otherwise disposed of by the contractor. Any burning done will be done in accordance with applicable local laws and ordinances and regulations of the state. Care will be taken to ensure burning will be done at the greatest distance practical from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will be performed under constant surveillance. Also, during construction, measures will be taken to reduce the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents.

Alternative 3 (Central Alignment + North Alignment "A")

Anticipated impacts from the implementation of *Alternative 3 (Central Alignment + North Alignment "A")* are expected to be similar to that of *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 2 (Western Alignment + North Alignment "A").*

During construction of this alternative, all materials resulting from clearing and grubbing, demolition, or other operations will be removed from the project, burned, or otherwise disposed of by the contractor. Any burning done will be done in accordance with applicable local laws and ordinances and regulations of the state. Care will be taken to ensure burning will be done at the greatest distance practical from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will be performed under constant surveillance. Also, during construction, measures will be taken to reduce the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents.

Alternative 4 (Central Alignment + North Alignment "B")

The projected impacts from the implementation of *Alternative 4 (Central Alignment + North Alignment "A")* is expected to be similar to those anticipated from *Alternative 1 (Western Alignment + North Alignment "A")*, *Alternative 2 (Western Alignment + North Alignment "A"),* and *Alternative 3 (Central Alignment + North Alignment "A").*

During construction of this alternative, all materials resulting from clearing and grubbing, demolition, or other operations will be removed from the project, burned, or otherwise disposed of by the contractor. Any burning done will be done in accordance with applicable local laws and ordinances and regulations of the state. Care will be taken to ensure burning will be done at the greatest distance practical from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will be performed under constant surveillance. Also, during construction, measures will be taken to reduce the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents.

4.13 NOISE

4.13.1 How is noise measured?

The addition of a new highway brings a redistribution of traffic noise from the existing roads to the new alignment. A highway noise analysis is required to quantify the expected traffic noise levels from the new road and compare them with state and federal traffic noise impact criteria.

Road traffic noise is measured in decibels, which is filtered with an "A-weighting" to replicate the frequency response of the human ear. Therefore, this noise is described in terms of A-weighted sound levels (dBA). The ear can detect sound levels ranging from 0 to over 120 dBA. A change in sound level of 3 dBA is just perceptible, a 6 dBA change is noticeable, and a 10 dBA increase in sound level is perceived as twice as loud. Examples of sound levels commonly associated with various activities are presented in **Table 4.33**.

Table 4.33
Typical Sound Levels

Common Outdoor Activities	Sound Level, dBA	Common Indoor Activities
	---110---	Rock Band
Jet Fly-over at 300 m (1000 ft)		
	---100---	
Gas Lawn Mower at 1 m (3 ft)		
	---90---	
Diesel Truck at 15 m (50 ft),		Food Blender at 1 m (3 ft)
at 80 km/hr (50 mph)	**---80---**	Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime		
Gas Lawn Mower, 30 m (100 ft)	**---70---**	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	**---60---**	Large Business Office
Quiet Urban Daytime	**---50---**	Dishwasher Next Room
Quiet Urban Nighttime	**---40---**	Theater, Large Conference
Quiet Suburban Nighttime		Room (Background)
	---30---	Library
Quiet Rural Nighttime		Bedroom at Night
	---20---	Concert Hall (Background)
		Broadcast/Recording Studio
	---10---	
Lowest Threshold of Human Hearing	**---0---**	Lowest Threshold of Human Hearing

Source: Engineering – Noise, Air Quality, and Hazardous Waste Management Office, October 1998: Table N-2136.2 – Typical Noise Levels, "Technical Noise Supplement", Rudy Hendricks-Author, Environmental

Since traffic noise varies in level over the space of minutes or hours, the equivalent continuous level of sound (Leq) is used to represent the average sound energy over an appropriate period of interest. For the purposes of this assessment, hourly Leq values for the “design hour” and “peak hours” have been used.

The traffic noise evaluation procedures required for the proposed project are stipulated in the LADOTD Highway Traffic Noise Policy[41] and federal regulations and guidelines. These documents define specific traffic noise assessment requirements and regulate maximum allowable noise levels based on land use and existing sound levels. If the noise criteria are exceeded, noise abatement measures must be considered.

Traffic noise impacts occur when the future (predicted, design year, build condition) noise levels approach or exceed the FHWA Noise Abatement Criteria, or when the future noise levels exceed the existing noise levels at any sensitive receptor by 10 dBA. LADOTD has published their Highway Traffic Noise Policy to comply with the FHWA Noise Regulations found at 23 CFR 772. The Louisiana criteria are shown below in **Table 4.34**.

Table 4.34
LADOTD Highway Noise Policy – Hourly A-Weighted Sound Level Decibels (dBA)

Activity Category	FHWA Activity Leq (H)	Evaluation Location	Activity Description	In Louisiana, impact occurs when Noise Level *is equal to or greater than* the values below
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.	56
B	67	Exterior	Residential (includes undeveloped lands permitted for residential).	66
C	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings. (Includes undeveloped lands permitted for these activities).	66
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.	51
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F. (Includes undeveloped lands permitted for these activities).	71
F	—	—	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.	N/A
G	—	—	Undeveloped lands that are not permitted.	N/A

Source: Highway Traffic Noise Policy (2011). State of Louisiana Department of Transportation and Development
N/A: Not Applicable

4.13.2 What are the noise levels within the study area?

The allowable traffic noise level is a function of both the land use and the existing sound levels. The study area is predominately agricultural land and forested wetlands. The area is dotted with

[41] Highway Traffic Noise Policy (2011). State of Louisiana Department of Transportation and Development.

numerous active and inactive oil and gas wells with communities and residential neighborhoods primarily located along the natural ridges and roads. The proposed alternatives currently under consideration traverse predominantly agricultural land and forested wetlands and avoid the majority of the residential areas.

Thibodaux is the largest community and located at the southern terminus of the study area. The community consists of a downtown commercial center, surrounded by a number of small residential neighborhoods. Its noise sensitive areas also include schools, colleges, churches, parks, a hospital, and a country club. Additionally, there are several smaller communities and residential areas within the study area, as well as individual houses scattered along portions of the proposed alternatives. Alternatives currently under consideration will avoid the most populated areas of the region.

Relative to the Noise Abatement Criteria, the most predominant activity categories in the study area are those defined in Activity Category F, which includes agricultural, wetlands, lakes and bayous, and other undeveloped land, as well as commercial and industrial properties. Activity Category E includes the exterior impact criteria for developed lands that are less sensitive to highway traffic noise. Activity Category B, defined as residential properties and including single-family homes, mobile home parks, and multi-family residences, appears only sporadically within the study area. Category A, the most sensitive of the categories, is not present along the proposed alternatives currently under consideration. Based on the Activity Categories present, Category B becomes the limiting category for noise levels. Therefore, it becomes necessary to evaluate whether future external noise levels at receptors would reach 66 dBA as a minimum condition.

It is also necessary to determine if a future increase of 10 dBA in the road traffic noise will occur. An estimate of the increase in noise along the existing road network can be obtained by comparing existing (2010) and design year (2032) traffic volumes in the Traffic Analysis Technical Appendix prepared by Urban Systems, Inc. For the purpose of calculation, peak hour volume flow/hr. was used to determine the sound level, since these volumes were provided in the data. TNM 2.5 was used to calculate the predicted noise level for a given traffic volume and design speed of the road at a notional distance of 10 m (33 feet) from each road segment. This was repeated for both years. The difference is the 'impact' between the two years for the appropriate road segment, as shown in Table 4.35, below.

This method of assessment is subject to two limitations:

- The noise level at receptors depends on their distance from the road. This will vary along the roads for individual receptors. Therefore the selected calculation distance of 10 meters (33 feet) from the existing roads is only notional, to provide an *indication* of the level of noise encountered at each road. It is of more value for estimating the differences in noise levels for the build and no-build and route alternative conditions, because the differences are less subject to distance.

- Traffic volume and speed of traffic affects the noise level, and although peak hour conditions have been considered (since this data was available from the traffic analysis), it is possible for traffic speed to diminish under some peak hour conditions as congestion arises.

However, this exercise has required a *comparison* of alternatives. For such a purpose, since all conditions have been calculated with the same set of assumptions, the results are believed to provide a reasonable estimate of noise level differences to the nearest decibel, within the accuracy of the available data, for the situations considered.

For determining the impact of the 66 dBA level from the new route alternatives, TNM 2.5 was used to calculate the distance of the 66 dBA noise contour from the road edge. This was carried out on a page-by-page basis from the line and grade document (and after taking into account an amendment to the Western Alignment). Design hour traffic volumes, at design speeds were used, assuming 96% motor vehicles with 4% heavy trucks. The likely residential dwellings falling within this contour (if any) were counted from scrutiny of satellite images along the appropriate route of the road alignment (images on Google Earth and the line and grade document were compared).

The calculation of the distance of the 66 dBA contour is objective, but the estimate of the numbers of dwellings falling within the contour is subjective, because it depends on interpretation of whether a building is residential or has some other use, such as commercial or industrial.

4.13.3 What are the impacts to noise levels as a result of the No-build Alternative?

Table 4.35 shows the anticipated changes in noise level experienced by receptors along existing roads for the no-build condition in 2032. The noise would increase by approximately 1 to 3 dBA on all sections except for LA 308 W of LA 20, which suggests no change, and for LA 20 from US 90 to LA 24, which suggests a 1 dBA decrease. None of these changes reach the impact criterion of a10 dBA increase. Hence, on this basis it is concluded the no-build condition would result in no adverse impacts.

However, within the limitations of estimating actual noise levels along existing road sections (discussed above), it appears that two locations would be exposed to a level of 66 dBA where they were previously below this level (LA 648 E of LA 20, LA311 N of US 90). This implies an impact may occur for residences along these two road sections.

The data also suggests conditions where the 66 dBA levels are already exceeded under peak traffic conditions, and would be further exceeded under the no-build condition in 2032. Again, however, it must be stated that this indication of impact is only a calculation that is very dependent on receptor distances from the roads: many receptors may be at greater distances than the assumption of 10 m (33 feet) and hence are exposed to lower levels of noise.

Table 4.35 Approximate Changes in Road Traffic Volume and Noise by 2032 for No-Build Condition (Positive dBA value in last column implies an increase, negative values a decrease)

Road Section	Current condition (2010)		No Build condition (2032)		Approx. change in level dBA
	Peak hour volume	Level dBA*	Peak hour volume	Level dBA*	
LA 3127 W of LA 3213	129	59	250	62	3
LA 648 E of LA 20	546	65	1008	68	3
LA 316 US 90 to LA 24	225	61	308	63	2
LA 311 N of US 90	363	63	588	66	3
LA 308 W of LA 20	371	64	454	64	0
LA 1 W of LA 24	425	64	558	65	1
LA 309 S of LA 1	83	57	117	58	1
LA 24 N of US 90	933	71	1583	73	2
LA 20 W of LA 307	358	67	433	68	1
LA 20 S of LA 3127	442	68	529	69	1
LA 20 S of LA 304	479	68	671	70	2
LA 20 N of LA 308	821	71	1371	73	2
LA 20 US 90 to LA 24	179	64	154	63	-1
US 90 W of LA 24	617	69	1054	72	3
US 90 E of LA 316	579	69	825	71	2

**At a notional distance of 10 m (33 ft) from the road section (see text).*
Data Source: Technical Appendix: Traffic Analysis (2013). Houma-Thibodaux to I-10 Connection, North-South Corridor, Hurricane Evacuation. Urban Systems, Incorporated.

4.13.4 What are the impacts to noise levels as a result of the Build Alternatives?

As previously described, TNM 2.5 was used to calculate the distance of 66 dBA noise contour from the edge of the route alternatives.

The contour did not extend beyond the road edge in the majority of cases where the road is elevated. Receptors at a lower elevation are protected by the 'barrier effect' of the elevated road.

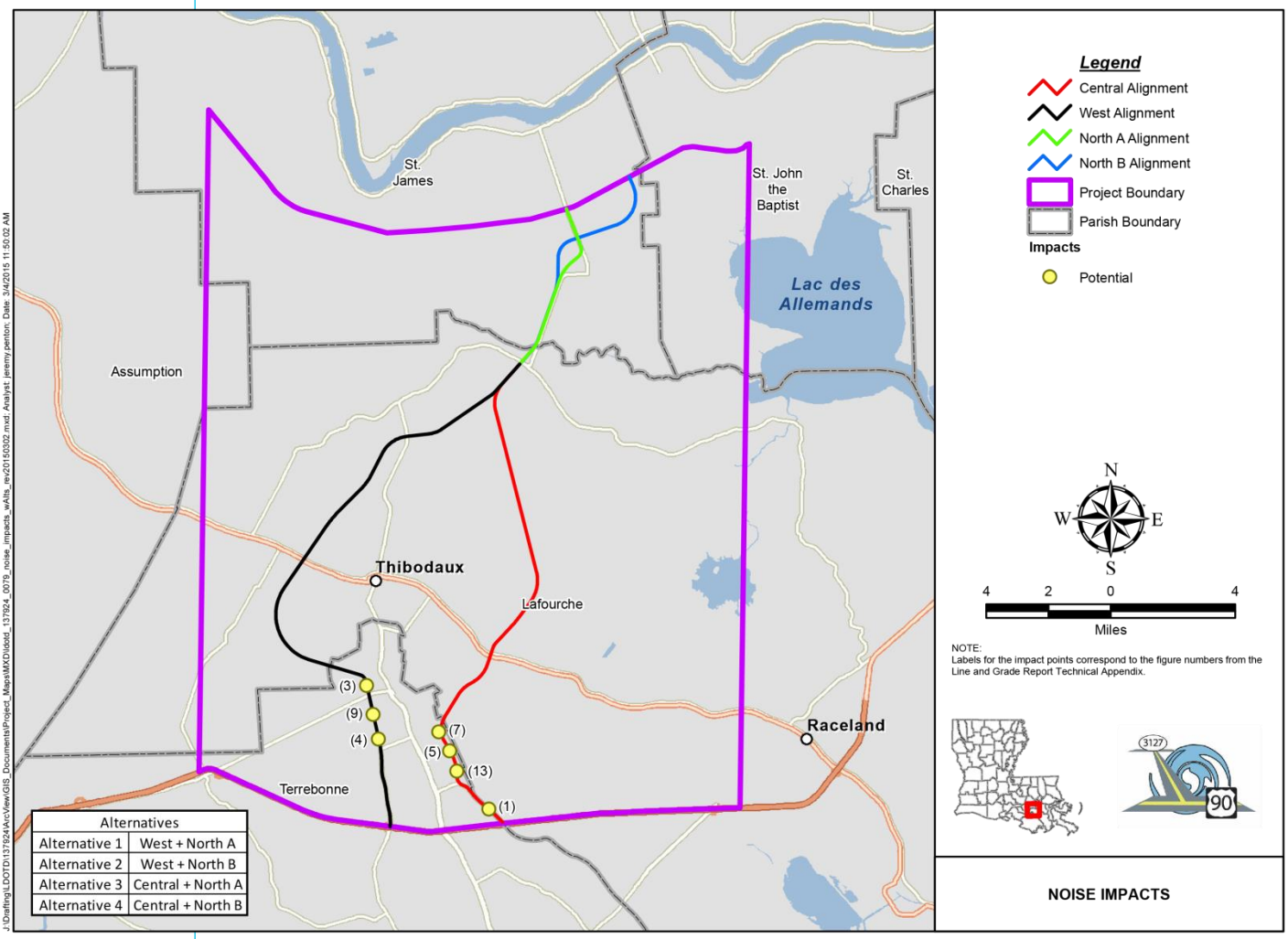
Despite the subjective limitation of judging whether a dwelling lies within the contour (discussed previously), it is clear that both alignments have several sections in the south where population density is higher and dwellings are closer to the proposed roads. The Western Alignment offers the lower number of dwellings likely to fall within the contour, and hence the greater number of impacts, compared with the Central Alignment. No impacts were found for the Northern Alignments.

Table 4.36 shows the number of noise receptors that will *potentially* experience noise impacts from the build alternatives. Locations of these potential impacts are more specifically noted in **Figure 4-9**. Further analysis will be conducted for the Preferred Alternative once selected. Analysis will also include an evaluation to determine whether noise abatement measures are feasible and reasonable in accordance with the LADOTD Noise Policy.

Table 4.36
Predicted Impacts from Noise Contours reaching or exceeding 66 dBA (total number of affected properties)

Road Section	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Potential Impacts	16	16	26	26

Figure 4-9
Potential Noise Impacts



Alternative 1 (Western Alignment + North Alignment "A") and Alternative 2 (Western Alignment + North Alignment "B")

Table 4.37 shows the anticipated changes in noise level likely to be experienced by receptors along existing roads if either *Alternative 1 (Western Alignment + North Alignment "A")* or *Alternative 2 (Western Alignment + North Alignment "B")* were to be chosen for the design year of 2032, compared with the No-build Alternative. Only one road section is predicted to see an increase in noise level compared with the no-build condition. This is LA 20 from US 90 to LA 24, for which the increase is only 1 dBA. The noise level at a notional distance of 10 m (30 ft) from the road would increase from 64 to 65 dBA (Table 4.36 shows the predicted noise level in 2032 for the no-build condition, to which 1 dBA is added for the Route Alternative). Since the level is less than 66 dBA, an adverse impact is predicted to be unlikely.

All other road sections show either no change or a decrease of 1 to 3 dBA compared to the No-build Alternative. Hence there would be no adverse impacts on these existing roads.

Table 4.37
Approximate Changes in Road Traffic Volume and Noise by 2032 with Alternatives 1 and 2 Compared with the No-build Alternative
(Positive dBA value implies an increase, negative values a decrease)

Road Section	Peak hour volume flow/hr		Approx. change in noise level, dBA
	No build Alternative	Alternative 1 (Western Alignment + North Alignment A) or Alternative 2 (Western Alignment + North Alignment B)	
	2032	2032	
LA 3127 W of LA 3213	250	208	-1
LA 648 E of LA 20	1008	946	0
LA 311 N OF US 90	588	358	-3
LA 308 W of LA 20	454	446	0
LA 1 W of LA 24	558	546	0
LA 309 S of LA 1	117	92	-1
LA 24 N of US 90	1583	1408	-1
LA 20 W of LA 307	433	233	-3
LA 20 S of LA 3127	529	438	-1
LA 20 S of LA 304	671	467	-2
LA 20 N of LA 308	1371	1338	0
LA 20 US 90 to LA 24	154	175	1
US 90 W of LA 24	1054	1038	0
US 90 E of LA 316	825	804	0

Source: Technical Appendix: Traffic Analysis (2013). Houma-Thibodaux to I-10 Connection, North-South Corridor, Hurricane Evacuation. Urban Systems, Incorporated.
*This table includes both Alternatives 1 and 2 as each has a relatively similar effect on the existing northern section of LA 20.

Alternative 3 (Central Alignment + North Alignment "A") and Alternative 4 (Central Alignment + North Alignment "B")

Table 4.38 shows the anticipated changes in noise level likely to be experienced by receptors along existing roads if *Alternative 3 (Central Alignment + North Alignment "A")* or *Alternative 4 (Central Alignment + North Alignment "B")* were to be chosen for the design year of 2032, compared with the No-build Alternative. As with *Alternative 1 (Western Alignment + North*

Alignment "A") and *Alternative 2 (Western Alignment + North Alignment "B")* only the road section of LA 20 from US 90 to LA 24 is predicted to increase by 1 dBA. The noise level at a notional distance of 10 m (30 ft) from the road would increase from 64 to 65 dBA (as before, see Table 4.36 for predicted noise level in 2032), which is less than 66 dBA and hence would be unlikely to present an adverse impact.

All other road sections show either no change or a decrease of 1 to 3 dBA compared to the No-build Alternative. Hence there would be no adverse impacts on these existing roads.

Table 4.38
Approximate Changes in Road Traffic Volume and Noise by 2032 with Alternatives 3 and 4 Compared with the No-build Alternative
(Positive dBA value implies an increase, negative values a decrease)

Road Section	Peak hour volume flow/hr		Approx. change in noise level, dBA
	No build Alternative	Alternative 3 (Central Alignment + North Alignment "A") or Alternative 4 (Central Alignment + North Alignment "B")	
	2032	2032	
LA 3127 W of LA 3213	250	208	-1
LA 648 E of LA 20	1008	954	0
LA 311 N OF US 90	588	346	-3
LA 308 W of LA 20	454	446	0
LA 1 W of LA 24	558	546	0
LA 309 S of LA 1	117	92	-1
LA 24 N of US 90	1583	1408	-1
LA 20 W of LA 307	433	233	-3
LA 20 S of LA 3127	529	438	-1
LA 20 S of LA 304	671	467	-2
LA 20 N of LA 308	1371	1338	0
LA 20 US 90 to LA 24	154	175	1
US 90 W of LA 24	1054	1038	0
US 90 E of LA 316	825	804	0

Source: Technical Appendix: Traffic Analysis (2013). Houma-Thibodaux to I-10 Connection, North-South Corridor, Hurricane Evacuation. Urban Systems, Incorporated.
*This table includes both Alternatives 3 and 4 as each has a relatively similar effect on the existing northern section of LA 20.

4.13.5 What indirect and cumulative impacts are anticipated?

Indirect Impacts

Table 4.35 (above) shows that by 2032, without the proposed alternatives, the noise on existing roads would increase by approximately 1 to 3 dBA, except for LA 20 from US 90 to LA 24, which would decrease by 1 dBA. There will be no indirect adverse impacts where noise levels increase by 10 dBA. However, two adverse impacts may occur where previous noise levels of less than 66 dBA in 2010 reach or exceed this level in 2032 (LA 648 E of LA 20, LA311 N of US 90).

Cumulative Impacts

Table 4.36 (above) lists from approximately 16 to 26 potential impacts along the proposed alternatives. Whichever alternative is chosen, the noise would be mitigated by design to present no impacts at the appropriate locations. Tables 4.37 and 4.38 (above) show a net nil change or a decrease in noise levels at all nearby roads, except for LA 20 from US 90 to LA 24, which would only see a 1 dBA increase. Since the potential sites where impacts may occur will be mitigated by design, and the changes are much less than an increase of 10 dBA, there will be no cumulative impacts.

4.14 HAZARDOUS MATERIAL SITES

4.14.1 How were existing hazardous material sites determined?

The proposed project consists of a 346-square-mile study area. Due to the size of the study area a GIS model was created to assist in the analysis process. A major benefit of using the GIS model was the capability of reviewing, organizing, and managing large data sets. The GIS model allows for baseline conditions to be established prior to the development of the proposed alternative corridors and to allow the inclusion of additional data during further project development.

State and federal regulatory agency databases containing information on hazardous materials and hazardous waste sites were downloaded and inventoried. These regulated sites have the potential to contain hazardous materials.

4.14.1.1 Determining through databases

EPA is the leading federal agency having regulatory authority over hazardous waste sites. EPA collects and maintains databases for all sites that are subject to environmental regulations. These databases are then combined into one database called the Facility Registry System (FRS). EPA provides the ability to download a file containing all facilities and/or sites within the FRS for a given state or other search criteria. The FRS file for Louisiana was downloaded on March 19, 2015. The following is a list, with descriptions, of some of the main databases within FRS. EPA facilities records were accessed via the NEPAssist database.

- **National Priorities List (NPL)** – Priority sites for cleanup under the federal Superfund program. EPA has determined that these sites pose a threat to human health and remediation is required.
- **Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)** – Listing of Superfund sites that EPA has investigated or is currently investigating for a release or threatened release of hazardous substances. Contains sites that are either on or proposed to be added to the NPL and sites that are in the screening and assessment phase for possible inclusion on the NPL.
- **CERCLIS "No Further Remedial Action Planned" (NFRAP)** – Contains information on sites that have been removed and archived from the inventory of Superfund sites. Archive status indicates that, to the best of EPA's knowledge, federal Superfund assessment of a site is complete and it has been determined that no further steps will be taken to list the site on the NPL.
- **Resource Conservation and Recovery Act Information (RCRAInfo)** – EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database provides information on sites that generate, transport, store, treat, and/or dispose of

hazardous waste (Treatment, Storage, and Disposal Facility [TSDF]). The data also includes information for hazardous waste generators: a conditionally-exempt small quantity generator (CESQG) produces less than 100 kilograms per month of hazardous waste, a small quantity generator (SQG) produces between 100 kilograms and 1,000 kilograms per month of hazardous waste, and a large quantity generator (LQG) produces over 1,000 kilograms per month of hazardous waste.

- **RCRIS Corrective Action (CORRACT)** – Identifies Hazardous Waste Handlers with RCRA Corrective Action Activity.
- **Emergency Response Notification System (ERNS)** –Supports the release notification requirements of Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended; Section 311 of the Clean Water Act (CWA); and Sections 300.51 and 300.65 of the National Oil and Hazardous Substances Contingency Plan. ERNS records and stores information on reported releases of oil and hazardous substances.
- **Toxic Chemical Release Inventory System** – Identifies facilities that release toxic chemicals to the air, water, and land in reportable quantities under the Superfund Amendments and Reauthorization Act (SARA) Title III Section 313.

In addition to the EPA databases, several state sources were identified and data reviewed to be incorporated into the GIS model. These sources include the Louisiana Oil Spill Coordinator's Office (LOSCO) Data Catalog, the Louisiana Statewide GIS (Atlas), and the Louisiana Department of Environmental Quality (LDEQ) Interactive Mapping Application (LIMA). Data retrieved from these sources include:

- UST-TEMPO – The Registered Storage Tank database is a listing of sites with permitted underground storage tanks (USTs).
- LUST – An inventory of reported leaking petroleum storage tank incidents.
- UST – Motor Fuel UST sites that have utilized the UST Trust Fund.
- LDEQ Landfills – Type I Facility is disposal of industrial solid wastes. Type II is used for disposal of residential or commercial solid waste.
- Type II Facility – a facility used for disposing of residential or commercial solid waste. (If the facility is also used for disposing of industrial solid waste, it is also a Type I facility.)

4.14.1.2 Determining regulated sites

After the data had been collected, a GIS base model was created and all known regulated sites were geographically displayed. A 1-mile buffer was placed around the study area boundary and all data within the buffer was collected.

The search located 1,240 potential regulated sites within the study area. **Table 4.39** provides a summary of the regulated sites identified within the various federal and state database sources. Sites may be listed on multiple databases and/or may reflect a change in ownership. There are no superfund sites within the project boundaries. There are four brownfield sites within the project boundaries.

Table 4.39
Regulated Sites within the Study Area Buffer

Databases	Total Sites
EPA's FRS	746
LOSCO*	190
LIMA*	50

* Duplicate sites may occur in EPA's FRS system

GIS spatial data layers of regulated sites were overlaid onto existing mapping of the project area to locate sites associated with the table shown above. Appropriate search distances, as shown in **Table 4.40**, were used for each of the build alternatives. Regulated sites were identified using GIS and spatial data layers. An onsite visit will need to be conducted during the analysis of the Preferred Alternative to verify all locations when preparing the Final EIS.

Table 4.40
Search Distances for Regulated Sites

Federal/State Databases	Search Distance from Project Limits*
NPL	1.6 km (1.0 miles)
CERCLIS	0.8 km (0.5 miles)
RCRA (TSDF)	1.6 km (1.0 miles)
NRC	Project Limits
ERNS	Project Limits
RCRA (Generators)	Project Limits (each alignment or adjacent to ROW)
LUST	0.8 km (0.5 miles)
UST	Project Limits
Landfills	0.8 km (0.5 miles)

4.14.1.3 Determining oil and gas wells

The LOSCO Data Catalog provided a point dataset of oil and gas and injection wells in the State of Louisiana. It contained data from the Department of Natural Resources Office of Conservation database of permitted wells dating back to early as the 1900s. This dataset was processed on January 4, 2007 and downloaded for the project on August 26, 2010. It identified 1,320 oil and gas wells within the study area.

The data catalog also provided GIS layers identifying oil and gas fields. This is also a point dataset of the approximate center point locations of the fields. The oil and gas field dataset was processed on January 31, 2007 and downloaded for the project on August 26, 2010. A total of 23 oil fields were identified within the study area.

Additionally, the data catalog contained spatial layers known as "Pit Study." This point file identified former oil extraction sites that could pose a threat in regards to hazardous waste. These sites could include tank batteries, collection and separation apparatuses, metering stations and wells, and other related items. The Pit Study dataset was downloaded for the project on August 26, 2010. A total of 256 sites were identified within the study area.

4.14.1.4 Determining petroleum pipelines

This region of Louisiana is known for its petroleum-based industries, including numerous oil and gas refineries. There were 19 petroleum pipelines identified within the study area from the database.

4.14.2 What are the impacts to hazardous material sites as a result of the No-build Alternative?

The No-build Alternative would provide no immediate changes within the project area. As area communities continue to grow, the need for available land will also grow, and current land uses and conditions would continue to change over time. Residential, commercial, and industrial growth would also continue within the project area. The number of hazardous material sites such as oil wells, gas stations, and industrial facilities is likely to continue to increase due to urban/population expansion.

4.14.3 What are the impacts to hazardous material sites as a result of the Build Alternatives?

Construction of any of the four build alternatives are anticipated to have a low potential for creating additional hazardous material impacts on the environment. Impacts associated with contaminated media would most likely be identified during construction and would be related to activities on or near existing contaminated sites. These sites may have already been impacted and/or have the potential to impact the environment based on historic conditions, such as remnant USTs. Regulated sites also have the potential of contaminating adjacent sites, creating risk when acquiring properties adjacent to the regulated sites. ROW acquisition will be required for the selected Preferred Alternative alignment. Prior to ROW negotiation and/or acquisition, an American Society for Testing and Materials (ASTM) Phase I Environmental Site Assessment would need to be conducted for the Preferred Alternative alignment. Phase II Environmental Site Assessments may also be necessary depending on the findings of the Phase I report. The Phase II Environmental Site Assessment would provide additional testing and sampling of all potential hazardous sites and would provide additional information about the types and extent of contamination, if present. If contaminated media was identified, interim measures or site remediation may be necessary.

Relocation and/or removal of all existing structures in the selected Preferred Alternative alignment would require asbestos and lead-based paint (LBP) surveys to be completed for suspect structures. Asbestos and LBP inspections, specifications, notification, license, accreditation, abatement, and disposal, as applicable, would comply with federal and state regulations. Asbestos and LBP issues would be addressed during the ROW process prior to construction. If suspect material is encountered, a mitigation plan for the removal and disposal of materials containing hazardous materials would need to be developed according to federal, state, and local regulations. Structures that have been identified as being impacted by the alternatives are discussed in Section 4.9 Relocations.

Mitigation of hazardous waste sites impacted by the proposed preferred alignment will vary depending on the type, size, and location of hazardous material sites. Each site would have to be assessed and if necessary, mitigation would have to be determined according to the issues associated with each site.

Alternative 1 (Western Alignment + North Alignment "A")

A total of 33 regulated sites and other potential contamination sources were identified within or adjacent to the ROW for *Alternative 1 (Western Alignment + North Alignment "A")*. The project area was also studied for sites/facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database but may handle petroleum products. In reviewing the project aerial photography, four gas stations were identified along the alignment. Two of these were listed in the UST databases: Hill City Oil Co. and Shop Rite #42 at the intersection of Park Road and LA 20. This alternative was also estimated to impact one petroleum waste pit site and

five oil and gas wells. **Table 4.41** lists the registry ID and type of hazardous waste sites impacted by this alternative.

Table 4.41
Hazardous Waste Sites – Alternative 1 (Western Alignment + North Alignment "A")

REGISTRY ID	DATABASE	DESCRIPTION	FED/STATE
110002377071	LA-TEMPO	STATE MASTER	STATE
110002377071	AIRS/AFS	AIR MINOR	FEDERAL
110003260006	RCRAINFO	TRANSPORTER	FEDERAL
110003260006	RCRAINFO	USED OIL PROGRAM	FEDERAL
110003305771	RCRAINFO	CESQG	FEDERAL
110003326115	RCRAINFO	CESQG	FEDERAL
110003331617	RCRAINFO	CESQG	FEDERAL
110003335294	RCRAINFO	CESQG	FEDERAL
110006028011	NPDES	ICIS-NPDES UNPERMITTED	FEDERAL
110006028011	PCS	NPDES NON-MAJOR	FEDERAL
110006028011	RCRAINFO	CESQG	FEDERAL
110008388627	RCRAINFO	UNSPECIFIED UNIVERSE	FEDERAL
110011176574	PCS	NPDES NON-MAJOR	FEDERAL
110011176574	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110020061957	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110020061957	PCS	NPDES NON-MAJOR	FEDERAL
110032939756	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110032939756	PCS	NPDES NON-MAJOR	FEDERAL
110032939756	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110032939756	PCS	NPDES NON-MAJOR	FEDERAL
110037488689	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110037488689	PCS	NPDES NON-MAJOR	FEDERAL
110039154633	ICIS	ENFORCEMENT/COMPLIANCE ACTIVITY	FEDERAL

Alternative 2 (Western Alignment + North Alignment "B")

A total of 25 regulated sites and other potential contamination sources were identified within or adjacent to the ROW for *Alternative 2 (Western Alignment + North Alignment "B")*. The project area was also studied for sites/facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database but may handle petroleum products. In reviewing the project aerial photography and UST databases, two gas stations were identified along the alignment: Hill City Oil Co. and Shop Rite #42 at the intersection of Park Road and LA 20. It was also estimated that this alternative would impact one petroleum waste pit site and four oil and gas wells. **Table 4.42** lists the registry ID and type of hazardous waste sites impacted by this alternative.

Table 4.42
Hazardous Waste Sites – Alternative 2 (Western Alignment + North Alignment "B")

REGISTRY ID	DATABASE	DESCRIPTION	FED/STATE
110002377071	LA-TEMPO	STATE MASTER	STATE
110002377071	AIRS/AFS	AIR MINOR	FEDERAL
110003260006	RCRAINFO	TRANSPORTER	FEDERAL
110003260006	RCRAINFO	USED OIL PROGRAM	FEDERAL
110003305771	RCRAINFO	CESQG	FEDERAL
110003326115	RCRAINFO	CESQG	FEDERAL
110003331617	RCRAINFO	CESQG	FEDERAL
110003335294	RCRAINFO	CESQG	FEDERAL
110008388627	RCRAINFO	UNSPECIFIED UNIVERSE	FEDERAL
110020061957	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110020061957	PCS	NPDES NON-MAJOR	FEDERAL
110032939756	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110032939756	PCS	NPDES NON-MAJOR	FEDERAL
110032939756	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110032939756	PCS	NPDES NON-MAJOR	FEDERAL
110037488689	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110037488689	PCS	NPDES NON-MAJOR	FEDERAL
110039154633	ICIS	ENFORCEMENT/COMPLIANCE ACTIVITY	FEDERAL

Alternative 3 (Central Alignment + North Alignment "A")

A total of 19 regulated sites and other potential contamination sources were identified within or adjacent to the ROW for *Alternative 3 (Central Alignment + North Alignment "A")*. The project area was also studied for sites and facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database, but may handle petroleum products. In reviewing the project aerial photography, two gas stations were identified as being impacted. These locations were not listed in the UST databases. It was estimated that this alternative would also impact one petroleum waste pit site and five oil and gas wells. **Table 4.43** lists the registry ID and type of hazardous waste sites impacted by this alternative.

Table 4.43
Hazardous Waste Sites – Alternative 3 (Central Alignment + North Alignment "A")

REGISTRY ID	DATABASE	DESCRIPTION	FED/STATE
110006018665	RCRAINFO	CESQG	FEDERAL
110006028011	NPDES	ICIS-NPDES UNPERMITTED	FEDERAL
110006028011	PCS	NPDES NON-MAJOR	FEDERAL
110006028011	RCRAINFO	CESQG	FEDERAL
110006809141	NPDES	ICIS-NPDES UNPERMITTED	FEDERAL
110006809141	PCS	NPDES NON-MAJOR	FEDERAL
110011176574	PCS	NPDES NON-MAJOR	FEDERAL
110011176574	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110027254913	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110027254913	PCS	NPDES NON-MAJOR	FEDERAL
110040088197	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL

Alternative 4 (Central Alignment + North Alignment "B")

A total of 11 regulated sites and other potential contamination sources were identified within or adjacent to the ROW for *Alternative 4 (Central Alignment + North Alignment "B")*. The project area was also studied for sites/facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database but may handle petroleum products. It was estimated that this alternative would impact one petroleum waste pit site and four and gas wells. **Table 4.44** lists the registry ID and type of hazardous waste sites impacted by this alternative.

Table 4.44
Hazardous Waste Sites – Alternative 4 (Central Alignment + North Alignment "B")

REGISTRY ID	DATABASE	DESCRIPTION	FED/STATE
110006018665	RCRAINFO	CESQG	FEDERAL
110006809141	NPDES	ICIS-NPDES UNPERMITTED	FEDERAL
110006809141	PCS	NPDES NON-MAJOR	FEDERAL
110027254913	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL
110027254913	PCS	NPDES NON-MAJOR	FEDERAL
110040088197	NPDES	ICIS-NPDES NON-MAJOR	FEDERAL

4.14.4 What are the potential impacts from the construction of any of the Build Alternatives?

All four build alternatives would have minimal risks for hazardous material impacts on the environment. Impacts would most likely occur on or near existing hazardous material sites. Regulated sites were identified within or near all of the proposed alternatives. These sites create a higher potential for encountering hazardous contamination during construction. A summary of impacts associated with each of the alternatives are shown in **Table 4.45**.

Table 4.45
Hazardous Waste Sites Impacted by Alternative

SITE TYPE	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
HAZARDOUS WASTE SITES	23	18	11	6
USTs	4	2	2	0
WASTE PITS	1	1	1	1
OIL AND GAS WELLS	5	4	5	4
TOTAL IMPACTS	**33**	**25**	**19**	**11**

Records indicate that there are well sites located within or adjacent to the ROW for the build alternatives. During the ROW acquisition and negotiation process, responsible well operators and owners would be contacted to determine appropriate actions to take for each site.

The build alternatives may also impact several petroleum pipeline segments. During further project development, owners and operators of these pipelines would be contacted. Exact locations and depths of the lines would be established. During ROW negotiation, determinations will be required to make necessary adjustments and/or relocations of these pipelines. Location and depth of pipelines that will remain in place would be marked on the ground (in the field) prior to construction activities, in order to prevent damage to the pipelines. If proper precautions are taken, impacts related to petroleum lines within the project area should be minimal.

4.14.5 What indirect and cumulative impacts are anticipated?

Potential development associated with the construction of the proposed Preferred Alternative alignment could have additional impacts on regulated sites. However, risks can be minimized by conducting Environmental Site Assessments according to ASTM standards to identify, avoid, and mitigate hazardous material sites.

4.15 PROTECTED LANDS (SECTION 4(F) RESOURCES AND SECTION 6(F) RESOURCES)

4.15.1 What are the properties of Section 4(f) and Section 6 (f) that impact the existing conditions of the area?

Section 4(f) of the 1966 U.S. Department of Transportation Act (49 U.S.C. 1653, now 49 U.S.C. 303) declared a national policy that special efforts be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation may approve projects that require the use of significant publicly owned parks, recreation areas, or wildlife and waterfowl refuges, or any significant historic site protected under Section 4(f) only if:

- There is no prudent and feasible avoidance alternative to using that land and;
- The program or project includes all possible planning to minimize harm to the resource resulting from such use.

The following recreational facilities and wildlife and waterfowl refuges are located within the study area:

Assumption Parish

- Canal Street Park and St. Mary Park in Napoleonville, offering playgrounds, and several ballparks in Napoleonville, Plattenville, Paincourtville, and Labadieville.

Lafourche Parish

- Various city parks in Thibodaux offer playing fields, jogging paths, picnic and playground areas, and a splash park.
- Miles Memorial Park in South Vacherie is located on LA 20.
- Lake Boeuf Wildlife Management Area is located south of Lake Boeuf with access to LA 308. It contains 800 acres of freshwater marsh and is accessible only by boat.

St. John the Baptist Parish

- Lac des Allemands encompasses most of the southern portion of St. John the Baptist Parish and offers fishing, boating, camping, and hiking.

Terrebonne Parish

- Schriever Gym, which offers tennis courts, gym, and ballpark, and Gray Park, which also offers tennis courts, gym, basketball and ballpark.

Additionally, there are 22 publicly-accessible boat ramps accessing the many bayous and canals present in the area. School playgrounds and playing fields are located throughout the study area. These facilities are typically available to the public after school hours.

The Land and Water Conservation Fund (LWCF) Act of 1965 established funding to provide matching grant assistance to states and local governments for the planning, acquisition, and development of outdoor public recreation sites and facilities.

Section 6(f) of the Act requires that properties using LWCF grants must be maintained as a public recreational facility in perpetuity. Section 6(f) prohibits the conversion of property acquired or developed with these grants to a non-recreational purpose without the approval of the Department of Interior's National Park Service (NPS). Replacement lands of equal fair market value, location, and usefulness must be provided for the facility if land is converted. If LWCF grants were used for a portion of a Section 6(f) property, then replacement applies only to that portion using LWCF grants.

Recreational facilities within the study area that have received LWCF grants to date are the Thibodaux City Parks (various) and the Thibodaux Water Reservoir.

4.15.2 How are Section 4(f) impacts measured?

Section 4(f) of the Department of Transportation Act of 1966 regulates how publicly-owned properties, such as parks, recreational lands, and wildlife and waterfowl refuges, and historic sites (that are on or eligible for inclusion in the NRHP) are used for transportation projects. Section 4(f) takes into account impacts that are a use of the resource, whether it is of a direct, temporary, or constructive nature, defined as following:

- A direct use permanently incorporates property into the transportation project;
- A temporary use occupies property temporarily but is adverse to the property's purpose; and
- A constructive use's proximity impacts severe enough to impair the property's features or activities.

Under SAFETEA-LU, the U.S. Department of Transportation (USDOT) takes into account any avoidance or minimization of impacts along with any mitigation or enhancement measures to determine the extent of the impact to the resource. If the USDOT determines that a transportation project will have a *de minimis (*minimal) impact on a Section 4(f) resource, then the Section 4(f) evaluation process will be completed. The managing agency for a park, recreational land, or wildlife and waterfowl refuges would need to state, in writing, that the project is not likely to "adversely affect the activities, features and attributes" of the Section 4(f) resource. For historic resources, the State Historic Preservation Officer (SHPO) would need to state in writing that the project would have "no historic properties affected" or "no adverse effect" to historic properties.

4.15.3 What are the impacts to Section 4(f) and Section 6(f) resources as a result of the No-build Alternative?

No Section 4(f) resources would be impacted by the No-build Alternative.

No Section 6(f) resources would be impacted by the No-build Alternative.

4.15.4 What are the impacts to Section 4(f) and Section 6(f) resources as a result of the Build Alternatives?

Alternative 1 (Western Alignment + North Alignment "A")

No Section 4(f) resources would be impacted by the implementation of *Alternative 1 (Western Alignment + North Alignment "A").*

Neither the Thibodaux City Parks nor the Thibodaux Water Reservoir is located within or adjacent to ROW of this alternative; therefore, no Section 6(f) impacts are anticipated.

Alternative 2 (Western Alignment + North Alignment "B")

No Section 4(f) resources would be impacted by the implementation of *Alternative 2 (Western Alignment + North Alignment "B").*

Neither the Thibodaux City Parks nor the Thibodaux Water Reservoir is located within or adjacent to ROW of this alternative; therefore, no Section 6(f) impacts are anticipated.

Alternative 3 (Central Alignment + North Alignment "A")

One property that meets the criteria for Section 4(f) of the Department of Transportation Act would be impacted by *Alternative 3 (Central Alignment + North Alignment "A");* Schriever Gym. The Schriever Gym, which includes a gym, tennis courts, walking trail, and baseball field, is located at 102 Kelsi Drive in Schriever and accessed from Par Road 29. *Alternative 3 (Central Alignment + North Alignment "A")* would widen Par Road 29, which would then require ROW from the recreational facility resulting in a direct use of a Section 4(f) property. Within the proposed ROW are a chain link fence, paved walking trail, and ornamental trees. However, the use of Schriever Gym, by this alternative would not substantially diminish the activities, features, or attributes of the facility; therefore, the use is considered *de minimis* and no further evaluation is needed.

Neither the Thibodaux City Parks nor the Thibodaux Water Reservoir is located within or adjacent to ROW of this alternative; therefore, no Section 6(f) impacts are anticipated.

Alternative 4 (Central Alignment + North Alignment "B")

Alternative 4 (Central Alignment + North Alignment "B") would, like *Alternative 3 (Central Alignment + North Alignment "A")*, also impact one Section 4(f) resource; Schriever Gym. This alternative would also widen Par Road 29, which would then require ROW from the recreational facility resulting in a direct use of a Section 4(f) property. Within the proposed ROW are a chain link fence, paved walking trail, and ornamental trees. However, the use of Schriever Gym, by this alternative would not substantially diminish the activities, features, or attributes of the facility; therefore, the use is considered *de minimis* and no further evaluation is needed.

Neither the Thibodaux City Parks nor the Thibodaux Water Reservoir is located within or adjacent to ROW of this alternative; therefore, no Section 6(f) impacts are anticipated.

4.15.5 What indirect and cumulative impacts are anticipated?

Indirect impacts to Section 4(f) resources could include changes in accessibility or increased noise levels. Access would be maintained to Schriever Gym and its parking with *Alternative 3 (Central Alignment + North Alignment "A")* and *Alternative 4 (Central Alignment + North Alignment "B")*. Traffic-related noise may increase; however, the level would be below FHWA's Noise Abatement Criteria. Impacts resulting from construction activities at the Schriever Gym would be temporary in nature and would not disrupt continued usage of the facilities.

A publicly-accessible boat ramp is located on Highway 20 in St. James Parish on its border with Lafourche Parish with access to Bayou Chevreuil. None of the four alignments would require ROW from the boat ramp facility nor affect its intended use or function. The boat ramp is located east of existing LA 20 with access directly from LA 20. The project in this area would be on new location west of existing LA 20. Existing LA 20 north of the boat ramp access would be closed. Access would be maintained to the boat ramp from the south via LA 20. No proximity impacts to the boat ramp or increased noise levels would occur as a result of the proposed project.

No indirect or cumulative impacts are anticipated for the Section 6(f) resources: Thibodaux City Parks or the Thibodaux Water Reservoir.

4.16 VEGETATION AND HABITAT

4.16.1 What are the existing vegetation and habitat located within the study area?

The Endangered Species Act of 1973 requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic Atmospheric Administration, Office of Marine Fisheries (NOAA Fisheries) regarding activities that may affect endangered or threatened species through the destruction or adverse modification of critical habitats. Threatened and endangered species present in the study area are discussed in Section 4.19. The study area does not contain critical habitat for any federally-listed endangered or threatened species. However, impacts to habitats used by endangered and threatened species, even if it is not designated critical habitat, can have an adverse impact on these species. In addition, adverse modification to habitats can result in an impaired species becoming a federal candidate species.

The study area is located in the upper portions of the Barataria-Terrebonne Basin, a highly ecologically and commercially productive interdistributary wetland-estuary. The Barataria-Terrebonne Basin contains an extensive array of living resources,[43] with over 700 individual species of wildlife and vegetation. A Barataria-Terrebonne National Estuary Program (BTNEP) report was used to identify the common vegetation within the study area[44].

Through the Solicitation of Views process, correspondence was received from the Louisiana Department of Wildlife and Fisheries (LA WL&F) dated August 4, 2004. LA WL&F identified cypress-tupelo swamp and freshwater marsh natural communities as being present in the study area. Lake Boeuf State Wildlife Management Area (WMA) was also identified by LA WL&F as being within the study area. This 789-acre management area lies south of Lake Boeuf, between the Sam Foret Canal and Theriot Canal. While a portion of this WMA is located within the study area, none of the build alternatives currently under consideration encroach upon the designated area.

Vegetation within the study area is among the most diverse of the Barataria-Terrebonne Basin's habitats. Over 300 vegetation species, none of which are federally or state protected, can be found within the study area, have been identified in the swamp and fresh marsh environments within the Barataria-Terrebonne Basin. The four dominant habitat types are uplands, freshwater marshes, swamps, and bottomland hardwoods. Some common species of vegetation found within the study area are summarized in **Table 4.46**.

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[43] Condry, R. E., Kemp, P., Visser, J. M., Gosselink, J., Linstedt, D., Melancon, E., Peterson, G., & Thompson, B. (1995). *Status, trends, and probable causes of change in living resources in the Barataria and Terrebonne estuarine systems*. (No. 21). Thibodaux, LA: Barataria-Terrebonne National Estuary Program Publication.

[44] Conner, W. H., & Day, J. W. Jr. (Eds.). (1987). *The Ecology of Barataria Basin, Louisiana: An estuarine profile*. U.S. Fish and Wildlife Service Biology Report 85(7.13). Washington, D.C.: National Wetlands Research Center, US. Fish and Wildlife Service, U.S. Department of the Interior.

Table 4.46
Common Vegetation Found in the Study Area by Habitat Type

Upland Vegetation		Fresh Marsh Vegetation	
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Eastern Cottonwood	*Populus deltoides*	*Alligatorweed*	*Alternanthera philoxeroides*
American Sycamore	*Platanus occidentalis*	*Eastern Baccharis*	*Baccharis halimifolia*
Hackberry	*Celtis laevigata*	*Spikerush*	*Eleocharis spp.*
Green Ash	*Fraxinus pennsylvanica*	*Marsh Fern*	*Dryopteris thelypteris*
Nuttall Oak	*Quercus texana*	*Water Hyacinth*	*Eichhornia crassipes*
Water Oak	*Quercus nigra*	*Marsh Pennywort*	*Hydrocoytle ranunculoides*
Bitter Pecan	*Carya X lecontei*	*Common Rush*	*Juncus effusus*
Sweetgum	*Liquidambar styraciflua*	*Duckweed*	*Lemna* spp.
Peppervine	*Ampelopsis arborea*	*Maidencane*	*Panicum hemitomon*
Eastern Poison Ivy	*Toxicodendron radicans*	*Dotted Smartweed*	*Polygonum punctatum*
American Elm	*Ulmus americana*	*Swamp Smartweed*	*Polygonum hydropiperoides*
Sumac	*Rhus* spp.	*Pickerelweed*	*Pontederia cordata*
Blackberry	*Rubus* spp.	*Bulltongue Arrowhead*	*Sagittaria lancifolia*
Greenbrier	*Smilax* spp.	*Broad-Leaf Cattail*	*Typha latifolia*
Hickory	*Carya X ludoviciana*	*Giant Cutgrass*	*Zizaniopsis miliacea*
Swamp Forest Vegetation		**Bottomland Hardwood Vegetation**	
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Bald Cypress	*Taxodium distichum*	*Boxelder*	*Acer negundo*
Water Tupelo	*Nyssa aquatic*	*Hickory*	*Carya* spp.
Black Willow	*Salix nigra*	*Hackberry*	*Celtis laevigata*
Pumpkin Ash	*Fraxinus profunda*	*Hawthorn*	*Crataegus* spp.
Buttonbush	*Cephalanthus occidentalis*	*Holly/Yaupon*	*Ilex* spp.
Swamp Red Maple	*Acer rubrum vr. drummundii*	*Sweetgum*	*Liquidambar styraciflua*
Dwarf Palmetto	*Sabal minor*	*Wax Myrtle*	*Morella cerifera*
Lizard's Tail	*Saururus cernuus*	*Live Oak*	*Quercus virginiana*
Virginia Willow	*Itea virginica*	*Water Oak*	*Quercus nigra*
		Eastern Poison Ivy	*Toxicodendron radicans*
		Greenbrier	*Smilax* spp.

Sources: U.S. Fish and Wildlife Service Biology Report 85, 1987 and BTNEP Publication No. 21, 1995

The study area also includes farmed/pasture and developed areas. Agricultural lands are discussed further in Section 4.10. In developed areas, naturally occurring vegetation has been disturbed and the vegetation community consists of mixed vegetation associated with human communities.

4.16.2 What are the impacts to vegetation and habitat as a result of the No-build Alternative?

The No-build Alternative would result in no impacts to vegetation and habitats within the Barataria-Terrebonne Basin.

4.16.3 What are the impacts to vegetation and habitat as a result of the Build Alternatives?

The build alternatives could result in the loss of vegetation within the highway ROW for at-grade construction. At-grade construction would be primarily through upland habitats. Elevated sections of the build alternatives would be constructed through the wetland habitats. These elevated sections would allow for re-vegetation of the wetland area; however, they could result in shading that may inhibit re-vegetation by woody species. **Table 4.47** shows the mileage for at-grade and elevated sections for each build alternative and **Table 4.48** shows the acreage impact to uplands for each build alternative.

Table 4.47
Alternative Elevation by Miles

	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Elevated	13.0	14.6	14.3	15.9
At-Grade	13.1	13.6	8.4	9.0
Total	**26.1**	**28.2**	**22.7**	**24.9**

Source: Figure 4-18 Hydric Soils & Elevated/Non-Elevated Roadway Sections

Table 4.48
Impact to Uplands (Acreage)

	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Elevated	62.47	60.15	40.23	37.91
At-Grade	188.59	224.84	123.36	159.61
Total	**251.06**	**284.99**	**163.59**	**197.52**

Wetland habitat types within the study area consist of cypress-tupelo, freshwater marsh, bottomland hardwood, shrub-scrub, riverine, cypress, farmed wetlands, and lake. These habitats provide basic wetland functions, such as flood attenuation, wildlife habitat, water quality improvement, and sediment retention. **Table 4.49** shows the acreage impact of the build alternatives for wetland habitats.

New roads create linear road-side habitats that may be dominated by disturbance-tolerant species and invasive species may be common, such as, the Chinese tallow tree (*Sapium sebiferum*).[45] A well designed re-vegetation plan that includes maintenance activities to remove invasive species can help prevent invasive species from becoming dominant in the road ROW.

[45] Forman, R. T., & Alexander, L. E. (1998). Roads and their major ecological effects. *Annual Review of Ecological Systems, 29*, 207-31.

Table 4.49
Impact to Wetland Habitats by Type (Acreage)

Wetland Habitat Type	Alternative 1 (Western Alignment + North Alignment A)		Alternative 2 (Western Alignment + North Alignment B)		Alternative 3 (Central Alignment + North Alignment A)		Alternative 4 (Central Alignment + North Alignment B)	
	Elevated	At Grade	Elevated	At Grade	Elevated	At Grade	Elevated	At Grade
Swamps	111.15	N/A	141.22	N/A	168.39	N/A	198.45	N/A
Bottomland Hardwood	88.71	0.45	92.58	2.53	60.46	2.86	64.34	4.94
Freshwater Marsh	0.96	2.07	6.38	2.07	24.93	3.81	30.35	3.81
Total	**200.82**	**2.52**	**240.18**	**4.60**	**253.78**	**6.67**	**293.14**	**8.75**

N/A - Not Applicable
Source: Figure 4-21 National Wetland Inventory.

Alternative 1 (Western Alignment + North Alignment "A")

Approximately 6.1 miles of *Alternative 1 (Western Alignment + North Alignment "A")* will be built over existing roadways resulting in minimal loss of vegetation and minimal loss of previously disturbed wildlife habitats. Building over roadways decreases the amount of deleterious effects caused by construction to wildlife and causes less disruption to established wildlife corridors and habitat. This approach may also decrease interruption to flood retention capabilities and other factors beneficial to wildlife. Wildlife species within these previously disturbed areas would generally have no difficulty relocating during construction.

The at-grade portions of this alternative would result in the loss of various types of vegetation within the proposed ROW. Once *Alternative 1 (Western Alignment + North Alignment "A")* leaves the existing corridor of LA 311 it will traverse primarily forested (wetlands and uplands) and edges of agricultural farmlands (uplands). North of LA 1, the proposed western section of this alternative will cross large segments of farmlands (uplands), bisecting the farmed areas. The at-grade impacts from the northern part of this alternative will be minimal since nearly all of it will be constructed over existing roadways. The at-grade portions of this alternative will result in the loss of 188.59 acres of vegetation associated with uplands.

North of LA 20, *Alternative 1 (Western Alignment + North Alignment "A")* will be built as elevated sections over bottomland hardwoods for approximately 3.9 miles. Approximately 3.7 miles of the northern portion of this alternative will be elevated over bottomland hardwoods. Following construction, elevating these segments will decrease wetland and wildlife habitat fragmentation and allow for greater flood amelioration. During construction, disruption will occur within naturally occurring systems.

Alternative 2 (Western Alignment + North Alignment "B")

Approximately 4.8 miles of *Alternative 2 (Western Alignment + North Alignment "B")* would be built over existing roadways resulting in minimal loss of vegetation and minimal loss of previously disturbed wildlife habitats. Building over roadways decreases the amount of deleterious effects caused by construction to wildlife and causes less disruption to established wildlife corridors and habitat. This approach may also decrease interruption to flood retention capabilities and other factors beneficial to wildlife. Wildlife species within these previously disturbed areas would generally have no difficulty relocating during construction.

The at-grade portions of this alternative would result in the loss of various types of vegetation within the proposed ROW. Once *Alternative 2 (Western Alignment + North Alignment "B")* leaves the existing corridor of LA 311, it will traverse primarily forested (wetland and upland) and edges of agricultural farmlands (uplands). North of LA 1, the proposed western section of this alternative will cross large segments of uplands, bisecting the farmed areas. The at-grade portions from the northern part of *Alternative 2 (Western Alignment + North Alignment "B")* will be built over uplands for approximately 2.5 miles. Approximately 224.84 acres of uplands will be lost by at-grade construction of this alternative.

North of LA 20, *Alternative 2 (Western Alignment + North Alignment "B")* will be built as elevated sections over swamps and bottomland hardwoods for approximately 4.0 miles. Approximately 5.4 miles of the northern portion of this alternative will be elevated over swamps and bottomland hardwoods. Following construction, elevating these segments will decrease wetland and wildlife habitat fragmentation and allow for greater flood amelioration. During construction, disruption will occur within naturally occurring systems.

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 (Central Alignment + North Alignment "A") would result in the conversion of uplands, swamps, and bottomland hardwood habitats to road-side habitats. This alternative would be built over approximately 3.1 miles of existing two-lane roadways, which will be all on the central portion of this alternative. Impacts to previously disturbed areas would be minimal.

Alternative 3 (Central Alignment + North Alignment "A") at-grade portions would be primarily through uplands north of LA 316 and LA 1. The at-grade portion of the northern part of *Alternative 3 (Central Alignment + North Alignment "A")* will be built over uplands for approximately 2.5 miles. The at-grade portions of this alternative will result in the loss of 123.36 acres of vegetation associated with uplands.

Elevated portions of *Alternative 3 (Central Alignment + North Alignment "A")* will be built over swamps and bottomland hardwoods starting with a short section after the ROW leaves LA 316, and the majority of the elevated portions of this alternative will be north of LA 1. Approximately 5.4 miles of the northern part of *Alternative 3 (Central Alignment + North Alignment "A")* will be elevated over swamps and bottomland hardwoods. The elevated sections would result in the swamps and bottomland hardwoods becoming freshwater marshes.

Alternative 3 (Central Alignment + North Alignment "A") would be approximately 4.5 miles west of the Lake Boeuf WMA and would be one of the two closest alternatives to the WMA. Due to the distance between the WMA and this alternative, direct impacts to the WMA are not anticipated.

Alternative 4 (Central Alignment + North Alignment "B")

Alternative 4 (Central Alignment + North Alignment "B") would result in the conversion of uplands, swamps, and bottomland hardwood habitats to road-side habitats. This alternative would be built over approximately 4.4 miles of existing two-lane roadways. Impacts to previously disturbed areas would be minimal.

The *Alternative 4 (Central Alignment + North Alignment "B")* at-grade portions will be primarily through uplands north of LA 316 and LA 1. The at-grade portions of this alternative will result in the loss of vegetation associated with uplands. The at-grade impacts will be minimal since nearly all of it will be constructed over existing roadways. Approximately 159.61 acres of uplands will be lost by at-grade construction of this alternative.

Elevated portions of this alternative will be built over swamps and bottomland hardwoods starting with a short section after the ROW leaves LA 316, and the majority of the elevated

portions of *Alternative 4 (Central Alignment + North Alignment "B")* will be north of LA 1. Elevated road construction and shading effects would result in the conversion of the swamps and bottomland hardwoods to freshwater marshes.

Alternative 4 (Central Alignment + North Alignment "B") would be approximately 4.5 miles west of the Lake Boeuf WMA and would be one of the two closest alternatives to the WMA. Due to the distance between the WMA and this alternative, direct impacts to the WMA are not anticipated.

4.16.4 What indirect and cumulative impacts are anticipated?

Secondary impacts may include increases in road kill and decreases in plant health due to change in water quality from road run-off.[46] Secondary development would also occur along the proposed alignment, spreading from existing urban areas into agricultural and forested wetland habitats resulting in the loss of vegetation and habitat as the existing land uses are converted to urban uses. This development would impact upland habitats first then wetlands due to existing federal and state regulations protecting wetlands from development. The increase in capacity created by the proposed project and subsequent secondary development could require future highway development projects to meet growing capacity demand.[47]

4.17 INVASIVE SPECIES

4.17.1 What are the invasive species likely to be found within the study area?

Executive Order 13112 was established in 1999 to prevent the introduction of invasive species, to provide for their control, and to minimize their impacts to the economy, ecology, and human health. The State of Louisiana formed the Louisiana Aquatic Invasive Species Task Force in 2002 under the authority of *Executive Order MJF 02-11*. This task force, led by LA WL&F, prepared a management plan to describe the problems caused by aquatic invasive species and outline a plan to address associated problems.[48]

The LA WL&F management plan specifically identifies transportation corridors as nuisance species pathways of concern. The list of potential aquatic and terrestrial invasive and nuisance species likely to be found within the study area was compiled using Tulane University and LA WL&F occurrence data.[49]

While no quantitative surveys have been conducted, it is reasonable to anticipate that the following nuisance animal and plant species are likely to be found within the study area.

Nutria

Nutria (*Myocastor coypus*) were introduced in Louisiana in the 1930s. A popular theory is that this semi-aquatic species was transported from Argentina, and shortly after escaping from their pen during a storm, they began reproducing at alarming rates. Estimates of nutria population numbers in the 1960s ranged as high as 20 million. The State of Louisiana has implemented a nutria control program in order to reduce the damage caused by this species; however, herbivory

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[46] Trombulak, S. C. & Frissell, C. A. (2000). Review of ecological effects of roads on terrestrial and aquatic communities. *Conservation Biology, 14*(1), 18-30.

[47] Southerland, M. (1994). *Evaluation of ecological impacts from highway development.* Washington, D.C.: U.S. Environmental Protection Agency.

[48] Louisiana Department of Wildlife and Fisheries. (2005). State Management Plan for Aquatic Invasive Species in Louisiana.

[49] Riehl, Christie, Exotic Species in Louisiana, Tulane University (http://www.tulane.edu/~bfleury/envirobio/enviroweb/ExoticSpecies.htm). Last Accessed October 24, 2013.

by this animal continues to be a problem in many coastal areas, including both native marsh habitat and agricultural crops. This species has been documented to feed on herbaceous vegetation, as well as trees like bald cypress (*Taxodium distichum*). The LA WL&F Nutria Control Program has documented vegetative damage caused by nutria in at least 11 Coastal Wetlands Planning Protection and Restoration Act project sites in the Barataria and Terrebonne Basins.

Feral Hog

Feral hogs (*Sus scrofa*), which includes European wild hogs and hybrids, are quickly becoming the most serious problem facing land managers and hunters in Louisiana. This species was originally introduced to North America in the 1500s by the Spanish as livestock. Through escape and release, pigs quickly adapted to life in the wild and became feral. Feral hogs are omnivorous, eating anything from vegetation to carrion, though vegetation constitutes the largest portion of their diet.

Feral hogs are plagued by a multitude of diseases that can affect humans, commercial swine operations, and wildlife. The majority of damages caused by feral hogs are a result of their rooting. Excessive rooting can drastically impact crops, golf courses, levees, hayfields, tree farms, and lawns. Much of this damage occurs after rain events or in irrigated areas during periods of drought. Rooting may lead to erosion and excess soil moisture, and, ultimately, conditions in which managers are unable to operate equipment. Excessive soil disturbance associated with rooting can also cause damage to crops and wetlands. Feral hogs are also known to prey upon livestock and wildlife and will directly compete with other wildlife for resources.

Water Hyacinth

Water hyacinth (*Eichhornia crassipes*) was introduced into the United States in the 1880s, and has become one of the most destructive invasive aquatic plants in the southeast United States. Because this species readily multiplies asexually, it can quickly choke off waterbodies and clog drainage structures. Thick mats of this species can also lower dissolved oxygen in waterbodies causing fish kills. Recent developments in biological control methods have helped control the invasion of this species when used in conjunction with herbicide application.

Chinese Privet

Chinese privet (*Ligustrum sinense*) is native to China and was introduced into the United States in 1852 for use as an ornamental shrub. It continues to be widely sold in the nursery and gardening industry. The foliage of Chinese privet is also used for cut-flower arrangements. This species began escaping cultivation in the 1930s. A survey of appropriate herbaria reveals collection records from Georgia as early as 1900. Based on herbarium records, the species became naturalized and widespread in the southeast and eastern United States during the 1950s, 1960s, and 1970s. The fruit of this species has been demonstrated to be toxic to humans and its rapid growth outcompetes native vegetation.

Kudzu

Kudzu *(Pueraria lobata)* is an invasive vine that is widely naturalized throughout the southeastern United States. This species was developed for forage and erosion control in the United States beginning in the 1920s; however, it has quickly become a nuisance throughout its range. The kudzu vine forms large impenetrable masses over woody vegetation that shade out light, eventually killing the underlying tree. Herbicide has proven to be the best method of control for this species.

Cogongrass

Cogongrass *(Imperata cylindrical)* is a grass that spreads via a rhizome root system and is native to Southeast Asia. Cogongrass was introduced into the United States as both packing material and

forage. This species invades disturbed areas, forming dense stands that crowd out native species. This species is particularly hard to control, as its rhizomes easily detach from the main plant, facilitating transport. Control of this species is achieved only through the implementation of management plans that include a combination of herbicides, replanting native species, and burning.

Chinese Tallow Tree

Another abundant exotic plant is the Chinese tallow tree (*Sapium sebiferum*), an Asian tree that escaped cultivation in the United States sometime this century. It is one of the most common trees in Louisiana and is found in densities that average up to nearly four thousand per hectare. It grows fast and flourishes in disturbed areas such as roadsides, suburbs, and drainage ditches. Chinese tallow trees are shade-tolerant and can grow in almost any damp environment. Although individuals of the species are short-lived, the tallow's adaptability and resistance to floods will probably allow it to dominate Louisiana ecosystems.

4.17.2 What are the impacts to invasive species as a result of the No-build Alternative?

The No-build Alternative would result in no changes to existing nuisance and exotic species population levels.

4.17.3 What are the impacts to invasive species as a result of the Build Alternatives?

Alternative 1 (Western Alignment + North Alignment "A")

While the risk of invasive species distribution along transportation corridors and their associated ROWs is high, it is not likely that *Alternative 1 (Western Alignment +North Alignment "A")* will increase the numbers of existing nuisance species or introduce any new nuisance species. Nuisance species quickly establish themselves in newly disturbed areas, outcompeting early successional native species. Building along an existing corridor may result in no new invasive species, as the area has been previously cleared. Proposed *Alternative 1 (Western Alignment +North Alignment "A")* and *Alternative 2 (Western Alignment + North Alignment "B")*, which include existing developed land, will generally include higher numbers of established nuisance and exotic species.

Alternative 2 (Western Alignment + North Alignment "B")

It is not anticipated that *Alternative 2 (Western Alignment + North Alignment "B")* will increase existing invasive species or introduce new species to the study area.

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 (Central Alignment + North Alignment "A") is not expected to increase existing invasive species or introduce new invasive species to the study area.

Alternative 4 (Central Alignment + North Alignment "B")

Alternative 4 (Central Alignment + North Alignment "B") is not anticipated to lead to an increase of existing invasive species occurrences or introduce new invasive species to the study area.

Upon selection of a Preferred Alternative, more detailed population surveys of nuisance and exotic species will be conducted. If necessary, nuisance-species specific management plans should be developed and implemented during the course of construction to eliminate the chance of spreading any species found.

4.18 WILD AND SCENIC RIVERS

4.18.1 What Wild and Scenic Rivers are located within the study area?

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to protect designated rivers and adjacent areas by preventing construction or modification to the area. Wild and Scenic Rivers are those rivers with free-flowing conditions approved by the Secretary of the U.S. Department of Interior being classified, designated, and administered as one of the following:

- **Wild River Areas** – Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
- **Scenic River Areas** – Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
- **Recreational River Areas** – Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Regardless of classification, each river in the National System is administered with the goal of protecting and enhancing the values that caused it to be designated.

The NPS maintains the nationwide rivers inventory. A review of this NPS database was performed to determine if any wild or scenic rivers are located in the study area. At present, there are no nationally designated Wild and Scenic Rivers within the study area.

Louisiana Scenic Rivers are protected by the *Louisiana Scenic Rivers Act of 1988*, and are managed and regulated by LA WL&F. Based on data from the Louisiana Scenic Rivers State Map, the study area has no state-designated scenic rivers.[50]

4.18.2 What are the impacts to Wild and Scenic Rivers as a result of the No-build Alternative?

No impacts are expected from the No-build Alternative to Wild and Scenic Rivers.

4.18.3 What are the impacts to Wild and Scenic Rivers as a result of the Build Alternatives?

Alternative 1 (Western Alignment + North Alignment "A")

The study area has no nationally-designated Wild and Scenic Rivers, nor does it contain any Louisiana-designated scenic rivers. Therefore, *Alternative 1 (Western Alignment + North Alignment "A")* will not impact Wild and Scenic Rivers.

Alternative 2 (Western Alignment + North Alignment "B")

No nationally-designated Wild and Scenic Rivers or Louisiana-designated scenic rivers are located within the study area. Therefore, *Alternative 2 (Western Alignment + North Alignment "B")* will not impact Wild and Scenic Rivers.

[50]Louisiana Department of Wildlife and Fisheries. (2012). *Louisiana Scenic Rivers System.* http://www.wlf.louisiana.gov/louisiana-natural-and-scenic-rivers-descriptions-and-map. Last accessed October 24, 2013.

Alternative 3 (Central Alignment + North Alignment "A")

Due to no national or state-designated Wild and Scenic Rivers being located within the study area, it is not anticipated that *Alternative 3 (Central Alignment + North Alignment "A")* will impact this resource area.

Alternative 4 (Central Alignment + North Alignment "B")

The study area has no nationally- or state-designated Wild and Scenic Rivers. Thus, *Alternative 4 (Central Alignment + North Alignment "B")* will not impact Wild and Scenic Rivers.

4.18.4 What indirect and cumulative impacts are anticipated?

The study area has no nationally-designated Wild and Scenic Rivers, nor does it contain any Louisiana-designated scenic rivers. Therefore, there are no anticipated secondary or cumulative impacts from the proposed project.

4.19 ENDANGERED, THREATENED, AND OTHER LISTED SPECIES

4.19.1 What endangered, threatened, and other listed species are located within the study area?

Threatened, endangered, and protected species are protected by the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884). The Bald and Golden Eagle Protection Act, enacted in 1940 (16 U.S.C. 668-668c), and the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755) are two other pieces of legislation that provide protection for threatened and endangered species. **Table 4.50** shows the threatened and endangered faunal species listed by USFWS for the study area.[51] This table also notes the likelihood of these species being found within the study area, based on habitat availability. Initial consultation has been established with USFWS and the Louisiana Department of Wildlife & Fish, Natural Heritage Program (LA WL&F-NHP) through the Solicitation of Views process in order to determine the presence and location of any protected, threatened, or endangered species, and sensitive biological resources. USFWS and LA WL&F-NHP have responded accordingly, and comments from these agencies were utilized in the analysis of alternatives.

[51] U.S. Department of the Interior, Fish and Wildlife Service. Threatened and Endangered Species of Louisiana. January, 2010

Table 4.50
Protected Species Potentially Occurring Within the Study Area

Common Name	Scientific Name	Federal Status	Habitat	Likely Presence in Study Area
West Indian Manatee	*Trichechus manatus*	E	Lake Pontchartrain & Tributaries	Unlikely
Alabama Heelsplitter	*Potamilus inflatus*	T	Amite River, possible in Pearl River	Unlikely
Gulf Sturgeon	*Acipenser oxyrhynchus desotoi*	T	Pearl River & Lake Pontchartrain Tributaries	Unlikely
Pallid Sturgeon	*Scaphirhynchus albus*	E	Mississippi River & Tributaries	Unlikely
Bald Eagle	*Haliaeetus leucocephalus*	BGEPA	Conifers near large bodies of water	Likely
Piping Plover	*Charadrius melodus*	T	Coast	Unlikely
Green Sea Turtle	*Chelonia mydas*	T	Coastal Waters	Unlikely
Hawksbill Sea Turtle	*Eretmochelys imbricata*	E	Coastal Waters	Unlikely
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	E	Coastal Waters	Unlikely
Leatherback Sea Turtle	*Dermochelys coriacea*	E	Coastal Waters	Unlikely
Loggerhead Sea Turtle	*Caretta caretta*	T	Coastal Waters	Unlikely

Sources: USFWS Southeast Region, 2010 and NatureServe Explorer 2010; and, Title 76, ss 317, Louisiana Administrative Code
(T = Threatened, E = Endangered, BGEPA = Bald & Golden Eagle Protection Act)
Listed Floral Species

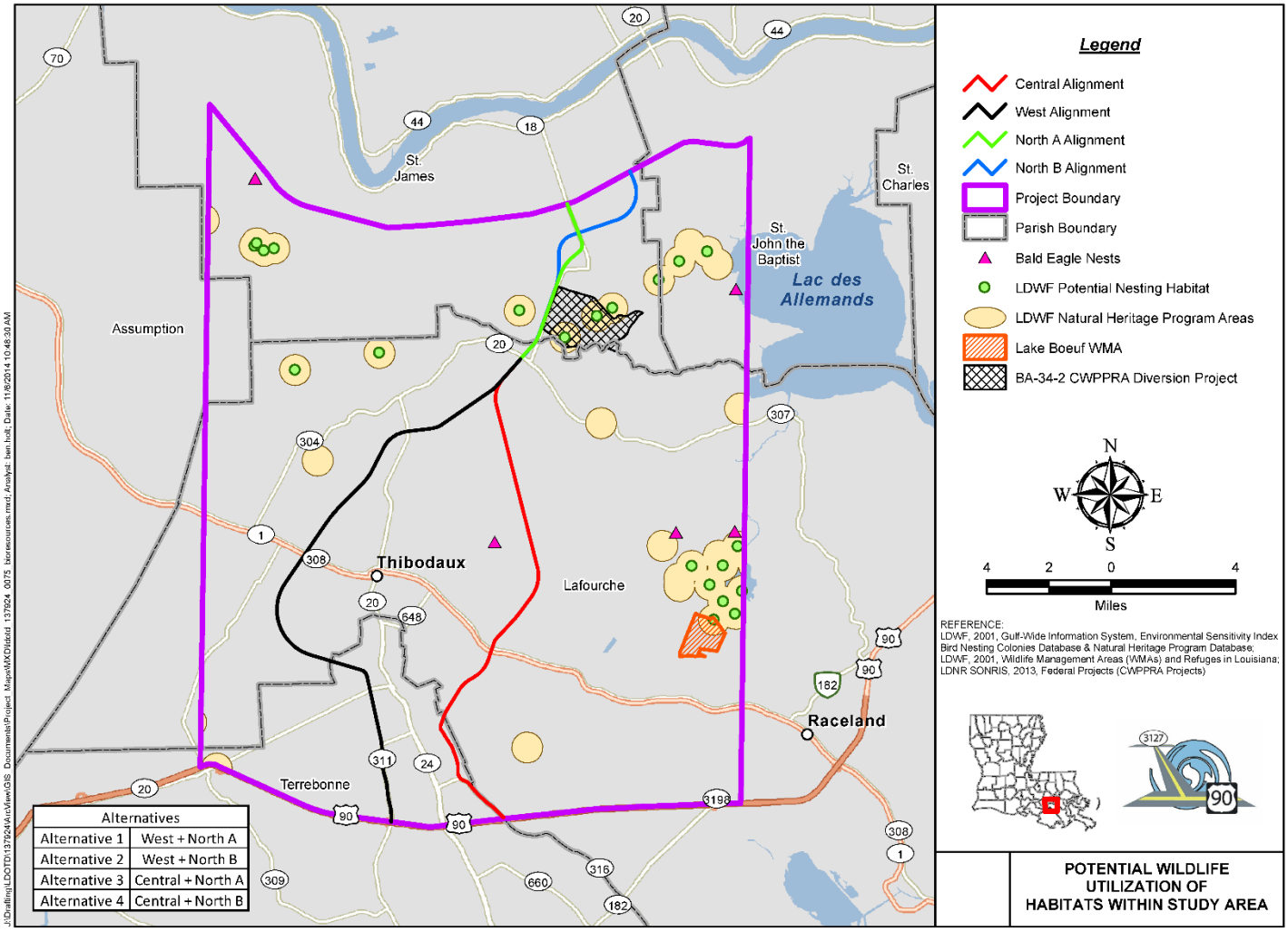
Listed Faunal Species

Several bald eagle (*Haliaeetus leucocephalus*) nesting areas and water bird nesting colonies have been reported within the study area. While the bald eagle was delisted from the Endangered Species Act in June 2007, and federal agencies are no longer required to consult with USFWS for projects affecting this species, it is still afforded protection under the *Bald and Golden Eagle Protection Act* of 1940 (16 U.S.C. 668-668c). Responses to Solicitation of Views from LA WL&F-NHP indicated that locations of bald eagle nests include the western shore of Lac Des Allemands, and in and around Section 59, T12S, and R16E; Sections 34 and 32, T14S and R18E; Section 78, T14S, and R17E. Eagles often utilize the same nesting location year after year; however, they may relocate or choose alternate nest sites after storms, hurricanes, or other disturbances.

Waterbird rookeries are protected during nesting season under the *Migratory Bird Treaty Act* of 1918 (16 U.S.C. 703-711). Locations of nesting colonies are continually changing from one season to the next. Activities may not occur within 300 meters of an active rookery during nesting season, which is March 15 to July 15 in Louisiana. LA WL&F-NHP tracks waterbird rookeries. A review of LA WL&F-NHP records indicates that three parishes within the study area are known to contain waterbird rookeries—Lafourche, St. James, and St. John the Baptist.[52] A qualified biologist should inspect the proposed work site for the presence of undocumented wading bird nesting colonies and bald eagle nests during the nesting seasons (i.e., March 15 through July 15 for wading bird colonies and October to mid-May for bald eagles). These surveys should focus on early successional scrub/shrub and forested swamp habitats. In the event that colonies of nest sites are encountered along the chosen alternative, the USFWS Lafayette, Louisiana Field office should be contacted for additional information. **Figure 4-10** represents the locations of potential nesting habitat within the study area.

[52] Conner, W. H., & Day, J. W. Jr. (Eds.). (1987). *The ecology of Barataria Basin, Louisiana: An estuarine profile*. U.S. Fish and Wildlife Service Biology Report 85(7.13). Washington, D.C.: National Wetlands Research Center, US. Fish and Wildlife Service, U.S. Department of the Interior.

Figure 4-10
Potential Wildlife Utilization



Responses to Solicitation of Views received from LA WL&F-NHP indicate that the following imperiled (S2) and critically imperiled floral species (S1) potentially occur within the study area:

- Swamp milkweed (*Asclepias incarnata*), S2;
- Common water-willow (*Justicia americana*), S2;
- Floating antler fern (*Ceratopteris pteridoides*), S2; and
- Hairy comb fern (*Ctenitis submarginalis*), S1.

No legal protection is afforded these species; however, if any are encountered along the Preferred Alternative, it is recommended that LA WL&F-NHP be notified. Once a Preferred Alternative is chosen, coordination with a plant conservation entity such as Louisiana Native Plant Initiative, McNeese State University, or Nicholls State University should be undertaken and efforts should be made to conserve these species in the event that they are encountered.

Critical Habitat

While no critical habitat for listed species was identified within the study area during the Solicitation of Views process, wetland and aquatic habitats of concern were identified by both USFWS and LA WL&F-NHP. These resources include:

- Unnamed freshwater marsh in and around Section 72, Township 15S, Range 18E;
- Unnamed cypress-tupelo swamps in and around Section 39, Township 13S, Range 16E;
- Unnamed cypress-tupelo swamps in and around Section 84, Township 12S, Range 18E;
- Bayou Chevreuil;
- Bayou Citamon;
- Bayou Cutoff;
- Bayou Grand Coteau;
- Bayou Lafourche;
- Bayou Lassene;
- Grand Bayou; and,
- Rathborne Swamp.

4.19.2 What are the impacts to endangered, threatened, and other listed species as a result of the No-build Alternative?

The No-build Alternative would result in no impacts to threatened and endangered species.

4.19.3 What are the impacts to endangered, threatened, and other listed species as a result of the Build Alternatives?

Alternative 1 (Western Alignment + North Alignment "A")

No habitat suitable for listed species was identified within *Alternative 1 (Western Alignment + North Alignment "A")*; therefore, this alternative is not anticipated to impact endangered, threatened, or other listed species.

Alternative 2 (Western Alignment + North Alignment "B")

No habitat suitable for listed species was identified within *Alternative 2 (Western Alignment + North Alignment "B")*; therefore, this alternative is not anticipated to impact endangered, threatened, or other listed species.

Alternative 3 (Central Alignment + North Alignment "A")

No habitat suitable for listed species was identified within *Alternative 3 (Central Alignment + North Alignment "A")*; therefore, this alternative is not anticipated to impact endangered, threatened, or other listed species.

Alternative 4 (Central Alignment + North Alignment "B")

No habitat suitable for listed species was identified within *Alternative 4 (Central Alignment + North Alignment "A")*; therefore, this alternative is not anticipated to impact endangered, threatened, or other listed species.

In order to eliminate potential impacts to bald eagles and wading birds, surveys for these species will be conducted along the Preferred Alternative. If nests or potential nesting habitat are found, coordination with USFWS and LA WL&F-NHP will be initiated to obtain additional guidance. If necessary, construction will be sequenced in order to avoid disturbances during the nesting seasons of any species, colonies, or rookeries found.

4.19.4 What indirect and cumulative impacts are anticipated?

No direct impacts to listed species are anticipated; therefore, no secondary and cumulative impacts will occur within the Preferred Alternative.

While potential bird nesting habitats are identified within the study area, no critical or bird nesting habitat has been identified within any of the build alternatives. However, efforts should be made to ensure that the design of the chosen alternative minimizes disruption to wildlife migration and dispersal patterns. Elevation of roadway sections that traverse wetland and aquatic resources of concern is proposed, which will reduce road kills associated with crossings and allow unimpeded migration of both terrestrial and aquatic species.

4.20 ESSENTIAL FISH HABITAT

4.20.1 What essential fish habitat is found within the study area?

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) was passed in 1976, and reauthorized in 1996, in response to fisheries issues facing the nation. A part of the MSFCMA concentrated on fisheries management plans, and description and identification of essential fish habitat (EFH). Essential fish habitat is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. NOAA Fisheries has regulatory oversight for EFH. Through the Solicitation of Views process, NOAA Fisheries has determined that the affected resources within the study area are not the ones for which NOAA Fisheries is responsible.

The NOAA Fisheries ESH Mapper was reviewed to identify EFHs that may be within the study area.[53] Lac des Allemands was identified as being ESH for coastal migratory pelagic fishes, red drum, reef fishes, and shrimp.[54]

4.20.2 What are the impacts to essential fish habitat as a result of the No-build Alternative?

The No-build Alternative will result in no impacts to any EFH.

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[53] National Oceanic and Atmospheric Administration Fisheries. (2012) Essential Fish Habitat Mapper. http://sharpfin.nmfs.noaa.gov/website/EFH_Mapper/map.aspx. Last accessed March 21, 2012.

[54] Gulf of Mexico Fishery Management Council. (2005) Generic amendment number 3 for addressing essential fish habitat requirements, habitat areas of particular concern, and adverse effects of fishing in the following fishery management plans of the Gulf of Mexico: shrimp fishery of the Gulf of Mexico, United States Waters, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, coastal migratory pelagic resources (mackerels) in the Gulf of Mexico and South Atlantic, stone crab fishery of the Gulf of Mexico, spiny lobster in the Gulf of Mexico and South Atlantic, coral and coral reefs of the Gulf of Mexico. Tampa, Florida: Gulf of Mexico Fishery Management Council

4.20.3 What are the impacts to essential fish habitat as a result of the Build Alternatives?

Alternative 1 (Western Alignment + North Alignment "A")

Lac des Allemands is an EFH for coastal migratory pelagic fishes, red drum, reef fishes, and shrimp. Lac des Allemands is located on the eastern edge of the study area. *Alternative 1 (Western Alignment + North Alignment "A")* is located approximately 5.6 miles from this EFH area. Due to this distance, this alternative is not anticipated to impact EFH.

Alternative 2 (Western Alignment + North Alignment "B")

One EFH, Lac des Allemands, is located within the study area. The northern portion of *Alternative 2 (Western Alignment + North Alignment "B")* is located approximately 3.5 miles to the west of this water body. Due to the distance between the EFH and this alternative, no direct impacts to the EFH are anticipated.

Alternative 3 (Central Alignment + North Alignment "A")

Lac des Allemands, an EFH for coastal migratory pelagic fishes, red drum, reef fishes, and shrimp, is located on the eastern edge of the study area. *Alternative 3 (Central Alignment + North Alignment "A")* is located approximately 5.6 miles from this EFH area. Due to this distance, this alternative is not anticipated to impact EFH.

Alternative 4 (Central Alignment + North Alignment "B")

One EFH, Lac des Allemands, is located within the study area, along the study area's eastern border. The northern portion of *Alternative 4 (Central Alignment + North Alignment "B")* is located approximately 3.5 miles to the west of this water body. Due to the distance between the EFH and this alternative, no direct impacts to the EFH are anticipated.

4.20.4 What indirect and cumulative impacts are anticipated?

Secondary and cumulative impacts to the EFH would be from changes in water quality as a result of the presence of the proposed northern portion of *Alternative 2 (Western Alignment + North Alignment "B")* and *Alternative 4 (Central Alignment + North Alignment "B")*. The northern portion of these two alternatives would be in closer proximity to the EFH and in previously undeveloped areas. Runoff from the northern portion of Alternative 2 and Alternative 4 and increased development will increase turbidity and increase nutrient loads in Lac des Allemands. These changes in water quality will adversely affect the health of the EFH. *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 4 (Central Alignment + North Alignment "B")* are not in close proximity and have developed areas between their alignments and the EFH.

4.21 WATER QUALITY

4.21.1 What are the characteristics of surface water within the study area?

Louisiana has multiple surface water quality issues involving pathogens, nutrient transport, pesticides, organic and inorganic chemicals, metals, trace elements, suspended sediment, eutrophication, and hypoxia. LDEQ is authorized to regulate and monitor water quality within the state (LA R.C.33: IX). To meet the requirements of the Clean Water Act of 1977, as amended (CWA), LDEQ has developed and implemented the Louisiana Water Quality Management Plan (LWQMP). LDEQ uses the LWQMP to implement the Surface Water Monitoring Program (SWMP), which collects and analyzes water samples throughout the state for 29 specific water quality parameters and fecal coliforms. In addition to the SWMP, LDEQ integrated a Non-Point Source

Management Plan (NPSMP) and a Total Maximum Daily Load (TMDL) program into the overall LWQMP.[55]

Surface water is an important environmental resource in Louisiana, specifically within the proposed study area where it serves as a drinking water source, primary and secondary recreation, fish and wildlife propagation, and agricultural waters for the area parishes. The surface waters within the proposed project corridor are currently impaired and mitigation of the suspected causes of those impairments is a federal requirement for LDEQ. Section 303(d) of the CWA and the EPA's Water Quality Planning and Management Regulations require states to develop TMDLs of pollutants for water bodies that are not supporting their designated uses (**Table 4.51**).

Table 4.51
List of Designated Uses for Surface Waters Within the Study Area

Stream Description	Designated Uses
Bayou Lafourche - from Donaldsonville to Intracoastal Waterway at Larose	A - Primary Contact Recreation; B - Secondary Contact Recreation; C - Fish and Wildlife Propagation; D - Drinking Water Supply
Lac Des Allemands	A - Primary Contact Recreation; B - Secondary Contact Recreation; C - Fish and Wildlife Propagation; G - Outstanding Natural Resource Waters
Lake Boeuf	A - Primary Contact Recreation; B - Secondary Contact Recreation; C - Fish and Wildlife Propagation
Bayou Boeuf, Halpin Canal, and Theriot Canal	A - Primary Contact Recreation; B - Secondary Contact Recreation; C - Fish and Wildlife Propagation; F - Agriculture
Bayou Verret, Bayou Chevreuil, Bayou Citamon, and Grand Bayou	A - Primary Contact Recreation; B - Secondary Contact Recreation; C - Fish and Wildlife Propagation; F - Agriculture
Bayou Terrebonne - from Thibodaux to Intracoastal Waterway in Houma	A - Primary Contact Recreation; B - Secondary Contact Recreation; C - Fish and Wildlife Propagation

The citizens of the local parishes also have goals to improve the surface water quality in the area. An example of the state and local interest in mitigation is the Bayou Lafourche Channel Improvement Project that is currently being developed and will help to improve water quality along the northern portion of Bayou Lafourche, in and around Donaldsonville, Louisiana. The Bayou Lafourche Fresh Water District (BLFWD) also organizes cleanup projects of Bayou Lafourche to help improve water quality. BLFWD was created in 1950 and is located in Thibodaux, Louisiana. BLFWD provides potable water to over 250,000 people in four parishes—Ascension, Assumption, Lafourche, and Terrebonne. Another important project was proposed in 2006 for the area parishes and included the construction of a weir system within BLFWD to help minimize saltwater intrusion. The status of the Manage Effluent project has not been determined. For the study area, it is evident that surface water quality is an important factor in evaluating the feasibility of all of the build alternatives being considered.

[55] LDEQ. http://www.deq.louisiana.gov/portal/Portals/0/planning/305b/2002/pdf/305b-3.pdf 2002. Last Accessed October 30, 2013.

During the initial Solicitation of Views, there were not a significant amount of comments from state or federal agencies regarding surface water quality. However, USFWS did express concern about placing fill material along the build alternatives and the potential for short- and long-term impacts to the biology and hydrology in the area. Specific areas of concern were Bayous Chevreuil, Citamon, Cutoff, Grand Coteau, Lafourche, Lassene, Grand, and the Rathborne Swamp.[56]

In 2004, LDEQ referenced the requirement to obtain a "Construction Stormwater General Permit" prior to beginning construction. LDEQ also noted in 2004 that Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, St. Mary, and Terrebonne Parishes are classified as attainment parishes with the NAAQS for all criteria pollutants.[57] Airborne pollutants can deposit back onto land and water bodies, sometimes at great distances from the source, and can be an important contributor to declining water quality. Pollutants in water bodies that may originate in part from atmospheric sources include nitrogen compounds, sulfur compounds, mercury, pesticides, and other toxics.[58]

A Water Quality Certification from LDEQ will be required during the U.S. Army Corps of Engineers (USACE) 404 permitting process. This permitting process will be implemented for the Preferred Alternative once selected.

The proposed project was originally presented as an additional route for citizens located in the south-central parishes of the state during hurricane evacuation events. The route was to provide a more direct access and connection to the system network servicing I-10 via LA 3127. Since the project was originally proposed, there has been an increased focus on the benefits the route will offer to the population growth in these same parishes.

The growth in the local populations not only provides a greater need for more transportation routes in the parishes, but also a need for additional drinking water sources in the area. Surface water is a critical drinking water source for these same citizens. Growth along new routes within the project corridor can introduce additional point and non-point source pollutants. There are existing permitted discharge point sources within the project corridor. Those point sources may be forced to relocate based on the Preferred Alternative. The majority of the existing point source dischargers within the study area are sanitary wastewater treatment facilities.

Highway runoff also has an impact on the surface water drinking quality within the area parishes and will have to be considered during this evaluation. Understanding and evaluating the surface water quality before and after the proposed project is an important factor for the feasibility of all of the build alternatives within the study area.

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[56] USFWS. United States Department of the Interior, Fish and Wildlife Service, Notice of Intent for Proposal to Construct the North-South Hurricane Evacuation Corridor (ER 04/430), July 2, 2004.

[57] LDEQ. State Project No. 700-99-0302; BH Project No. 76027-00; Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary Parishes Proposed Houma-Thibodaux to LA 3127 Connection (North-South Corridor/Hurricane Evacuation) EIS. July 6, 2004.

[58] EPA, "Air Pollution and Water Quality" http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/airdeposition_index.cfm. Last Accessed October 30, 2013.

4.21.2 What bodies of surface water are located within the study area?

The majority of the study area is located within the EPA-designated East Central Louisiana Coastal Watershed sub-basin and a small portion of the study area is located in the West Central Louisiana Coastal Watershed sub-basin. Surface waters are abundant in the study area and are composed of rivers, lakes, bayous, swamps, fresh marsh, and canals (irrigation, service, and drainage). The predominant water bodies in the study area consist of Bayou Chevreuil, Grand Bayou, Bayou Lafourche, Lac Des Allemands, Lake Boeuf, and Bayou Terrebonne, see **Figure 4-11**.

The Mississippi River provides the main source of potable water for this area of the state. The water is pumped down Bayou Lafourche, treated, and distributed to the public throughout the surrounding parishes. BLFWD is the responsible agency for providing water to the public in the study area.[59] Two surface water protection areas are located in BLFWD. Both of the protection areas are located at positions where they can offer the most protection to the water intake systems at the treatment plants.[60] Protection Area 1 is located in the northern portion of Bayou Lafourche within Thibodaux, Louisiana and Protection Area 2 is located in the southern portion of Bayou Lafourche, in close proximity to Raceland, Louisiana. These protection areas can be seen on Figure 4-11.

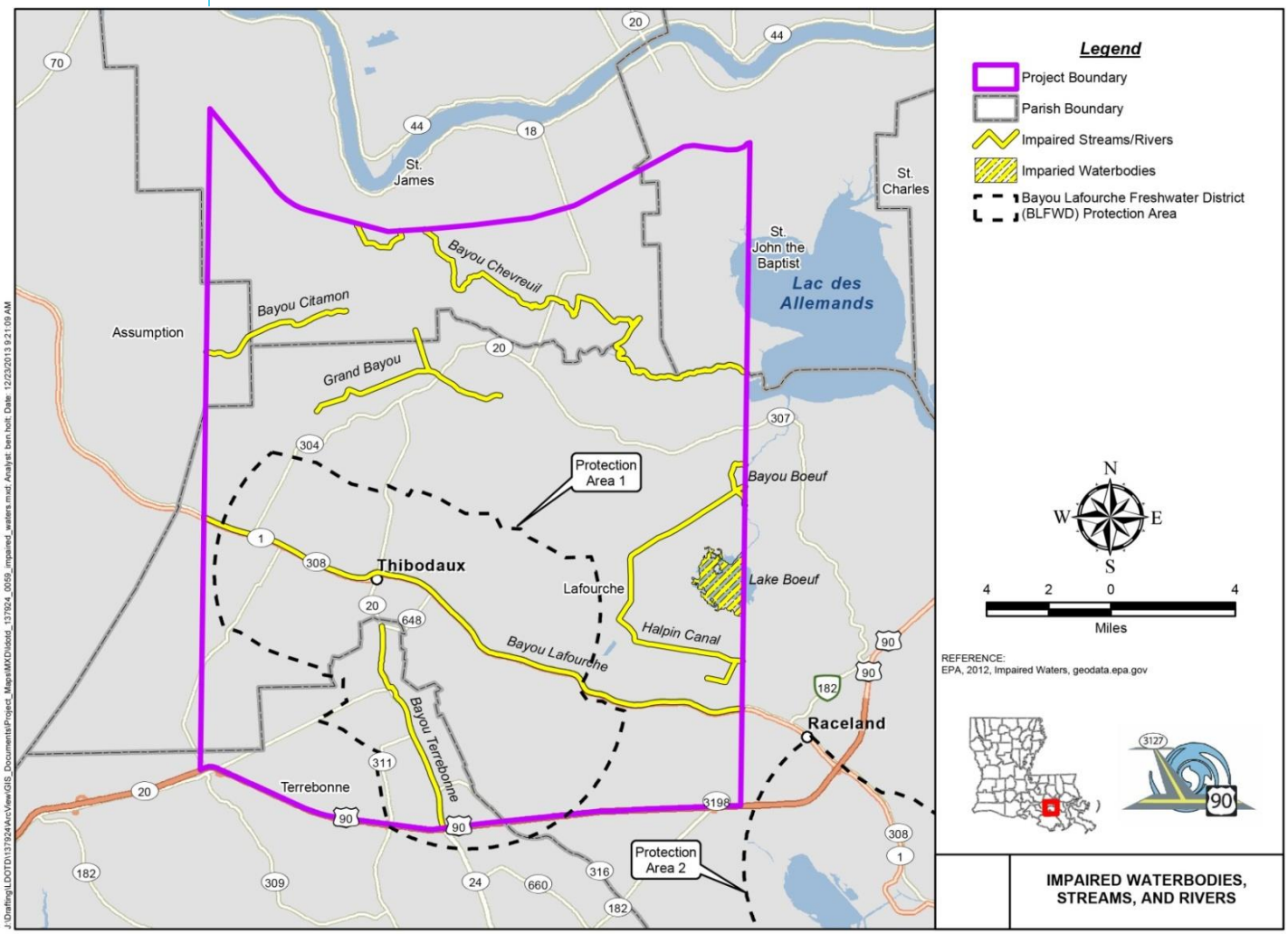
A former distributary of the Mississippi River, Bayou Lafourche flows from Donaldsonville, Louisiana to the Gulf of Mexico. Bayou Lafourche was dammed off from the Mississippi River at Donaldsonville, Louisiana in 1904. In 1955, BLFWD began pumping Mississippi River water into Bayou Lafourche to restore flow. The water was necessary for public, commercial, and industrial uses in the surrounding parishes along Bayou Lafourche.

Lac Des Allemands is a 14,720-acre freshwater lake on the northeastern edge of the study area and Lake Boeuf is a 6,100-acre freshwater lake on the southeastern edge. Bayou Terrebonne is the only predominant water body in the proposed study area that is in the West Central Louisiana Coastal Watershed. Other secondary water features within the study area include Bayous Verret, Chevreuil, Citamon, and Grand, and numerous drainage canals.

[59] The Cadmus Group, Inc. "TMDL Development for Dissolved Oxygen and Nutrient for Bayou Lafourche Subsegment (020401) in the Barataria Basin, Louisiana", 2005.

[60] Kilgen, Marilyn B. Dr. "Source Water Protection Program Assessment/Planning Project Final Report", September 30, 2009.

Figure 4-11
Impaired Waters



In accordance with sections 305(b) and 303(d) of the CWA, and EPA regulations, a biennial Integrated Water Quality Inventory Report is published by LDEQ. The Integrated Report consists of a Water Quality Inventory Report, 305(b), and an annual List of Impaired Water Bodies Report, 303(d). The 305(b) report summarizes water quality attainments, water body impairments, and potential sources of water body impairments. The 303(d) report identifies surface waters that are not meeting, or not expected to meet, water quality standards. The 2010 Integrated Water Quality Inventory Report was used to assess and summarize the water quality of water bodies located in the proposed study area. The 303(d) section of the 2010 Integrated Report was partially approved by EPA on November 17, 2011; EPA proposed to disapprove Louisiana's decision not to list three water bodies. Assessments of dissolved oxygen (DO) for three coastal subsegments (LA021102_00, LA070601_00, and LA120806_00) remain in question pending completion of EPA's decision document public notice process. **Table 4.52** describes the suspected impairments and sources of impairments by water body for surface waters within the study area.

Table 4.52
List of Suspected Impairments and Sources of Impairments by Water Body for Surface Waters Within the Study Area

Water Body Name	Suspected Causes of Impairment	Suspected Sources of Impairment
Bayou Lafourche-From Donaldsonville to Intracoastal Waterway at Larose	Non-native Aquatic Plants	Introduction of Non-native Organisms (accidental or intentional)
	Fecal Coliform	On-Site Treatment Systems (Septic Systems and Similar Decentralized Systems), Package Plant or Other Permitted Small Flows Discharges, and Unpermitted Discharge (Domestic Wastes)
Lac Des Allemands	Non-native Aquatic Plants	Introduction of Non-native Organisms (accidental or intentional)
Lake Boeuf	Nitrate/Nitrite (Nitrite + Nitrate as N)	Non-irrigated Crop Production
	Non-native Aquatic Plants	Introduction of Non-native Organisms (accidental or intentional)
	Dissolved Oxygen	Natural Sources, Non-irrigated Crop Production
	Total Phosphorus	Non-irrigated Crop Production
Bayou Boeuf, Halpin Canal, and Theriot Canal	Nitrate/Nitrite (Nitrite + Nitrate as N)	Industrial Point Source Discharge, Natural Sources, and Non-irrigated Crop Production
	Non-native Aquatic Plants	Introduction of Non-native Organisms (accidental or intentional)
	Dissolved Oxygen	Industrial Point Source Discharge, Non-irrigated Crop Production, Natural Sources
	Total Phosphorus	Industrial Point Source Discharge, Non-irrigated Crop Production, Natural Sources
Bayou Verret, Bayou Chevreuil, Bayou Citamon, and Grand Bayou	Chloride	Changes in Tidal Circulation/Flushing, Drought-related impacts, and Natural Sources
	Nitrate/Nitrite (Nitrite + Nitrate as N)	Natural Sources and Non-irrigated Crop Production
	Non-native Aquatic Plants	Introduction of Non-native Organisms (accidental or intentional)
	Dissolved Oxygen	Non-irrigated Crop Production, Natural Sources
	Total Phosphorus	Natural Sources and Non-irrigated Crop Production

Table 4.52
List of Suspected Impairments and Sources of Impairments by Water Body for Surface Waters Within the Study Area

Water Body Name	Suspected Causes of Impairment	Suspected Sources of Impairment
Bayou Terrebonne-From Thibodaux to Intracoastal Waterway in Houma	Fecal Coliform	Municipal (Urbanized High Density Area), On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Package Plant or Other Permitted Small Flows Discharges, Sanitary Sewer Overflows (Collection System Failures)
	Nitrate/Nitrite (Nitrite + Nitrate as N)	Municipal Point Source Discharges, On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Package Plant or Other Permitted Small Flows Discharges, Sanitary Sewer Overflows (Collection System Failures)
	Non-native Aquatic Plants	Introduction of Non-native Organisms (accidental or intentional)
	Dissolved Oxygen	Municipal (Urbanized High Density Area), On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Package Plant or Other Permitted Small Flows Discharges, Sanitary Sewer Overflows (Collection System Failures)
	Total Phosphorus	Municipal Point Source Discharges, On-site Treatment Systems (Septic Systems and Similar Decentralized Systems), Package Plant or Other Permitted Small Flows Discharges, Sanitary Sewer Overflows (Collection System Failures)

Source: 2010 Louisiana Water Quality Inventory Integrated Report, LDEQ

As indicated in Table 4.52, the suspected sources of impairment of the waterways within the study area do not include highway runoff, specifically. Highway runoff pollutants may include heavy metals, inorganic salts, aromatic hydrocarbons, and suspended solids. Ordinary operations and the wear and tear of our vehicles also result in the dropping of oil, grease, rust, hydrocarbons, rubber particles, and other solid materials on the highway surface.[61] Some of the pollutants found in highway runoff may potentially contribute to the existing causes of impairment to the water bodies within the study area. Best management practices (BMPs) should be used to reduce these potential impacts from highway runoff to the existing impaired water bodies.

Receiving surface water and groundwater are both susceptible to contamination from highway-related contaminants. Surface waters (streams, rivers, ponds, and lakes) are particularly vulnerable because they are directly exposed to contaminants released into the air and to direct discharges from point or non-point sources.[62] Groundwater is susceptible to these same contaminants over time, based on the depth to groundwater and the composition of the aquitard.

[61] USDOT FHWA, Environmental Technology Brief – FHWA-RD-98-079., http://www.fhwa.dot.gov/publications/research/infrastructure/structures/98079/runoff.cfm. June 8, 2011. Online Report Accessed January 23, 2012.

[62] USDOT FHWA, Environmental Technology Brief – FHWA-RD-98-079., http://www.fhwa.dot.gov/publications/research/infrastructure/structures/98079/runoff.cfm. June 8, 2011. Online Report Accessed January 23, 2012.

4.21.3 What are the impacts to surface water as a result of the No-build Alternative?

The No-build Alternative would result in no additional impacts to the surface water quality of the study area.

4.21.4 What are the impacts to surface water as a result of the Build Alternatives?

In order to effectively evaluate the build alternatives, it is necessary to quantify the impacts to surface water quality sensitive areas. For the purpose of this evaluation, surface water quality sensitive areas are water bodies that have been identified by LDEQ as being impaired and those that serve as drinking water sources for the area parishes. Impairments to both sensitive and non-sensitive areas within the proposed study area range from sediment to pathogens, such as from fecal coliform. Some impairments are more relevant to a highway construction project and the future impacts associated with the highway. Those will be the impairments more closely evaluated upon selection of a Preferred Alternative alignment. Bayou Lafourche serves as the main drinking water source for the area parishes; therefore, potential impacts (direct and indirect) to the bayou will also be considered.

Another factor that must be considered in the evaluation is the location of each alternative alignment as they traverse through wetland areas. Each alternative alignment will create certain construction and storm water runoff impacts that must be addressed through BMPs. Construction methods to limit impacts to the wetland area will have to be employed by the contractor; however, storm water runoff will need to be addressed in the design of the project.

Wetlands have a natural filtering system that can aid in removing and assimilating deposits from highway runoff. This filtering system can provide valuable water quality protection for downstream rivers, lakes, and estuaries. However, the quality of the wetlands, as waters of the U.S., must be protected.[63] Furthermore, the introduction of storm water runoff into wetlands can actually help preserve or enhance wetland areas by adding freshwater, silts, and nutrients to degrading emergent wetlands in the Barataria-Terrebonne Estuary.[64] The four different build alternatives have been evaluated to determine the assimilative capacity of these wetland areas and the BMPs that should be used to limit impacts to the wetlands and downstream impaired water bodies.

Each of the alternatives will have similar impacts on water quality within the study area. The more significant water quality impacts would be temporary and occur during the construction phase of the project. An erosion and sediment control plan in accordance with BMPs will be required during construction to limit these impacts as much as practicable. Design of a selected alternative may include features, such as roadside ditches, storm water ponds, and other BMPs to properly manage the long-term impacts from the new highway.

The degree of impact to wetlands is discussed in detail in other sections of the DEIS, but the assimilative capacity of the wetlands for the treatment of runoff from each route must be considered. The greater the area of wetland that runoff could be received in is assumed to equate to a greater assimilative capacity for the area and an overall benefit to the surface water quality for the area parishes. This assumption has not been verified through field collected data, but will

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[63] EPA. "Wetlands and Runoff", January 12, 2009.

[64] Landrum, Eddie. "Using Stormwater Discharges for Levee Protection and Wetlands Enhancement in the Barataria-Terrebonne Estuary, Louisiana". http://nsgl.gso.uri.edu/oresu/oresuc00002/pdffiles/papers/025.pdf. Last Accessed October 30, 2013.

be used as a preliminary screening tool for the build alternatives. Wetland acreages will not be included in the summary table because they are already discussed in Section 4.24. The total runoff anticipated from each route was considered in order to determine which route will have the potential to contribute more runoff on an annual basis. Also considered will be proximity downstream to the nearest impaired water body that will be associated with each route. Since all of the build alternatives cross Bayou Chevreuil, Grand Bayou, and Bayou Lafourche, the distance to those impaired water bodies will not be considered. **Table 4.53** provides a summary of the ratings for each build alternative, with consideration of the factors presented previously.

Table 4.53
Alternatives – Ranking Table*

	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Distance to Impaired Water Body (Miles)	0.42(4)	0.42(4)	2.66(1)	2.66(1)
Runoff Volume based on 25-Year 24-Hour Storm Event (Gallons)	18,173,258 (3)	19,715,038 (4)	16,024,686 (1)	17,602,375 (2)
Potential Relocated NPDES Facilities	10(4)	9(3)	3(1)	3(1)
Overall Ranking	3.67	3.67	1.00	1.33

* Rankings are in parentheses and based on each route versus the other routes. The rankings are 1 through 4, with 1 representing the highest rank and 4 representing the lowest rank. All three of the individual rankings were averaged to get the Overall Ranking for each build alternative.

Alternative 1 (Western Alignment + North Alignment "A")

The western portion of *Alternative 1 (Western Alignment + North Alignment "A")* would cross through the Barataria and Terrebonne basins, East and West Central Louisiana Coastal watersheds, and multiple named streams and water bodies (**Figure 4-12** and **Figure 4-13**). It also crosses two named water bodies that are recognized as being impaired—Grand Bayou and Bayou Lafourche. Grand Bayou is impaired for nutrients and Bayou Lafourche is impaired for nutrients and pathogens. Although pathogens and nutrients should not be an immediate impact from the proposed project, there is a potential for secondary and cumulative impacts for both. The secondary and cumulative impacts are described in more detail later in this section.

The western portion of this alternative is also directly upstream of Bayou Terrebonne, which is impaired for pathogens and nutrients. This portion follows approximately 6.8 miles of Bayou Terrebonne and is located on the northern section of both the West Central and East Central watersheds. Bayou Terrebonne is not a drinking water source but it does serve as a Primary Contact Recreation, Secondary Contact Recreation, and Fish and Wildlife Propagation designated area. Protection and mitigation of impacts to Bayou Terrebonne should be considered.

Figure 4-12
Basins with Alternatives

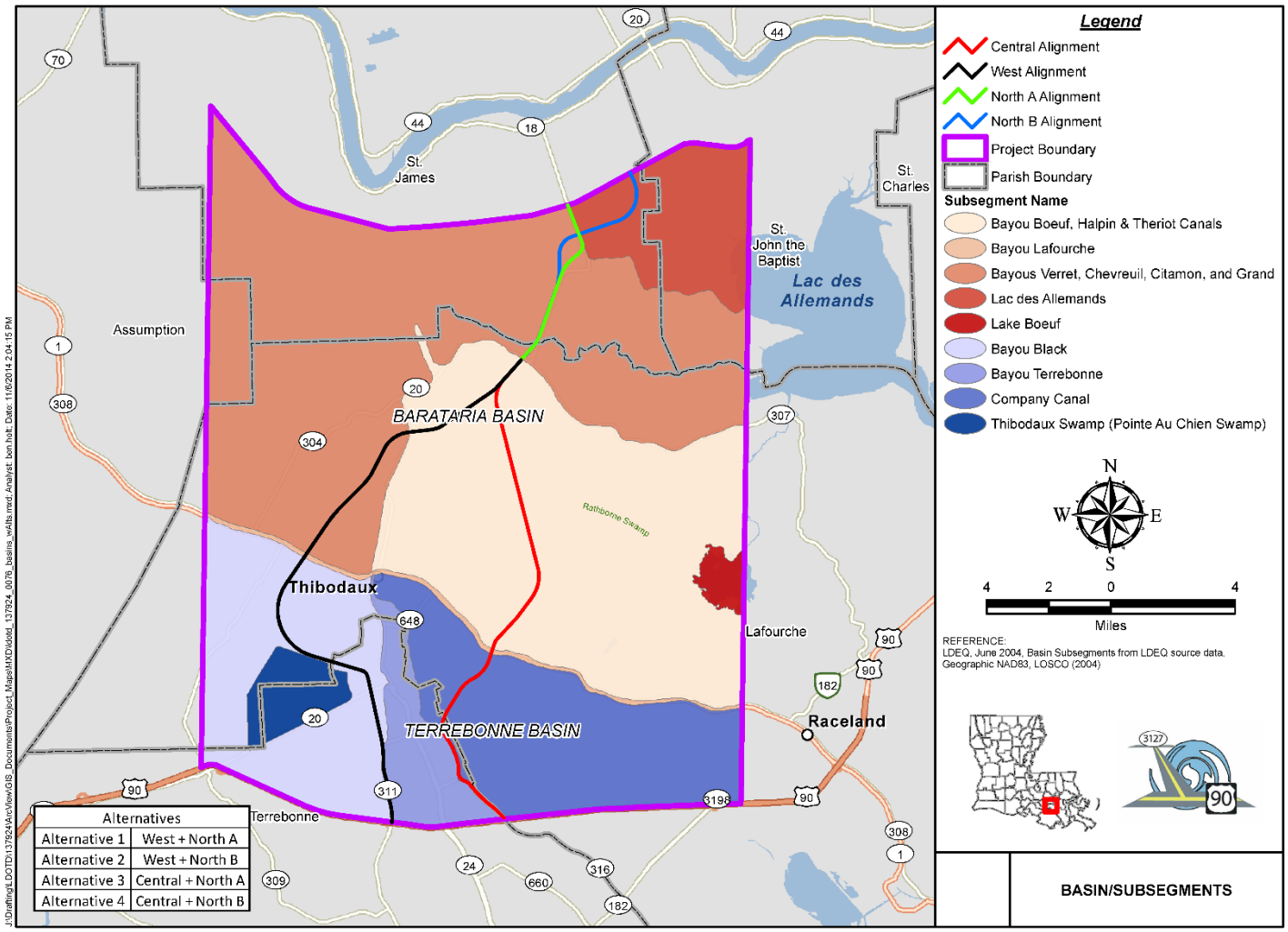
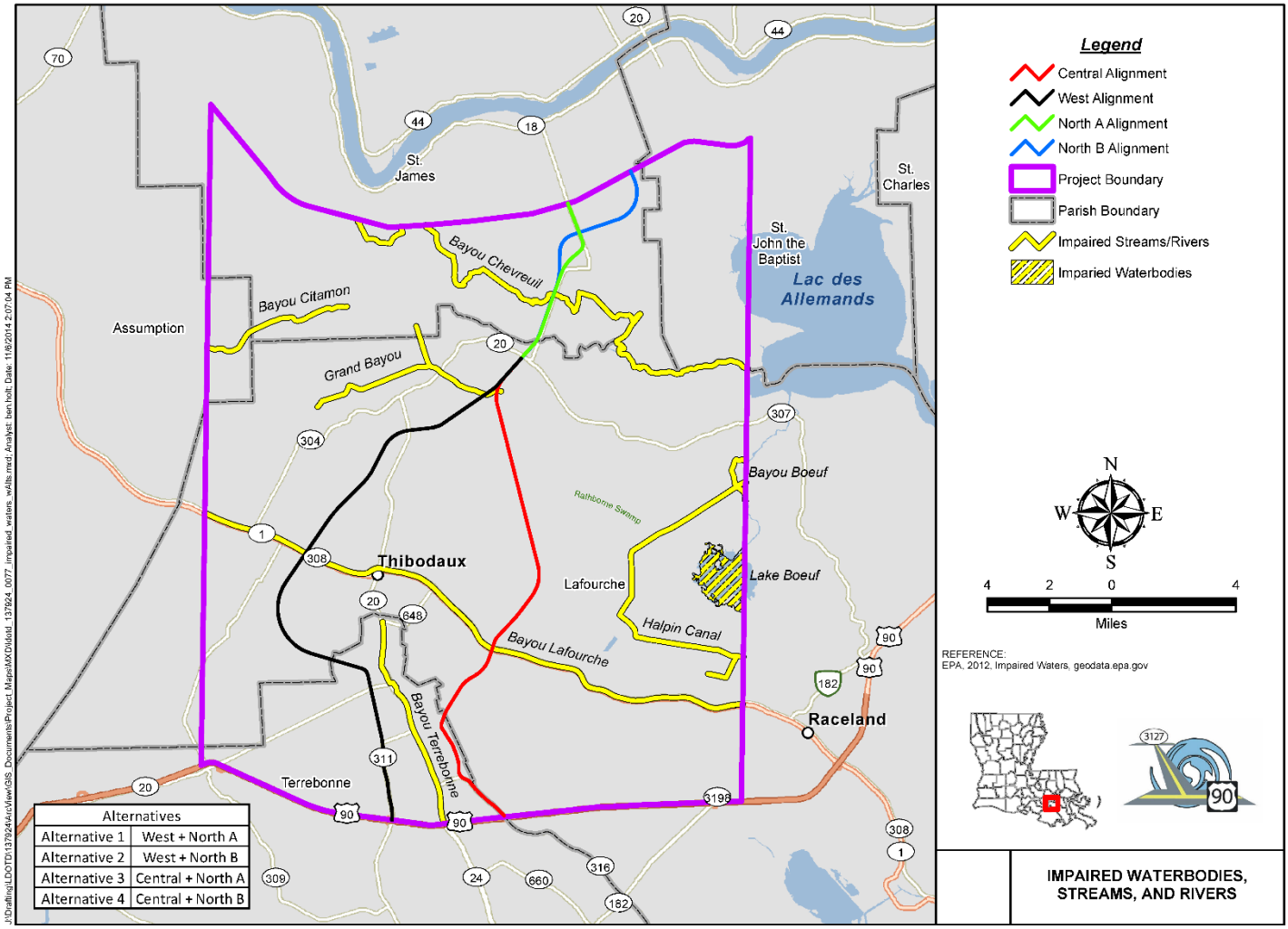


Figure 4-13
Impaired Waters with Alternatives



The western portion of *Alternative 1 (Western Alignment + North Alignment "A")* is located approximately 6 miles from the USGS coordinates for Rathborne Swamp. Through the Solicitations of Views process, USFWS expressed their concern for impacts to aquatic habitats in Rathborne Swamp. It has been reported that deposition of sediment in water bodies degrades water quality and severely impacts aquatic habitat.[65] These impacts from sediment would be mitigated by the use of sediment traps, silt fences, and sediment curtains. There is also a greater amount of wetland acreage between the western portion of this alternative and Rathborne Swamp in comparison to the central portion of *Alternative 3 (Central Alignment + North Alignment "A")* and *Alternative 4 (Central Alignment + North Alignment "B")*. As a previously stated assumption for this evaluation, the assimilative capacity of a wetland increases with volume. An increase in volume by depth or length is an understood treatment method for the settling of sediment and solids, typical within runoff.[66]

The northern portion of this alternative crosses one impaired water body: the Bayou Chevreuil. As shown in Table 4.52, Bayou Chevreuil is impaired for nutrients. The northern portion of *Alternative 1 (Western Alignment + North Alignment "A")* will have impacts during construction, but those impacts should not contribute to the existing impairment for Bayou Chevreuil. Following the construction of the northern portion of this alternative, any contribution to nutrient runoff would be small due to a majority of the North A Alignment being elevated. Any nutrient runoff would be more closely associated with a secondary or cumulative as compared to a direct impact.

Storm water runoff associated with the North A portion of this alternative is expected to be more noticeable than from the North B portion of *Alternative 2 (Western Alignment + North Alignment "B")* and *Alternative 4 (Central Alignment + North Alignment "B")* due to the topography of the area, but should not be significantly different from what is currently associated with LA 20. **Figure 4-14** shows that the topography for the area where the North A portion is located ranges from 5 to 15 feet for a majority of the route and the North B portion is predominantly 0 to 5 feet except where it crosses LA 20.

Alternative 2 (Western Alignment + North Alignment "B")

The western portion of *Alternative 2 (Western Alignment + North Alignment "B")* would cause similar impacts as described in *Alternative 1 (Western Alignment + North Alignment "A")*.

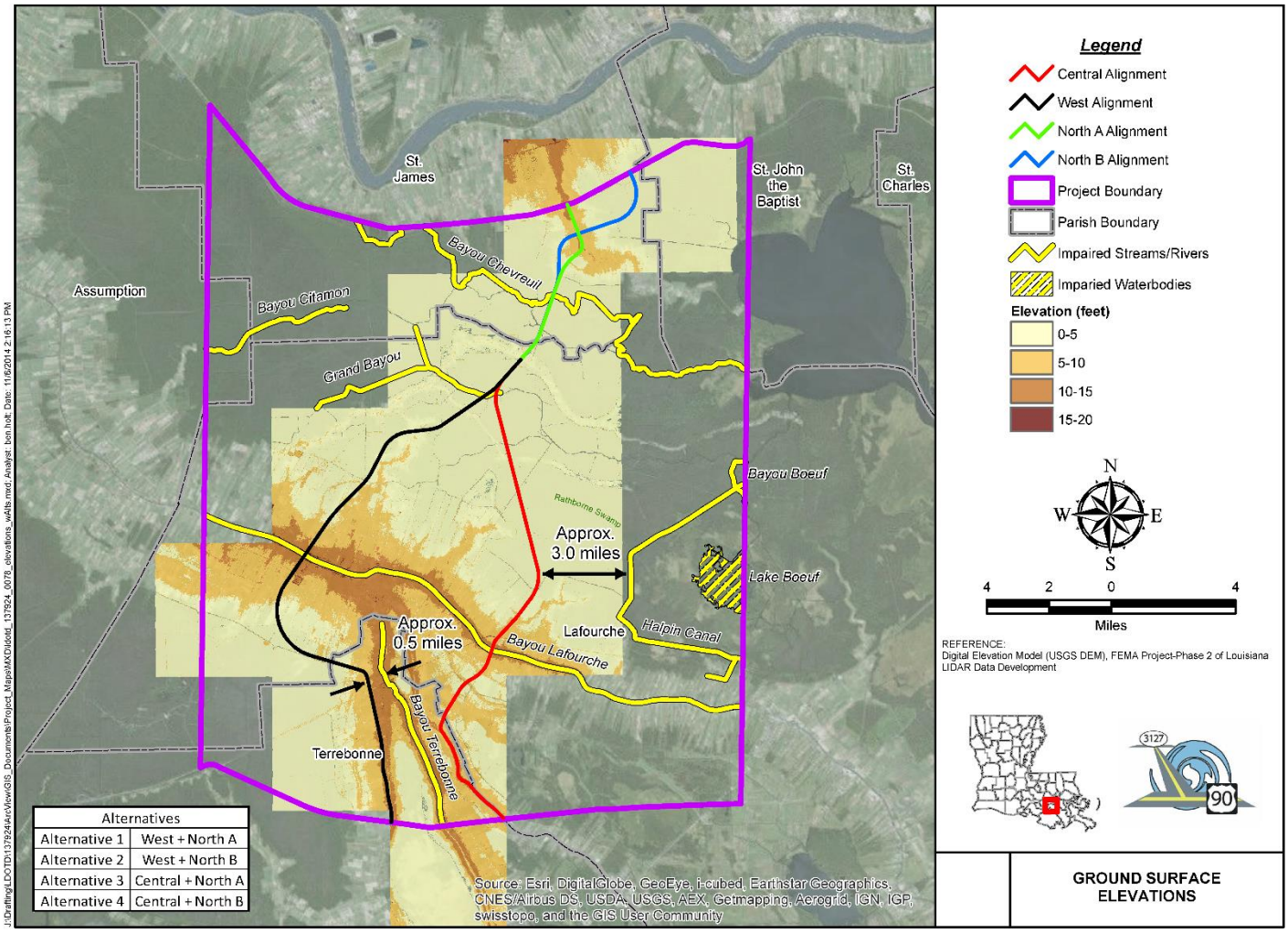
The northern portion of *Alternative 2 (Western Alignment + North Alignment "B")* would cross one impaired water body, which is Bayou Chevreuil. As shown in Table 4.52, Bayou Chevreuil is impaired for nutrients. This alternative will have impacts during construction but those impacts should not contribute to the existing impairment for Bayou Chevreuil.

Storm water runoff associated with the northern portion of this alternative is expected to be less noticeable than from the northern portion of *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 3 (Central Alignment + North Alignment "A")*, due to the area's topography. Figure 4-14 shows the topography for the area of the two proposed northern alignments (North A and North B).

[65] WSDOT. Washington Department of Transportation WSDOT, Water Quality, July 2003.

[66] Metcalf & Eddy. Wastewater Engineering – Treatment and Reuse, 2003.

Figure 4-14
Elevations with Alternatives



The North B alignment will have a more immediate impact on wetlands than the North A alignment. There is an estimated immediate impact to approximately 103 acres of Woody Wetlands with the North B alignment compared to a 62-acre impact to Woody Wetlands with the North A alignment. Both North A and North B are elevated through designated wetland areas. Wetland areas have been shown to provide assimilative qualities for treating runoff. The North B alignment would result in a greater temporary to permanent loss of these wetlands and their assimilative qualities. There would also be additional runoff in an area that was previously receiving none, other than sheet flow coming from Vacherie, Louisiana. It should be noted that natural wetlands are not intended for the treatment of storm water runoff and measures should be in place to mitigate the runoff to wetlands, but their treatment characteristics must be considered.

Alternative 3 (Central Alignment + North Alignment "A")

The central portion of *Alternative 3 (Central Alignment + North Alignment "A")* would cross through the Barataria and Terrebonne Basins, East and West Central Louisiana Coastal watersheds, and multiple named streams and water bodies (Figure 4-14). It also crosses two named water bodies that are recognized as being impaired—Grand Bayou and Bayou Lafourche. Grand Bayou is impaired for nutrients and Bayou Lafourche is impaired for nutrients and pathogens. As previously mentioned with the western portions of *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 2 (Western Alignment + North Alignment "B"),* pathogens should not be impacted from the proposed project; however, there is a potential for nutrients to be impacted.

The central portion of this alternative is not located in proximity to any other impaired water bodies that are downstream of any potential discharges during construction or following completion of the project. The central portion also runs parallel to Bayou Terrebonne for a short distance but it is located downstream of the bayou; therefore, any impacts related to the construction or operation of the central portion should not have an effect on Bayou Terrebonne.

The central portion of *Alternative 3 (Central Alignment + North Alignment "A")* is located approximately 3 miles from the USGS coordinates for Rathborne Swamp. Through the Solicitations of Views process, USFWS expressed their concern for impacts to aquatic habitats in Rathborne Swamp. It has been reported that deposition of sediment in water bodies degrades water quality and severely impacts aquatic habitat.[67] These impacts from sediment would be mitigated by the use of sediment traps, silt fences, and sediment curtains. The distance between the western portion of *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 2 (Western Alignment + North Alignment "B")* and the central portion of *Alternative 3 (Central Alignment + North Alignment "A")* to the Rathborne Swamp does show that the central portion may have more of an impact on the aquatic habitat due to sedimentation caused during construction.

The northern portion of this alternative would cause similar impacts as described in *Alternative 1 (Western Alignment + North Alignment "A")*.

Alternative 4 (Central Alignment + North Alignment "B")

The central portion of *Alternative 4 (Central Alignment + North Alignment "B")* would cause similar impacts as described in *Alternative 3 (Central Alignment + North Alignment "A")*.

The northern portion of *Alternative 4 (Central Alignment + North Alignment "B")* would cause similar impacts as described in *Alternative 2 (Western Alignment + North Alignment "B")*.

[67] WSDOT. Washington Department of Transportation WSDOT, Water Quality, July 2003.

4.21.5 What indirect and cumulative impacts are anticipated?

Each build alternative will have secondary and cumulative impacts following construction. Examples of secondary and cumulative impacts that may impact the surface water quality for this proposed project include the introduction of roadside herbicides for maintenance of the ROWs, introduction of litter and debris from vehicles, change in the land uses for the area, and population growth impact on water resources. These impacts will be evaluated based on their relevance with each build alternative.

There are measures that can be taken to mitigate the impacts from herbicides as well as decrease litter and debris from vehicles. Specifically, there are BMPs that exist for the application of herbicides and there are user restrictions and penalties that can be enforced against litterers. With herbicides there are specific application techniques that can be utilized to minimize contact with non-target species and bare ground. Training of employees can also be used to improve application techniques of herbicides.

Alternative 1 (Western Alignment + North Alignment "A")

The total mileage of *Alternative 1 (Western Alignment + North Alignment "A")* is approximately 26 miles. Of the 26 miles, approximately half is elevated and the remainder is proposed to be constructed at-grade. The at-grade sections will be constructed with roadside ditches and other amenities that will serve to filter contaminants from highway runoff. Elevated sections over wetlands and bayous could have an impact on those systems. However, it is anticipated that BMPs will be employed to provide treatment of highway runoff from elevated sections and to limit any long-term impacts to the surface water quality.

The predominant land use along *Alternative 1 (Western Alignment + North Alignment "A")* is 35 percent or 209 acres of Forested Wetlands and 41 percent or 244 acres of Cultivated Crops (**Figure 4-15**). The loss of wetlands would indicate a loss of surface water treatment for the area based on the assimilative quality of wetlands. It is assumed that the cultivated crops that would be lost through the selection of this alternative would have an immediate positive water quality impact for the basin sub-segment by the loss of cultivated crop land that introduces nutrients into the basin, which is one of the current impairments for the surrounding water bodies. For the purpose of this evaluation, it is assumed that the cultivated crops that are initially lost would be relocated at some later time and could be potentially moved closer to one of the impaired water bodies within the basin. *Alternative 1 (Western Alignment + North Alignment "A")* would result in the relocation of more cultivated cropland that could potentially introduce additional nutrients within the basin than what is anticipated with *Alternative 3 (Central Alignment + North Alignment "A"*). A summary of the potential impacts to land use that can indirectly impact water quality for the study area are presented in **Table 4.54**.

Figure 4-15
Land Use with Alternatives

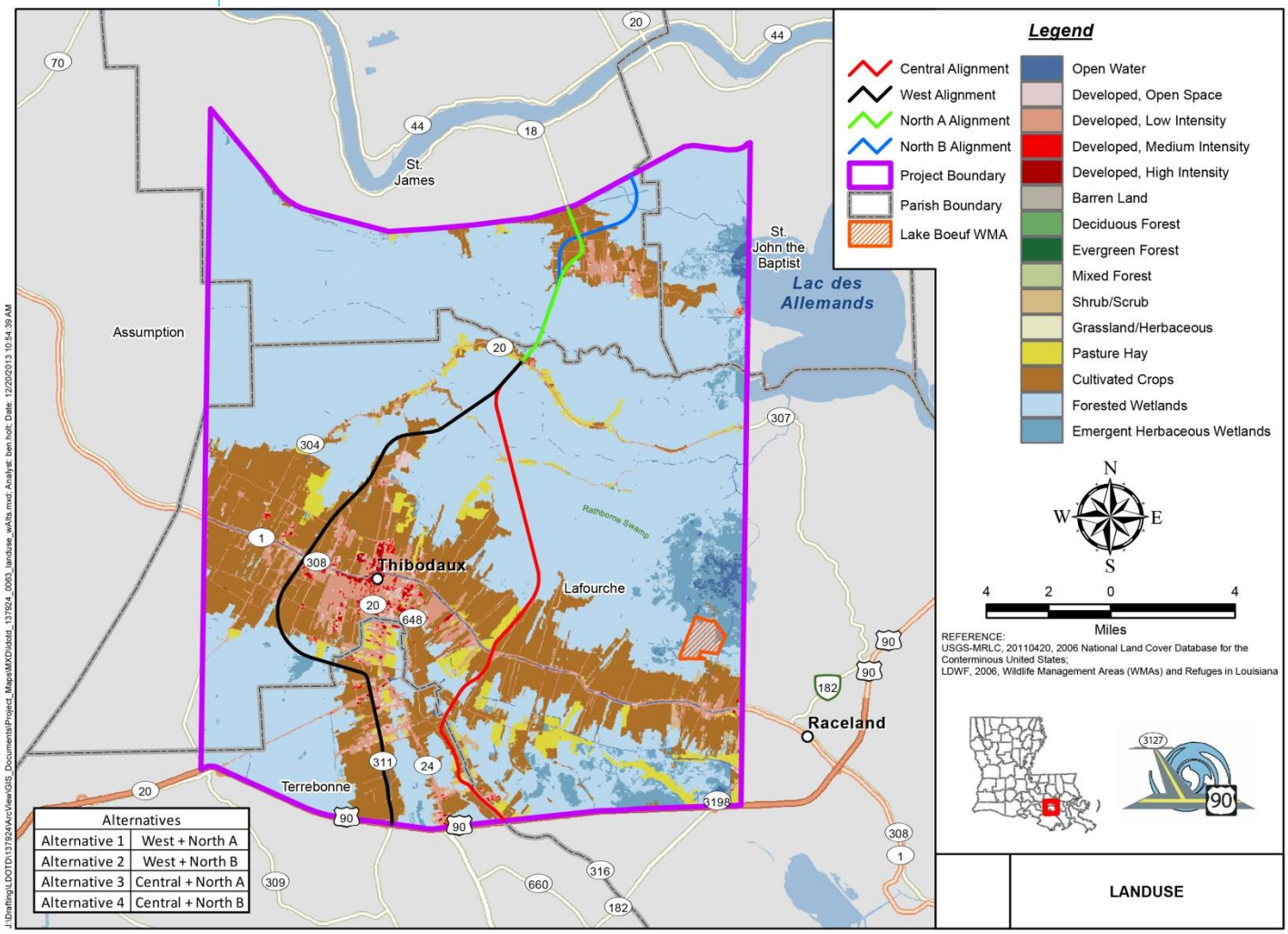


Table 4.54
Alternatives – Land Use Categories (Acreage)

Land Use	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Cultivated Crops	244.59	278.51	149.62	183.55
Developed, Low Intensity	108.66	89.05	55.99	36.38
Developed, Medium Intensity	3.22	1.11	2.31	0.20
Developed, High Intensity	2.61	0.98	1.64	N/A
Developed, Open Space	20.96	14.79	16.00	9.83
Open Water	1.19	1.50	2.59	2.89
Pasture/Hay	6.48	6.48	13.97	13.97
Grassland/ Herbaceous	0.2	0.20	0.53	0.53
Shrub/Scrub	0.51	0.49	0.02	N/A
Emergent Herbaceous Wetlands	0.9	1.65	0.87	1.62
Forested Wetlands	209.39	250.29	261.63	302.53
Total	**598.71**	**645.05**	**505.17**	**551.50**

Alternative 1 (Western Alignment + North Alignment "A") includes approximately 13 miles of highway that are un-elevated and 13 miles that are elevated. This alternative is anticipated to see some growth along the un-elevated portions from residential or commercial development. These new developments can potentially contribute to additional surface water runoff by the addition of nutrients from the fertilizers used on resident's yards, runoff from commercial parking lots, and sanitary discharges from commercial or subdivision package plants.

Population growth and land use changes are not anticipated to be that great for the northern portion of this alternative since the majority of the new route would be following the existing Highway 20. However, the northern portion of this alternative (which is identical to the northern portion of *Alternative 3 (Central Alignment + North Alignment "A")* is primarily positioned within the highest elevated area when compared with the northern portions of *Alternative 2 (Western Alignment + North Alignment "B")* and *Alternative 4 (Central Alignment + North Alignment "B")*. Therefore, any impacts from construction runoff or operational runoff would be more noticeable over a longer term.

Alternative 2 (Western Alignment + North Alignment "B")

The total mileage of *Alternative 2 (Western Alignment + North Alignment "B")* is approximately 28 miles. Of the 28 miles, there are 13.6 miles that are un-elevated and will require roadside herbicide maintenance. *Alternative 2 (Western Alignment + North Alignment "B")* includes approximately 14.6 miles of elevated highway.

Alternative 2 (Western Alignment + North Alignment "B") is expected to have more of an impact on the hydrology within the study area than *Alternative 4 (Central Alignment + North Alignment "B")* based on a comparison of the elevated portions versus un-elevated portions of each route.

The predominant land use along this alternative is 39 percent or 250 acres of Forested Wetlands and 43 percent or 278 acres of Cultivated Crops (Figure 4-15). When compared with *Alternative 4 (Central Alignment + North Alignment "B")*, the loss of wetlands for *Alternative 2 (Western Alignment + North Alignment "B")* would be less significant and there would be more cultivated cropland relocated as a result of the selection of *Alternative 2 (Western Alignment + North Alignment "B")*, which would have a positive impact on water quality. The impact to Forested Wetlands would be lower with this alternative, so there is expected to be more capacity for surface water runoff treatment through assimilation if this alternative is selected.

Similarly to *Alternative 1 (Western Alignment + North Alignment "A")*, *Alternative 2 (Western Alignment + North Alignment "B")* should see some growth along the un-elevated portions from residential or commercial development. Those new developments will also potentially contribute to the nutrient and pathogen impairments found in the local water bodies. There is more un-elevated highway associated with *Alternative 2 (Western Alignment + North Alignment "B")* when compared to *Alternative 4 (Central Alignment + North Alignment "B")*; therefore, the magnitude of runoff from new developments would be greater.

The northern portion of this alternative (which is identical to the northern portion of *Alternative 4 [Central Alignment + North Alignment "B"]*) is expected to result in greater potential nearby land use changes than the northern portions of *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 3 (Central Alignment + North Alignment "A")*. The northern portion of *Alternative 2 (Western Alignment + North Alignment "B")* traverses an area that is currently less populated than the northern portions of *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 3 (Central Alignment + North Alignment "B")*, which means that there would be more of a potential for new residential and commercial development along the un-elevated portions of highway for that area, and this will increase the runoff characteristics for the area. Additional discharges would contribute to the nutrient and pathogen impairments within the project area.

Alternative 3 (Central Alignment + North Alignment "A")

The total mileage of *Alternative 3 (Central Alignment + North Alignment "A")* is nearly 23 miles. Of the 23 miles, there are approximately 8.4 miles that are un-elevated and will require roadside herbicide maintenance. *Alternative 3 (Central Alignment + North Alignment "A")* includes approximately 14.3 miles of elevated highway.

When compared to *Alternative 1 (Western Alignment + North Alignment "A")*, *Alternative 3 (Central Alignment + North Alignment "A")* is expected to have less of an impact on the hydrology within the study area based on the amount of elevated portions versus at-grade portions for each route. *Alternative 3 (Central Alignment + North Alignment "A")* has almost 5 miles less of at-grade construction than *Alternative 1 (Western Alignment + North Alignment "A")* and also has the least amount of at-grade construction of all of the four build alternatives.

The predominant land use along *Alternative 3 (Central Alignment + North Alignment "A")* is 52 percent or 262 acres of Forested Wetlands and 29 percent or 150 acres of Cultivated Crops (Figure 4-15). When compared with *Alternative 1 (Western Alignment + North Alignment "A")*, the loss of wetlands for this alternative would be more significant and there would be less cultivated cropland relocated as a result of its selection. The highway will be elevated for each route within the wetland areas, but the initial impact of the construction project would not allow for the Forested Wetlands to completely reestablish following construction. Loss of wetlands and their assimilative water treatment qualities for runoff would be a cumulative impact to water quality for the area over time.

Alternative 3 (Central Alignment + North Alignment "A") is expected to see some growth along the un-elevated portions from residential or commercial development that will potentially contribute to the nutrient and pathogen impairments found in the new local water bodies. However, there is more elevated highway associated with this alternative than with *Alternative 1 (Western Alignment + North Alignment "A")*; therefore, the magnitude of runoff from new developments should be less.

As mentioned already, the northern portion of this alternative will be following the existing Highway 20, and therefore population growth and development is anticipated to be low. In turn, runoff characteristics are also expected to be low. However, the northern portion of this

alternative is at a higher elevation than *Alternative 2 (Western Alignment + North Alignment "B")* and *Alternative 4 (Central Alignment + North Alignment "B")*, and therefore any impacts from construction runoff or operational runoff would be more noticeable over a longer time period.

Alternative 4 (Central Alignment + North Alignment "B")

The total mileage of Alternative 4 (Central *Alignment + North Alignment "*B") is nearly 25 miles. Of the 25 miles, there are approximately 9.0 miles that are un-elevated and will require roadside herbicide maintenance. Alternative 4 (Central *Alignment + North Alignment "*B") includes approximately 15.9 miles of elevated highway.

Alternative 4 (Central Alignment + North Alignment "B") is expected to have less of an impact on the hydrology within the study area than *Alternative 2 (Western Alignment + North Alignment "B")* when comparing the amount of elevated versus un-elevated portions of each route. *Alternative 4 (Central Alignment + North Alignment "B")* has approximately 1 mile more of elevated roadway length and almost 5 miles less of at-grade construction.

The predominant land use along *Alternative 4 (Central Alignment + North Alignment "B")* is 55 percent or 303 acres of Forested Wetlands and 33 percent or 184 acres of Cultivated Crops (Figure 4-15). This alternative has the most impacts to wetlands out of all four build alternatives. However, it also has the longest length of elevated roadway sections. The loss of wetlands would indicate a loss of surface water treatment for the area based on the assimilative quality of wetlands. The impact on water quality would be more positive with *Alternative 2(Western Alignment + North Alignment "B")* rather than with *Alternative 4 (Central Alignment + North Alignment "B")*, due to the higher number of cultivated cropland relocations.

Some potential new development is expected along the at-grade portions of *Alternative 4 (Central Alignment + North Alignment "B")*, which would increase runoff. The northern portion of *Alternative 4 (Central Alignment + North Alignment "B")* (which is identical to the northern portion of *Alternative 2 [Western Alignment + North Alignment "B"]*) is expected to have a high amount of nearby land use changes. More initial wetland areas would be removed with the introduction of the northern portion of this alternative, which would ultimately lead to cumulative impacts to water quality over time due to the loss of wetlands and their assimilative water treatment qualities for runoff.

4.22 GROUNDWATER

4.22.1 What are the groundwater characteristics within the study area?

Groundwater is an important environmental resource in Louisiana. Groundwater is the primary source of drinking water for 61 percent of Louisiana's residents. Of this 61 percent, 12 percent use domestic wells and 49 percent rely on public water supplies. Louisiana has a Groundwater Advisory Group that is comprised of environmental professionals representing private, federal, state, and local agencies dealing with water resources in Louisiana.[68] However, groundwater is not as critical of a resource in the proposed study area due to saltwater intrusion.

During the Solicitation of Views process, there were no significant state or federal agency comments regarding the groundwater quality within the study area. LDEQ did state that "all precautions should be observed to protect the groundwater of the region."

[68] LDEQ. http://www.deq.louisiana.gov/portal/DIVISIONS/WaterQualityAssessment/AquiferEvaluationandProtection/ProtectingLouisianasGroundWater.aspx. May 2, 2006. Online Report Accessed January 23, 2012.

A complete groundwater quality assessment is not necessary for this portion of the project. The quality of the surface waters has a more immediate impact on the residences of the area parishes. The general soil types for the study area consist of poorly to very poorly drained loamy and clayey soils near natural levees, swamps, and marshes. The depth to water in the study area ranges from 0.5 to 2 feet.[69] As long as the surface water quality is adequately evaluated, the groundwater quality should benefit from those same areas of concern. The major difference between the groundwater and surface water in the study area is that the groundwater is not a significant direct drinking water source for the area parishes.

According to the 2005 USGS publication, *Water Use in Louisiana*, groundwater withdrawals amounted to 14.96 million gallons per day (mgd) in Assumption Parish, 13.71 mgd in Lafourche Parish, 22.63 mgd in St. James Parish, 13.31 mgd in St. John the Baptist Parish, and 1.50 mgd in Terrebonne Parish. In 2005, 95 percent of groundwater withdrawals in Assumption Parish and 72 percent of groundwater withdrawals in St. John Parish were for industrial use. Ninety-nine (99) percent of groundwater withdrawals in Lafourche Parish, 87 percent of groundwater withdrawals in St. James Parish, and 82 percent of groundwater withdrawals in Terrebonne Parish were for aquaculture purposes. Twenty-eight (28) percent of groundwater withdrawals in St. John the Baptist were for public supply. Livestock watering, rural domestic purposes, and general irrigation make up remaining measurable groundwater withdrawals in Assumption and Lafourche Parishes.[70]

4.22.2 What groundwater sources are located within the study area?

There are no sole source aquifers located within any of the build alternatives under consideration. The *USGS Ground Water Atlas of the United States* indicates that the only aquifer system in the study area is the Coastal Lowlands aquifer system, which is comprised of five regional aquifers.[71] Deposits of the Coastal Lowland system thicken toward the Gulf of Mexico and are composed of heterogeneous, unconsolidated to poorly consolidated sand, silt, and clay. Recharge to the aquifer system occurs primarily through precipitation and occurs at the greatest volume when the area is topographically high.[72] Groundwater quality ranges from fresh to saline in the shallow aquifers of Lafourche, St. James, and Terrebonne Parishes. Groundwater does become predominantly saline to the southern part of the study area.

A review of water wells registered with the Louisiana Department of Natural Resources (LDNR), Office of Conservation indicated that there are six wells total within a 150-foot buffer of the build alternative centerlines. There are two active and three plugged and abandoned wells located within the western portion of *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 2 (Western Alignment + North Alignment "B")*, as shown in **Figure 4-16** below. There is one active well located within the northern portion of all four alternatives. The water well registration data file contains only wells registered with LDNR or formerly registered with LADOTD, Water Resources Section. It is possible additional wells have been drilled within the study area and have not been registered. Further analysis and field verification will be necessary upon selection of a Preferred Alternative.

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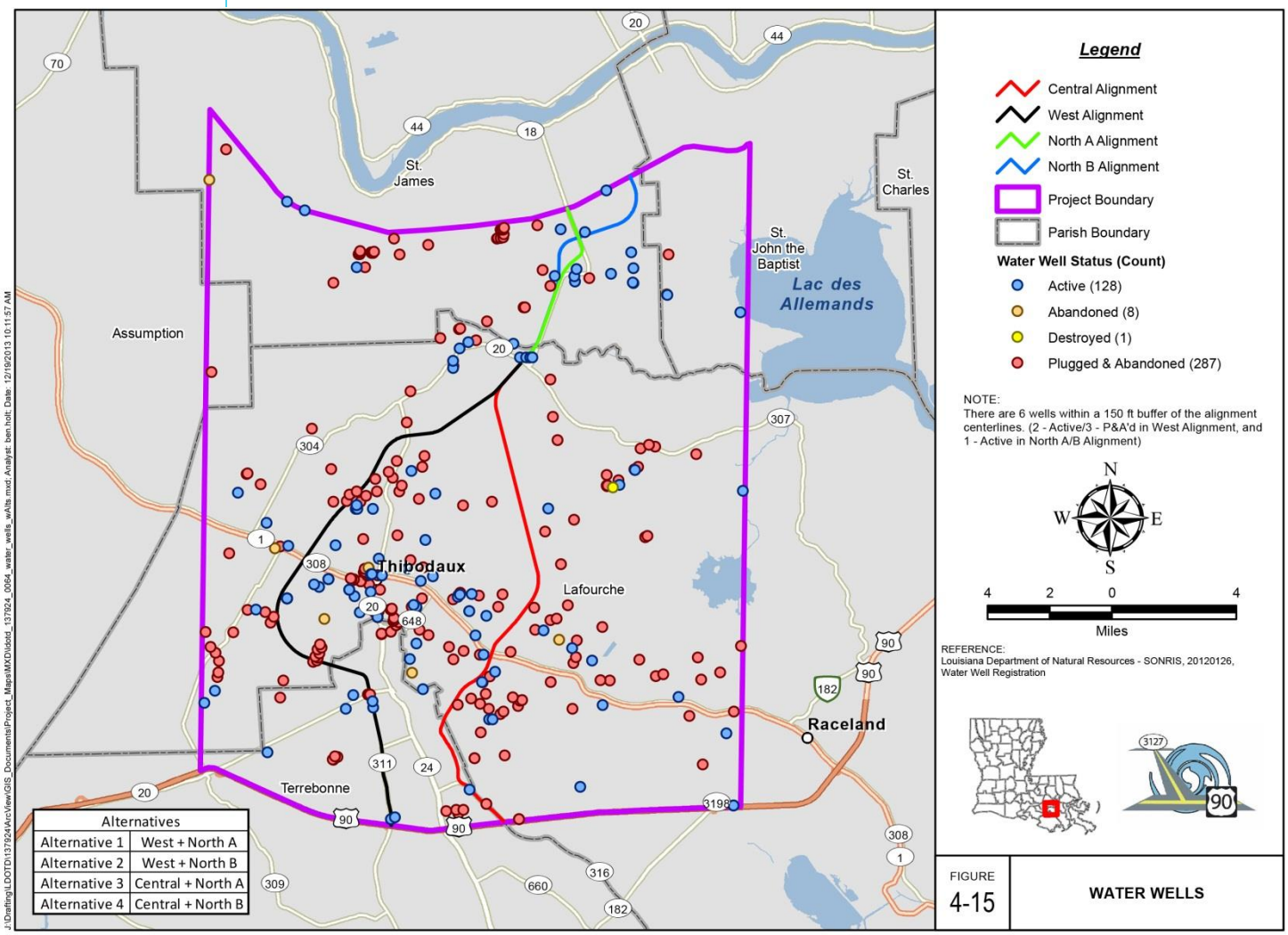
[69] United States Department of Agriculture, "Soil Survey of Lafourche Parish, Louisiana". 1984.

[70] Sargen, B. Pierre, USGS. "Water Use in Louisiana, 2005", 2007.

[71] USGS. United States Geological Survey, HA 730-F. http://pubs.usgs.gov/ha/ha730/ch_f/index.html. 1998. Last Accessed October 30, 2013.

[72] Blanchard, C. Troy. "Population Projections of Louisiana Parishes through 2030". 2009.

Figure 4-16
Water Wells with Alternatives



4.22.3 What are the impacts to groundwater as a result of the No-build Alternative?

The No-build Alternative would result in no additional impacts to the surface water quality of the study area.

4.22.4 What are the impacts to groundwater as a result of the Build Alternatives?

Alternative 1 (Western Alignment + North Alignment "A")

As previously indicated in Figure 4-16, there are active wells located within the study area for the western portion of *Alternative 1 (Western Alignment + North Alignment "A")*.

Groundwater is not a primary source of drinkable water for citizens located in Lafourche, St. James, and Terrebonne Parishes; therefore, any groundwater impacts would be insignificant to the feasibility of this alternative. Any immediate impacts to the groundwater quality in the area would be similar in nature to the surface water impacts previously mentioned in Section 4.21.

Alternative 2 (Western Alignment + North Alignment "B")

There are active wells located within the study area for the western portion of *Alternative 2 (Western Alignment + North Alignment "B").*

Groundwater is not a primary source of drinkable water for citizens located in Lafourche, St. James, and Terrebonne Parishes; therefore, any groundwater impacts would be insignificant to the feasibility of this alternative. Any immediate impacts to the groundwater quality in the area would be similar in nature to the surface water impacts previously discussed in Section 4.21.

Alternative 3 (Central Alignment + North Alignment "A")

There should be no active wells either impacted or displaced as a result of *Alternative 3 (Central Alignment + North Alignment "A")*. Impacts to the groundwater quality in the area would be similar to the potential surface water impacts discussed in Section 4.21.

Alternative 4 (Central Alignment + North Alignment "B")

There should be no active wells either impacted or displaced as a result of *Alternative 4 (Central Alignment + North Alignment "B")*. Impacts to the groundwater quality in the area would be similar to the potential surface water impacts discussed in Section 4.21.

4.22.5 What indirect and cumulative impacts are anticipated?

Any secondary and cumulative impacts to the groundwater quality in the area would be similar in nature to the surface water impacts previously mentioned. Groundwater is typically impacted by storm water runoff in the same way that surface waters would be impacted. Long-term impacts to groundwater would be insignificant. It is anticipated that most storm water runoff associated with each route would move through the project area without much infiltration due to the poorly drained soils that compose a majority of the study area.[73]

Although the project overlies the Coastal Lowlands aquifer system, there would be minimal noticeable impact to the aquifer from construction or operation of the build alternatives. Groundwater quality ranges from fresh to saline in the shallow aquifers of Lafourche, St. James, and Terrebonne Parishes. Groundwater does become predominantly saline to the southern part of the study area.

[73] United States Department of Agriculture, "Soil Survey of Lafourche Parish, Louisiana," 1984.

In areas where the water table is higher, the impacts to groundwater would be more immediate and the build-up over time could be significant to the aquifer. Depth to water in the study area is as shallow as 0.5 feet in some areas of the proposed project. For the areas where the water table is not shallow, the potential contaminants would be deposited in the soil material rather than be conveyed to the underlying aquifer. The proposed route will be predominantly elevated in areas where the water table is high.

Proper maintenance of equipment along with BMPs during construction activities and daily refueling would minimize the possibility of accidental spills of fuels or lubricants. Accidental spills could potentially impact groundwater quality; however, containment and cleanup measures would be implemented immediately if a spill occurs. Any spills of a reportable quantity would be immediately reported to the appropriate authorities to ensure proper cleanup.

The two active water wells identified near the western portion of *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 2 (Western Alignment + North Alignment "B")* and the one active water well in the northern portion of all four build alternatives may be impacted by project construction if those routes are selected. A determination of impact and the potential for relocation will be made during the design implementation phase of the project.

4.23 FLOODPLAINS

4.23.1 What is the 100-year floodplain?

A floodplain is an area of level land along the course of a river formed by the deposition of sediment during periodic floods. Floodplains are normally dry but may become inundated when a river or water body overflows its banks because of heavy precipitation from a storm event or from seasonal flooding. Executive Order 11988, issued in 1977, directs federal agencies to "avoid construction or management practices that would adversely affect floodplains unless there are: one, no practical alternatives, and two, the proposed action has been designed or modified to minimize harm to or within the floodplain." Highway projects administered, funded, or approved by FHWA are subject to EO 11988, and to 23 CFR 650; the FHWA regulation that controls the location and hydraulic design of highway encroachments on floodplains.

The National Flood Insurance Act was established in 1968 and created the National Flood Insurance Program (NFIP). The Federal Emergency Management Agency (FEMA) manages the NFIP and produces flood hazard maps as a component of the administration of the NFIP. The Flood Insurance Rate Maps (FIRM) for the study area were obtained from FEMA in GIS format, where available. For example, both St. James and St. John the Baptist Parishes have effective Digital Flood Insurance Rate Maps (DFIRM), which were utilized. Assumption, Lafourche, and Terrebonne Parishes all have Preliminary DFIRMs. Preliminary DFIRMs are presented to a community as part of the production or revision process. The community's comments are taken into consideration when FEMA produces the final product. Preliminary DFIRMs are never used for rating flood insurance, but may be used by the community for regulating development. They are the most up-to-date flood risk information until they are replaced by their Future DFIRM and eventually accepted as an Effective DFIRM.[74] The Preliminary DFIRM data is only available for viewing and not as individual GIS data. Assumption, Lafourche, and Terrebonne Parishes are currently going through the appeals process with FEMA in regards to their Preliminary DFIRMs. **Table 4.55** shows the FIRM status by Parish.

[74] Louisiana State University AgCenter Flood Map Portal. 2013. http://maps.lsuagcenter.com/floodmaps/. Last accessed on October 11, 2013.

Table 4.55
FIRM Status by Parish

Parish	Effective FIRM Date	Preliminary DFIRM Date	Effective DFIRM Date
Assumption	11/5/1997	7/28/2009	N/A
Lafourche	4/17/1985	7/30/2008	N/A
St. James	N/A	N/A	7/4/2011
St. John the Baptist	N/A	N/A	11/4/2010
Terrebonne	5/1/1985	7/30/2008	N/A

N/A: Not Applicable

Based on the FIRMs, it has been determined that approximately 76 percent (or 167,175 acres) of the study area is located within the 100-year floodplain. Flood events within the study area occur during heavy rainfall events that cause bi-directional flow in the many canals within the study area and ponding of rainwater on the relatively flat topography. Storm surge flooding may also occur during tropical storm events. **Figure 4-17** illustrates the FEMA FIRM for the study area. The Effective DFIRM data was used for St. James and St. John the Baptist Parishes and Effective FIRM GIS data was used to depict the floodplain for Assumption, Lafourche, and Terrebonne Parishes.

LADOTD commented in a letter dated July 7, 2004, as part of the Solicitation of Views process, that parts of the study area are located within a Special Flood Hazard Area (SFHA). This SFHA was established as a result of the Federal Insurance Administrator designating the area as being within the 100-year floodplain. The SFHA is the area where the NFIP's floodplain management regulations must be enforced by the local floodplain managers as a condition of participation in the NFIP and where mandatory purchase of flood insurance is required. LADOTD also advised that the occurrence of base flood inundation be considered during the development of the proposed project.

The FIRMs for the study area indicate that the 100-year floodplain zones that would be crossed by the build alternatives are zoned A and AE. Zone A flood zones do not have a calculated Base Flood Elevation (BFE). According to the FIRMs (Effective DFIRM and Preliminary DFIRM information was used to calculate BFE), BFE range from +2 feet North American Vertical Datum of 1988 (NAVD88) to +11 feet NAVD88 in the study area. Along the alternatives being considered, the maximum BFE for at-grade construction would be +6 feet NAVD88 (which is based upon the assumption of one foot of freeboard for road construction). The elevated portions of the build alternatives will need to be designed to an appropriate elevation that should also be above BFE.

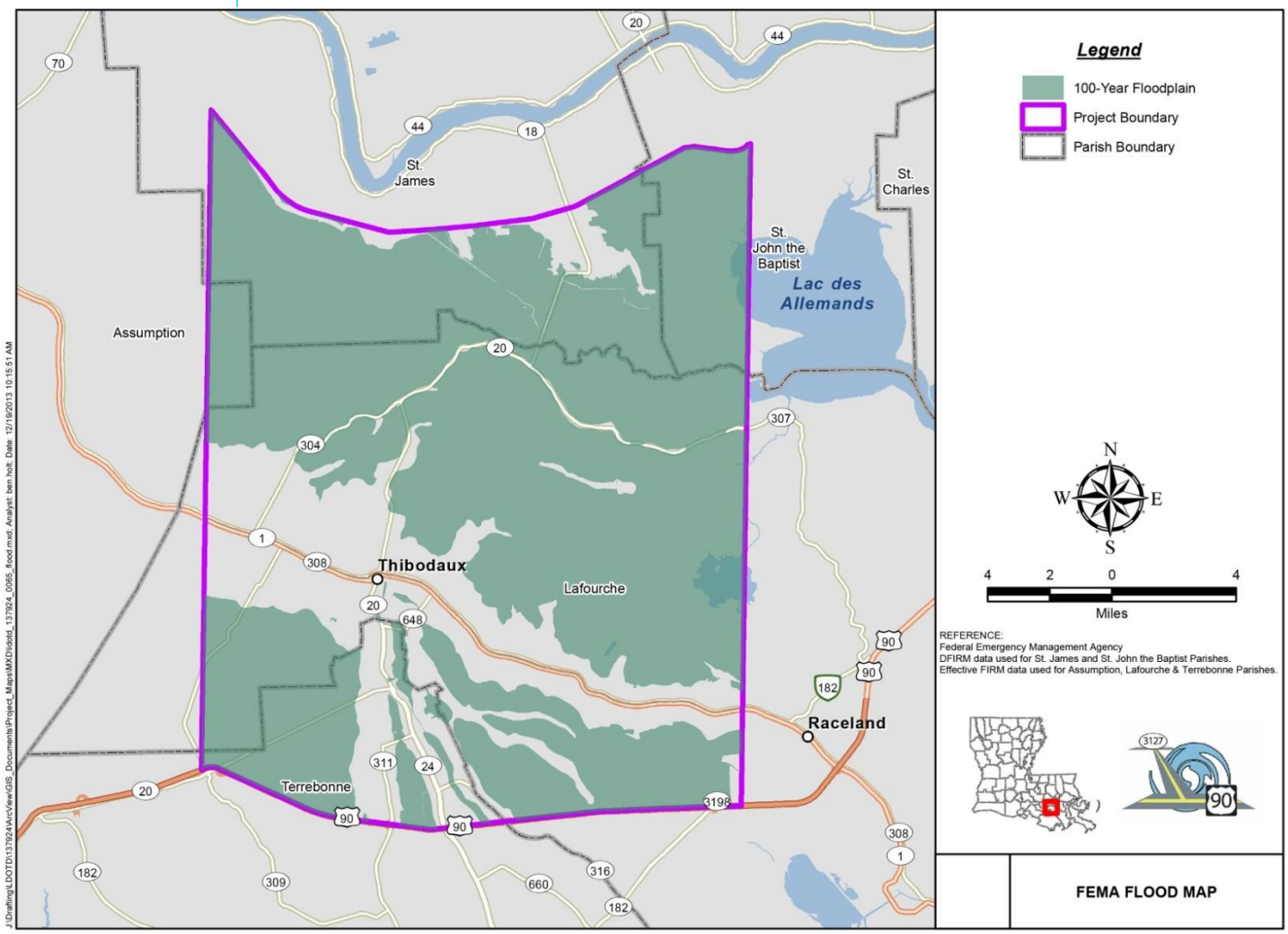
4.23.2 What is the floodway?

A regulated floodway is defined by FEMA as a watercourse and adjacent land areas that are reserved in order to discharge a base flood without increasing water elevations more than a designated height. A review of the Effective DFIRM and Preliminary DFIRMs indicates that there are no regulatory floodways within the study area.

4.23.3 What are the impacts to the floodplain as a result of the No-build Alternative?

The No-build Alternative would not result in decreasing the 100-year floodplain's capacity to absorb floodwaters. However, as described in the Purpose and Need section of this document, a secondary purpose of this proposed project will be to provide alternative evacuation routes during tropical storms and major flood events in the region.

Figure 4-17
FEMA Flood Map



4.23.4 What are the impacts to the floodplain as a result of the Build Alternatives?

Slightly more than half of the length of the build alternatives will be within the 100-year floodplain. **Table 4.56** provides the mileage for the build alternatives within and outside of the 100-year floodplain. **Table 4.57** provides the acreage within and outside the 100-year floodplain that would be crossed by each build alternative and indicates if the roadway would be elevated or at-grade.

Table 4.56
100-Year Floodplain Alternative Mileage

Alternatives	Within 100 Year Floodplain	Outside 100 Year Floodplain	Total Miles
Alternative 1 (Western Alignment + North Alignment "A")	13.3	12.8	26.1
Alternative 2 (Western Alignment + North Alignment "B")	15.6	12.6	28.2
Alternative 3 (Central Alignment + North Alignment "A")	13.4	9.3	22.7
Alternative 4 (Central Alignment + North Alignment "B")	15.8	9.1	24.9

Source: Figure 4-17 - FEMA Flood Map (Effective DFIRM GIS data used for St. James and St. John the Baptist Parishes; Effective FIRM GIS data used for Assumption, Lafourche, and Terrebonne Parishes)

Table 4.57
100-Year Floodplain Acreage

Alternatives	Within 100 Year Floodplain			Outside 100 Year Floodplain		
	Elevated	At Grade	Total	Elevated	At Grade	Total
Alternative 1 (Western Alignment + North Alignment "A")	247.0	47.6	294.6	38.7	264.5	**303.2**
Alternative 2 (Western Alignment + North Alignment "B")	286.4	60.4	346.8	33.3	265.1	**298.4**
Alternative 3 (Central Alignment + North Alignment "A")	265.9	27.6	293.5	45.5	165.2	**210.7**
Alternative 4 (Central Alignment + North Alignment "B")	305.3	40.4	345.7	40.8	165.8	**205.9**

Source: Figure 4-17 - FEMA Flood Map (Effective DFIRM GIS data used for St. James and St. John the Baptist Parishes; Effective FIRM GIS data used for Assumption, Lafourche and Terrebonne Parishes)

Several streams will be crossed by the proposed project. **Table 4.58** provides a list of named stream crossings proposed for each build alternative. A review of the Effective DFIRMs and Preliminary DFIRMs indicates that none of these streams are considered a regulatory floodway. The study area does not contain a regulated floodway that would be impacted by the proposed project (based upon review of Effective FIRMs, Effective DFIRMs, and Preliminary DFIRMs).

Table 4.58
Named Stream Crossings

Stream Name	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Bayou Lafourche	Yes	Yes	Yes	Yes
Bayou Boeuf	Yes	Yes	No	No
Bayou Blue	No	No	Yes	Yes
Grand Bayou	No	No	Yes	Yes
Cutoff Bayou	No	No	Yes	Yes
Hollywood Canal	No	No	Yes	Yes
Lepeans Canal	No	No	Yes	Yes
St. James Canal	No	No	Yes	Yes
Bayou Lassene	No	Yes	No	Yes
Chevreuil Bayou	Yes	Yes	Yes	Yes

Source: Houma-Thibodaux to LA 3127 Connection Preliminary Alternatives Exhibits - Line and Grade and Preliminary DFIRM data

Alternative 1 (Western Alignment + North Alignment "A")

More than 13 miles of the total 26.1 miles of *Alternative 1 (Western Alignment + North Alignment "A")* would be located within the 100-year floodplain, approximately 84 percent of which will have elevated construction.

The hydrology of the floodplain may be altered by the at-grade portions of this alternative. The elevated portions of the alternative will be built above BFE and will be designed to allow sufficient flow of flood waters beneath the proposed project highway.

Alternative 2 (Western Alignment + North Alignment "B")

Nearly 16 miles of the total 28.2 miles of *Alternative 2 (Western Alignment + North Alignment "B")* would be located within the 100-year floodplain, a majority of which (83 percent) will have elevated construction. This alternative would have the most 100-year floodplain acreage (nearly 347 acres) as well as the most at-grade construction (60 acres).

The hydrology of the floodplain may be altered by the at-grade portions of this alternative. The elevated portions of the alternative will be built above BFE and will be designed to allow sufficient flow of flood waters beneath the proposed project highway.

Alternative 3 (Central Alignment + North Alignment "A")

More than 13 miles of the total 22.7 miles of *Alternative 3 (Central Alignment + North Alignment "A")* would be located within the 100-year floodplain, 91 percent of which will have elevated construction. This alternative would have the fewest total acres within the 100-year floodplain, as well as having the fewest at-grade impacts. Only 27.6 acres of 100-year floodplain would be filled by at-grade construction of this alternative.

The hydrology of the floodplain may be altered by the at-grade portions of this alternative. The elevated portions of the alternative will be built above BFE and will be designed to allow sufficient flow of flood waters beneath the proposed project highway.

Alternative 4 (Central Alignment + North Alignment "B")

Almost 16 miles of the total 24.9 miles of *Alternative 4 (Central Alignment + North Alignment "B")* would be located within the 100-year floodplain, 88 percent of which will have elevated construction.

The hydrology of the floodplain may be altered by the at-grade portions of this alternative. The elevated portions of the alternative will be built above BFE and will be designed to allow sufficient flow of flood waters beneath the proposed project highway.

4.23.5 What indirect and cumulative impacts are anticipated?

Secondary development along the build alternatives could further alter the capacity of the 100-year floodplain to absorb major flood events. Secondary development as a result of the proposed project would occur mainly at new interchanges that occur within the 100-year floodplain. Currently, there are three interchanges proposed that meet this criteria. Floodplain managers will need to control and monitor development that would impact the 100-year floodplain and work to require compensatory treatment to mitigate impacts.

4.24 COASTAL ZONE

4.24.1 Is the study area within the Coastal Zone?

The Louisiana Coastal Zone Boundary was established in response to the federal Coastal Zone Management Act of 1972 by Act 361 of the 1978 Regular Session of the Louisiana Legislature. The Coastal Zone is managed by the LDNR, Coastal Management Division (LDNR-CMD) through the Louisiana Coastal Resources Program. LDNR-CMD regulates development activities and manages the resources of the Coastal Zone. Coastal Zone resources include wetlands, fisheries, oil and gas production, wildlife habitats, and coastal crops.[75] The wetlands within the Coastal Zone provide storm protection and wildlife habitat.[76] **Figure 4-18** shows that the entire study area is within the Coastal Zone. During the Solicitation of Views process, LDNR-CMD determined that the proposed project is of state concern and assigned the project Coastal Use Permit number P20040911, but authorization for the proposed project will not be granted until a complete application has been submitted to LDNR-CMD.

As mentioned above, the entire study area is within the Coastal Zone. The direct impacts to the coastal zone resource would be the fill or conversion of wetlands. **Table 4.59** shows the acreage of wetlands along the build alternatives.

Table 4.59
Wetland Acreage

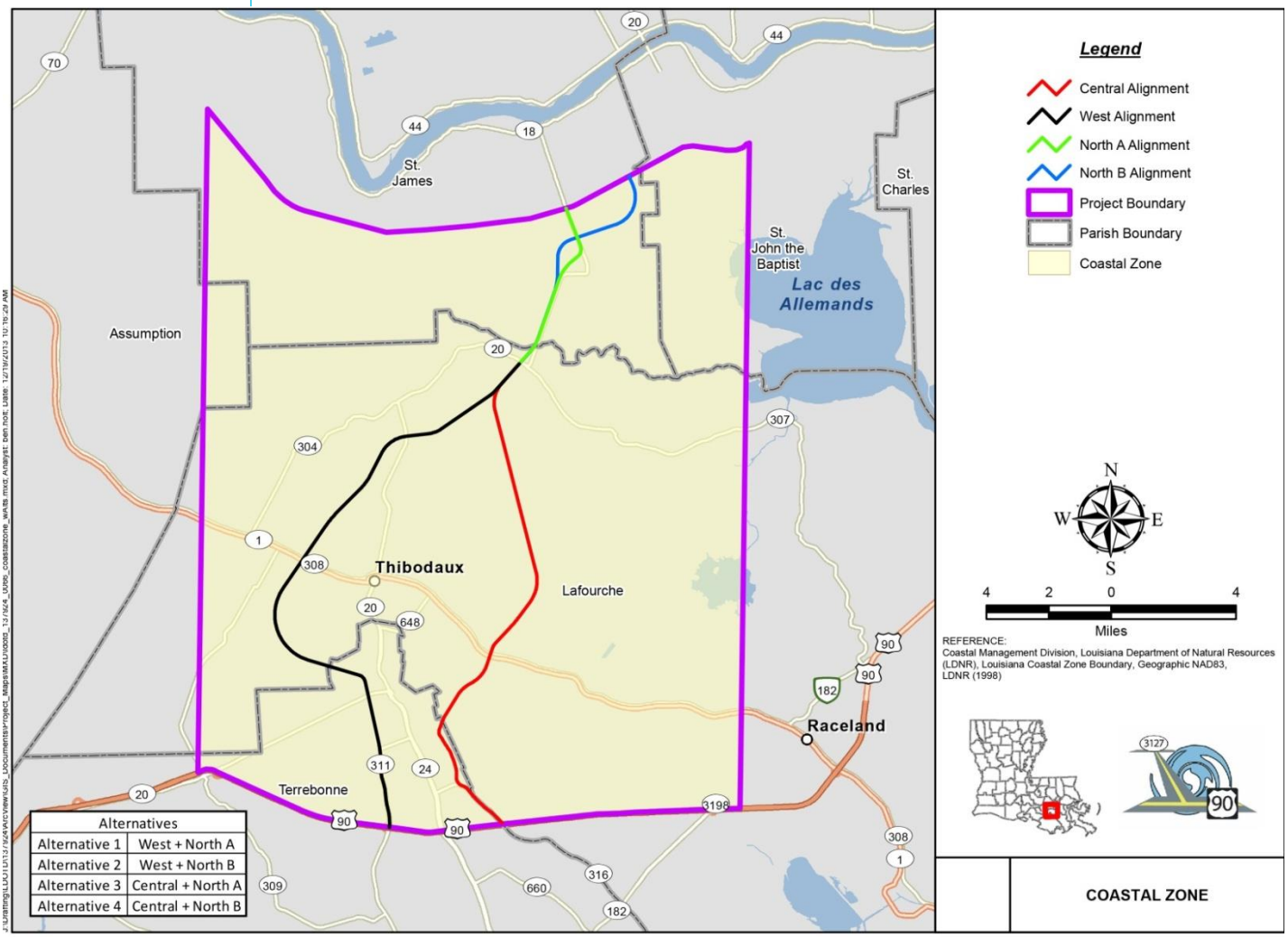
Wetland Habitat Type	Alternative 1 (Western Alignment + North Alignment A)		Alternative 2 (Western Alignment + North Alignment B)		Alternative 3 (Central Alignment + North Alignment A)		Alternative 4 Central Alignment + North Alignment B)	
	Elevated	At Grade	Elevated	At Grade	Elevated	At Grade	Elevated	At Grade
Freshwater Forested/Shrub Wetland	199.25	0.55	238.60	2.63	252.81	6.67	292.17	8.75
Riverine	0.94	N/A	0.95	N/A	0.97	N/A	0.97	N/A
Freshwater Pond	0.63	N/A	0.63	N/A	N/A	N/A	N/A	N/A
Lake	N/A	1.97	N/A	1.97	N/A	N/A	N/A	N/A
Total	**200.82**	**2.52**	**240.18**	**4.60**	**253.78**	**6.67**	**293.14**	**8.75**

Source: Figure 4-23 - NWI Wetlands

[75] Louisiana Department of Natural Resources. 2011. *A coastal user's guide to the Louisiana coastal resources program.* Baton Rouge, Louisiana: Louisiana Department of Natural Resources.

[76] Louisiana Department of Natural Resources Office of Coastal Management. 2010. *Defining Louisiana's coastal zone: a science based evaluation of the Louisiana coastal zone inland boundary.* Baton Rouge, Louisiana: Louisiana Department of Natural Resources.

Figure 4-18
Coastal Zone



4.24.2 Environmental consequences

No-build Alternative

The No-build Alternative would result in no wetland impacts.

Build Alternatives

Alternative 1 (Western Alignment + North Alignment "A") would fill over 2 acres of forested wetlands, while *Alternative 2 (Western Alignment + North Alignment "B")* would fill over 4 acres of forested wetlands, *Alternative 3 (Central Alignment + North Alignment "A")* would fill over 6 acres of forested wetlands, and *Alternative 4 (Central Alignment + North Alignment "B")* would fill almost 9 acres of forested wetlands. The elevated sections of the alternatives would convert forested wetlands to emergent wetlands because of shading effects. *Alternative 1 (Western Alignment + North Alignment "A")* would convert the fewest acres of forested wetlands to emergent wetlands, while *Alternative 4 (Central Alignment + North Alignment "B")* would convert the most. A more detailed discussion of the direct impacts to wetlands may be found in Section 4.23.2.

Secondary and cumulative impacts

Secondary and cumulative impacts from the Preferred Alternative would affect wetlands and coastal habitats downstream of the impacted wetlands. Secondary impacts from the Preferred Alternative would be nonpoint pollution from runoff entering wetlands located adjacent to the Preferred Alternative. Highway runoff pollutants may include heavy metals, inorganic salts, aromatic hydrocarbons, and suspended solids. An additional secondary impact would be alteration of hydrology downstream of the impacted wetlands along the Preferred Alternative. The loss of wetlands along the Preferred Alternative could permanently alter or sever the natural hydrology of the remaining wetlands. Cumulative impacts would be from secondary development of land now accessible via the Preferred Alternative.

4.25 WETLANDS

4.25.1 What methodology was used to identify wetlands within the study area?

Wetlands comprise a large portion of the overall study area. Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions" (40 CFR 230.3 and 33 CFR 328.3). Executive Order 11990 of May 1977 was enacted to protect and slow the loss of the nation's wetlands.

A preliminary wetland assessment was performed to evaluate the study area based on the guidance provided by the USACE Wetland Delineation Manual and the Atlantic and Gulf Coastal Plain Regional supplement.[77,78,79] The New Orleans District of the USACE has the sole authority to make the official determinations of wetlands or jurisdiction over property in the various parishes within the study area.

This preliminary assessment used historical aerial and satellite imagery, the National Wetlands Inventory (NWI) maps, individual parish NRCS Soil Surveys, the NRCS Web Soil Survey, USGS 7.5 minute topographical maps, site observations, and local knowledge to aid in the identification of potential jurisdictional wetlands and habitat quality ratings for wetlands.[80,81,82,83,84] The various habitat quality ratings include: high - undeveloped, relatively undisturbed, medium - disturbed but retaining some wetland function, low - affected by development, and agricultural/urban.

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[77] Federal Interagency Committee for Wetland Delineation. (1989). *Federal Manual for Identifying and Delineating Jurisdictional Wetlands, Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)* U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S. Department of Agriculture, Soil Conservation Service, Washington, D.C.

[78] U.S. Army Corps of Engineers (1987) Corps of Engineers Wetland Delineation Manual. Wetland Research Program Technical Report Y-87-1, Waterways Experiment Station, Environmental Laboratory, Vicksburg, MS, January 1987.

[79] U.S. Army Corps of Engineers (2008). *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region.* Engineer Research and Development Center, Environmental Laboratory, ERDC/EL TR-08-30, Vicksburg, Mississippi, October 2008.

[80] U.S. Department of Agriculture. (2007). Soil Survey of Assumption Parish, Louisiana.

[81] U.S. Department of Agriculture. (2007). Soil Survey of Lafourche Parish, Louisiana.

[82] U.S. Department of Agriculture. (2007). Soil Survey of St. James Parish, Louisiana.

[83] U.S. Department of Agriculture. (2007). Soil Survey of Terrebonne Parish, Louisiana.

[84] U.S. Department of Agriculture – Natural Resources Conservation Service (2010). National Cooperative Soil Survey, Web Soil Survey 2.1.

Wetlands within the study area are generally interrelated with geomorphic positioning associated with a riverine distributary depositional environment. The entire study area lies within the floodplain of the Mississippi River. Riverine depositional geomorphic positioning starts with the natural levee, transitions into back slope and backswamp, and ends with swamp/marsh. Soils within the study area correspond with geomorphic positioning and hydric classification.[85,86] The natural levee soils of the study area are normally considered non-wetland soils. Soils associated with the back slopes, back swamps, and marsh/swamps are typically considered hydric wetland soils and include Allemands, Aquents, Barbary, Carlin, Fausse, Gramercy, Kenner, Larose, Maurepas, Mhoon, Rita, and Schriever, as shown in **Figure 4-19**. Agricultural practices utilized forced drainage to farm the land from the natural ridges to the lowlands adjacent to the cypress-tupelo swamps. Some of the lowlands have become fallow and reverted back to wetlands.

In addition to agriculture, the existing condition of wetlands within the study area has also been affected by the installation of numerous gas wells and gas pipeline infrastructure. **Figure 4-20** and **Figure 4-21** show that approximately 422 miles of pipeline and 907 oil and gas wells are located within the study area.[87] These pipelines and well sites are usually cleared during their construction, which decreases the overall habitat value of the forested wetland types they are located in. A more precise evaluation of the impact these features have on the existing functional value of wetlands will be conducted on the Preferred Alternative.

Wetland habitat types observed in the study area include cypress-tupelo swamps, freshwater marsh, shrub-scrub, bottomland hardwoods, agricultural wetlands, and other waters of the U.S.

4.25.2 What wetlands are located within the study area?

Cypress-Tupelo (NWI Habitat Mapping Codes PFO1/2C,D,F)

Cypress-tupelo swamps are wetlands dominated by woody vegetation over 20 feet tall. Swamps are characterized by saturated soils during the growing season, and standing water during most of the year. The highly organic soils of swamps form a thick, black, nutrient-rich environment. Cypress (*Taxodium distichium*) and tupelo (*Nyssa aquatica*) trees are the dominant canopy species with black willow (*Salix nigra*), red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvania*), wax myrtle (*Morella cerifera*), Chinese tallow tree (*Sapium sebiferum*), and buttonbush (*Cephalanthus occidentalis*) dominating the understory.[88] Herbaceous vegetation species found in bottomland hardwoods and fresh marsh are also common in the cypress-tupelo swamps, often forming floating tussocks.

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[85] Gregtag Macbeth. (2000). *Munsell Soil Color Charts*, New Windsor, New York.

[86] Natural Resource Conservation Service (1998) *Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils,* Version 4.0. G.W. Hurt, Whited, P.M., and Pringle, R.F. (Eds.). USDA, NRCS, Ft. Worth, TX.

[87] SONRIS database. http://dnr.louisiana.gov/crm/coastres/monitoring.asp. Sites No's 194, 197, and 268. Last accessed October 24, 2013.

[88] U.S. Fish and Wildlife Service (1988) National List of Plant Species That Occur in Wetlands: Southeast (Region 2) USDI Biological Report 88 (26.2), May 1988.

Figure 4-19
Hydric Soils with Alternatives

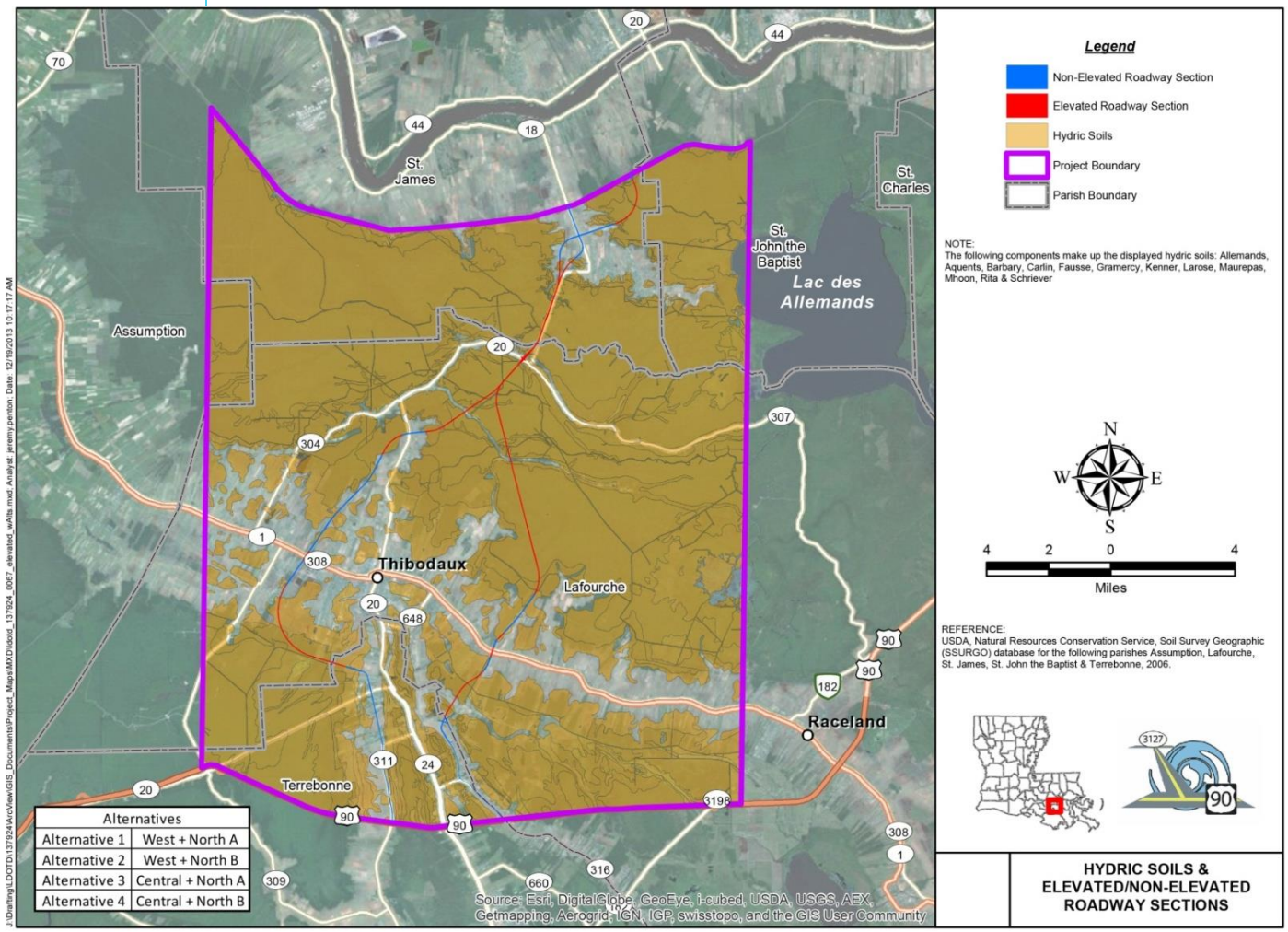


Figure 4-20
Pipelines with Alternatives

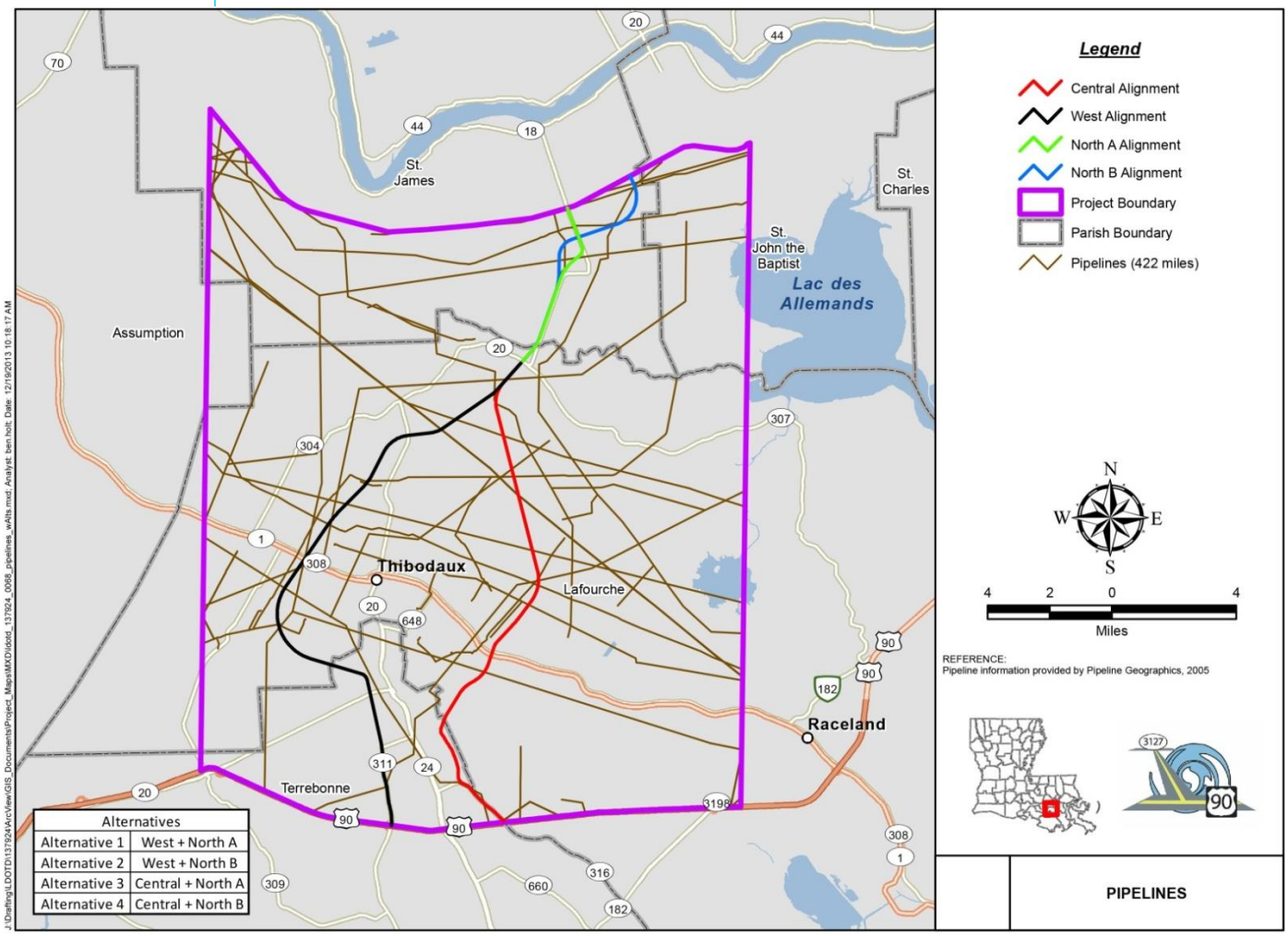
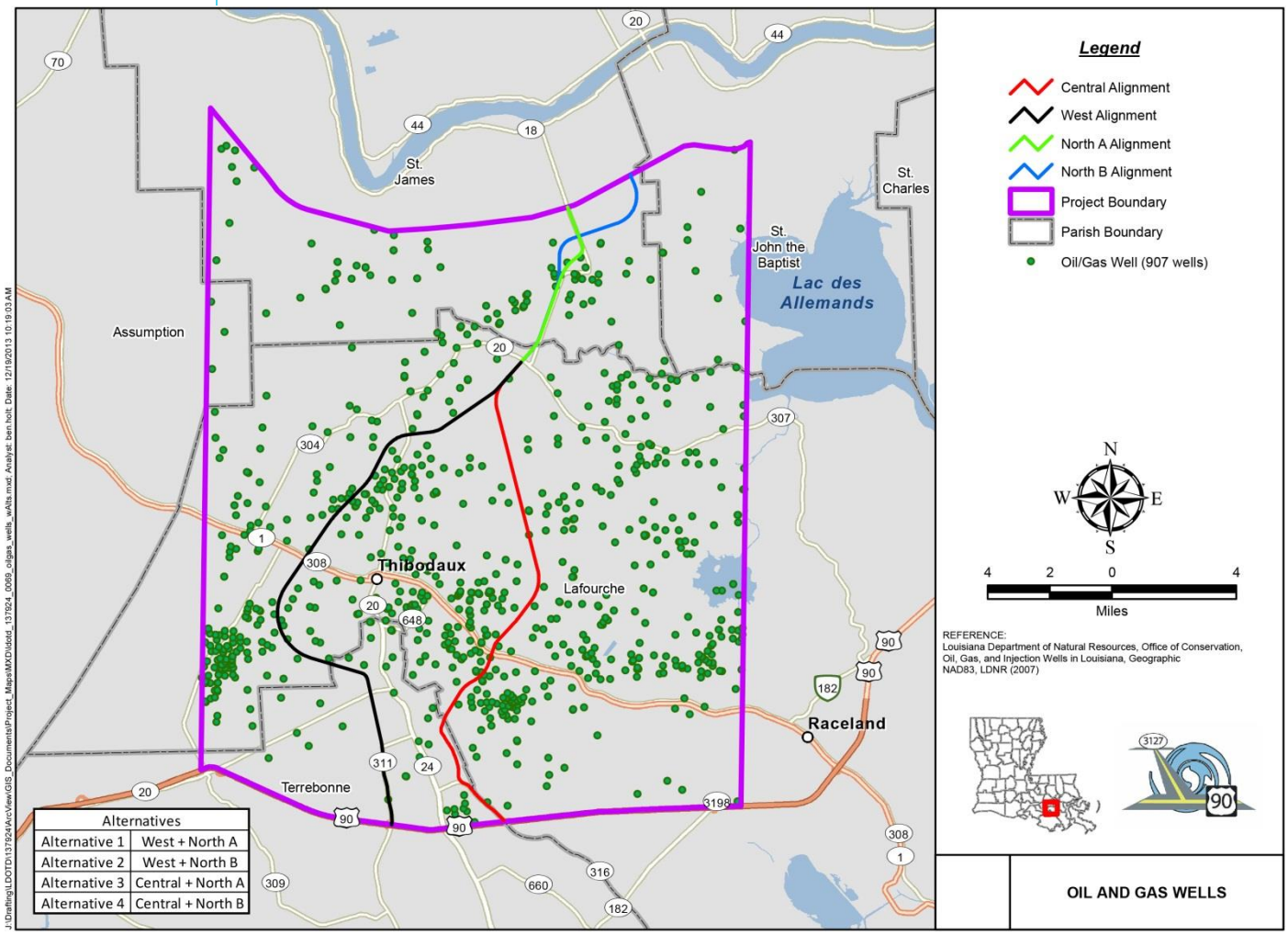


Figure 4-21
Oil and Gas Wells with Alternatives



Freshwater Marsh (NWI Habitat Mapping Codes PEM1C,F)

Freshwater marshes are wetlands frequently or continually inundated with water, characterized by emergent soft-stemmed vegetation adapted to saturated soil conditions. Alligatorweed (*Alternanthera philoxeroides*), bull tongue (*Sagittaria lancifolia*), cattail (*Typha sp.*), needle rush (*Juncus effusus*), maiden cane (*Panicum hemitomon*), pickerelweed (*Pontederia cordata*), marsh fern (*Thelypteris palustris*), giant cutgrass (*Zizaniopsis miliacea*), golden rod (*Solidago stricta*), and smartweed (*Polygonum punctatum*) are the common herbaceous vegetation species. Black willow, red maple, cypress, wax myrtle, and Chinese tallow tree are also common woody species found in freshwater marshes.[89]

Shrub-Scrub (NWI Habitat Mapping Codes PFO1A, PSS)

Shrub-scrub wetlands include areas dominated by woody vegetation less than 6 meters (20 feet) tall. Vegetation includes true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. Typical species include black willow, red maple, wax myrtle, baccharis (*Baccharis halimifolia*), marsh elder (*Iva frutescens*), holly possom-haw (*Ilex decidua*), Chinese tallow tree, and various species of coffeebean type plant (*Sesbania sp.*).[1,90]

Former lowland agricultural fields and utility transportation corridors, such as pipelines and electrical transmission lines, provide conditions suited to shrub-scrub habitat. Freshwater marsh herbaceous vegetation species can be found mixed with the shrub-scrub vegetation. The study area has abundant pipeline and transmission line ROWs and former agricultural fields, predominantly nearest the cypress-tupelo swamp areas.

Bottomland Hardwoods (NWI Habitat Mapping Codes PFO1C)

Bottomland hardwood forests are found along rivers and streams generally in broad floodplains. They are deciduous forested wetlands. Identifying features of these wetland systems are the fluted or flaring trunks that develop in several species, and the presence of knees, or aerial roots. Hackberry (*Celtis laevigata*), sweet gum (*Liquidambar styraciflua*), water oak *(Quercus nigra*) live oak (*Quercus virginiana*), green ash, american elm (*Ulmus americana*), pumpkin ash (*Fraxinus profunda*), box elder (*Acer negundo*), cypress, honey locust (*Gleditsia triacanthos*), and Chinese tallow tree (*Sapium sebiferum*) are some of the dominant tree species in bottomland hardwood forests (Louisiana Office of Coastal Protection and Restoration, 2010). Sedge (*Carex sp.),* palmetto (*Sabel minor*), lizard-tail (*Saururus cernuus*), trumpet creeper (*Campsis radicans*), dewberry (*Rubus cuneifolius*), greenbrier (*Smilax sp.*), pepper-vine (*Ampelopsis arborea*), fall panic grass (*Phanopyrum gymnocarpon*), climbing hempweed (*Mikania scandens*), and poison ivy (*Toxicodendron radicans*) are some of the dominant herbaceous species in bottomland hardwood forests.[91]

Farmed Wetlands (NWI Habitat Mapping Codes PAB/PUB)

Farmed wetlands have been partially drained or altered to produce an agricultural crop or pasture, but still may exhibit some wetland values. These areas may be planted in row crops or pasture grasses. Soil surfaces have been graded and cultivated. Existing drainage networks may utilize ditches and water control structures to make the land suitable for agricultural purposes. Active agriculture lands undergoing a land use change will be subject to a more thorough jurisdictional determination centered on the historical and original landform. Farmed wetlands in the study area are generally located in the lowlands of the natural ridge geomorphic positioning

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[89] Louisiana Office of Coastal Protection and Restoration. (2010). CRMS-Wetlands Monitoring Data.

[90] U.S. Fish and Wildlife Service (1988) National List of Plant Species That Occur in Wetlands: Southeast (Region 2) USDI Biological Report 88 (26.2), May 1988.

[91] Louisiana Office of Coastal Protection and Restoration. (2010). CRMS-Wetlands Monitoring Data.

adjacent to the swamps. If unable to be maintained in agriculture, the land will go through a vegetation succession of shrub-scrub to bottomland hardwoods or to a marsh/swamp environment depending on drainage. The build alternatives, particularly passing through the lowlands, encounter many areas of varying degrees of wetland habitat.

Other Waters of the U.S. (NWI Habitat Mapping Codes L1/R2)

Waters of the U.S. are partly defined as non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (40 CFR 230.3[s]). Waters of the U.S. do not include prior converted cropland. The study area contains numerous water bodies including lakes, ponds, canals, bayous, and drainage canals. Agricultural drainage networks are among the predominant features throughout the build alternatives.

Wetland vs. Non-Wetland

Agricultural practices utilized forced drainage to farm the land from the natural ridges to the lowlands adjacent to the cypress-tupelo swamps. The natural ridge areas are predominantly non-wetland. Some lowlands have become fallow and transitioned into various types of wetlands, and were included in the wetland category. Agricultural drainage networks in the existing active agricultural lands were not included in the wetland category, as they do not meet the requirements for wetland classification.

4.25.3 What are the impacts to wetlands as a result of the No-build Alternative?

The No-build Alternative would result in no wetland impacts.

4.25.4 What are the impacts to wetlands as a result of the Build Alternatives?

It is anticipated that wetland impacts will result from any of the build alternatives. These impacts will be associated with clearing (all portions), filling (at-grade portions), and shading (elevated portions). Forested wetlands are the most abundant wetland type within the proposed Alternatives. **Table 4.60** and **Table 4.61** present a preliminary wetland assessment quantification based on historical aerial and satellite imagery, the NWI maps, individual parish NRCS Soil Surveys, the NRCS Web Soil Survey, USGS 7.5 minute topographical maps, limited site observations, local knowledge, and best professional judgments. It does not represent an actual amount of wetland acreage affected by the respective alternatives, but rather a general representation. The linear footage was based on scaling from aerial imagery as well as GIS data. A percentage was obtained for wetlands based on the total alignment length and the wetland length. Acreage was calculated by applying the total length of wetlands by the width of the ROW (ROW obtained in GIS format), which ranges from approximately 150 to 250 feet. NWI data for the study area is included in **Figure 4-22**.

Figure 4-22
NWI Land Use with Alternatives

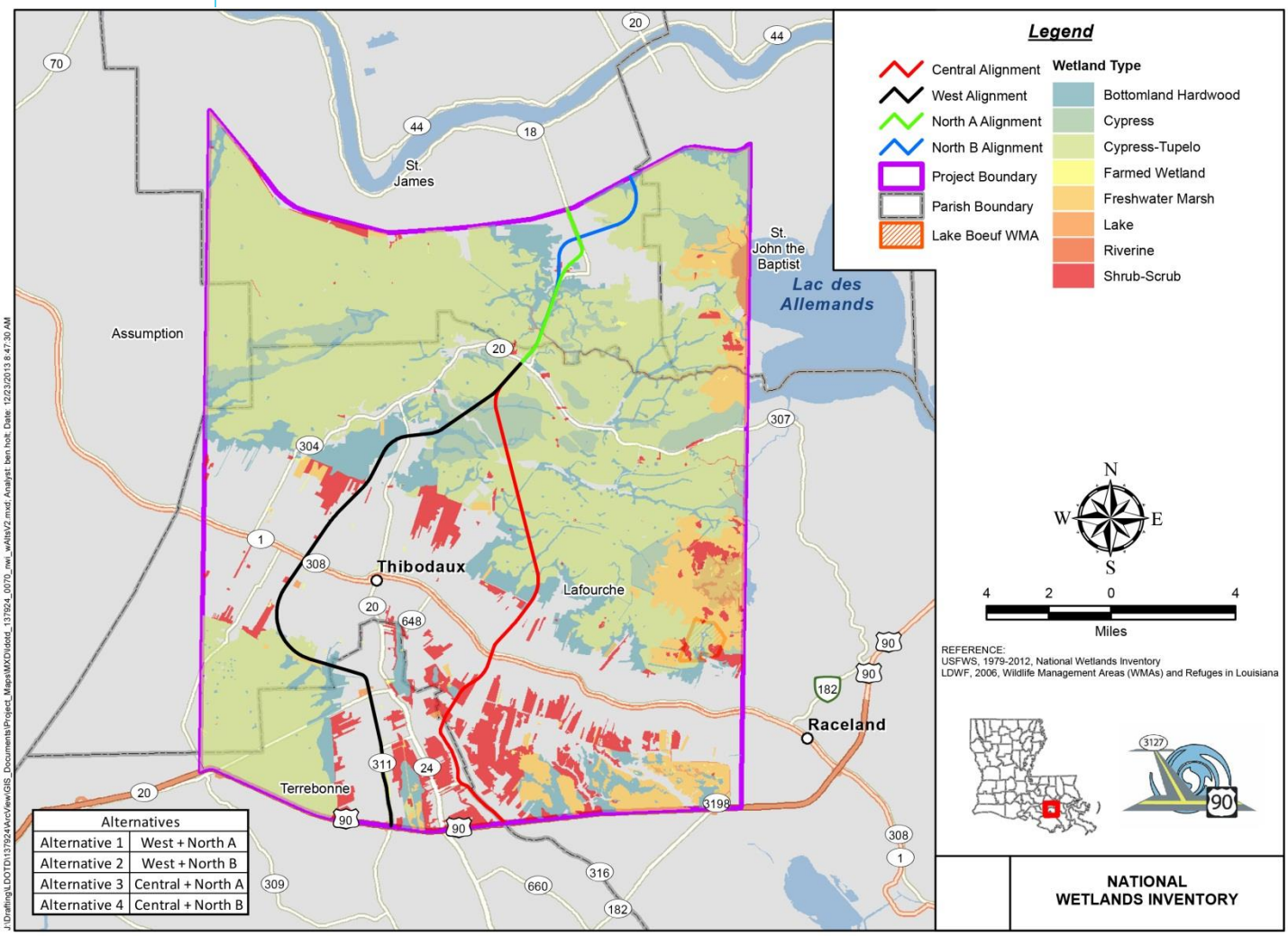


Table 4.60
Alternatives – Wetland and Non-Wetland Acreages

Alternative	Wetland Acreage	Non Wetland Acreage	Wetland Percentage	Total Acreage
Alternative 1 (Western Alignment + North Alignment "A")	203.35	395.36	33.96	**598.71**
Alternative 2 (Western Alignment + North Alignment "B")	244.79	400.26	37.95	**645.05**
Alternative 3 (Central Alignment + North Alignment "A")	260.46	244.71	51.56	**505.17**
Alternative 4 (Central Alignment + North Alignment "B")	301.90	249.60	54.74	**551.50**

Table 4.61
Estimated Wetland Impact Types by Alternative

Impact Type	Potential Impacts Per Alternative (acres)			
	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Clearing/Shading - Forested	199.25	238.60	252.81	292.17
Shading - Open Water	1.57	1.58	0.98	0.98
Fill - Forested	0.56	2.64	6.67	8.75
Fill - Open Water	1.97	1.97	0.0	0.0
Total	**203.35**	**244.79**	**260.46**	**301.90**

Elevation of the majority of the Preferred Alternative segments would minimize wetland impacts by eliminating large functional losses associated with fill. While the elevated portions of the build alternatives will still pose some degree of impact in conjunction with shading and clearing during construction, they will still provide a significant portion of their original functionality, such as attenuation, wildlife movement, and nutrient assimilation.

A more in-depth and precise quantification of potential jurisdictional wetlands will be conducted on the Preferred Alternative.

Alternative 1 (Western Alignment + North Alignment "A") would fill 0.56 acres of forested wetlands, while *Alternative 2 (Western Alignment + North Alignment "B")* would fill 2.64 acres of forested wetlands, *Alternative 3 (Central Alignment + North Alignment "A")* would fill 6.67 acres of forested wetlands, and *Alternative 4 (Central Alignment + North Alignment "B")* would fill 8.75 acres of forested wetlands. The elevated sections of the Alternatives would convert forested wetlands to emergent wetlands because of shading effects. *Alternative 1 (Western Alignment + North Alignment "A")* would convert the fewest acres of forested wetlands to emergent wetlands, while *Alternative 4 (Central Alignment + North Alignment "B")* would convert the most.

Alternative 1 (Western Alignment + North Alignment "A")

As Tables 4.60 and 4.61 depict, *Alternative 1 (Western Alignment + North Alignment "A")* appears to pose the least overall impact to wetland systems within the study area (203.35 total acres). *Alternative 1 (Western Alignment + North Alignment "A")* will result in 16.9 percent less wetland impacts when compared with *Alternative 2 (Western Alignment + North Alignment "B")* (244.79 acres), 21.9 percent less impact than *Alternative 3 (Central Alignment + North Alignment "A")* (260.46 acres), and 24.7 percent less impact than *Alternative 4 (Central Alignment + North Alignment "B")* (301.90 acres).

Alternative 1 (Western Alignment + North Alignment "A") also represents the least impact (both fill and shading) to forested wetland systems within the study area. Forested wetlands generally provide a greater functional value than herbaceous and open water type systems; therefore, minimizing impacts to this type of wetland system can reduce the overall mitigation effort required.

Alternative 2 (Western Alignment + North Alignment "B")

Approximately 29 percent of *Alternative 2 (Western Alignment + North Alignment "B")* runs through wetlands, as compared to 25 percent of *Alternative 1 (Western Alignment + North Alignment "A")*. Though *Alternative 2 (Western Alignment + North Alignment "B")* has the greatest total acreage among the build alternatives (860 acres), this alternative has the second lowest overall impact to wetland systems within the study area.

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 (Central Alignment + North Alignment "A") has the lowest total acreage among the build alternatives (nearly 675 acres), and has the second highest overall impact to wetland systems within the study area.

Alternative 4 (Central Alignment + North Alignment "B")

More than 41 percent of *Alternative 4 (Central Alignment + North Alignment "B")* runs through wetlands, the highest proportion among the build alternatives. This alternative represents the greatest impact to forested wetland systems (both fill and shading) within the study area.

4.25.5 What indirect and cumulative impacts are anticipated?

Because the build alternatives predominantly fall within existing transportation corridor developed areas and disturbed wetland/agricultural interface zones, secondary and cumulative wetland impacts resulting from the proposed project will be minimal. Efforts will be made to ensure that when the Preferred Alternative spans larger wetlands, it will be constructed in a manner that avoids hydrologic alterations, which would permanently alter the function of the wetland and potentially create smaller wetlands out of a larger wetland thus lessening the value of the wetland.

Both the North A and North B segments of the build alternatives bisect an EPA/Coastal Protection and Restoration Authority river diversion enhancement project. This 5,134-acre project is located northwest of Lac des Allemands in the area of Bayou Chevreuil. This project was approved in 2001 and includes the installation of two siphons to divert water from the Mississippi River along with gapping spoil banks along Bayou Chevreuil, installing culverts along LA 20 between Orange Grove Plantation and South Vacherie, and supplemental planting installation within degraded swamp. In order to ensure that the northern segment of the Preferred Alternative does not cause secondary/cumulative impacts to the ongoing hydrologic restoration efforts, these sections of the roadway are proposed to be elevated.

Conceptual Mitigation Plans

Following minimization and avoidance of impacts to wetlands, the purchase of wetland mitigation bank credits is the USACE preferred method of offsetting wetland impacts (33 CFR 332.3[b]). Mitigation banks are preferred because they are established in advance of the impacts they offset, eliminating potential risks and/or temporal lag associated with stand-alone mitigation efforts. The hydrologic unit code (HUC) in which the potential ROWs occur is a stand-alone HUC with high competition for mitigation credit purchase because of the low availability of credits at only two mitigation banks—Laurel Valley Coastal Mitigation Bank and Enterprise Woodlands. Mitigation bank credits and the associated costs are largely dependent upon supply and demand and can fluctuate dramatically. A present cost per acre estimate is approximately $35,000.

While mitigation banking is preferred to offset wetland impacts, there may also be opportunities to partner with federal and local governmental agencies by funding additional phases of ongoing restoration efforts within the northwestern Barataria Basin. Contributing in-lieu fees to basin-wide enhancement/restoration efforts may also serve to reduce the proposed project's potential secondary and cumulative impacts.

Another mitigation option to consider would be the possible establishment of wetlands for habitat in the location where both recommended Alternatives parallel LA 20 on an elevated structure. Wetlands could potentially be reestablished after removing part of the LA 20 embankment. However, the viability of this option and limits would need to be investigated further to determine practicability due to potential 4(f) issues along a section of the route.

4.26 MINERAL RESOURCES

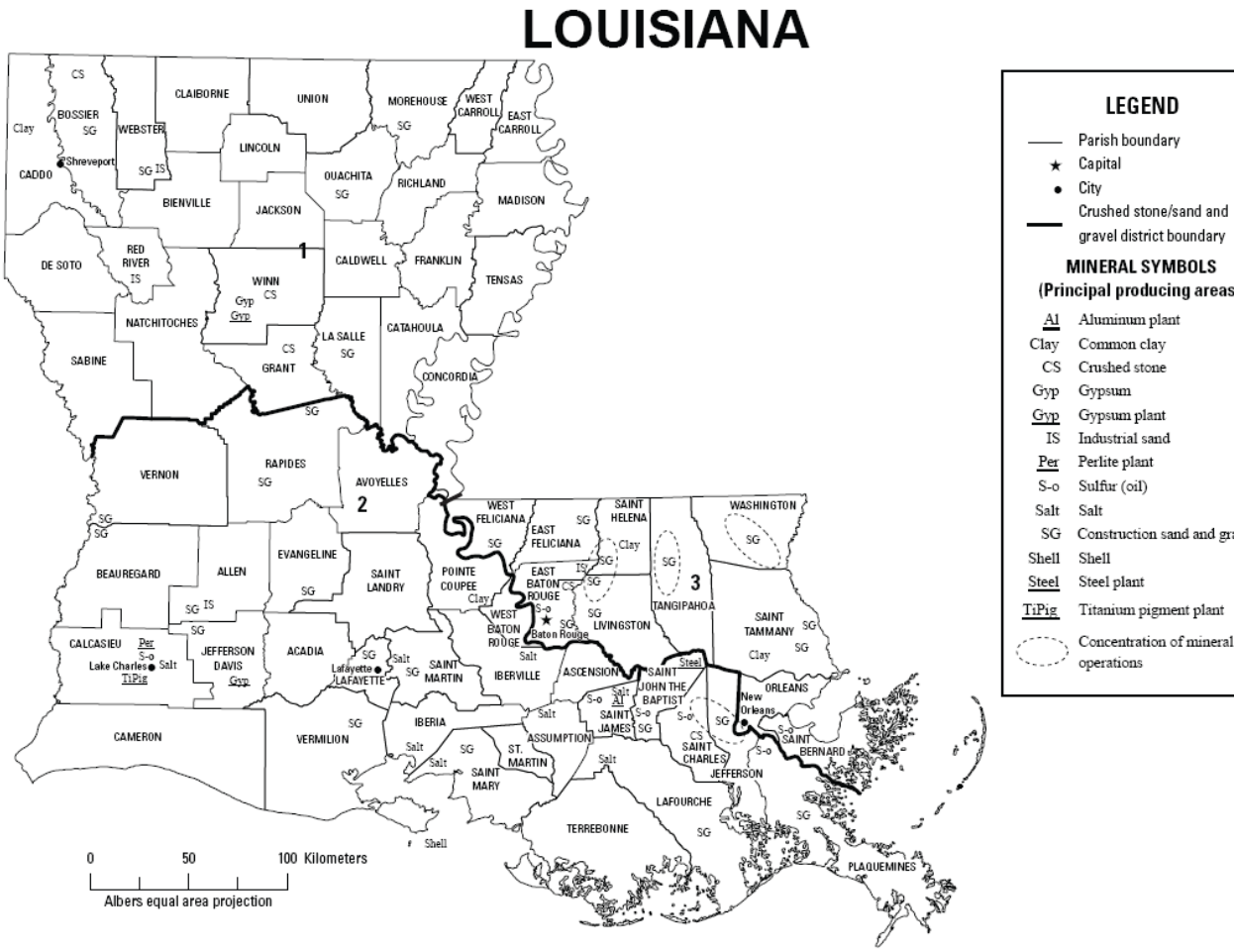
Mineral resources information for the study area was developed researching data using LDNR's SONRIS database and USGS publicly available data.

4.26.1 What mineral resources are found within the study area?

The USGS 2009 Minerals Yearbook for Louisiana[92] included **Figure 4-23** illustrating principal mineral producing areas. Within the study area, salt was listed as a mineral resource in Lafourche Parish and sand and gravel in St. John the Baptist Parish.

[92] USGS 2009 Minerals Yearbook for Louisiana (http://minerals.usgs.gov/minerals/pubs/state/2009/myb2-2009-la.pdf).

Figure 4-23
Mineral Sources



Source: Louisiana Geological Survey/U.S. Geological Survey (2009).

The Chacahoula salt dome is one of the largest on the Gulf Coast and is located along the western boundary of the study area. This dome is located approximately 8 miles southwest of Thibodaux, Louisiana and was one of five considered as a possible candidate for the expansion of the U.S. Strategic Petroleum Reserve. Salt from the Chacahoula salt dome covers an area of approximately 1,800 acres. Oil production has been the main commodity from the southern and eastern sides of the dome; gas production has occurred on the north and west sides. In addition to oil and gas activities, sulfur mining was conducted from 1955 to 1962 in the northeast-central region of the Chacahoula dome[93]. Although portions of the salt dome lie within the study area, the potential reserve area, three currently active brine caverns, and the historic sulfur mining location are located just outside the study area boundary.

Based on data obtained from LDNR's SONRIS database,[94] there are approximately 22 oil and gas fields within the study area. **Table 4.62** includes a list of these fields and their parish of location. Oil and gas wells are located throughout the project area with higher concentrations in the southern portion of the study area near the Chacahoula, Melodia, Rosseau, and Thibodaux oil and gas fields. Oil and gas wells are discussed in Section 4.14.1.3 in greater detail.

Table 4.62
Oil and Gas Fields of the Study Area

Filed Name	Parish
Bayou Chevreui	Lafourche
Bayou Citamon	St. James
Burton	St. James
Chacahoula	Lafourche
Chegby	Lafourche
Choctaw School	Lafourche
Cutgrass Coulee	St. James
Kraemer	Lafourche
Lafourche Crossing	Lafourche
Laurel Grove	Lafourche
Lower Vacherie	St. James
Melodia	Lafourche
North Laurel Grove	Lafourche
North Thibodaux	Lafourche
Northwest Lake Boeuf	Lafourche
Rosseau	Lafourche
South Chegby	Lafourche
South Kraemer	Lafourche
Southwest Lake Boeuf	Lafourche
St. John	Lafourche
Terrebonne Bayou	Terrebonne
Thibodaux	Lafourche

[93] Lord, Anna Snider, Christopher A. Rautman, and Karl M. Loof. "Geologic Technical Assessment of the Chacahoula Salt Dome, Louisiana, for Potential Expansion of the U.S. Strategic Petroleum Reserve." *Sandia.gov*.Sandia Report SAND2007-0483.Sandia National Laboratories, 2007. Web. 24 Nov. 2013. <http://prod.sandia.gov/techlib/access-control.cgi/2007/070483.pdf>.

[94] (http://sonris-www.dnr.state.la.us/gis/agsweb/IE/JSViewer/index.html?TemplateID=181)

Mineral leases in the project study area were researched through SONRIS's active mineral leases GIS layer. This layer is maintained by LDNR's Office of Mineral Resources and is updated monthly. The database consists of all active mineral leases issued by the State Mineral and Energy Board of the State of Louisiana. This board is the entity that grants and administers leases on state-owned lands and water bottoms for the purpose of exploring, prospecting, and/or drilling for and producing oil, gas, and any other liquid or gaseous minerals in solution and produced with oil and gas. Lease terms exclude free sulphur, potash, lignite, sale, and other solid minerals. The seven currently active mineral leases located in the study area are listed in **Table 4.63**[95].

Table 4.63
Active Mineral Leases Within the Study Area

Filed Name	Parish
A0307	Lafourche
SL16758	Lafourche
SL18930	Lafourche
SL21132	Lafourche and Terrebonne
SL3244	Lafourche
SL4518	Lafourche
SL6123	Lafourche

4.26.2 What are the impacts to mineral resources as a result of the No-build Alternative?

There are no impacts to mineral resources as a result of the No-build alternative.

4.26.3 What are the impacts to mineral resources as a result of the Build Alternatives?

Each alternative was analyzed using LDNR's GIS data obtained from SONRIS to determine the impacts on oil and gas resources. The oil and gas field data obtained from SONRIS does not include area boundaries, only location markers. Oil and gas fields impacted directly by each Build Alternative could not be accurately determined. The impact of each Build Alternative on oil and gas wells was calculated and the serial number and product was identified for each impacted well. Additionally, impacts to mineral leases were calculated for each Build Alternative. The product type and acreage of impact has been provided. Mineral lease impacts are discussed below and summarized in **Table 4.64**.

[95] LDNR.*SONRIS Interactive Maps – Oil/Gas and Mineral Resources.* LDNR, 2013. Web. 22 Nov. 2013. <http://sonris-www.dnr.state.la.us/gis/agsweb/IE/JSViewer/index.html?TemplateID=181>.

Alternative 1 (Western Alignment + North Alignment "A")

Alternative 1 impacts two oil and gas wells in Terrebonne Parish. Well Serial No. 52465 is listed as "Wells Unable to Be Located"; no plugged and abandoned report was found. Well Serial No. 235471 is listed as "PA-35 Temporary Inactive Well to be Omitted from Production Report (Gas&Condensate)". Alternative 1 does not impact any active state mineral leases.

Alternative 2 (Western Alignment + North Alignment "B")

Alternative 2 impacts the same two oil and gas wells as Alternative 1 and does not impact any active state mineral leases.

Alternative 3 (Central Alignment + North Alignment "A")

Alternative 3 impacts two oil and gas wells in Lafourche Parish. Well Serial No. 56182 is a plugged and abandoned condensate producer. Well Serial No. 100135 is a plugged and abandoned dry hole. Additionally, approximately 76.1 acres of State (mineral) Lease 21132 falls within the boundaries of Alternative 3. The product types listed for this mineral lease include oil, gas, and plant products.

Alternative 4 (Central Alignment + North Alignment "B")

Alternative 4 impacts the same two oil and gas wells as Alternative 3 and also affects the mineral lease identified as State Lease 21132. Approximately 75.9 acres of this lease are within the boundaries of Alternative 4.

Table 4.64
Oil and Gas Fields of the Study Area

Resource Name	Alternative 1 (Western Alignment + North Alignment A)	Alternative 2 (Western Alignment + North Alignment B)	Alternative 3 (Central Alignment + North Alignment A)	Alternative 4 (Central Alignment + North Alignment B)
Oil and Gas Wells	2	2	2	2
Mineral Lease Acreage	0	0	76.1	75.9

4.26.4 What indirect and cumulative impacts are anticipated?

The Houma-Thibodaux to LA 3127 Connector is designed to provide system linkage and provide an additional route for hurricane evacuation. Portions of the route will have controlled access, limiting the potential for additional development along the selected route. Interchanges would be the primary areas of secondary development. Should any interchanges be located within an active mineral lease, approval by the state would be required. As mineral resources are regulated by the state and managed by the state, private landowners, and publicly-held companies, it would be unlikely that the connector would result in measurable cumulative impacts. It is possible that by providing system linkage, more thorough development of the leases could occur and development may become more efficient, as travel time to processing or end points could be reduced.

4.27 ENERGY

4.27.1 What is the existing energy consumption within the study area?

The existing energy consumption within the study area can be attributed to the diversity of land use and broad variation of vehicles associated with each land use category. Inherent differences among transportation modes in regards to available routes, travel distance, types of vehicles, and other factors greatly affect energy usage. Populated areas like the Houma-Thibodaux metropolitan area have a combination of commercial, residential, and agricultural land uses that generate traffic throughout the existing transportation system. Traffic from rural portions of the project area must utilize existing highway facilities to access major roadways and populated areas. This increases travel time and ultimately energy usage. In addition, traffic from both densely populated and rural areas utilizes the existing transportation system for commuting and evacuation routes. During a storm evacuation, the existing inefficiencies in the transportation system increase energy consumption due to extensive traffic congestion and travel delays.

4.27.2 What are the impacts to energy as a result of the No-build Alternative?

In regards to the No-build Alternative, existing traffic operation inefficiencies, such as congestion and indirect, circuitous routes, cause an inefficient use of energy within the study area. However, this alternative will not expend any additional energy associated with construction except for routine maintenance.

4.27.3 What are the impacts to energy as a result of the Build Alternatives?

The majority of temporary, construction-related energy for the build alternatives is determined by the approximate lane mileage for each proposed alignment. Given that fact, the alternatives ranked from least to most potential energy consumption are as follows: Alternative 3 (22.6 miles), Alternative 4 (24.8 miles), Alternative 1 (26.6 miles), and Alternative 2 (28.8 miles). However, energy consumption would be offset by energy savings with the implementation of the proposed traffic facility improvements. Upon completion, motorists will have shorter, more direct routes to their points of destination. This will result in a reduction in energy consumption because fewer miles are being traveled. The proposed alignments would improve overall traffic operations and efficiency within the study area. The overall improvement in traffic operations will reduce congestion, improve the level of service and facility capacity, and improve vehicle fuel efficiencies within the transportation system, which, therefore, reduces overall energy consumption.

4.27.4 What indirect and cumulative impacts are anticipated?

The secondary and cumulative energy impacts for the No-build Alternative within the study area are present through the continuous energy consumption of existing industrial and oil facilities throughout the area. There is also the potential for additional industrial facilities to be constructed which requires additional energy.

The potential for secondary and cumulative energy impacts from the build alternatives could be caused by future economic growth and development.

4.28 AESTHETICS/VISUAL RESOURCES

4.28.1 What are the existing aesthetic/visual resources within the study area?

The visual resources of the study area support a vast range of natural and agriculturally developed landscape. The study area encompasses a substantial acreage of wetlands, floodplains, forests, and farmland that are visible from existing Louisiana highways in the area. These existing visual resources also support a broad range of animal and plant species that thrive from the natural habitat provided within the study area. This natural landscape, indigenous to the southern region of the country, can be considered a high quality visual resource.

4.28.2 What are the impacts to aesthetics/visual resources as a result of the No-build Alternative?

With no necessary construction, the No-build Alternative would have no apparent effect on existing visual resources and aesthetics within the study area.

4.28.3 What are the impacts to aesthetics/visual resources as a result of the Build Alternatives?

The proposed build alternatives will affect the existing visual resources within the study area. Although a portion of each proposed alternative utilizes existing highways, the majority of the alignments will require new roadways to be constructed on existing farmland, floodplains, and wetlands. In addition, the proposed alignments will require the relocation of some existing residential and commercial properties that may affect the visual aesthetics of the project area.

The viewshed, which is defined as the surface area visible from a given viewpoint or series of viewpoints, would be affected in some areas by the build alternatives. The build alternatives will affect rural portions of the existing visual resources changing from an open viewshed to a roadway. In urban areas, the proposed build alternatives will not strongly contrast with the existing environment or block a large portion of existing views. The newly constructed roadway will blend with existing highway facilities and provide a smooth transition into the existing transportation network. Some adverse visual impacts will be expected during the construction phases and maintenance of the alternatives. However, these negative visual impacts are temporary.

The build alternatives will positively affect the visual aesthetics due to the proposed improvements from the roadway. Green medians will be added along the at-grade roadway sections. In areas with surrounding residential and commercial properties, clean curb lines will be laid. The sections of existing road that will be upgraded will become more aesthetically pleasing. All of these features will offer a clean, updated appearance that the public will undoubtedly appreciate. Routine maintenance will allow for these enhancements to be maintained through the Preferred Alternative's design life. However, a new roadway through a previously open area will result in adverse visual impacts to those viewer of the roadway. The proposed build alternatives will limit the once open visual landscape.

4.28.4 What indirect and cumulative impacts are anticipated?

Under the No-build Alternative, the existing visual environment and its elements will be maintained. Secondary and cumulative impacts that may be expected due to the No-build Alternative stem from the expectation that the area will still experience growth. Continued use of the facilities and development in the area will cause wearing of the roadways and require more frequent maintenance for upkeep.

Secondary and cumulative visual impacts from the build alternatives can be caused by future economic growth and development near the build alternatives that affect the existing visual resources. The economic growth and development can be expected to occur at a higher rate than the No-build Alternative because of the impacts of the new facilities. With increased development, more effort will have to be taken to upkeep the visual aesthetics. In addition, maintenance facilities during and after construction are to also be considered.

Greenhouse gases are defined as carbon dioxide, water vapor, methane, nitrous oxide, and halocarbons (hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride). All but the halocarbons are naturally occurring. Man s activities have increased the levels of most of these constituents in the atmosphere. Water vapor is the one constituent thought not to be significantly affected by man s activities. Carbon dioxide increases are primarily due to combustion of fossil fuels. It is estimated that half of the methane levels are due to agricultural activities, combustion of fossil fuels and waste disposal. Nitrous oxides result from agricultural activities, fossil fuel combustion, wastewater treatment and waste combustion; and biomass burning. Halocarbons result primarily from industrial processes.

4.29 CLIMATE CHANGE

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, hydrofluorocarbons, perfluorocarbons, 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 Demand Management (TDM) 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. If funding becomes available, DOTD plans to invest 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 change.

4.30 PROJECT COMMITMENTS

Commitments that will be implemented to offset adverse effects of the preferred build alternative would include, but are not limited to, the following:

- Implementation of BMPs during construction of the facility.
- Temporary impacts to jurisdictional wetlands from construction staging areas will be managed by the contractor, who will be required to restore the ground to its natural contour allowing for one complete growing season for natural restoration of vegetation.
- Purchase of wetland banking credits, wetland conservation easements, enhancement, restoration, and/or creation of wetlands or a combination thereof based on USACE and Louisiana specifications during the Section 404 permit process.
- Another mitigation option to consider would be the possible establishment of wetlands for habitat in the location where both recommended Alternatives parallel LA 20 on an elevated structure. Wetlands could potentially be reestablished after removing part of the LA 20 embankment. However, the viability of this option and limits would need to be investigated further to determine practicability due to potential 4(f) issues along a section of the route.
- Mitigation of adverse stream effects based on the Section 404 permit process.
- An approved compensatory mitigation plan to offset losses of wetland acres will be developed.
- Avoidance of construction during the nesting season of bald eagles should individual nests be sighted within 1,500 feet of the alternative chosen for construction.
- Re-investigation and survey of areas considered potentially suitable habitat for federally-protected species within one year of letting the construction contract for the project.
- Acquisition of ROW will be handled in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the Secretary's Policy and Procedure Memorandum No. 48: UST and Contaminated Site Policy.
- All waterway closure requirements are to be coordinated with the Marine Safety Office of the US Coast Guard.
- Warning signs visible to vessel operators will be posted prior to and during all water-related activities.

4.31 PERMITS AND MITIGATION

The following section discusses all applicable permits and certifications for the Houma-Thibodaux to LA 3127 Connection Project.

4.31.1 U.S. Coast Guard: Bridge Permit

A Bridge Permit from the USDOT, United States Coast Guard (USCG), and USCG Bridge Administration Program is required for any structures crossing a navigable waterway of the United States. The Bridge Permit Application Guide is available on the USCG Bridge Administration webpage[96].

4.31.2 U.S. Army Corps of Engineers: Section 404 and Section 10 Permits

Section 404 of the CWA (33 U.S.C. 1344) prohibits the discharge of dredged or fill material into navigable waterways, tributaries to navigable waterways, and jurisdictional wetlands without a permit from USACE. Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) prohibits the obstruction or alteration of navigable waters of the United States without a permit from USACE.

The *Joint Permit Application for Work Within the Louisiana Coastal Zone* was developed to facilitate the state and federal permit application process administered by USACE and the LDNR Office of Coastal Management (OCM) for work in the Louisiana Coastal Zone. The Joint Permit Application is used to apply for a Coastal Use Permit, a Section 404 permit, and a Section 10 permit[97].

4.31.3 Louisiana Department of Natural Resources-Coastal Management Division: Coastal Use Permit

The entire study area is located within the LDNR-OCM, Coastal Zone Boundary (Figure 4-18). The "Joint Permit Application for Work within the Louisiana Coastal Zone" is to be submitted for the project and is available at the web site.

4.31.4 Louisiana Department of Environmental Quality: Water Quality Certification – Section 401

A Water Quality Certification (WQC) from the LDEQ certifies that placement of fill material into state waters will not have a significant effect on water quality standards. An LDEQ WQC is required for the issuance of the USACE Section 404 permit. A copy of the Joint Permit Application will be sent to LDEQ for WQC by the permitting agency.

4.31.5 U.S. Environmental Protection Agency: NPDES Section 402 Permit

A National Pollutant Discharge Elimination System (NPDES) permit is required from the EPA for any construction project having the potential to discharge storm water into the waters of the United States. This project is considered to be a large scale, greater than 5 acres, construction project. A Notice of Intent (NOI) is required for construction activity to be submitted to EPA in order to obtain permit coverage.

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[96] http://www.uscg.mil/hq/cg5/cg5411/default.asp

[97] The Joint Permit Application Form is available at http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=93.

4.31.6 Louisiana Department of Environmental Quality: LPDES Permit

The LDEQ has an approved EPA NPDES Program. The LDEQ Louisiana Pollutant Discharge Elimination System (LPDES) meets the EPA criteria and qualifies for the NPDES permit. A LPDES large construction permit (greater than 5 acres), Form CSW-G, from the LDEQ is required for storm water discharges associated with construction activities in Louisiana.[98] Other LPDES applications or permits also may be required for discharges into state waters.

4.31.7 Louisiana Department of Environmental Quality: Storm Water Pollution Prevention Plan

Operators of regulated construction sites are required to develop and implement storm water pollution prevention plans as part of the NOI for the LPDES permit from LDEQ.

[98] Form CSW-G is available at http://www.deq.louisiana.gov/portal/Default.aspx?tabid=245.

Chapter 5.
Public Involvement and Agency Coordination

CHAPTER 5. PUBLIC INVOLVEMENT AND AGENCY COORDINATION

The National Environmental Policy Act (NEPA) states in its regulations that agencies shall "make diligent efforts to involve the public in preparing and implementing their NEPA procedures."[1] This includes providing public notice of meetings, making environmental documents available to the public, and requesting information from the public. In addition, it is the Federal Highway Administration's (FHWA) policy that public involvement and a systematic interdisciplinary approach be essential parts of the development process for proposed actions.[2]

For the development of this project, the FHWA and the Louisiana Department of Transportation and Development (LADOTD) have coordinated with three distinct groups to ensure involvement and input. These groups include:

- Federal, state, and local agencies;
- The public; and
- Stakeholders, including elected public officials and other groups with an interest in the project.

5.1 WHAT IS THE PUBLIC INVOLVEMENT PLAN FOR THIS PROJECT?

Effective public involvement and agency coordination is the key to achieving environmentally responsible transportation decisions.

The Public Involvement Plan (PIP) was developed and submitted to LADOTD. It was revised on February 23, 2010. The purpose of this document is to define the process by which LADOTD will communicate with all involved agencies and the public in regards to the project. The plan was developed in accordance with Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which requires that the lead agencies establish a plan for coordinating public and agency participation and comment during the environmental review process associated with the preparation of an environmental impact statement (EIS).

The following tasks were to be accomplished through the PIP:

- Identify the early coordinating efforts;
- Identify cooperating and participating agencies to be involved in agency coordination;

[1] 40 CFR 1506.6(a)

[2] 23 CFR 771.105

- Establish the timing and form for agency involvement in defining the project's Purpose and Need and study area, the range of alternatives to be investigated, and methodologies, as well as reviewing the preliminary Draft EIS (DEIS);
- Establish the timing and form for public opportunities to be involved in defining the project's Purpose and Need and study area and the range of alternatives to be investigated, providing input on issues of concern and environmental features, and commenting on the findings presented in the DEIS and Final EIS (FEIS); and
- Describe the communication methods that will be implemented to inform the community about the project.

5.2 NOTICE OF INTENT

The original Notice of Intent (NOI) was published in the Federal Register on January 7, 2004. This notice was issued to advise the public and all interested agencies that an EIS was being prepared to evaluate a proposed hurricane evacuation route that would service Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, St. Mary, and Terrebonne Parishes. Contact information and a project description were also provided.

A revised NOI was published in the Federal Register on March 25, 2010. This notice was submitted to notify the public and all agencies of the overall changes to the project scope and environmental review process for the project. Updated contact information and project description were provided.

A copy of the NOI is provided in Appendix B.

5.3 LADOTD SOLICITATION OF VIEWS

The formal solicitation of views (SOV) letter was submitted to local federal and state agencies, organizations, and individuals on June 24, 2004. In addition to the formal letter, all recipients were provided with a study area map and description to summarize the overall project scope. Input in the form of written comments was requested from each agency. The comments and responses that were received assisted in identifying foreseeable economic, social, and environmental issues in regards to the proposed project. Comments relative to the environmental impacts included concerns for the wetlands impact, the nesting season for birds, and impact on native vegetation. Comments relative to the alignments supported the alignment that connected to the Gramercy-Wallace Bridge. Letters received from the agencies in response to the SOV are included in Appendix N.

5.4 WHAT AGENCY INVOLVEMENT AND COORDINATION TOOK PLACE AS PART OF THE PROPOSED PROJECT?

Effective interagency coordination is the key to achieving environmentally responsible transportation decisions.[3] To meet this goal, LADOTD and FHWA invited federal, state, and local agencies to be involved in the project as cooperating or participating agencies.

[3] FHWA http://www.environment.fhwa.dot.gov/projdev/tdminterag2.asp, last accessed 12/4/13

5.4.1 What are cooperating and participating agencies?

The roles and responsibilities of cooperating and participating agencies are similar, but cooperating agencies have a higher degree of authority, responsibility, and involvement in the environmental review process.

Cooperating agencies are those governmental agencies specifically requested by the lead agency to participate during the environmental evaluation process for the project. FHWA's NEPA regulations (23 CFR 771.111(d)) require that those federal agencies with jurisdiction by law (with permitting or land transfer authority) be invited to be cooperating agencies for an EIS. See **Table 5.1** for a list of the cooperating agencies.

Table 5.1
Lead, Cooperating, and Participating Agencies

Agency	Roll
Federal Highway Administration (FHWA)	Lead
Louisiana Department of Transportation and Development (LADOTD)	Joint Lead
The South Central Planning & Development Commission	Participating
U.S. Army Corps of Engineers (USACE)	Cooperating
Environmental Protection Agency (EPA)	Participating
U.S. Fish and Wildlife (USFWS)	Participating
Louisiana Department of Environmental Quality (LDEQ)	
U.S. Coast Guard	
Louisiana Department of Natural Resources (LDNR)	
Federal Aviation Administration	
Louisiana Department of Culture, Recreation and Tourism (DCRT)	
Louisiana Department of Agriculture and Forestry (LDAF)	
Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)	
U.S. Department of Agriculture and Farm Service Agency	
U.S. Department of Housing and Urban Development	
Indian Nation Tribal Historic Preservation Office	
Louisiana Office of Historic Preservation (LASHPO)	

Participating agencies are federal and non-federal governmental agencies that may have an interest in the project because of their jurisdictional authority, special expertise, and/or statewide interest. Participating agencies are to address specific concerns or issues as related to their area of expertise, exchange information, and provide a methodology for evaluating certain resources of environmental concern. See Table 5.1 for a list of the participating agencies.

5.4.2 How have the agencies been involved in the proposed project?

Once the invitations to become cooperating and participating agencies were accepted, agency roles in the project development process were further defined.

Pursuant to Section 6002 of SAFETEA-LU, participating agencies are responsible for identifying, as early as practicable, any issues of concern regarding the project's potential environmental, social, or economic impacts that could substantially delay or prevent any agency from granting a permit that is needed for the project. Section 6002 of SAFETEA-LU is intended to ensure that agencies are fully engaged in the scoping of the project and the decisions regarding alternatives to be evaluated in detail in the NEPA analysis. The role of the agencies in the development of the project include the following as they relate to each agency's area of expertise:

- Providing meaningful and early input on defining the need and purpose, determining the range of alternatives to be considered, and the methodologies and level of detail required in alternatives analysis.
- Participating in coordination meetings and joint field reviews, as appropriate.
- Providing timely review and comment on the environmental documents to reflect the views and concerns of the agency on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

5.4.3 What agency coordination meetings were held?

The Formal Interagency Scoping Meeting was held at South Central Planning and Development (SCPDC) in Grey, Louisiana on July 13, 2004. This meeting provided an introduction of the project team and a detailed overview of the project scope, schedule, discussion of previous studies, and a review of efforts to date.

Invitations to the meeting were sent to all potential cooperating and participating agencies. Representatives from FHWA, LADOTD, USACE, EPA, Louisiana Fish and Wildlife Service (LA FWS), LADNR, South Central Planning, LA Homeland Security, Chitimacha Tribe representatives and officials from the following Parishes: Ascension, Assumption, Lafourche, St. James, and Terrebonne discussed the project Purpose and Need, objective, scope, and methods for identifying feasible alternatives. The agencies were also provided the opportunity to comment on alignments that were being further considered from a previous study conducted in 1999.

Representatives from each agency provided comments and asked questions regarding the information presented. The major concern from most agencies was the conclusions discussed in the *1999 Hurricane Evacuation Corridor Study* (see Appendix Q). This study concluded that considerations for any connection with the Gramercy-Wallace Bridge should be eliminated. Requests were made for copies of the *1999 Hurricane Evacuation Corridor Study* to further evaluate the alternatives considered. At the conclusion of the agency comments, LADOTD noted that the EIS would focus on the three alternative corridors recommended in the *1999 Hurricane Evacuation Corridor Study* and that the team will be developing those three alternatives further, and refining them based on new and updated traffic data and environmental information.

The second agency meeting was held on November 18, 2004. The purpose of this meeting was to provide an update on the hurricane evacuation route and receive input from the agencies. Attending the meeting were representatives from LADOTD, FHWA, SCPDC, and USACE. Topics that were discussed included the Purpose and Need, Alignments, Traffic and Toll Study.

The third agency meeting was held at SCPDC on May 2, 2006. This meeting focused on the revised Purpose and Need, the reduced range of alternatives, the traffic and transportation reports, and the updated toll study.

Invitations to the meeting were sent to all potential cooperating and participating agencies. Representatives from the following agencies attended:

- LADOTD;
- FHWA;
- USACE;
- LADNR;
- USFWS,
- SCPDC;
- State Police;
- EPA;
- LA Homeland Security;
- St. Mary Parish;
- Terrebonne Parish;
- Assumption Parish;
- LaFourche Parish;
- St. James Parish;
- St. Johns Parish; and
- Thibodaux Parish.

Comments were provided during the meeting and were recorded to be included in the meeting minutes and list of action items. Based on input and comments obtained from the meeting, it was agreed that the eastern corridor and the central corridor traveling through Nicholls State University could be eliminated from further consideration.

In July of 2006, work on the EIS was stopped by LADOTD to allow for the resolution of concerns of the various resource agencies, including USACE, EPA, and USFWS. Due to agency concern that not all possible alternatives had been considered, LADOTD decided to supplement the project with an additional study of possible east-west alternative corridors connecting the Houma-Thibodaux area to the Sunshine Bridge via the Bayou Lafourche Ridge. The *Preliminary Alternatives Screening Study for an East-West Corridor from Houma-Thibodaux to Sunshine Bridge* is included in Appendix E.

As a result, the study area was expanded to include the east-west corridors. The supplemental study included a preliminary evaluation of alternatives within the newly expanded study area.

On November 19, 2010, a fourth agency coordination meeting was held to review the project background and status, the updated traffic report, and the screening analysis. Attendees included: LADOTD, FHWA, Louisiana Department of Wildlife and Fisheries (LA WL&F), USACE, USFWS, SCPDC, and EPA. Comments were provided from agencies in regards to the alternatives and other information presented during the meeting. These comments were taken into consideration in the continued evaluation and development of the range of alternatives.

On April 6, 2011, a fifth agency meeting was held at LADOTD. Attending the meeting were representatives from LADOTD and FHWA. Discussed in the meeting were the Central, Western and LA 20 alignments. Following a lengthy discussion it was determined that the LA 20 alternate did not meet the Purpose and Need and therefore was removed from further consideration. The Central and Western alignments were advanced forward for further analysis.

On March 27, 2012, a sixth agency coordination meeting was held at SCPDC Attendees included: LADOTD, FHWA, Terrebonne Parish, SCPDC, USACE, USEPA, St. James Parish, USFWS, and LA FWS. The objective of the meeting was to provide a project recap, discuss the refined Purpose and Need, the results of the traffic study, and the current status of the project in reference to the NEPA process. In addition, the range of alternatives was discussed and their potential impacts to the human and natural environment. Comments regarding the traffic study, the range of alternatives and associated impacts, the refined Purpose and Need, and other information were provided during the meeting and through formal written documents sent through email. These comments were taken into consideration and incorporated into the revision of the Purpose and Need and range of alternatives.

5.4.4 What Section 7 consultation occurred?

Based on the requirements of Section 7 consultation and the Endangered Species Act (ESA), federal agencies are directed to work to conserve endangered and threatened species and to use their authorities to further the purposes of the Act. In April 2005, the USFWS expressed concern over the potential construction of a new roadway through wetlands, for the new road could have significant adverse impacts to the wetlands and other wildlife resources (see correspondence in Appendix N).

As a result of the SOV letters, USFWS recommended that the alternatives that improved existing elevated sections be evaluated in an effort to minimize potential adverse environmental impacts. In addition to coordination with USFWS, other alternatives being considered were refined to reduce encroachment on significant natural resources. All further consultation will be documented and included in the FEIS.

5.4.5 What Section 106 consultation occurred?

In an effort to fulfill the requirements of the National Historic Preservation Act of 1966 (NHPA) Section 106 for public involvement, background research was conducted to identify and tabulate the existing cultural resources within the study area. The opportunity for the participation and opinions of interested parties throughout the Section 106 process should also be conducted. Based on the PIP, the following tasks and responsibilities will be fulfilled to meet the NHPA requirements:

- Provide input on the identification of historic resources eligible for the National Register of Historic Places and effects to these resources resulting from the project;
- Identify, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts;
- Assist in the development of measures to avoid, minimize, or mitigate adverse effects to historic resources; and
- Provide meaningful and timely input on unresolved issues.

All Section 106 consultation correspondence will be completed and documented in the FEIS.

5.5 HOW WAS THE PUBLIC INVOLVED IN THE PROPOSED PROJECT?

5.5.1 What public information meetings were held?

In accordance with the PIP and SAFTEA-LU Section 6002 that states that the public will be provided opportunities to provide specific input on the Purpose and Need and the range of alternatives, a series of public informational meetings were held in an effort to include the public with the project development process.

Following the agency scoping meeting on July 13, 2004, the first public informational meeting was held at Nicholls State University's Gouaux Auditorium on July 15, 2004. The overall objective of the meeting was to provide an overview of the project by presenting the Purpose and Need, the NEPA guidelines in which project documents would be prepared, project background and location, and preliminary project scheduling and milestones. Following the presentation, local constituents were given the opportunity to ask questions and provide comments. Attendees were asked to fill out survey questionnaires in an effort to further solicit input from local residents, officials, representatives, and other organizations.

The second public meeting was held on November 18, 2004 at Nicholls State University's Gouaux Auditorium. A summary of efforts since the July 2004 public meeting was presented along with cost assumptions, revised project area maps, and preliminary design criteria for the proposed roadways. All verbal comments were recorded during the meeting and documented in the meeting transcription. All written comments were obtained from the survey questionnaire or responses mailed or emailed to the project team.

The third round of public meetings were held on November 5th and 6th, 2007 in Thibodaux and Napoleonville on the East-West Connector and there was minimal participation. Therefore because of the low attendance, three people total, another meeting was schedule for November 27th.

On November 27, 2007, the fourth public meeting was held at Napoleonville Middle School in Napoleonville, Louisiana. This meeting was held to discuss and obtain public input in regards to the consideration of an alternative that would potentially cross Bayou Lafourche, Louisiana Highway 1 (LA 1), and LA 308. This alternative was analyzed to evaluate the feasibility of an east-west corridor that would connect the Houma-Thibodaux area to the Sunshine Bridge. A detailed description of the efforts that led up to this analysis, the proposed typical sections, and additional exhibits were presented. The public were then given the opportunity to verbally comment on the presented information. These comments were recorded and included in the meeting transcription.

The fifth public informational meeting was held on March 9, 2010 at Nicholls State University's Gouaux Auditorium. The objective of this meeting was to present the revised Purpose and Need, previous project coordination, the status of the project related to the NEPA process, and opportunities for continued public involvement. In addition, the results of the alternative screening study were discussed to update the public on the additional route that was considered in the NEPA document. Based on the information presented, the public provided both verbal and written comments that were documented and considered during the further analysis of alternative routes.

5.5.2 What community/town hall meetings were held for the proposed project?

Following the second public informational meeting, a community information meeting was held on December 9, 2004 at the St. James Parish Westbank Reception Hall. Advertisements for the meeting were published in the local newspaper to ensure that the public was aware of the upcoming meeting. Project informational materials were provided to all attendees at the start of the meeting, which allowed the public to become familiar with the scope of the project prior to the formal presentation and discussion.

At the conclusion of the presentation, the public were provided the opportunity to view exhibits and interact with the project team. Attendees provided their verbal comments that were recorded during the meeting. Survey questionnaires were also distributed amongst the group to further solicit input from local residents and other interested parties to establish areas of concern. All populated questionnaires were compiled and made available upon request.

5.5.3 How did the project team convey information to the public?

5.5.3.1 Project newsletter

As stated in the PIP, a minimum of two newsletters were to be published over the course of the project. Newsletters were prepared and published in the years of 2005 and 2010. Project newsletters were published in print and on the project website for distribution throughout the study area. The purpose of the newsletters was to provide local residents, public officials, schools, local organizations, and other groups with a project overview, description of the efforts achieved since the previously published newsletter, and project schedule.

Copies of the newsletters are included in Appendix P.

Recipients of the newsletters were also provided the opportunity to participate in consultation regarding historic resources pursuant to the Advisory Council on Historic Preservation (ACHP) 36 CFR Part 800 regulations implementing Section 106 of the National Historic Preservation Act (NHPA).

5.5.3.2 Project website

The LADOTD Houma-Thibodaux to LA 3127 Connection EIS website was developed to provide general information and updates regarding the project. The public can access the website at www.ht3127eis.com to obtain additional project information, schedule small meetings with the project team, register to be on the mailing list, and view project location maps. The project location maps do not provide sensitive data that is protected by federal and state regulations. The LADOTD Houma-Thibodaux to LA 3127 Connection EIS website will be maintained until the FHWA Record of Decision (ROD) has been published.

5.6 PUBLIC OFFICIALS MEETINGS

All state and local officials were invited to the scoping and public information meeting. Over the course of the EIS process, local interested parties and government officials, such as the South Central Industrial Association (SCIA) and the Houma-Thibodaux Metropolitan Planning Organization (HTMPO), were briefed with updates at project milestones to facilitate the flow of information throughout their respective regions and associated agencies. All briefings were facilitated by members of the project team.

Chapter 6. Comments and Responses

HOUMA-THIBODAUX TO LA 3127 DEIS

AGENCY COMMENTS					
No.	**Date**	**Meeting Date**	**Agency**	**Comment**	**Response**
1	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	A. Would it be worthwhile running Quantm on all of the 1999 Feasibility Study corridors?	Yes
2	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	B. The Army COE and EPA want "Avoidance" Alternates evaluated.	Comment Noted.
3	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	C. If the 1999 Study did not consider other projects, then that study was not complete.	Comment Noted.
4	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	D. Will we be addressing how traffic is getting to US 90?	Traffic was evaluated for the existing roadway network within the project area.
5	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	E. Will we consider "Non-Build" Alternatives?	Yes.
6	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	F. Culturally…You should consider doing a detailed survey of archaeological resources on selected path.	Comment Noted.
7	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	G. What are plans for improvement to LA 3127?	LA 3127 will be widened to provide 4 lanes of traffic.
8	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	H. Is it wise to be directing Houma-Thibodaux residents to Gramercy-Wallace Bridge? Would this not be sending them into "harm's way"?	The feasibility of using this bridge has been evaluated and discussed in the document.
9	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	I. Would one or the other bridges (Sunshine or Gramercy-Wallace) be more critical than the other to the Houma-Thibodaux population?	The feasibility of using these bridges have been evaluated and discussed in the document.
10	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	J. Study area boundary on the east is logical.	Comment Noted.
11	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	K. The next Agency Meeting will be scheduled for September/October 2004 to look at preliminary range of alternatives. This will be prior to Public Meeting #2, which is targeted for November 2004.	Comment Noted.
12	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	L. Need to revisit, but not dwell on, 1999 study findings.	Comment Noted.
13	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	M. Seems to be conflict regarding US 90's ability to act as a hurricane evacuation route. (This Purpose & Need vs Route 1 Purpose & Need)	Comment Noted.
14	7/13/2004	7/13/2004	FHWA, LADOTD, USACE, Ascension Parish Sheriff, Assumption Office of Emergency Preparedness, Lafourche Parish. St. James Parish, Terrebonne Parish, Chitamacha Tribe of LA, EPA, Dept. of Natural Resources, LA Dept. Wildlife and Fisheries, LA Office of Homeland Security, NOAA Fisheries, SCPDC	N. New construction best if along Lafourche Ridge	Comment Noted.
15	7/13/2004	7/13/2004	Parish of St. James, President	On July 13, 2004 I attended a meeting at South Central Planning and Development Commission's office in Houma, Louisiana which you hosted concerning the North/South Hurricane Evacuation Route. Present with me at this meeting was Mr. Jody Chenier, my Director of Operations and Mr. Gerald Falgoust, my Director of Emergency Preparedness. This meeting we found to be informative; however, we feel that the best route is Alternate #7 which was totally ignored. Thus, from that standpoint we were extremely disappointed, for it felt that Alternate #7 as discussed in Exhibit "A" (enclosed) which is my letter dated May 7, 1999 to Ms. Michele Deshotels presents my detailed position concerning this matter. Please note that attached to my letter is St. James Parish Council Resolution No. *99-65* which was unanimously passed by our council also supporting Alternate #7. Upon reviewing Exhibit "A" it is unconceivable that Alternate #7 would not be the route of choice.	Comment Noted.

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No.	Date	Meeting Date	Agency	Comment	Response
16	6/23/2004	7/13/2004	Gulf South	Not complicate anything, but just to lend further insight into some local concerns and talk that may be a possibility in the Quantm modeling. Locally, in Terrebonne Parish, Valhi Blvd. was recently extended by the Parish. It is currently a 2 lane road, but the corridor (to Hollywood Road) has been set-up as a four lane facility. It currently extends from the Houma Civic Center (usually an evacuation shelter) north to Hollywood Road. It is approximately 1 mile west and parallel to LA 311. Due to the high growth along LA 311 and since LA 311 is currently a 2 lane facility, to relieve traffic-there has been discussion and even a map prepared on possibly extending Valhi Blvd all the way to US 90 and beyond to Schriever and the west bypass road around Thibodaux. Don't know if this fits into any of the master plan thinking but I'll try to get a reduced copy of the map, put it in the mall to you so you can be familiar with it. This could be a factor if any of the options show the N-S corridor passing on the west side of Thibodaux.	Comment Noted.
17	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	A. On July 13, 2004 I attended a meeting at South Central Planning and Development Commission's office in Houma, Louisiana which you hosted concerning the North/South Hurricane Evacuation Route. Although I found this meeting very informative, I feel that the best route, Alternate #7, was totally ignored. Thus, I was very disappointed. In fact the Southeast Louisiana Hurricane Task Force felt strong enough about Alternate #7 that the attached Resolution was unanimously passed by all members present. Your open minded consideration concerning Alternate #7 will be greatly appreciated, for its felt that Alternate #7 is the best possible location for this proposed highway.	Comment Noted.
18	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	B. We are all aware of the significant need for a Hurricane Evacuation Route from the Houma/Thibodaux areas	Comment Noted.
19	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	C. The southeast and south-central section of Louisiana needs immediate relief for evacuation during times of an approaching hurricane, and,	Comment Noted.
20	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	D. Immediate relief would be achieved by the completion of the four-laning from the relocated US 90 to LA 3127, to the Veterans Memorial Bridge, to US 61 and 1-10 via Alternate 7 would provide true hurricane evacuation relief; and,	Comment Noted.
21	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	E. This route would provide a different route for traffic and vehicles traveling south from LA 3127 to Thibodaux and Houma over the present LA 20 which is a sub-standard extremely hazardous highway from Vacherie to Chackbay; and,	Comment Noted.
22	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	F. WHEREAS, Alternate 7 will not involve the relocation of mass residents; and,	Comment Noted.
23	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	G. Alternate 7 will provide immediate relief at less cost (a minimum of $64.7 million savings) in comparison to other alternatives; and,	Comment Noted.
24	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	H. Alternate 7 will provide greater utilization of the Veterans Memorial Bridge, Sunshine Bridge and the Hale Boggs Bridge; and,	Comment Noted.
25	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	I. Alternate 7 will better serve the populated areas that can feed onto this new highway, the Central and Lower Lafourche area (including the Raceland area) from Highways 90, 3052, 308 and 1, Houma, Gray, Schriever, South Thibodaux, Thibodaux proper (including Thibodaux Regional Medical Center and Nicholls State University), the North Thibodaux area, Choctaw, Chackbay/Choupic, Bayou Beouf!Kra6mer areas (from Highways 304,20 and 307), South Vacherie (from Highway 20) and the remainder of West St. James Parish (from Highways 3127, 18 and 20)	Comment Noted.
26	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	J. Alternate 7 services more populated areas than Alternate 6,6A or 7A:, and, WHEREAS, Alternate 7 provides easier access from the River Parish area to Nicholls State University, Thibodaux Regional Medical Center, Thibodaux/Houma area businesses, catholic schools, etc.	Comment Noted.
27	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	K. Alternate 7 provides easier flow of tourism between the River Parish area and the Lafourche/Terrebonne area; and,	Comment Noted.
28	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	L. Alternate 7 has the least environmental impact.	Comment Noted.
29	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	M. Alternate 7 will also provide a more efficient evacuation of the River Parish area south due to a nuclear power plant issue and/or a hazardous material incident along the river; and,	Comment Noted.
30	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	N. The Southeast Louisiana Hurricane Task Force enthusiastically and wholeheartedly supports Alternate 7 as described in the March 1999 Draft Hurricane Evacuation Corridor Study prepared by URS Greiner Woodward Clyde and submitted by the Louisiana Department of Transportation and Development under State Project No. 700-99-0132	Comment Noted.
31	7/20/2004	7/13/2004	Southeast Louisiana Hurricane Task Force	O. The resolution having been submitted to a vote was enthusiastically endorsed by all members present. There were no dissenting votes.	Comment Noted.
32	7/15/2004	7/15/2004	State Senate-District 20	Thank you, Michelle. First, I think I know about half the people in here, but my name's Reggie Dupre. I'm state senator for District 20. District 20 encompasses about two thirds of Terrebonne Parish, mostly the southern portions and most the city of Houma and about 60 percent of Lafourche Parish. So I am the majority senator for both Lafourche and Terrebonne Parishes. Out of all 144 state legislators, Reggie Dupre lives the furthest south, out of all of them. I live closer to Fidel Castro than anybody else in the state legislature. I'm very pleased the EIS is finally started. Personally, I think the rough study that was done and this EIS has the wrong northern boundary, 3127. I feel it ought to be Interstate 10 because that's our ultimate goal, is to get to Interstate 10. I can tell you down here in South Louisiana I'm not that worried about Al Qaeda and the terrorist attacks. One day we may see thousands of people die in South Louisiana because of a major hurricane. And most occurred two years ago. I did send a written response and it was a short letter and I'd like to read it into the record also for the benefit of those who are here. I am very pleased to hear that DOTD has finally initiated EIS for a north-south hurricane evacuation corridor. I have always been a staunch supporter of this project. I represent approximately 120,000 citizens in Lafourche and Terrebonne Parishes. My district is one of the most vulnerable for hurricane tidal surges. This project will provide safe evacuation to approximately 200,000 of South Louisiana citizens. Two years ago my two parishes were struck by a tropical storm, Isidore, and Hurricane Lili within a two-week period. Had hurricane Lili continued straight for Morgan City as the original Category 4 strength, most of my district would have had to face tidal surges of approximately 14 feet above sea level. And we do have maps from NOLA to prove that a 10:00 p.m. advisory the night of the hurricane showed what would happen. Lafourche and Terrebonne would have been the hardest hit. Considering an average height of the homes and businesses in my district is only about 7 feet above sea level, over 90 percent of the structures in my area would have been under 7 feet of water. I feel that Hurricane Lilly was a wake-up call for those public officials. There are currently no adequate north-south highways to evacuate south-central Louisiana. About two years ago, a rough study was done on this project. I personally preferred an eastern route which would line up the Gramercy-Wallace Bridge to U.S. 90 on the Lafourche-Terrebonne border and the Bayou Blue area. It is obvious that we may have to consider tolls to	Comment Noted.

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No.	Date	Meeting Date	Agency	Comment	Response
				construct this highway. A direct link to the Gramercy-Wallace Bridge would have more traffic to justify tolls, if necessary. Furthermore, the Gramercy-Wallace 3 Bridge connects I-10 closer to I-55 for our citizens to travel north out of harm's way. And I said I will try to participate. I am here tonight. I am participating in this meeting. Yesterday, Senator Jody Amadee, represents St. James and Ascension Parishes, called me. He said, Reggie, was this your idea to build a highway between the two bridges? I said, No, it was not. He said he'd like a direct link also. So does Senator Gautreaux. And I've talked to several other representatives in this area. It seems the consensus is building a direct link would be the best thing for this area. Why? It brings you faster access to Interstate 10. We don't need to send people in the metropolitan areas of New Orleans and Baton Rouge when trying to evacuate. I think we're tied up enough in traffic. I personally feel there's more developable land on the eastern side, especially the eastern side of Thibodaux near Nicholls for right-of-way purposes, and giving Nicholls a direct exit for a four-lane highway would definitely help this university grow and become a more regional facility. The State has just appropriated 27 million dollars to build the spur between the Wallace-Gramercy Bridge and 3127, which is called in this map future 3213. Most of us in the legislative delegation in this area feel that driving south, when you get off the bridge, you ought to be able to keep on straight and come straight towards Thibodaux. How we going to pay these major highways? We need to take that into consideration. The DOTD just recently did a 20-year master plan. In that master plan it states that in 7 years from now, we will stop constructing new highways and capacity projects unless we come up with additional revenue sources. 7 years. This project will not get built unless we have new taxes or tolls, the nasty Ts. It will take one of the two. When you're looking at over $2.00 a gallon for gasoline, a new tax on gasoline will not pass. That is unacceptable, and you'll never get the votes in the state legislature. It requires two-thirds vote of the house in the legislature. So we're going to have to consider tolls. Just yesterday the Louisiana Transportation Authority approved a resolution to go to the State Bond Commission recommending the building of lower LA-1 and selling and getting over 180,000 for revenue bonds, revenue bonds from tolls that will be done on the Leeville Bridge to pay for that 17-mile stretch of highway. And I know you have concerns about wetlands north of Thibodaux, but even at my very conservative definition of what's a wetland, all of the area between south of Golden Meadow at the end of the hurricane evacuation project to Port Fourchon is all wetlands. So we're building a 17-mile causeway in south Lafourche and we have a record of decision at EIS fixing to go to bid, hopefully within about a year, year and half from now, on portions of that causeway. So don't tell me that we can't address some of the environmental issues on the north side which are comparatively speaking much, much less. And like I said before, a direct route, of course, would prove more traffic for tolls. Because that's how you pay highway patrols, you have to have the traffic to warrant it. A few years ago in 1999 there was a bill to reauthorize the tolls for the Crescent City Connection at a dollar. The Sunshine Bridge was reduced to 50 cents. Well, it was costing 46 cents per car to pay for the toll-takers. So in essence what we had is we had a tax to pay the tax collectors. So I agree with what Secretary Movulsaki (phonetically spelled) did. He said that doesn't make any sense, so he pulled the tolls off and tore down the toll booths. But the original plan was to leave the tolls at $1.00, bond out the money, and four-lane LA-1 between Whitecastle and Donaldsonville and LA 70 between the Sunshine Bridge and Interstate 10. Then you would have that bigger loop to the south of Baton Rouge, four-lane loop. Unfortunately, the bill passed at 50 cents. But that's the only way. I feel that if we want to build this highway in our lifetime, we have to consider tolls. That's the pure facts of it. That's the only way we will see it done, I think, in the relative near future. Thank you.	
33	8/23/2004	7/15/2004	City Of Thibodaux	Mentioned that the City of Thibodaux preferred an alignment that would go around Thibodaux to the East of the City.	Comment Noted.
34	8/23/2004	7/15/2004	St. James Parish	Questioned why this study would be looking at additional alignments when the URS feasibility study already completed that task	LADOTD answered that the feasibility study was completed in 1999 and now have additional and more recent data that may affect the alternatives.
35	11/18/2004	11/18/2004	Agency Representative	A. It was asked if different starting points on the south end of project would be considered.	In response it was noted that a QUANTM run starting on 90 to the west of LA 24 has already been initiated but the results have not yet been received. A brief review of the QUANTM process regarding how requests for evaluations of new starting points or other modifications was provided.
36	11/18/2004	11/18/2004	USACE	B. The USACE representative asked if “avoid all wetlands” can be entered into the optimization program.	It was noted that, in theory, that was possible. However, regarding total avoidance of wetlands, given the expansive wetland areas, total avoidance of this valuable resource appears to be unlikely. It was noted that the DOTD appreciates the need to try to avoid wetland impacts, and, if impacts cannot be avoided to minimize impacts to wetlands. Finally, whatever impacts cannot be avoided or minimized, impacts need to be mitigated.
37	11/18/2004	11/18/2004	USACE	C. The US Army Corps of Engineers representative noted that they have pushed for an alternative that follows Bayou Lafourche ridge and have not deviated from that position. This route extends beyond the project area. By following the west side of the Mississippi River, the route avoids Baton Rouge. It was noted that the basis for our project is the 1999, Hurricane Evacuation Corridor Study prepared by URS Greiner. The URS study set the project boundaries for the Houma- Thibodaux to LA 3127 Connection, Hurricane Evacuation Route project. The URS study also provides a feasibility study of alternative corridors for hurricane evacuation and was intended to provide the DOTD with recommendations for future study. The URS report will be reviewed and a formal response will be provided to the USACE.	Comment Noted.

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No.	Date	Meeting Date	Agency	Comment	Response
38	11/18/2004	11/18/2004	Agency Representative	D. It was asked if we need an interstate grade highway for evacuation.	In response it was noted that the DOTD sets the criteria for what the roadway will look like including if it will meet interstate standards. The present proposed route is designated as an F-3 highway which is a 4 lane freeway having a right-of-way of 300 ft. wide. The highway and structures are proposed to be at or above storm surge height
39	11/18/2004	11/18/2004	USACE	E. The US Corps of Engineers representative noted that they will assess impacts of height during the permitting process	Comment Noted.
40	11/18/2004	11/18/2004	USACE	F. The US Corps of Engineers representative noted that they are revising methods of wetland mitigation. Direct and indirect impacts will be considered. 3:1 is a better potential reality ratio to use for high quality wetlands. 5 or 6:1 would be a ratio to use for secondary impacts. The Mobile, Alabama District uses a ratio method. No Net Loss is the goal. Bottomland hardwood mitigation bank is approximately $5000/acre. Almost all wetland sin the project area can be considered high quality.	Comment Noted.
41	11/18/2004	11/18/2004	Agency Representative	G. It was asked if there is a mechanism for recording why people want a certain route when drawing lines on the constraint maps provided for that purpose.	It was noted that the team will note in the margins who drew which line but that the reasons for why would need to be recorded on survey forms or by other means
42	11/18/2004	11/18/2004	Agency Representative	H. Regarding the southern termini, it was asked how the LA. Highway 1 project tied into this project. Does the LA. 1 project have to tie-in to the southern terminus of the North-South project?	It was noted that LA. 1 must link to US 90, not specifically to the North-South project and that each project has independent utility
43	11/18/2004	11/18/2004	USACE	I. The USACE representative noted that here is an existing 200 acre mitigation bank in the direct path of the Prospect Street extension (Gremillion Land Bank). The US Corps of Engineers representative also noted that there are 3 other mitigation banks in the project area;-Lafourche Crossing, Greenwood Plantation and one other. The team requested that the USACE provide details including a map showing the location of these new mitigation banks so they can be incorporated in our constraints mapping	Comment Noted.
44	11/18/2004	11/18/2004	USACE	J. The US Corps of Engineers representative expressed his opinion that a transportation link should be the primary purpose as that is what it will be used for 99% of the time. Hurricane evacuation has too many alternatives	Comment Noted.
45	11/18/2004	11/18/2004	Agency Representative	K. An individual involved with access management asked if sharing gas or oil line right of way was a possibility.	A DOTD representative noted that there regulations say that that is not allowed for lines over 250 psi.
46	11/18/2004	11/18/2004	Agency Representative	L. An individual asked how people in Larose get to the evacuation routes.	It was noted that people in Larose need to get to US 90 and then can access the evacuation route from US 90 by either traveling to the east or west to wherever the evacuation route starts from.
47	11/18/2004	11/18/2004	Agency Representative	A question was raised regarding the use of LA 309 on the west side of the project area as an evacuation route since there is an existing 2-lane road through the wetlands. Can it be included in the study?	In response, it was noted that a full range of alternatives will be considered as part of the process and use of QUANTM route optimization software but that there are no plans to expand the project area to the west.
48	11/18/2004	11/18/2004	Terrebonne Parish Sheriff	Expressed his views that evacuation for the area should remain on the west bank of the Mississippi River generally following a route to Donaldsonville, then Port Allen, then Simmesport, then to Alexandria. He marked this path on a state highway map	Comment Noted.
49	11/18/2004	11/18/2004	State Senate-District 20	My name is Reggie Dupre, State Senator, District 20. I represent about two-thirds of Terrebonne Parish's population and about 60 percent of Lafourche Parish's population, on the coast of both parishes. My district goes from the Atchafalaya River to the Grand Isle line of the beach. You know, we met here in July. Since then we've had a big lesson. We had Hurricane Ivan. Several days after Hurricane Ivan, I was at meeting with Governor Blanco, and I said, Governor, did you learn anything from Hurricane Ivan's evacuation. She said, Yes, I did, Reggie, two things. First of all, not enough of the citizens of this state know the alternate routes. When we chose where the state highway system was built, there were alternate highways out there, and they were not used enough during this evacuation. We need to educate the people on alternate routes. Secondly, she told me she flew over several areas that were backed up on I-10 and U.S. 90, and she says, I learned -- she learned that intersections create problems. Where you had an intersection, traffic was backed up for miles and miles and it was because of the slow-down of intersections. So when we considering hurricane evacuation routes, we need to minimize the number of intersections, especially a "T" intersection, where you got to turn left or route without interstate-style entrance ramp. What I'm asking for is to look at the big picture. Crude oil is running at close to $50 a barrel, and it was above $50 a barrel for a while. Gasoline prices are around $2 a gallon. You're not going to see a new gasoline tax in the near future to fund these major monster projects. What's the alternative? The alternative is tolls. So if we don't consider tolls, we'll never build this project. That's the facts. Now, who is going to pay a toll that goes nowhere? Well, the answer is, not enough people to pay the highway, so you'll never build the project if the highway does not have a good direct transportation link. That's why I'm totally against any routes that go between the Sunshine Bridge and New Orleans-Gramercy Bridge. We have to either link up to one or the other. I think the Gramercy Bridge or the Veterans Memorial Bridge makes a lot more sense, because we got to see what the Sunshine Bridge and what it will become in the future. One day we will see LA Highway 1 between Whitecastle and Donaldsonville a four-lane. One day we will see LA 70 between on the east bank of the Sunshine Bridge to Interstate 10 four-lane. Once that occurs, you will have an alternate route for truck traffic around Baton Rouge. So the Sunshine Bridge traffic will increase considerably. That'll be your alternate loop, south loop around Baton Rouge. The Wallace-Gramercy Bridge or the Veterans Memorial Bridge, on the other hand, has the least amount of traffic counts of any bridge in the United States of America over the Mississippi River. That's from Canada to the Gulf of Mexico. I'm told the average traffic counts barely get to 5,000 cars a day. We got more than 5,000 cars a day that pass right here at Nicholls University than cross the Mississippi River at Gramercy. The capacity of that bridge is over 50,000 cars a day. That is the anchor. The State of Louisiana is fixing to build, and going	Yes.

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				to bid very soon and they're spending close to $30 million on a road for three miles, linking the bridge, the Wallace-Gramercy Bridge to 3127. In past DOTD hearings, on the road shows, people from Houma, people from Thibodaux, have supported that project, although it's not in our parish. We have always visualized that three-mile link as Phase 1 of the north-south hurricane evacuation corridor. We've always considered it that, and it will be that. Once that three-mile link is built, it will be actually faster for citizens in Thibodaux to go to either New Orleans or Baton Rouge to go north through Highway 20, through Chackbay, because it'll cut out, I'd say, 10 minutes or so. You're not going to have to go on River Road. So let's look at the big picture. Let's look at a more direct route. We start off with a big flaw on this whole system when we did the 1999 raw study. Not one of these maps I see here on the study areas, the shaded areas, goes cross the Mississippi River. If my people are wanting to evacuate for a hurricane, believe me, the people I represent are the most vulnerable, some of the most vulnerable in the State of Louisiana. And I represent Chauvin, Dulac, lower South Lafourche, Leeville, Golden Meadow, Cocodrie, Bayou Du Large, Pointe Aux Chene. If they want to evacuate, they're not going to a sugarcane field on the West Bank of the river in the middle of nowhere, where no one lives in St. James Parish. That's not the purpose of evacuating. The purpose of evacuating is to get across this river. So we got to consider what's the best route and the fastest route across the river. So I'm suggesting and think, in saying that DOTD needs to amend this contract on this project immediately. This EIS is costing $2 million. It is funded by $1.6 million of federal transportation dollars and $400,000 of local, not state, but local dollars. The way we raise those local dollars, the seven parishes that are directly affected in this project has about 400,000 people in it. We raise -- each one of these parishes, and some of them are poor. And Assumption Parish put up their proportionate share, St. James Parish, St. John put up -- and Terrebonne, Lafourche, St. Mary, St. Charles Parish all put up their proportionate share. So basically these local governments put up a dollar a person. One dollar for every person in their parish was put up by the local government. The State has nothing on the line, financially, yet on this project. Now, I know we have a little bitty contingency left in the budget, what was put in the federal budget for this EIS. I suggest we go back, renegotiate the contract. The study area needs to be extended to Interstate 10 to the north. We've got to evacuate to I-10 or I-55, but we've got to go beyond -- we got to get across the river. So that's my -- the suggestions I'm making is, No. 1, extend the study area to Interstate 10, not just 3127. We've got to get across that river. No. 2, extend the purpose and need to not only hurricane evacuation, but also consider a transportation link. And I understand y'all may have done that already.	
50	11/18/2004	11/18/2004	State Senate-District 20	That is crucial. And strongly consider the most direct route. You know, they say the devil's in the details, and this is a summary sheet of 10 -- this one sheet says it all, and you might not think us elected officials read this fine print, but sometimes we do. This is a summary sheet of the 1999 raw study. The three chosen routes are Route 6, 6-A, and Route 7-A. I'm suggesting looking at something which is very, very similar to Alternate 7 which was not considered as one of the routes. Well, let me tell you the differences between them. On mileage, they're very close; all four are very close. The shortest one is 63-1/2. The longest one is Route 7, I'll admit it, it's 65.4 miles. But if you take into consideration that extra 9 or 10 miles between the bridge, in the middle between the two bridges, this is actually the shortest route. That needs to be considered as far as the routes. But let's talk about the project costs. According to this '99 study, Alternate 7, which is not a chosen route, is the cheapest. It is $144 million cheaper than Alternate 6. It is $155 million cheaper than Alternate 6-A and $65 million cheaper than 7-A. So it's at least $65 million cheaper. Okay. Part of the environmental impact assessment is wetland impacts. Alternate 7 has 360 acres of wetland impacts. The next closest one is Alternate 7-A, which goes to the middle, it's 365 acres. 6-A has 415 acres, and 6 has 400 acres. So what I'm suggesting, we need to seriously consider a direct route, which has been shown on this study to be the cheapest route and the less environmentally sensitive route. Based upon this formation, y'all going to have to convince me why we're not choosing Alternate 7. I mean this young lady must have mentioned the words "common sense" about eight times in her presentation. It's all about common sense, it's all about looking at the big picture, and that's why I think we really need to consider this direct route, the one that does make the most common sense for the future of the State of Louisiana.	Comment Noted.
51	11/18/2004	11/18/2004	State Representative-District 58	Good evening, my name is Roy Quezaire. I'm state representative from Donaldsonville. I represent District 58 which encompasses major portions of five parishes, Iberville, Ascension, Assumption, St. James, and all of the West Bank of St. John the Baptist Parish. I'm also very proud to be the chairman of the House of Representatives Transportation Committee. Senator Dupre and I entered the legislature the same year and we've been very good friends and best of colleagues and we've bounced a lot of ideas off of one another. First and foremost, we just concluded what you heard Senator Dupre talk about, the road show. That's, by way of legislative act, law -- the joint transportation committee of the Senate and the House of Representatives, by law is ordered or compelled to travel to all nine of the DOTD districts, the width and breadth of the State of Louisiana. And we have opened public meetings for the folks and citizens to come in and give their views and opinions on the transportation concerns, infrastructure network, and transportation systems, concerns that they have. As you move throughout each quadrant of the State of Louisiana, the needs are different. But in this area, in our area of the state, because of what we have experienced in the past, we need to -- we ought to make sure that the decisions that we make are, first of all, I heard the terminology "common sense," but mostly safe, efficient, and effective. Also, please keep in mind that as we are postured on the West Bank of the Mississippi River, that it is imperative that we take advantage of the various bridges, from Hale Boggs, or the Destrehan-Luling bridge, all the way up to Baton Rouge, and keep in mind that the true Westbank Expressway have been talked about for well over 20 years, which would be the four-lane expressway from Port Allen all the way down the West Bank of the Mississippi River. The only area that it is not four-lane, or have the potential of being four-lane, is just the 10-mile stretch between Donaldsonville and Whitecastle that Senator Dupre talked about. But having a connection, that arterial vein running along the side of the West Bank of the Mississippi River, is very, very important. And it will be the southern loop coming from Baton Rouge, not only for hurricane evacuation and safety and protection of the folks and the citizens, but also for economic development, which is what the direction that this State must head in. Keep in mind also that if, in fact, the proposed international cargo facility comes to fruition, which is also in my district, there will be, automatically, more four-lane and interconnector highways bringing traffic to,	

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				through, and around that particular 25,000 acre site. So we will have some future connectors that will move people safely and efficiently and effectively from one point to another on the West Bank of the Mississippi River. But I will yield -- I will yield to you, the citizens in this area, because my district does not come all the way here, but it stops right there in Assumption Parish. But I will yield to you all and your views and opinions that what you feel is best and then let our experts take it back to the table and then come up with a more sensible decision. Now, Louisiana must, must embrace the toll concept. There's no way for us to get around that. As I travel annually from Donaldsonville to Milwaukee, Wisconsin, I can't wait till I get to Chicago, Illinois and get on the toll highway that'll lead me all the way into Milwaukee, Wisconsin. It's a pleasure to put a coin into the basket or the dollar bills, whatever the toll rate is. But let me tell you something, it's a fast, efficient, safe way of moving people and commerce and trade from Point A to Point B. And once folks get accustomed to doing that, it's a way of life. But we can't get around that. In Oklahoma, my son lives in Tulsa, Oklahoma, when I travel to him, I hit at least three different toll roads, and they've been in existence for quite some time. Those folks have had the foresight and the understanding of what toll roads can do for them. We are, as we speak, as a state, the Louisiana Department of Transportation and Development is experiencing a $10 billion backlog of work yet to be done. Now, not 10 million, 10 billion. What's the answer? Quite naturally, folks don't want to hear the talk about taxes, but we have to shoulder this responsibility for the generations following us. Toll roads is the way to go. Port Fourchon, I cannot say enough about that wonderful facility, Port Fourchon and what it brings to this nation. We should have had a four-lane superhighway years ago, years ago, leading to that. All of that will give us economic development and also massive evacuation capabilities for now and the future. So I am for it. We will continue, Senator Dupre and I and the rest of the legislative delegation, to educate and sensitize the rest of our colleagues from north, south, east, and west about the importance of this particular corridor that we are talking about, proposed corridor that we are talking about tonight. So we know the job that we have to do, and we're looking forward to rolling up our sleeves and continuing to do work at the state capitol. There's still yet a lot of work to be done. As you see here on the April 26, '04, through April 26, '06, we have two more years of actual planning and getting things on the table and then to move forward with what will be the most sensible thing to do. So let me commend, congratulate, and applaud you all for being here tonight. It's important that, you know, what you think and what you say and what your views and opinions are, as we get them on the record, get back to the department and all of the experts, and then come out with a sensible answer.	
52	11/18/2004	11/18/2004	Houma-Terrebonne Chamber of Commerce	Thank you very much, Ms. Deshotels. My name is Daniel Walker. I'm not a politician. I live in Houma, Louisiana. I'm here representing the Houma-Terrebonne Chamber of Commerce. I've been the chairman of the infrastructure of the chamber for the last year, and prior to that I was in an officer position. I served as chairman of chamber. We have been very involved with the development and watching this project as it unfolds. And I have to tell you that probably -- I don't know if I can say that I was the most outspoken, but I was very outspoken and very much not in favor of what DOTD was doing in the past with respect to this project. I'd like to commend the Department for these public hearings, for amending the statement of purpose and need to include the linkage to the interstate. Senator Dupre said it probably more eloquently than I can say it. I believe that the scope and need of the project needs to be amended to include to encompass taking the route all the way to Interstate 10 via the Gramercy-Wallace Bridge. I believe that the most -- the route that makes the most sense is, I believe, Alternate No. 7, which goes to the east and is the most direct route from our perspective. And I'm grateful for the opportunity to be here. I really just endorse what the senator has said. I think that he expresses what our ultimate goal is here and where we'd like to see this project. And I thank you for the opportunity.	
53	11/18/2004	11/18/2004	Chitamacha Tribe of Louisiana	Good evening, I'm Jason Emery. I'm with the Chitimacha Tribe of Louisiana and I'm here -- actually, that's a very interesting comment. I think it would be very fruitful to potentially extend this to I-10, but that's not actually the purpose of my being here. I wanted to bring, I guess, our perspective, which is that cultural resources are an important aspect of planning and in EIS and they're important to the tribe who has, you know, been here in the State of Louisiana, in South Louisiana, according to tradition since, you know, the world began and documented archeologically, which is what I am, for at least 6,000 years, based upon carbon dating. So they have their -- again, a strong interest in developing this area. They recognize that hurricane evacuation is a primary need for the Houma-Thibodaux area. This project is an exciting opportunity to make that actually happen and there's a subsequent facet of the project reaping economic development along with it. You certainly can't stop progress. But the main point that they want to bring out, I guess, is that in developing a new road, there are a number of archeological sites, prehistoric archeological sites that need to be considered in the development process and, hopefully, not impacted, and that's really all that I have to say. Thank You.	Comment Noted.
54	11/18/2004	11/18/2004	Houma-Terrebonne Chamber of Commerce	Al Badeaux. I'm also with the Houma-Terrebonne Chamber of Commerce. According to the routes that URS Greiner did back in '99, that Senator Dupre reverting to, or made reference to -- in other words, none of those routes, none of those numbers are valid anymore; is that what you're saying?	That study was valid within the constraints of that study. And what we have been directed to do with that study is to look at, solely, the issue of hurricane evacuation. What is exciting about the Quantum method is that this a relatively cutting edge software method that allows us to look at a multitude of alternatives that you could not do by hand the way that that study was done. But the data that that study generated is not invalid data. A lot of that stuff in the conclusions and recommendations made can be pulled in and utilized in the sense of helping to set a base for where we're going with this study. But as far as how the Quantum method works, it doesn't reuse those lines. It goes out and it looks at the constraints that are there. We've updated constraints because it's been five years. We have better information. There's better technology out there. Technology has advanced considerably in the last few years, and we're able

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					to take advantage of that. The State of Louisiana is a leading state in EIS in the nation, and some of the databases we have, other states are envious of where we are in that regard. And we don't always realize how far we've come along in some of these ways, and we're able to take advantage of that new information out there that may not have been available five years ago.
55	11/18/2004	11/18/2004	Houma-Terrebonne Chamber of Commerce	The only reason I say that is because he made reference to that particular study, on that particular route. That's why --	That particular study served its purpose, and what it shows us that it's feasible to take this project to the next step. And I might say with that, that this project is still not what we consider a funded project. This study -- this stage is funded, but we have not identified funding past this stage, and that's why the toll issue is so much an important part of this discussion that we're having.
56	11/19/2004	11/18/2004	South Central Industrial Association (SCIA)	A. The SCIA Board of Directors, representing approximately 200 member firms ·with over 35,000 employees in the bayou region, unanimously voted in support of Alternate 7 as a preferred route for the :North South Access Highway Project. Logistically, Alternative 7 would provide the best evacuation route for Terrebonne and Lafourche parish residents. This route would provide a direct link from US 90 to the Veteran's Memorial Bridge in Vacherie/Gramercy, thus providing access to Interstate 10 and Interstate 55. We are pleased that alternative alignments will be evaluated in conjunction with financial, environmental and social constraints. It is obvious the LA DOTD is diligently working to provide the best possible solution for the protection of so many lives in south Louisiana. We encourage your continued work and look forward to being informed of the progress you are making regarding the North South Access Highway Project.	Comment Noted.
57	11/19/2004	11/18/2004	South Central Industrial Association (SCIA)	B. The South Central Industrial Association (SCIA) representing approximately 200 member firms and 35,000 employees, strongly requests further review by the Louisiana Department of Transportation and Development (LA DOTD) with regards to the North South Access Highway Project	Comment Noted.
58	11/19/2004	11/18/2004	South Central Industrial Association (SCIA)	C. The South Central Industrial Association appeals to the LA DOTD to expand and modify the current study for the North South Access Highway Project	Comment Noted.
59	11/19/2004	11/18/2004	South Central Industrial Association (SCIA)	D. The South Central Industrial Association requests the purpose and need be expanded to include transportation links	Comment Noted.
60	11/19/2004	11/18/2004	South Central Industrial Association (SCIA)	E. The South Central Industrial Association encourages the study of the inclusion of Alternative Route 7, which is the most direct route from LA Highway 90 to the Veterans Memorial Bridge near Vacherie/Gramercy.	Comment Noted.
61	11/19/2004	11/18/2004	South Central Industrial Association (SCIA)	F. The South Central Industrial Association believes Alternate 7 is the most cost effective route; WHEREAS, the South Central Industrial Association believes Alternate 7 will provide less wetland impact by construction;	Comment Noted.
62	11/19/2004	11/18/2004	South Central Industrial Association (SCIA)	G. The South Central Industrial Association encourages the limits of the study area be expanded to Interstate 10;	Comment Noted.
63	11/19/2004	11/18/2004	South Central Industrial Association (SCIA)	H. The long term safety and essential general welfare of the Bayou and River Regions are critically dependent upon future improvements to the transportation system, specifically the most cost effective and direct route of the North South Corridor/Hurricane Evacuation Route to the Interstate-!0 system, and	Comment Noted.
64	11/19/2004	11/18/2004	South Central Industrial Association (SCIA)	I. The South Central Industrial Association requests the Louisiana Department of Transportation & Development take immediate action to include transportation links and expansion of the limits of study to Interstate-10 for the North South Corridor/Hurricane Evacuation Route project	Comment Noted.
65	11/19/2004	11/18/2004	South Central Industrial Association (SCIA)	J. Therefore, be it further resolved, that the Board of Directors of the South Central Industrial Association on November 16, 2004 unanimously acknowledged, adopted and supported this resolution of transportation links and expansion limits to Interstate-10 for the North South Corridor Hurricane Evacuation Route as set forth above.	Comment Noted.
66	5/7/2006	5/2/2006	LADOTD, FHWA	A. The possibility of making the new LA1 @ US-90 the southern terminus of the project was discussed.	It was determined that point lied outside the study area.
67	5/7/2006	5/2/2006	LADOTD, FHWA	B. The possibility of the study area being too narrow was discussed.	It was proposed that the study area be extended east to the intersection of LA1 & US-90.
68	5/7/2006	5/2/2006	LADOTD, FHWA	C. US Fish and Wildlife voiced reluctance to concur with the stated Purpose and Need on the basis that "linkage" between a population center and a non-population center doesn't provide enough project justification when a significant wetlands impact and an existing north/south route are taken into consideration.	Additional justification for the project would need to be presented in the DEIS to supplement the Purpose and Need in order to obtain concurrence from US Fish.
69	5/7/2006	5/2/2006	LADOTD, FHWA	D. A proposal was made for an elevated section of roadway adjacent to the existing LA-20 north of 307, south of Vacherie. This elevated section would ultimately replace the existing un-developed section of roadway allowing for wetland restoration in that area.	Details of all alternatives considered will be discussed in the DEIS.
70	5/7/2006	5/2/2006	LADOTD, FHWA	E. The DEIS should include justification as to why the use of existing corridors such as LA1/308 are not viable options in achieving the purpose of the project.	Details of all alternatives considered will be discussed in the DEIS.
71	5/7/2006	5/2/2006	LADOTD, FHWA	F. Through input and comment from those in attendance, it was agreed that the eastern corridor and the central corridor traveling through Nicholls State could be eliminated from further consideration.	Comment Noted.
72	2/15/2006	1/26/2006	USFWS	A. The Final Technical Appendix: Traffic Analysis report presents a summary of existing and projected future *non-hurricane evacuation* traffic conditions, and describes duplications/ revisions to the previously presented project alternatives. That document states that one of the primary needs of the corridor study is the "lack of available corridors that provide north-south movement through the area." Consistent with our April 6, 2005, letter, the Service remains concerned about the potential construction of an entirely new roadway through the Des Allemands wetland complex. As stated in that correspondence, an entirely new roadway constructed through that area could have significant adverse impacts to wetlands (including a site proposed for restoration under the Coastal Wetlands Planning, Protection, and Restoration Act) and other Federal-trust fish and wildlife resources (including migratory birds and federally listed species).	Comment Noted.

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73	2/15/2006	1/26/2006	USFWS	B. While we recognize that an environmental analysis of revised alternatives will be developed in the future, we encourage FEMA and LDOTD to evaluate the alternative of improving and/or elevating existing facilities. Such an alternative may provide a means to improve north-south movement and connectivity within the study area, while avoiding and minimizing potential adverse environmental impacts. Many such improvements are currently being considered as described on page 16, Section 3.1, of the Technical Appendix: Traffic Analysis report. Accordingly, the Service recommends, that feasibility of widening and/or elevating Highway 20 be evaluated in the forthcoming environmental documentation, it can be compared with the currently proposed new alternatives, prior to selecting a preferred alignment.	Comment Noted.
74	2/15/2006	1/26/2006	USFWS	C. We appreciate the opportunity to comment on the above-referenced documents and look forward to participation in the collaborative development and selection of environmentally sound alternatives that would also achieve the project purposes	Comment Noted.
75	11/19/2010	11/18/2010	USACE	A. A combination of the western and central routes appears to be the best option	Comment Noted.
76	11/19/2010	11/18/2010	USACE	B. Disagreed that the identified “East/West” option is not technically a north/south option when looking at the bigger picture	Comment Noted.
77	11/19/2010	11/18/2010	USACE	C. The western and central routes following existing roads but in wetlands	Comment Noted.
78	11/19/2010	11/18/2010	USACE	D. The team needs to better define linkage for the agencies and general public	Comment Noted.
79	11/19/2010	11/18/2010	USACE	E. Doesn’t appear a 4-lane route is needed to improve traffic	Comment Noted.
80	11/19/2010	11/18/2010	USACE	F. USACE will recommend/require a 4-lane roadway through the wetlands to be elevated	Comment Noted.
81	11/19/2010	11/18/2010	USACE	G. The purpose and need should show more project need and clearly show purpose.	Comment Noted.
82	11/19/2010	11/18/2010	USACE	H. Better define traffic in the purpose	Comment Noted.
83	11/19/2010	11/18/2010	USACE	I. The project appears to be a LA 20 upgrade	Comment Noted.
84	11/19/2010	11/18/2010	USACE	J. Is the driving force economic development for the road?	Comment Noted.
85	11/19/2010	11/18/2010	USACE	K. The “East/West” is the least damaging alternative	Comment Noted.
86	11/19/2010	11/18/2010	USACE	L. The USACE would review a draft purpose and need statement prior to making comments	Comment Noted.
87	11/19/2010	11/18/2010	USACE	M. Recommendations – tighten up the alignments to minimize impacts, use existing ridges to the extent possible, use existing road	Comment Noted.
88	11/19/2010	11/18/2010	GSE	N. The connection across Gramercy provides more evacuation impacts	Comment Noted.
89	11/19/2010	11/18/2010	USEPA	O. The project was developed by the planning commission years ago and they appear to have a preselected corridor.	Comment Noted.
90	11/19/2010	11/18/2010	FHWA	P. The eastern route can be dropped (concurred by group)	Comment Noted.
91	11/19/2010	11/18/2010	FHWA	Q. The “East/West” Alignment can be dropped. The USACE did not concur at this time based upon current Purpose and Need.	Comment Noted.
92	2/14/2011	2/9/2011	LA-DNR/ CM	I have reviewed the purpose and need, preliminary screening process and recommended alternatives. Comments at this time would be to avoid and minimize wetland impacts to the maximum extent practicable. Currently, the project is located outside the coastal zone boundary. However, the coastal zone boundary may be altered to include the project at some point. Please continue to include our office on any correspondence concerning changes or updates to the project as we would like the opportunity to comment on any future project developments.	Comment Noted.
93	3/17/2011	11/18/2010	US-EPA	A. The purpose and need statement is so narrowly constructed as to provide selection of only a “north-south” option” and “…the so-called “east-west” alternatives	The project team feels due diligence has been achieved in considering not only several north-south routes developed from dozens of trend lines generated by route optimization software, but also several east-west routes traversing the Bayou Lafourche Ridge tying to the Sunshine Bridge. A supplemental screening study prepared in response to resource agencies’ request to independently evaluate routes tying to the Sunshine Bridge resulted in the inclusion of an east-west route in the NEPA document.
94	3/17/2011	11/18/2010	US-EPA	B. Concentrate on alternatives such as widening and elevating the existing LA-20, and improvements to other existing roads	The project team will consult with LADOTD and FHWA to consider evaluating the widening of LA-20 as an alternative to satisfy the project’s Purpose and Need. The Central and Western Alternatives will also be evaluated in greater detail in the draft EIS.
95	3/3/2011	11/18/2010	USACE	A. What directions on a compass are Gramercy from Thibodaux or Baton Rouge from Thibodaux?	Due to the unique geography of the region, there are no strictly east-west or north-south roadways. The project team is using these terms in a general sense, which represents the overall direction a particular roadway travels. These terms for describing the direction of travel for the roadways, east-west or north-south, is consistent with the way the previous studies have been documented for this project
96	3/3/2011	11/18/2010	USACE	B. How would a traveler from this area get to Baton Rouge now?	As shown on the maps provided, currently travelers within the study area would be required to use LA 20 to travel in an overall northerly or southerly direction to access LA 1/ LA 308, LA 3127, and/or US 90 to travel to Baton Rouge.

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97	3/3/2011	11/18/2010	USACE	C. A roadway can run east-west for a short distance at some point but this does not mean it's not a north-south connector. Please provide clarification of your meanings and instead of using terms like east-west and north-south offer a definition in terms of destination."	Transportation planning studies typically look at the general direction of transportation corridors as they move vehicles through an area. These movements are described in context as how these corridors function and not necessarily the actual directional changes that occur along the alignment. Detailed directional changes of a roadway facility are normally documented for the alternatives analysis section.
98	3/3/2011	11/18/2010	USACE	D. What is system linkage?	The project team will provide a definition of system linkage in the Purpose and Need chapter.
99	3/3/2011	11/18/2010	USACE	E. Why is improved linkage necessary?	The need for improved linkage is explained throughout the chapter, see the section titled "Why is north-south transportation linkage needed" beginning on page 2-8. This need was identified by the Houma-Thibodaux Metropolitan Planning Organization's long range transportation plan.
100	3/3/2011	11/18/2010	USACE	F. What areas need improved linkage and why?	The Houma-Thibodaux area is the only metropolitan area in Louisiana that is not directly served by an interstate facility. The study area is in need of improved access to the roadway network to provide improved access to LA 3127, which will allow network users more options to other areas.
101	3/3/2011	11/18/2010	USACE	G. Is this a two or four-lane facility?	The proposed roadway is being evaluated as a 4-lane, limited access facility where appropriate.
102	3/3/2011	11/18/2010	USACE	H. "Why the project is needed?", and this discussion is dominated by the need for a north-south emergency and evacuation route. How was this determined?	In the paragraph "Why is the project needed?" on page 2-3, two main needs, system linkage and emergency and hurricane evacuation, are presented. The project team will address this paragraph to make sure the reader understands the primary need is system linkage and the secondary need is improved emergency evacuation. These needs were identified through recent transportation planning initiatives for the region, which are mentioned on page 2-3, in the section titled "How were these needs identified?".
103	3/3/2011	11/18/2010	USACE	I. An adequate description of the project is necessary as it provides the information to define the purpose and identify a need	." A detailed project description, along with the project's history and background will be provided in Chapter 1, the introduction to the draft EIS. This will provide the reader with an overall basic understanding of the project
104	3/3/2011	11/18/2010	USACE	J. The Basic Purpose of this project is to provide for regional transportation needs and as such the proposed project does not require the location to be within a special aquatic site to fulfill its basic purpose.	This comment is acknowledged. As part of the NEPA process a wide range of alternatives are evaluated to ensure that all potential impacts to both the human and natural environments are considered.
105	3/3/2011	11/18/2010	USACE	K. So, what is the overall purpose of the proposed roadway?	The overall project purpose is stated on page 2-1 of the Purpose and Need
106	3/3/2011	11/18/2010	USACE	L. "Discussion is spent on how the study area is growing but focus is on such areas as Larose, Galliano, Ascension, St. Charles and St. John the Baptist which are located outside of the study area. Also businesses in Larose, Golden Meadow, Napoleonville, Metairie, Thibodaux and Houma were presented as being supported by this proposed roadway. If you are including such areas then the tables provided need to be updated and the contributions by such communities located outside the study area may need to be considered through broadening the study area and considering alternatives in these other areas. In expanding the study area, you could elaborate more fully in the "Affected Environment" section the role these developed areas play in supporting the need for the highway.	Portions of Ascension, St Charles and St John the Baptist parishes, although small, are located within the current study area boundary. Larose and Galliano are located outside the study area boundaries but are mentioned to illustrate that the major employers are located generally to the north and south of the study area. The roles of the Parishes and the communities will be discussed in the existing conditions and affected environment sections of the draft EIS.
107	3/3/2011	11/18/2010	USACE	M. The facts that were used to determine/identify the north-south corridor/evacuation route as a major need within the study area and region, as stated on page 2-3 of your document, should be discussed in great detail in the "Alternatives Section" of the EIS	The Alternatives section of the document will expand the discussion of the facts that were used to determine/identify the reasonable alternatives that will be evaluated in the draft EIS.
108	3/3/2011	11/18/2010	USACE	N. "The section titled "Where do people work and how do they travel to get there?" states the businesses in four cities and the number of employees for each. The information is somewhat disconnected as it does not really explain how these people travel and where the majority of these employees live. You should elaborate fully in the discussion of the "Affected Environment."	The project team will reevaluate this section of the document to present the information in a more concise manner.
109	3/3/2011	11/18/2010	USACE	O. Also using descriptive terms such as "Bayou Region" does not adequately describe the area in question	The project team will use the most relevant term to describe the Region.
110	3/3/2011	11/18/2010	USACE	Other questions about the roadway that could be answered in your alternatives discussion are:	
111	3/3/2011	11/18/2010	USACE	P. What would the estimated maximum annual throughput be for this project? What is the estimated maximum annual throughput on the existing roadways?	Throughput represents the number of vehicles processed by the system during a period of time. Traffic volumes used and evaluated were Average Daily Traffic (ADT) and Annual Average Daily Traffic (AADT). These traffic volumes provide information not only for a small window of time but also volumes experienced over a longer period (the entire year). These volumes would be similar to volumes collected for the

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					throughput. We further "translate" these volumes/ throughput by dividing traffic volumes by the maximum capacity the roadway facility will handle. This calculation then equates to a scale that is identified as Level of Service as discussed in the Purpose and Need. Findings from the traffic analysis, including actual traffic volumes and roadway capacity, were presented at the November 18th Agency Coordination meeting. A copy of the traffic report can be provided upon request.
112	3/3/2011	11/18/2010	USACE	Q. When would the estimated maximum annual throughput on the existing roadways be exceeded?	According to the traffic study, LA-20, the only existing facility providing direct north/south access to and from the study area has already grossly exceeded its capacity resulting in an unmet travel demand that is forced to use longer, more circuitous routes to get to and from the study area.
113	3/3/2011	11/18/2010	USACE	R. Why can't existing roadways be upgraded?	" The project team will consult with LADOTD and FHWA to consider evaluating the widening of LA-20 as an alternative to satisfy the project's Purpose and Need
114	3/3/2011	11/18/2010	USACE	S. How was the information provided in paragraph three of page 2-18 determined	The information on page 2-18 under the section "What happened during the evacuation during Hurricanes Gustav and Katrina?" was obtained from the traffic report referenced above. These traffic numbers were collected by South Central Planning and Development
115	3/3/2011	11/18/2010	USACE	T. Over what time period are these traffic counts and what was the total usage (hourly vs. daily)?"	The traffic volumes shown in Table 2.7 are from August 30, 2008; these volumes are daily. The project team will clarify this in the table
116	3/3/2011	11/18/2010	USACE	U. Also what was the delay time that was recorded?	Delay time was not part of the information collected by South Central Planning and Development.
117	3/3/2011	11/18/2010	USACE	V. Public interest goes much further than the local sentiment; it involves the consideration of the full public interest by balancing the favorable impacts against the detrimental impacts. The Corps has certain processing steps to follow when evaluating a proposed project	The project team understands that USACE has a long list of factors which encompass USACE's definition of public interest review, per 33 CFR Part320(a)(1), which impact USACE's decision on whether to issue a permit. This section of the Purpose and Need, "What is the sentiment of the public in relation to the proposed project?" illustrates the public opinion that has been received up to this point of the project as it is relevant to the need of the project. Additional public involvement activities and sentiment will be documented in a separate chapter of the draft EIS. The project team will address the USACE's public interest review factors to the fullest extent practicable in the draft EIS and if necessary, revisit during the 404 permit process.
118	2/28/2011	11/18/2010	USFWS	A. It appears that the main purpose of the purpose and need of the proposed project is to improve traffic flow during hurricane evacuations.	While the project would improve hurricane evacuations, the primary intent of this project is to improve north/south mobility and connectivity during "everyday" (non-hurricane) conditions. The need to improve hurricane evacuation is secondary to improved traffic conditions in the north/south direction during non-hurricane events. Analysis of existing and forecasted traffic conditions for the "no-build" scenario has indicated inadequate capacity during non-hurricane evacuation scenarios. These unfavorable conditions are further exacerbated during hurricane evacuation conditions. We will review the language presented in the draft Purpose and Need chapter to clarify the primary and secondary needs of the project as indicated above and revise the chapter accordingly.
119	2/28/2011	11/18/2010	USFWS	B. There are declining population trends throughout the study area.	Information presented in the draft purpose and need chapter indicates an overall "reduction in growth" on a per parish level between 2000 and 2009 compared to 1990 and 2000. However, the regional population growth rate (10.7%) has outpaced state population growth rate(0.5%) between 2000 and 2009 by more than twenty times. This trend further supports the need to adequately accommodate growing traffic demand.

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120	2/28/2011	11/18/2010	USFWS	C. Consider the expansion of existing north-south highway facilities	The project team will consult with LADOTD and FHWA to consider evaluating the widening of LA-20 as an alternative to satisfy the project's Purpose and Need. The Central and Western Alternatives will also be evaluated in greater detail in the draft EIS.
121	3/27/2012	3/27/2012	USACE	How much tweaking of the alternatives remains? Can alternatives move one way or the other? Will there be another meeting?	Some movement in the alternative alignments is possible, but not a new alternative and that this meeting is the last one and materials were provided in advance and the schedule changed to try to allow for maximum attendance.
122	3/27/2012	3/27/2012	USACE	The western alternative should push to the red line (on the map) to the north toward Chackbay just behind existing development. Maybe there could be a partial interchange. Commentor does not support the road tying in to 3213. Commentor is also not supportive of turning south of Thibodaux after crossing LA 20 where it turns north. Commentor supports the red line.	The routes have been designed to avoid and minimize impacts by moving alternatives as close to existing impacted areas as possible and placing the route on structure.
123	3/27/2012	3/27/2012	USACE	Commentor said that it would be easier for him to permit the red lines.	The red lines on the map indicated constraints and not alignments; they do not meet Louisiana Department of Transportation and Development's (DOTD) geometric standards for the roadway.
124	3/27/2012	3/27/2012	USACE	Relative to the northern tie-in, North Option A or B, Commentor is in favor using LA 20 to LA3127 (A) over a tie-in to LA 3213 at LA 3127 (B).	Noted.
125	3/27/2012	3/27/2012	USEPA	Commentor essentially agreed with all comments from (previous commentor, 1-4).	Noted.
126	3/27/2012	3/27/2012	USFWS	Commentor also supports comments from (previous commentor, 1-4).	Noted.
127	3/27/2012	3/27/2012	USACE	Commentor indicated that based on information provided, he is supportive of the western alternative over the central, but he is not sure that the east/west should have been removed.	It was indicated that the contract with the team did not allow for more engineering design (line and grade), which would be necessary for any extensive "tweaking". Team will look into the amount of work requested.
128	3/27/2012	3/27/2012	SCPC	Commentor offered an observation that it appeared the project was moving backward, is this new information?	The alternatives were refined based on the 2010 meeting and that what had been requested had been done.
129	3/27/2012	3/27/2012	USACE	Commentor indicated that USACE comments on Purpose and Need were not incorporated and that it is difficult to support as they don't know that enough work has been done to show the alternatives are the least damaging and most practical. Commentor wants reference to Assumption and Ascension Parishes removed and that the Purpose and Need is covering too large an area.	The Purpose and Need had been revised and incorporated USACE comments and was posted on the website in the revised form. The Purpose and Need will be reformatted to a more concise and readable format.
130	3/27/2012	3/27/2012	USFWS	Commentor asked about the need for evacuation and less time getting to I-10 and I-49 (Lafayette). Why would people want to get to I-10 fast, it's a parking lot and will not solve the problem? He does not feel the project improves overall evacuation.	The primary project purpose is to provide system linkage, the secondary purpose is hurricane evacuation. The project (in the beginning) was primarily supporting hurricane evacuation. Since then, it has become a federal aid project whereby the hurricane evacuation was determined to be of lesser importance. The project improves the overall network and supports future development.
131	3/27/2012	3/27/2012	USEPA	Commentor stated the USEPA has not provided concurrence on the project Purpose and Need. She also asked why is NEPA pursued before the Section 404 permit, and why is there a decision on federal funding – there should be no funds until the project is permitted?	FHWA must follow their NEPA process prior to seeking funding. There must be a Preferred Alternative in order to provide a permit application to the USACE.
132	3/27/2012	3/27/2012	USACE	The agencies are involved to ensure the project follows NEPA so that it can receive a permit. The USACE is acting as a "cooperating" agency, which means it is supporting both processes. USACE needs more information before he can agree – he is not entirely satisfied with the Purpose and Need. He sees it as a north/south corridor to connect Houma/Thibodaux to the Gramercy Bridge. LA 1 and US 90 are currently hurricane evacuation routes and are seeing development. Is quicker access to I-10 really getting people where they need to go? Is there travel and time savings? The Purpose should be to build a road to I-10 and the need should be time savings.	Noted.
133	3/27/2012	3/27/2012	USACE	Commentor stated that of the two alternatives, he supports the western alternative, but with changes. He does not feel all alternatives have been reasonably considered and thinks the east/west remains viable. There may be more tweaking in the permit process.	Noted.
134	8/31/2012	3/27/2012	USACE	At this point in the process, the Corps is neither an opponent nor proponent of the project and therefore, does not support any alternative. A Department of the Army permit can only be issued for the least damaging practicable alternative. Therefore, any alternative that is considered practicable must be carried though the evaluation until it can be determined that it is (1) not practicable or (2) determined not to be the least damaging through careful evaluation of the environmental consequences. The environmental consequences to be considered are outlined in the 404(b)(1) evaluation (40 CFR 230 Subparts C through F).	As part of the NEPA process, a wide range of alternatives have been evaluated to ensure the reasonable and practical alternatives proposed will limit impacts to both the human and natural environments while still meeting the project's stated purpose and need. The project team believes it has exercised due diligence in its consideration of a reasonable range of practicable alternatives.
135	8/31/2012	3/27/2012	USACE	While the Western alignment looks better than the others that were discussed at this meeting it is not the only alternative that should be considered in your evaluation to determine the least damaging practicable alternative.	The Western and Central alignment, along with the North A and North B options, will be objectively evaluated and documented in the alternatives section of the Draft EIS. The Draft EIS will identify the project alternatives that were considered, determined not to be practicable, and subsequently eliminated from further evaluation. A comprehensive discussion as to why the eliminated alternatives were not carried forward for further evaluation will be provided in the Draft EIS.

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136	8/31/2012	3/27/2012	USACE	Tweaking the central alternative as we did the western alternative may result in minimizing impacts to an extent that this alternative may be the least environmentally damaging.	The current alignment of the proposed Central Alignment is due to a number of factors including engineering constraints, safety factors, and to efforts to reduce impacts to both the human and natural environment. Further changes in the proposed alignment would likely would compromise the overall feasibility of the alignment and result in additional impacts. These factors include: (1) The location where the proposed Central Alignment crosses Bayou Lafourche, LA 1 and LA 308 is due to several constraints: - A large mitigation bank north of the Central Alignment at the crossing - A rail line and rail bridge over Bayou Lafourche - Large residential areas (2) To avoid impacting the mitigation bank and to cross Bayou Lafourche west of the currently proposed Central Alignment, the alignment would have to cross LA 1, LA 308 and Bayou Lafourche at a major skew angle. This realignment to the west would cause several displacements along LA 1 and LA 308 and significantly impact the large subdivision just south of LA 1. (3)Continuing north, the realignment would be in close proximity to plantation property where a large historical area and archaeological sites listed on the NRHP are located. (4)Also, the realignment of the Central alternative would impact additional residential areas where the alignment would crosses LA 20. Based on the significance of these factor and the consideration of potential impacts, it was determined more practicable to place this Alternative's crossing at its current location and continue north on the east side of the mitigation bank.
137	8/31/2012	3/27/2012	USACE	One of the issues seems to be how to balance natural, physical and social impacts. Least damaging alternative must balance impacts; it can't be one-sided. You have associated cost with impact. Cost affects the practicability of an alternative and is not considered as an impact.	Although cost does not play a part in an impact analysis, it is considered to determine if an alternative is reasonable and practical to construct. The documentation will provide a full and balanced discussion of all environmental consequences, including natural, physical, social impacts, and associated cost for each alternative.
138	8/31/2012	3/27/2012	USACE	In avoiding impacts you need to focus more clearly on reducing wetland impacts by avoiding and minimizing.	In the development of the alternatives, wetlands were viewed as an important resource and were avoided to the extent possible. As the alternatives evolved, further modifications and adjustments were made to the alternative alignments to minimize potential wetland impacts. Additionally, adjustments were made to the alternative alignments following previous Agency meetings. Some of these modifications include the use of existing roadway corridors in places where it is possible, and the placement of the alternatives in upland agricultural fields for the majority of the alternatives. Furthermore, the portions of alignment in the wetlands be elevated; and a portion of existing at-grade roadway in wetlands will be removed and replaced with elevated structure as a portion of the remaining alignments.
139	8/31/2012	3/27/2012	USACE	Some of the lines shown in red on the KEY MAP would offer less wetland impacts to your proposal.	The red lines shown on the key map reflect an initial effort to generate corridors avoiding a wide range of constraints identified in existing GIS databases. In the process of developing alternatives, the lines were adjusted to comply with DOTD road design guidelines and to take both human and natural impacts into consideration. To further minimize wetland impacts, the project team has adjusted the western alignment to approximate the location of the red lines for a greater portion of the alignment. Please see the attached exhibit.
140	8/31/2012	3/27/2012	USACE	You stated that you focused on the human aspect when looking at impacts. However wetlands provide many benefits to the human population as well as habitat for other species. You need to focus on the importance of the wetland functions to public interest.	In the development of the alternatives, wetlands were viewed as an important resource and were avoided as much as practicable. As required under NEPA, impacts to both the human and natural environments are considered and addressed during the environmental documentation process. To the extent practicable, the project team has developed the alternative alignments to minimize impacts to wetlands and other facets of the human and natural environment.

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141	8/31/2012	3/27/2012	USACE	Our position is purely advisory to assure that the EIS provides sufficient information relative to our jurisdiction (Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act) so as to make an informed permit decision. FHWA has the responsibility of assuring that the NEPA process adequately addresses the needs of the federal cooperating and coordinating agencies including a reasonable Purpose and Need statement. Again, the Corps defines the basic purpose for establishing water dependency and the overall project purpose to evaluate the applicant's needs relative to the public interest. The purpose and need are still not clearly defined in your documentation. The purpose and need should not be defined as one category, but as singular and separate entities. Without a well- established and justified purpose and need statement for your project it makes evaluation of the alternatives as presented difficult. If we are unable to establish the reasonability of these alternatives then it could bring us back to the no-build alternative as a viable alternative. While the need should focus on the transportation problem it should not be so narrowly defined that it constrains the range of reasonable alternatives. What is the purpose of your project? What is the need that drives that purpose? The Purpose and Need statement should: - Be concise - Easy to read - Focus on the essential needs and goals of the proposed project such as mobility, capacity, etc. - Include data for justification	The purpose of the Houma-Thibodaux to LA 3127 Connection is to improve north-south system linkage between the Houma-Thibodaux area and the Mississippi River Corridor and improve emergency and hurricane evacuation within Louisiana's bayou region through the establishment of a functional north-south transportation facility. The project is proposed to accomplish the following objectives: (1) Improve north-south connectivity and mobility between US Highway 90 and LA 3127 through an increase in the number of north-south links; (2) Provide north-south system redundancy by identifying alternatives that provide additional options for north- south travel when LA-20 fails; (3) Provide improved north-south highway network capacity in the project area; (4) Provide a direct, limited access route between the Houma-Thibodaux area and the Mississippi River Corridor to improve access to and from the Houma-Thibodaux area; (5) Maximize the efficient use and operation of hurricane evacuation routes by improving system redundancy; decreasing travel time; and providing facility access, capacity, and balanced distribution of evacuation traffic among critical Mississippi River crossings. The need for the proposed project is to remove the following deficiencies in the Study Area: (1) Inadequate north-south transportation system linkage. Existing north-south system linkage between the Houma-Thibodaux area and the Mississippi River Corridor is limited to LA 20, a narrow, winding arterial without access management. (2) Inadequate capacity in the roadway network in the Thibodaux area due to existing unmet travel demand in the north-south direction. Existing roadway network has current peak-period congestion and Level of Service (LOS) deficiencies. Portions of existing LA 20 show a LOS of E during both peak hours, along with three additional primary roadways (LA 308, LA 1, and LA 70) that have sections currently operating at LOS D. (3) Lack of a north-south emergency evacuation route and north-south rerouting opportunities in the Thibodaux area. In times of evacuation, the traffic volumes push the roadways far beyond their capacity.
142	8/31/2012	3/27/2012	USACE	Consideration of which alternatives are reasonable, prudent and practicable requires a well defined project and need statement. For the Corps the project purpose is used for evaluating practicable alternatives under the Section 404 (b)(1) Guidelines. The Section 404 (b)(1) Guidelines requires the Corps to determine if there are alternatives to first avoid, and then to minimize adverse impacts to aquatic resources, ultimately selecting the least environmentally damaging, practicable alternative.	As part of the NEPA process, a wide range of alternatives are evaluated to ensure potential impacts to both the human and natural environments are appropriately considered. In its identification and evaluation of potential alignments, the project team believes due diligence has been exercised and a thorough consideration of practicable alternatives has been achieved. The Draft EIS will further refine and document the purpose and need. The Draft EIS will provide a detailed accounting of the alternatives development, explaining the processes followed to progress from a tangled collection of many potential alternate routes to the reasonable and practicable alternatives currently considered for inclusion in the Draft EIS.

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HOUMA-THIBODAUX TO LA 3127 DEIS

PUBLIC COMMENTS

No.	Date	Meeting Date	Agency	Comment	Response
1	7/15/2004	7/15/2004	General Public	A. Stated that project area resources were not adequately identified for Assumption Parish.	Comment Noted.
2	7/15/2004	7/15/2004	General Public	B. Stated that the most valued resource in their community was saving lives.	Comment Noted.
3	7/15/2004	7/15/2004	General Public	C. Agreed that the information developed to date, the project's progress and the remaining steps to completion were presented in a clear and timely fashion.	Comment Noted.
4	7/15/2004	7/15/2004	General Public	D. Did not agree that the project displays were helpful to understand the project and the project area.	Comment Noted.
5	7/15/2004	7/15/2004	General Public	E. Stated that the project is important to the region because it would help save lives.	Comment Noted.
6	7/15/2004	7/15/2004	General Public	A. Did not agree that the project resources had been adequately identified and mapped. Expressed concern that property may be affected by the proposed alignments.	Comment Noted.
7	7/15/2004	7/15/2004	General Public	B. Stated that they felt there would be no environmental features to be harmed by the project.	Comment Noted.
8	7/15/2004	7/15/2004	General Public	C. Disagreed that the information developed to date, the project's progress and the remaining steps to project completion had been presented in a clear and timely fashion.	Comment Noted.
9	7/15/2004	7/15/2004	General Public	D. Did not agree that the project displays were helpful to understanding the project and the project area since they were unable to attend the actual meeting.	Comment Noted.
10	7/15/2004	7/15/2004	General Public	E. Stated that the project was important to the region to at least help with evacuation during storm. However, concerns were regard to the project affecting drainage of some property that have no flooding problems currently.	Comment Noted.
11	7/15/2004	7/15/2004	General Public	A. Gramercy/Wallace Mississippi River Bridge	Comment Noted.
12	7/15/2004	7/15/2004	General Public	B. Nicholls State University and the new technology center to be built.	Comment Noted.
13	7/15/2004	7/15/2004	General Public	C. Thibodaux Regional Hospital	Comment Noted.
14	7/15/2004	7/15/2004	General Public	D. Tourism. Oldest working plantation "Laurel Valley", Bayou Lafourche, Jean Lafitte Historical Center, etc.	Comment Noted.
15	7/15/2004	7/15/2004	General Public	E. City of Thibodaux and newly developed suburbs on the north side.	Comment Noted.
16	7/15/2004	7/15/2004	General Public	F. City of Houma and newly developed suburbs and commercial development on the rise.	Comment Noted.
17	7/15/2004	7/15/2004	General Public	G. LA State Hwy 3127 runs from the Sunshine Bridge to Luling Bridge, Wallace Bridge connection would be midway point.	Comment Noted.
18	7/15/2004	7/15/2004	General Public	H. Employment at the plants on the Mississippi River and a large amount from the 6th Ward & Thibodaux area.	Comment Noted.
19	7/15/2004	7/15/2004	General Public	I. Hwy 20, from the river into Thibodaux is in drastic need of a parallel road. Hwy 20 is 2 lanes with no shoulders. The Thibodaux stretch has been turned into a city street with a red light and turning lanes. People commuting from work or school are very frustrated. Contact LA state police concerning wrecks and fatalities on Hwy 20. When this occurs traffic anywhere between Vacherie and Thibodaux must be diverted either to Hwy 307 or the shelled Laurel Valley Road. Contact Laurel Valley Plantation on records concerning the amount of tour buses commuting.	Comment Noted.
20	7/15/2004	7/15/2004	General Public	J. Land in this region is disappearing at a rate of an inch a year. An elevated interstate is extremely necessary. Lives are at stake here. If this road is not built soon, the residents of this region will be trapped. There cannot be evacuation without this road. As it is now there is not enough highway to accommodate the amount of vehicles that would be trying to escape to higher ground.	Comment Noted.
21	7/15/2004	7/15/2004	General Public	A. Suggested that the Alternative 7 be included in the EIS	Comment Noted.
22	7/15/2004	7/15/2004	General Public	B. Stated that as a community, they value all types of natural terrain including wetlands, agriculture, and waterways. However, not to the extent that development should be stopped for a necessary hurricane evacuation.	Comment Noted.
23	7/15/2004	7/15/2004	General Public	C. Stated that he would like to have more discussion about Alternative 7.	Comment Noted.
24	7/15/2004	7/15/2004	General Public	D. Agreed that the project displays were helpful for understanding the project and the project area.	Comment Noted.
25	7/15/2004	7/15/2004	General Public	E. Stated that this project is important for this region in the event of a natural or manmade disaster.	Comment Noted.
26	7/15/2004	7/15/2004	General Public	A. Agreed that the project resources have been adequately identified and mapped so far except for the area south of Hwy 90. At Hwy 311, major expansion of the area occurs there as the population expands. Plan for now and the future however do not side track completion of what you have presently identified.	Comment Noted.
27	7/15/2004	7/15/2004	General Public	B. Stated that the most valued resources in the community is a westerly route along 311 going north to 3127 is the most elevated land. By terminating at St. James along 3127 equal access is obtained to the Sunshine Bridge and the Gramercy Wallace Bridge.	Comment Noted.
28	7/15/2004	7/15/2004	General Public	C. Agreed that the information developed to date was clear and in a timely fashion. Particularly the computer generated routes. A route west of Thibodaux as the east will need much mitigation due to the extreme amount of wetlands.	Comment Noted.
29	7/15/2004	7/15/2004	General Public	D. Agreed that the project displays were helpful for understanding the project and the project area.	Comment Noted.
30	7/15/2004	7/15/2004	General Public	E. Stated that the project was important to the region because with the rate of subsidence, erosion from natural causes (rain) and coastal erosion from wave action and salt water intrusion destroying vegetation, tidal wave height in a category 3, 4 or 5 requires a rapid, adequate exit from the region.	Comment Noted.
31	7/15/2004	7/15/2004	General Public	F. Various business and governmental entities are viewing this more as economic development, not hurricane evacuation. Use common sense, stick to your plan for 'hurevac' and build the N/S evacuation route to the west of Thibodaux.	Comment Noted.
32	7/15/2004	7/15/2004	General Public	A. Agreed that the project area resources were adequately identified and mapped. Believed that the Alternative 7 needed to be included in the study and area resources applicable to Alt 7 needed to be identified and mapped.	Comment Noted.
33	7/15/2004	7/15/2004	General Public	B. Stated that the community valued its wetlands, waterways, and farmlands but not to the point where they would want to impeded on progress, economic development, and hurricane protection and evacuation.	Comment Noted.
34	7/15/2004	7/15/2004	General Public	C. Agreed that project information developed to date, the project's progress and the remaining steps were presented in a clear and timely fashion. Except that Alt 7 was apparently eliminated from consideration without enough public input and awareness although a majority of the speakers at the 1999 public hearing favored Alt 7.	Comment Noted.
35	7/15/2004	7/15/2004	General Public	D. Agreed that the project displays were helpful to understand the project and project area.	Comment Noted.
36	7/15/2004	7/15/2004	General Public	E. Stated that the project was important to this region because it would provide a hurricane evacuation route. It would provide N/S evacuation for nuclear and plants. It would provide economic development and commerce from the gulf to I-10 and vice versa. It would replace sub-standard and dangerous main highway between Thibodaux and Vacherie (LA 20) which is used by thousands of vehicles on a daily basis. It would provide tourism and cultural benefits to entire region. In order to achieve all of the above benefits and at the same time be fiscally responsible with the taxpayer's monies, they felt that Alt 7 was the only reasonable route choice.	Comment Noted.
37	7/15/2004	7/15/2004	General Public	A. Agreed that the project resources have been adequately identified and mapped.	Comment Noted.
38	7/15/2004	7/15/2004	General Public	B. Stated that the most valued resources in the community were many natural and cultural resources that should be preserved.	Comment Noted.
39	7/15/2004	7/15/2004	General Public	C. Stated that not enough advance notice of meeting was provided to the general public,	Comment Noted.
40	7/15/2004	7/15/2004	General Public	D. Agreed that the project displays were helpful to understand the project and the project area.	Comment Noted.
41	7/15/2004	7/15/2004	General Public	E. Stated that evacuation and better roads to and from Thibodaux was why this project was important to this region.	Comment Noted.

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42	7/15/2004	7/15/2004	General Public	F. Stated that this road should enter Hwy 3127 as close to LA 20 in Vacherie as possible. This will be the best route for evacuation and also for the road to be more accessible to as many area residents as possible.	Comment Noted.
43	7/15/2004	7/15/2004	General Public		Comment Noted.
44	7/15/2004	7/15/2004	General Public	A. Agreed that the project area resources have been adequately identified and mapped.	Comment Noted.
45	7/15/2004	7/15/2004	General Public	B. Stated that downtown Thibodaux was a valued resource in the community.	Comment Noted.
46	7/15/2004	7/15/2004	General Public	C. Did not agree that the information developed to date, the project's progress and the remaining steps of the project were presented in a clear and timely fashion. Did not think that the public has enough notice as to what the DOTD has been doing in regards to this project.	Comment Noted.
47	7/15/2004	7/15/2004	General Public	D. Agreed that the project displays were helpful to understand the project and project area.	Comment Noted.
48	7/15/2004	7/15/2004	General Public	E. Stated that the evacuation route to the north (I-10) and helping economic development were why this project was important for the region.	Comment Noted.
49	7/15/2004	7/15/2004	General Public	F. Stated that the best route for this road would be an easterly route, since this is the fastest way to I-10 for the majority of the residents in the area.	Comment Noted.
50	7/27/2004	7/15/2004	General Public	A. Please let this letter be a supplement to and summary of the comments I made at the public hearing held concerning the above-referenced project in Thibodaux on July 15, 2004.	Comment Noted.
51	7/27/2004	7/15/2004	General Public	B. As you may know, I participated in the 1999 public hearing held in Thibodaux concerning the Hurricane Evacuation Study that wa!'; non r1t that time and realize that said study was done strictly for hurricane evacuation purposes. I also realize that the scope of said report only took into consideration utilizing the Veterans Memorial and Sunshine Bridges for hurricane evacuation purposes and not the Hale Boggs Bridge. Under the circumstances and within strictly those parameters, I can understand, but do not agree with, as hereinafter set forth, how the study ultimately recommended Alternates 6, 6-A and 7-A as the optimum hurricane evacuation routes from the Houma-Thibodaux area to Highway 3127 on the west bank of St. James Parish.	Comment Noted.
52	7/27/2004	7/15/2004	General Public	C. Another route, designated as Alternate 7, was also considered. Alternate 7 begins at Highway 3052 near its intersection with Highway 316 north of Houma, then runs in a south to north direction passing just east of the City of Thibodaux, then crosses Bayou Lafourche and continues northerly crossing Highway 307 near its intersection with Highway 20, then follows along Highway 20 north to South Vacherie, where said route continues directly north to intersect with Highway 3127 about a quarter mile or so west of the intersection of Highways 3127 and 20. Unfortunately, as many of us found out for the first time at the public hearing held on July 15, Alternate 7 possibly may not be part of the environmental impact study that your firm is now conducting.	Comment Noted.
53	7/27/2004	7/15/2004	General Public	D. For the reasons hereinafter set forth, I. along with many other people from mv area, including most, if not all, of the public officials from my area, strongly feel that it would be a huge mistake for the State not to seriously consider and ultimately accept Alternate 7 as the preferred route for this new road. Alternate 7 should be chosen as the route for this new road not only because it will serve as a very highly effective route for hurricane evacuation purposes, but also because of all of the ancillary benefits a new road at this location will bring to all of the areas affected thereby, as hereinafter set forth, as compared to Alternates 6, 6A and 7-A.	Comment Noted.
54	7/27/2004	7/15/2004	General Public	E. First of all, Alternate 7 should be considered a very highly effective hurricane evacuation route for the following non-exclusive reasons: Alternate 7 results in a shorter route overall to get across the Mississippi River than Alternates 6, 6-A and 7-A. If the goal is to get evacuees from the Houma-Thibodaux area across the Mississippi River, it is clear that Alternate 7 will get them there quicker and easier.	Comment Noted.
55	7/27/2004	7/15/2004	General Public	F. The initial study done shows that Alternate 7 will cost from $64.7 million to $144.0 million less to build than Alternates 6, 6-A and 7-A, thereby resulting in much wiser and better use of our tax dollars.	Comment Noted.
56	7/27/2004	7/15/2004	General Public	G. The Veterans Memorial Bridge will soon be connected to Highway 3127 approximately 2.5 miles east from where Alternate 7 enters Highway 3127. This will allow evacuees quick and easy access across the Mississippi River to Gramercy. From there, evacuees can choose four very reliable routes to continue their evacuation, depending on traffic conditions and the direction from which the hurricane is approaching:• Continue straight to Interstate 10 then continue their evacuation on Interstate 10 in either an easterly or westerly direction.• Take Highway 61 (Airline Highway) north to Interstate 10 or continue on Highway 61 to Baton Rouge and beyond. • Take Highway 61 east to LaPlace then proceed north to Interstate 55. • Take Highway 3125 in Gramercy to Highway 70 and proceed north to Sorrento and Interstate 10 from there.	Comment Noted.
57	7/27/2004	7/15/2004	General Public	H. Alternates 6 & 7-A enter Highway 3127 approximately 7 miles west of where Alternate 7 enters Highway 3127. If Alternate 7 is chosen, in times of hurricane evacuation, traffic entering Highway 3127 on Alternate 7 can easily be diverted westward on Highway 3127 in the direction of the Sunshine Bridge if necessary. Since there are no major streets or roads entering Highway 3127 between where Alternate 7 enters Highway 3127 and where Alternates 6 and 7-A enter Highway 3127 (except for Highway 3219 which enters Highway 3127 near St. James), any hurricane evacuation traffic diverted westward on Highway 3127 from Alternate 7 should not be seriously hindered in efforts to evacuate in a westward direction towards the Sunshine Bridge merely because Alternate 7 enters Highway 3127 a few miles east of where Alternates 6 and 7-A enter Highway 3127. There should be little or no interference with traffic flow in a westerly direction on Highway 3127 from Alternate 7 so as to allow a smooth, continuing flow of traffic west from where Alternate 7 enters Highway 3127.	Comment Noted.
58	7/27/2004	7/15/2004	General Public	I. Alternate 6-A enters Highway 3127 approximately 3 miles further west of where Alternates 6 & 7-A enter Highway 3127. This will encourage evacuees to continue their evacuation west towards Highway 70 leading to a big bottleneck of traffic where Highway 3127 meets Highway 70. Don't forget, this traffic will be competing with traffic coming north on Highway 70 from Highways 1 and 308. Unless Highway 3127 is extended west and north to completely bypass Donaldsonville, or unless a more direct route is built from Highway 3127 to the Sunshine Bridge, I can envision it being very difficult getting across the Sunshine Bridge in times of evacuation. Alternate 7 enters Highway 3127 almost midway between the three Mississippi River crossings that service the River Parishes and Lafourche/Terrebonne Parishes, (the Hale Boggs Bridge, the Veterans Memorial Bridge, and the Sunshine Bridge). Depending on which direction the hurricane is approaching the Louisiana coast, Alternate 7 allows traffic to be diverted over several or all of these river crossings.	Comment Noted.
59	7/27/2004	7/15/2004	General Public	J. If the hurricane is approaching the Houma area from the southeast, traffic can easily be diverted to the Veterans Memorial Bridge and the Sunshine Bridge. If the hurricane is approaching the Houma area from the southwest, then traffic can easily be diverted to the Veterans Memorial Bridge and the Hale Boggs Bridge. If the hurricane is approaching the Houma area directly from the south, then traffic can be directed to all three of these bridges. Alternate 7 thus allows a more efficient use of all three Mississippi River crossings for hurricane evacuation purposes.	Comment Noted.
60	7/27/2004	7/15/2004	General Public	K. Alternate 7, once it leaves Bayou Lafourche, runs nearer to more populated areas than do Alternates 6, 6-A and 7-A, which will allow for better evacuation capabilities of residents living in the following communities: Choctaw - from Choctaw Road. Bayou Boeuf and Kraemer- from Highway 307 and Highway 20. Chackbay and Choupic areas - from Highway 20 and Choctaw Road. South Vacherie- from Highway 20 in South Vacherie.	Comment Noted.

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61	7/27/2004	7/15/2004	General Public	L. Conversely, upon leaving Bayou Lafourche, Alternates 6, 6-A & 7-A appear only to service mainly the hurricane evacuation needs of the residents of the Choupic area and western Chackbay. The many residents of Bayou Boeuf, Kraemer, eastern Chackbay and South Vacherie may still be required to evacuate to Highway 3127 via Highway 20, which is obviously a very substandard hurricane evacuation route, since said route will be much shorter to Highway 3127 than using Alternates 6, 6-A, & 7-A are chosen over Alternate 7, I'm sure that your traffic studies will indicate that significantly fewer commuters and travelers will use this road on a daily basis, mainly because this road will intersect with Highway 3127 somewhat far away from Vacherie (6 to 9 miles) and the Veterans Memorial Bridge (approximately 8 additional miles), thereby possibly eliminating one of the main viable alternative sources of funding needed for construction of this road (tolls).	Comment Noted.
62	7/27/2004	7/15/2004	General Public	M. Secondly, please take into consideration other ancillary benefits and reasons Alternate 7 has over Alternates 6, 6-A & 7-A, including: Alternate 7 will serve more populated areas for all purposes than Alternates 6, 6-A & 7-A, including North Vacherie, South Vacherie, Chackbay/Choupic, Bayou Boeuf/Kraemer, Choctaw, Raceland and Central and Lower Lafourche, Thibodaux, Schriever, Gray, and Houma, and also including communities on the east bank of St. James and St. John the Baptist Parishes (Lutcher j Gramercy and other East St. James Parish communities, and Reserve, LaPlace and other East St. John the Baptist Parish communities) and the west bank of St. John the Baptist Parish (Wallace, Edgard and Lucy).	Comment Noted.
63	7/27/2004	7/15/2004	General Public	N. Alternate 7 will serve as a better evacuation route from north to south from the River Parishes in times of need for nuclear and/or petro-chemical evacuation purposes.	Comment Noted.
64	7/27/2004	7/15/2004	General Public	O. Alternate 7 provides easier access from the River Parishes area to Nicholls State University, Thibodaux General Hospital, Thibodaux/Houma area businesses, schools, churches, etc., and vice versa.	Comment Noted.
65	7/27/2004	7/15/2004	General Public	P. Alternate 7 allows for easier flow of tourism between the River Parishes area and Lafourche/Terrebonne Parishes.	Comment Noted.
66	7/27/2004	7/15/2004	General Public	Q. Alternate 7 provides the best location for easier flow of traffic between the River Region and the Lafourche/Terrebonne Region which will allow for greatly enhanced economic development of the River Region area and Lafourche/Terrebonne area.	Comment Noted.
67	7/27/2004	7/15/2004	General Public	R. Hundreds and hundreds of commuters and travelers, if not thousands, use Highway 20 between Thibodaux and Vacherie, in both directions, on a daily basis, for employment, healthcare, educational, shopping, social, and other personal needs. Alternate 7 will replace Highway 20 as the main commuter route between Thibodaux and Vacherie, especially the substandard and dangerous section of Highway 20 between Vacherie and Chackbay. Alternate 7 will greatly enhance the already strong economic, social, personal and other ties between the River Parishes and the Lafourche/Terrebonne region. The St. James Parish Council and the St. James Parish President's Office, and many area citizens have publicly endorsed Alternate 7 over Alternates 6, 6-A & 7-A.	Comment Noted.
68	7/27/2004	7/15/2004	General Public	S. Thirdly, please consider the disadvantages of Alternates 6, 6-A & 7-A, including:	Comment Noted.
69	7/27/2004	7/15/2004	General Public	T. These alternates will have a much higher cost, mainly because of the need for more elevated highways on these alternates.	Comment Noted.
70	7/27/2004	7/15/2004	General Public	U. These alternates will possibly cause greater environmental impact, i.e. , possibly will pass through more wetlands.	Comment Noted.
71	7/27/2004	7/15/2004	General Public	V. These alternates do not service as many populated areas as Alternate 7.	Comment Noted.
72	7/27/2004	7/15/2004	General Public	W. These alternates connect to Highway 3127 in a relatively remote area - an area not as prone to economic development as compared to Alternate 7.	Comment Noted.
73	7/27/2004	7/15/2004	General Public	X. The state and federal government will be spending hundreds of millions of dollars on this project. We need to be sure that this new road is built in the best possible location so that this road will serve not only as a very effective hurricane evacuation route, but will also service the future transportation needs for the most number of people in our entire area, both in a south to north direction and in a north to south direction.	Comment Noted.
74	7/27/2004	7/15/2004	General Public	Y. In summary, choosing Alternates 6, 6-A or 7-A over Alternate 7 will result in us having a road that will be very useful for hurricane evacuation purposes, but, in practicality, will not be very useful for hardly any other purposes.	Comment Noted.
75	7/27/2004	7/15/2004	General Public	Z. In light of the above, it is respectfully submitted that Alternate 7 is the best possible location for the new road in question. Please be sure to include Alternate 7 in the environmental assessment study that you are conducting.	Comment Noted.
76	7/15/2004	7/15/2004	General Public	My name is Kermit Kraemer. I represent the mayor of the City of Thibodaux. Certainly I agree with Senator Dupre with respect to this highway being detrimentally needed. Every year we're faced with the same problems of evacuating people, helpless citizens who need to get out of these areas as a result of natural disaster which is encroaching upon their homes and their lives. The City of Thibodaux favors the route to the east side of Thibodaux, crossing bayou Lafourche and then swinging across the northern portion of the City of Thibodaux to the west and then going north from there on the western side. This completes part of the City of Thibodaux's plans with the MPO. There is presently an unfunded loop around the City of Thibodaux which is in that program, and this would enable us not only to complete that loop to some degree, but it would also facilitate the high population densities that occur in the City of Thibodaux during the day at both Nicholls State University and also the hospital. All of those are located on the east side. It would also allow for the traffic which is coming from the south out of the present routes, 308 and LA-1, or the new routes which are proposed as a result of the LA-1 Coalition. They too could join up with this highway to the east. With respect to the people from Houma, it makes little difference whether they pass east or west of the City of Thibodaux. As the roadway would travel north on the eastern side and then make a loop, it will allow the remainder of the citizens of the City of Thibodaux to join in that evacuation on the northern side of the city. By coming across the city, it would also allow those people on the northern portion of Assumption Parish who might want to migrate and take this evacuation route and join on the northern side of Thibodaux before the road actually swung to the north. With respect to the environmental conditions, there is an existing corridor which was once an aqueduct for the City of Thibodaux wherein the City of Thibodaux moved water from the Mississippi River into the city for its drinking water and processed. That is one viable route which could be used. It allows, again, to use existing corridors. There is going to be environmental damage. Certainly the Corps is charged with that responsibility to protect wetlands, but it is not charged with the duty of preventing the use of wetlands. In fact, there is a process known as mitigation, that if we in fact do use the wetlands in one particular area, we are obliged under federal law to mitigate those damages in another place, which means we have to build a wetland in the another area. So the fact that there are wetlands to the north of the City of Thibodaux should not be a hindrance to the actual construction of that highway. We certainly appreciate the opportunity to participate today, and we will participate in the future. Thank you.	Comment Noted.
77	7/15/2004	7/15/2004	General Public	Yes, my name is Jacob Giardina, and I'd like to say that I'm very glad to see what you folks have presented tonight. I give you a little bit of a history that I have been involved with this, just as a private individual. About 12 years ago, South Louisiana Economic Council, which I'm involved in, went up and had a visit with -- then I think it was Governor Edwards, and I think it's about 12 years ago, the first of his last administration. We went up, Dick Lafont, who is manager of SLEC, and myself, resident, and Senator Ron Landry at that time, visited with Governor Edwards. We brought aerial photographs of what we were envisioning in this area, and he sent us over to General Patin, I think, yes, General Patin. And at that time we were able to get, I think, $300,000 appropriated to start this study going. Right after that, a group of us went to Washington and met with, at that time, Senator Bennett Johnson, Senator Breaux, Billy Tauzin, Representative Livingston, and a few others, and Clifford Smith -- and Clifford had a whole lot of these hurricane drawings just as you've showed here tonight -- and made the presentation of -- well, the group from down the bayou which eventually evolved into Coalition 1 talked about evacuation of the Fourchon, and of course we went up talking about the evacuation route. And I'd like to say at that time they made it extremely clear that to get federal monies, we would have to wear a hat of hurricane evacuation route. If there was any smell of economic development being the prime driver behind it, you could forget any federal monies. There was no federal monies being made available for economic development. So	Comment Noted.

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				that's a little bit of the background. I think some of this should be taken into consideration to make sure that, as Senator Dupre said, you know, the money is just going to be the prime driver back of this. There's a few other points I'd like to bring up. Because of the long involved history in it, we looked at this thing and, you know, there hasn't been a lot of emphasis in the beginning of going to the Gramercy Bridge and dumping the traffic off on I-10. And without going back there with a survey instrument, but looking at water levels on the columns of the highways and all, it was easy to see that, if you go back quite a few years back, I-10 was closed because it was underwater in that portion north of the -- it's a little bit further east of the Gramercy Bridge. So when you look at that, you look at the water level on an every-day basis, you look at the marks on the columns when it came over, it was about a five or six foot differential, which meant your roadways must be somewhere about five feet above elevation, above sea level, in about a 14-mile stretch. So if too much attention is given to getting people through solely the Gramercy Bridge, I think you could wind up with a disaster on the other side, thinking in terms of 10. I am very much in favor of going to the St. James area -- which is that big bend in the river I call the St. James area -- because if you drive that, you find that that point to Gramercy or that point to Donaldsonville is equally distanced. It's right about the same distance. So someone coming up for hurricane evacuation, if the storm is come from the east side, turning counterclockwise, pumping water into the I-10 -- and, likewise, when you go across 55, I think that -- in the lower Ponchatoula area isn't much more than five feet above sea level. You could run into a really bad potential problem aiming the traffic in that direction. I think if you brought it up to that point that is equally distant, a person can make a choice to go toward the Baton Rouge area or toward the 55 area, depending on which side the storm is coming on. You could say, Well, we could raise all these up and get them 10 feet above or 12 feet above, that's more money, and, of course, that's the prime thing. Also, if you decide to go on the west side, when Highway 90 was built, if you go west of Highway 311, there's a high incline in the highway. That was originally intended to be a turn-around right under there. So as far as getting from there, if you take the west side and go north, you'll only have two highways to cross, ultimately, which is 20 and Bayou Lafourche, which is 308 and Highway 1, again, cutting down some of the expense and going through an area that is a lot less environmentally impacted because it's the shortest distance across the swamp so to speak at that point. I know the mention has been made as far as Nicholls, the hospital, and etc. Yes, the substantial developments on the east side of town could help those. But if 2 you wear a hat of hurricane evacuation, which is where we're going with this whole thing, I think coming -- either east or west, but coming up into that Highway 90 -- into that St. James bend in the river would be, to me, the very best for the people who are undergoing the problems of evacuating. But I'm very glad to see that we've gotten this far with the project, and, hopefully, quickly, we'll get a whole lot further. Thank you.	
78	7/15/2004	7/15/2004	General Public	Thank you for the opportunity to speak to the group. My name is Lindy Hoffman, and Jake and I have been working on these projects for a long time. He's pretty much elaborated on everything, and I'm in concurrence with what he says. At my age, I think we're doing this for all of our grandchildren, more than for ourselves. However, I was involved with the rerouting of Highway 90, which predates all of this, and at that particular time, we spoke about a north-south corridor. If you look at where the definition is of your map now, I don't think that you have gone far south enough. I believe that it should include the area that is below where Highway 90 cuts across Terrebonne Parish. It should be down to almost the city limits or the Terrebonne Parish limits so that you are able to take and address the area of Terrebonne that is building up more than any other area in Terrebonne. You look at all of the houses that are being built in that area; look at the big apartment complexes that are being built. These people need a place to get out, and the only way to be able to get out is to come across and get into all of the confusion that is going to be going on in the Houma area itself. The Highway 311, starting at almost its inception, south should be made a corridor going straight north and continuing on to 3127. I believe we need to forget about the idea of extending to Interstate 10. As Jake so adamantly pointed out, this would be the wrong thing to do because that area does flood occasionally. I've traveled it myself in times when there was no hurricane but just very high water, and you had water coming up onto the road. So the most logical route, I feel, would be along the western side, which would address all of the development in the southwestern area of Terrebonne Parish and would allow these people access to a northerly route. If we take and do an easterly route, we're going to have to have all these people go through the Houma area or onto Highway 90 to get to this easterly route and then go north. You would then be competing with the traffic that's coming from the South Lafourche area along Highway 1 and 308, plus you would be competing with the traffic that is going to be coming out of St. James, St. Charles, and so on. And if you have ever been to the area of 610 and Highway 90 during the carnival season, don't ever go that route. Because if you do, you're going to sit there for hours. There was a very minor fender bender at 610 and 10, and it tied up everything from the west. There was nothing moving any of the highways. So I feel that a westerly route would be a whole lot more significant. And as Jake pointed out, you have much less environmental impact by going that way to the bend in the river at St. James from the -- what we would call the Shoepick area. You have high land all the way along this. And if it doesn't literally go along 311, it could go alongside of 311. Agriculture is important, and I heard someone make mention of the fact that the agricultural lands we don't want to disturb. But our agricultural lands are principally sugar. 10 years from now we're going to grow sugar in Cuba, and there won't be sugar here, which is an unfortunate thing, but it's reality. And when you have NAFTA and all of the other world trade -- look, I mean we're getting most of our stuff that we go to Wal-Mart to buy, comes from China. So we must look at this in the light of a global situation and not just a politically motivated situation that will address some of the desires of some of the individuals. We've got to look down the road and think many years in advance. I say that I was involved with the Highway 90 rerouting, and at that particular time, the political influence that were along the route literally delayed this project 30+ years, and it was unconscionable. I mean you really need to decide to do something and get in there and make every effort to do it. Because if we continue the study -- and we studied it back in the '70s, believe it or not, we are only going to be doing studies and having controversy, and we won't get any kind of road built. It is very imperative for us to have this north-south corridor and look at it from the standpoint of being a more useful thing for hurricane evacuation. Forget about any kind of economic development and so on. If we don't address other things as well as the north-south corridor, I'm going to sell my property in Terrebonne for beachfront property. Because with erosion and sinking, you are just not going to get away from it. It's going to keep sinking, and it's going to keep eroding. And it comes closer and closer to the routes that we're talking about. So let's get on the track and really do something. I appreciate what you all are doing, and I hope that you can do it with the most expedient means because this means a lot to our citizens. When you think of a 14-foot or 7-foot tidal surge coming across, you're addressing a tidal surge on almost 200,000 people. And 200,000 people are going to be a whole lot more of a problem if you got to find caskets for them and get them put away. So thank you for your effort, and I hope that you can take my comments into consideration, and certainly those of Jake. Jake made a very fine presentation for what he feels, from his observations, have been occurring in the past. Thank you very much.	Comment Noted.
79	7/15/2004	7/15/2004	General Public	Thank you for the opportunity to speak to the group. My name is Lindy Hoffman, and Jake and I have been working on these projects for a long time. He's pretty much elaborated on everything, and I'm in concurrence with what he says. At my age, I think we're doing this for all of our grandchildren, more than for ourselves. However, I was involved with the rerouting of Highway 90, which predates all of this, and at that particular time, we spoke about a north-south corridor. If you look at where the definition is of your map now, I don't think that you have gone far south enough. I believe that it should include the area that is below where Highway 90 cuts across Terrebonne Parish. It should be down to almost the city limits or the Terrebonne Parish limits so that you are able to take and address the area of Terrebonne that is building up more than any other area in Terrebonne. You look at all of the houses that are being built in that area; look at the big apartment complexes that are being built. These people need a place to get out, and the only way to be able to get out is to come across and get into all of the confusion that is going to be going on in the Houma area itself. The Highway 311, starting at almost its inception, south should be made a corridor going straight north and continuing on to 3127. I believe we need to forget about the idea of extending to Interstate 10. As Jake so adamantly pointed out, this would be the wrong thing to do because that area does flood occasionally. I've traveled it myself in times when there was no hurricane but just very high water, and you had water coming up onto the road. So the most logical	Comment Noted.

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				route, I feel, would be along the western side, which would address all of the development in the southwestern area of Terrebonne Parish and would allow these people access to a northerly route. If we take and do an easterly route, we're going to have to have all these people go through the Houma area or onto Highway 90 to get to this easterly route and then go north. You would then be competing with the traffic that's coming from the South Lafourche area along Highway 1 and 308, plus you would be competing with the traffic that is going to be coming out of St. James, St. Charles, and so on. And if you have ever been to the area of 610 and Highway 90 during the carnival season, don't ever go that route. Because if you do, you're going to sit there for hours. There was a very minor fender bender at 610 and 10, and it tied up everything from the west. There was nothing moving any of the highways. So I feel that a westerly route would be a whole lot more significant. And as Jake pointed out, you have much less environmental impact by going that way to the bend in the river at St. James from the -- what we would call the Shoepick area. You have high land all the way along this. And if it doesn't literally go along 311, it could go alongside of 311. Agriculture is important, and I heard someone make mention of the fact that the agricultural lands we don't want to disturb. But our agricultural lands are principally sugar. 10 years from now we're going to grow sugar in Cuba, and there won't be sugar here, which is an unfortunate thing, but it's reality. And when you have NAFTA and all of the other world trade -- look, I mean we're getting most of our stuff that we go to Wal-Mart to buy, comes from China. So we must look at this in the light of a global situation and not just a politically motivated situation that will address some of the desires of some of the individuals. We've got to look down the road and think many years in advance. I say that I was involved with the Highway 90 rerouting, and at that particular time, the political influence that were along the route literally delayed this project 30+ years, and it was unconscionable. I mean you really need to decide to do something and get in there and make every effort to do it. Because if we continue the study -- and we studied it back in the '70s, believe it or not, we are only going to be doing studies and having controversy, and we won't get any kind of road built. It is very imperative for us to have this north-south corridor and look at it from the standpoint of being a more useful thing for hurricane evacuation. Forget about any kind of economic development and so on. If we don't address other things as well as the north-south corridor, I'm going to sell my property in Terrebonne for beachfront property. Because with erosion and sinking, you are just not going to get away from it. It's going to keep sinking, and it's going to keep eroding. And it comes closer and closer to the routes that we're talking about. So let's get on the track and really do something. I appreciate what you all are doing, and I hope that you can do it with the most expedient means because this means a lot to our citizens. When you think of a 14-foot or 7-foot tidal surge coming across, you're addressing a tidal surge on almost 200,000 people. And 200,000 people are going to be a whole lot more of a problem if you got to find caskets for them and get them put away. So thank you for your effort, and I hope that you can take my comments into consideration, and certainly those of Jake. Jake made a very fine presentation for what he feels, from his observations, have been occurring in the past. Thank you very much.	
80	7/15/2004	7/15/2004	General Public	Thank you for allowing me to address the audience. I'm herb Toups from Thibodaux. I was thinking about what Mr. Giardina just said. Last year we had that hurricane -- and I don't know whether it was Lilly or Bob. But anyway Bob Breck comes on at 10:00 o'clock at night and says, If you people are living in Houma or Thibodaux, he said, I would get out of Dodge immediately. So I was in bed, and I'm telling my wife, I said, Damn, we better get the hell out of here. So I'm thinking, Where am I going to go. I got a motor home, and I tow a car. If I got to get out, where I'm going to do. So if I go through Chackbay and cross the Gramercy Bridge, after you pass 61, you're going through the swamp, and then you catch 10. How you going to go against the traffic to go to I-55? I don't think you can do it. And then when you get on 55, you going to have New Orleans traffic. So I'm thinking, Well, I'm going to go to 90, go to Gray, take 90 west to Lafayette. But when you get on 90 and you go up to the high-rise around Amelia, then it comes down to the ground. What's there? Swamp. So, man, I feel like we're trapped like rats, you know, so, which way to go? So this is wonderful. I think if you go to the river and take a left and go to Donaldsonville and catch the Sunshine Bridge and catch 10 there. But, boy, if you go north, if it's flooding Pontchartrain, it's going to come over I-10, I believe. So it cuts off your route to I-55. So if you go 90 west, you come off the high-rise, you got the Atchafalaya swamp. I hope you guys think it through and find a way for us to get out of here because, like somebody said, we got 200,000 people in Thibodaux, Morgan City, Raceland, Houma, Golden Meadow, all that area. We're trapped like rats. Thank you.	Comment Noted.
81	7/15/2004	7/15/2004	General Public	Good evening, my name is Jude Gravois. I'm from Vacherie in St. James Parish, and I'm very, very familiar with the area where we're talking about, Highway 3127, starting at Highway 20 going west. I was here five years ago. I have the transcript of the testimony, -- I'm sure y'all have it and y'all have studied it -- and I can remember quite a few people coming up and indicating they felt that the route that would have started east of Thibodaux and ended up going through Laurel Valley through the Choctaw community and Chackbay around Mike's and following 20 all the way to go straight to 3127. It seemed like the majority of the comments at that meeting were in favor of that route. That was called Alternate 7. And it seems to be a very, very practical route, all things considered. Are questions allowed at this stage?	Yes, sir.
82	7/15/2004	7/15/2004	General Public	Okay. I noticed in your talk earlier that you mentioned about the different studies, the study that was done earlier, and there were 8 or 9 potential routes that were looked at and studied, and 7 was one of them and 7-A and then 6 and 6-A. And I noticed today in this hearing -- and this is the first thing that I've heard of any of this since the last meeting that we had here at Nicholls five years ago, although I had sent in a request to be notified of any type of public hearings or meetings or receive literature of anything going on -- but I noticed you failed to mention and these drawings did not have any of mention of Alternate 7 as being an alternative route. I'd like to ask has Alternate 7 been taken off the table as far as a route for this?	Alternate 7 did not come through the study as a route to serve hurricane evacuation needs.
83	7/15/2004	7/15/2004	General Public	So are you saying that it has been taken off the table now and it will not even be considered as a potential route for this new road?	Alternate 7 did not come through the study as a route to serve hurricane evacuation needs.
84	7/15/2004	7/15/2004	General Public	My question is, Will Alternate 7 be considered as an alternative for this road that will be built?	This study is taking the recommendations from the previous feasibility study. There were three alternates that were recommended coming out of that study. Now, what this does, what 9 the environmental impact statement will do is it will take those recommendations and it will look at all the new fresh information that is generated, and Alternate 7 did not make that cut. Now, having said that Alternate 7 did not make that cut, I will not say that there is another alternate that might be looked at other than the three that came from the feasibility study. But Alternate 7, as it was in the document, did not make the cut.
85	7/15/2004	7/15/2004	General Public	So it is possible that the use of Alternate 7 could come back into the picture?	I will not say it will not come back in the picture, but it did not come through as serving hurricane evacuation needs in this community. And the reason for that is that if traffic goes directly towards Gramercy-Wallace Bridge and mixes with that traffic coming out of New Orleans, if there is a storm where we must evacuate New Orleans, as everyone in this room is aware of, we cannot evacuate New Orleans in a time period within under three days. And to mix New Orleans traffic with the traffic coming from this area does not serve this area under hurricane evacuation needs -- for some storms. It depends on the direction of the storm.

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86	7/15/2004	7/15/2004	General Public	It seems to me -- and like I said, 'm very familiar with the area. And from a practical standpoint at the location where Alternate 7 -- and I'd like to make a specific point at this time and ask both the consultants and the highway department to very, very seriously consider that as a 1 viable alternative to the other three. And one reason I'm saying that -- and it's not strictly for economic development or whatever, but knowing the area, knowing the people, and I would I would like to invite you to come to Vacherie and listen and I'll bring you around. And we'll have other people from the community and all of our public officials that have sent in comments and came to meetings last time were all in favor of Alternate 7, and now this is the first that we hear that Alternate 7 didn't make14 the cut. We were not notified of that, and, you know, we just want to know why and, if possible, have that be looked at as a viable alternative. The reason I'm saying that I think it's a viable alternative is Highway 3127, you have over 300 feet that was expropriated by the State for use as a four-lane highway. The approximate location where Alternate 7 would have come out on 3127, approximately quarter mile, half mile, maybe even a mile up-river from Highway 20, is only about five, six, or seven miles from where the Alternates 6 and 6-A and 7 actually come out. So it is very, very reasonable that traffic hitting Highway 3127 at that point can very easily still take a left. There's no impediment whatsoever to get to the same exact location where the other alternates come out behind St. James. By doing that, you're servicing the area downstream from Bayou Lafourche. The Raceland area could use that road. The people even in West Houma could jump on Highway 90 and catch the new road and go straight north. You got the evacuation of all the people on this side of Thibodaux and then cross over, Shoepick, the Kraemer-Chackbay area, and I could envision that there will eventually be a route around Thibodaux, especially north Thibodaux where the people on that side of town could just as easily come there. Senator Dupre mentioned tolls. Believe me, if that road is built and coming out back of St. James, there would be no traffic on it. It may be the ultimate hurricane evacuation route, but it's going to be a dead highway because there'll be absolutely no need for anyone traveling north or south to go use that road. So there would be no tolls that could be achieved at that location. So I believe, very seriously, another look should be taken at that as an alternate to come out on Highway 3127. It comes out exactly at the Gramercy-Wallace Bridge. It will be several miles from the entrance road to the bridge. And anyone coming out that location, if it is anywhere west of Highway 20, like I said, can very easily take a left, and that's a four-lane highway traveling, you know, I presume at a good rate of speed at that point, they could still go west towards the Sunshine Bridge very easily. I think the problem is going to be when you get to that other end. It's going to be a mess. And even if you make it come out behind St. James, it's going to be a mess. So there would have to be some significant upgrades made at the intersection of Highway 3127 -- either make that a through-road going all the way up to Port Allen or make it a direct shot into the Sunshine Bridge. But there's no way it's going to do any good -- that's why people don't go that route right now from 70. I guess our goal has to -- one of the questions, and if we're going to be spending hundreds of millions of dollars to build this road, we have to look at the total picture and the big picture. And is our goal simply to build a road that no one 6 will use except for hurricane evacuation? And I think that's the question that has to be looked at carefully, especially with the idea of finance. So I'd like to invite you, at your convenience, and your group to come and visit with us in Vacherie and St. James Parish, and I'll be happy to review that in more detail with you. Thank you.	Comment Noted.
87	7/15/2004	7/15/2004	General Public	As mentioned, I'm Roy Francis. I'm the executive director of the LA-1 Coalition, and I thank you for the opportunity to speak tonight. I just want, on behalf of the LA-1 Coalition, to express my support for this highway. I think it's much needed, and I'm glad to see the environmental impact statement has kicked off. I would ask that, you know, and I'm very in tune to the funding problems as relates to the Department of Transportation and Development in trying to secure dollars to build a road. I would ask that maybe you do mention the potential use of tolls or innovative financing in your document, whether it's tolls or some type of an intermodal district, because DOTD does not have the funding in place to build such mega projects. And I know the Senator did mention the two "T" words, and you've got to pay for what you want to build. And I think that -- and I haven't looked at any other traffic, and I don't think tolls could pay the entire part of it, but it may be one of the tools in the chest that can help leverage other federal and state dollars. That's what we had done with Louisiana Highway 1, and if everything goes right, we should let contract for construction in November or December. And Michelle and the two gentlemen here spearheaded that effort. And so I'm very confident EIS will move along in a timely fashion. The members of the LA-1 Coalition back five years ago were supportive of an eastern alignment further south along the 316 type corridor. Given the fact that if this is in fact a hurricane evacuation route, the majority of the people who are furthest south are the ones actually offshore. We have 13,000 people in the Gulf of Mexico living -- it's like a small city in itself. And, originally, in this study area, the majority of them are on the eastern side. And we also thought that it could link -- if we're spending a half a billion dollars, or actually NOTO, to get from coast to U.S. 90 would be about 730 billion dollars, I think, that we should obviously try to tie these two highways together. And not so much because of the economics of the port, but the growth at the port generates traffic, generates people there, generates workers, and then if ever there is ability to facilitate caner trade at Port Fourchon, there'll be more and more people there needing to get out of harm's way. That port has been the fastest growing port in the country, and not just for the economic, but for the people there working, they bring widgets and gadgets all the time and have to travel north with their equipment that gets on the highway system. So we are supportive of this project, and, obviously, as you mentioned, specifically south of this, but all of this traffic from the south feeds into this system, and that's why we have been supportive of an eastern alignment more-so than the other alternatives	Comment Noted.
88	7/15/2004	7/15/2004	General Public	Good evening. I am Aubrey Gravois. I'm a resident of Vacherie. I'm past chairman of St. James Parish, which I served for 16 years, and at present I serve on the Lafourche Basin Levee District since I've been there since the early '70s. So I'm very familiar with this project. I've been very active on it, been working on it for years and years. We don't want it to happen like what happened with this Gramercy-Wallace Bridge, which took 14 years to build, you know. And so when we start this, we want to build it. Just a couple of months ago we were in Washington, Coalition of Southern Levee Districts. I think Senator Dupre was with us also. And we went -- we met with Mary Landrieu and the legislators from Louisiana, they were all with us. And what we did there, she wanted a comprehensive 4 plan for what we planning for hurricane protection and the levee system. If you look at the future, the levee will start past Gramercy, past the bridge, Gramercy-Wallace Bridge, and will go all around St. John, St. Charles, Orleans, St. Bernard, and Plaquemine, and come all the way to Morganza. So I liked comment that Reggie said to also have the straighter line, because the East bank would also be levied for hurricane protection and for flooding, like some people have mentioned flooding. So, but the basic thing is, you know, I support which ever alignment we have to take, and, like, I'm from Vacherie, I'd like it to help my community as much as possible. And I'm glad to see that y'all have included our projects that the Lafourche Basin Levee District has undertaken in the last few years. One of the big ones is Donaldsonville to the Gulf of Mexico, and this is to surround for drainage. One of our main concepts is drainage and hurricane protection under this particular project. It took us 25 years to get this project going. When Billy Tauzin first won for Congress, we saw the need for it, and we've been working on it in Washington ever since. So right now we finally getting some federal money, and it's going to be a reality one day. But just like this is a reality, I think this project is very, very important. Like I said, we've been working with this for years and years. So we want to offer my cooperation and the Board's cooperation to make this thing a reality. Thank you.	Comment Noted.
89	7/15/2004	7/15/2004	General Public	Lindy Hoffman, again, from Thibodaux area. We are all talking about hurricane evacuation, and I think that we must approach the entire project relative to hurricane evacuation as the principal argument in whatever location we choose. With that thought in mind, there's one thing that was not mentioned. The intermodal transportation system that has been mentioned for the Donaldsonville area to Whitecastle. Now, being a little selfish about going to economic development as opposed to hurricane evacuation, someone mentioned that the road would not be used at all if we did it for hurricane evacuation. I'm sure that ultimately the intermodal transportation is going to be a reality, and when it becomes a reality, that highway system will be greatly used for other than hurricane evacuation. You've all heard the expression, Build it and they will come. Thank you.	Comment Noted.

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90	7/16/2004	7/15/2004	General Public	I'm the only Assumption representative, and I will tell you all that I live in Labadieville. I've been there 49 years. And if there was a major hurricane, I don't think I would travel south to 6 Thibodaux to go through Vacherie when I'm that close to the Sunshine Bridge. Because everybody in Assumption Parish, I think, would just head north to the Sunshine Bridge, and I don't know why Assumption was brought into this. Thank you.	Comment Noted.
91	7/17/2004	7/15/2004	General Public	I'm Herb Toups from Thibodaux. And I mentioned, you know, I was afraid to go to the Sunshine Bridge -- I mean going to Gramercy and all that area because of possible flooding. But if I wanted to go west and go to Lafayette, is there any -- something on the plan to make Highway 90 so you could get out going 90 towards Lafayette? You know, when you get off the high-rise around Amelia, you go down to ground level. Is there any plan to raise that? Man, that would be the way to go, Lafayette, catch I-49 north. But to get from, say, Morgan City and go on past towards Lafayette, you got some low spots. So is there any consideration in that area? I mean raising that land when you come off the high-rise around Amelia, not going towards Morgan City. Thank you.	Comment Noted.
92	11/18/2004	11/18/2004	General Public	A. Agreed that the NEPA process and the process by which we are developing the Environmental Impact Statement has been adequately described. Environment is good but remember this is an evacuation route for people to get out.	Comment Noted.
93	11/18/2004	11/18/2004	General Public	B. Agreed that the Quantm Route Optimization process been explained adequately.	Comment Noted.
94	11/18/2004	11/18/2004	General Public	C. Agreed that the information developed to date, the project's progress and the remaining steps to completion were presented in a clear and timely fashion.	Comment Noted.
95	11/18/2004	11/18/2004	General Public	D. Agreed that the project displays were helpful to understanding the project and the project area.	Comment Noted.
96	11/18/2004	11/18/2004	General Public	A. Agreed that the NEPA process and the process by which we are developing the Environmental Impact Statement has been adequately described. Environment is good but remember this is an evacuation route for people to get out.	Comment Noted.
97	11/18/2004	11/18/2004	General Public	B. Agreed that the Quantm Route Optimization process been explained adequately. An on-site assessment of traffic on Hwy 20 on the weekend would be beneficial.	Comment Noted.
98	11/18/2004	11/18/2004	General Public	C. Agreed that the information developed to date, the project's progress and the remaining steps to completion were presented in a clear and timely fashion.	Comment Noted.
99	11/18/2004	11/18/2004	General Public	D. Agreed that the project displays were helpful to understanding the project and the project area. Please label Parish road 22 which is in alignment with the new highway (large parcel of property owned by the school board). It's called the Choctaw Community and it houses the middle school for all residents of the north Lafourche area north of Bayou Lafourche. Also, traffic bottlenecks on Hwy. 20 midway between Sunshine & Luling Bridge. There's the N/S alignment from I-55 to I-10 to Gramercy/Wallace Bridge south parallel to Hwy 20. New road must go east of Hwy 20. With Houma being the furthest south, head north to Gramercy Bridge to I-55.	Comment Noted.
100	11/18/2004	11/18/2004	General Public	A. Agreed that the NEPA process and the process by which we are developing the Environmental Impact Statement has been adequately described. Environment is good but remember this is an evacuation route for people to get out.	Comment Noted.
101	11/18/2004	11/18/2004	General Public	B. Agreed that the Quantm Route Optimization process been explained adequately. An on-site assessment of traffic on Hwy 20 on the weekend would be beneficial.	Comment Noted.
102	11/18/2004	11/18/2004	General Public	C. Agreed that the information developed to date, the project's progress and the remaining steps to completion were presented in a clear and timely fashion.	Comment Noted.
103	11/18/2004	11/18/2004	General Public	D. Agreed that the project displays were helpful to understanding the project and the project area.	Comment Noted.
104	11/18/2004	11/18/2004	General Public	A. Agreed that the NEPA process and the process by which we are developing the Environmental Impact Statement has been adequately described. Environment is good but remember this is an evacuation route for people to get out.	Comment Noted.
105	11/18/2004	11/18/2004	General Public	B. Agreed that the Quantm Route Optimization process been explained adequately. An on-site assessment of traffic on Hwy 20 on the weekend would be beneficial.	Comment Noted.
106	11/18/2004	11/18/2004	General Public	C. Agreed that the information developed to date, the project's progress and the remaining steps to completion were presented in a clear and timely fashion.	Comment Noted.
107	11/18/2004	11/18/2004	General Public	D. Agreed that the project displays were helpful to understanding the project and the project area.	Comment Noted.
108	11/18/2004	11/18/2004	General Public	A. Agreed that the NEPA process and the process by which we are developing the Environmental Impact Statement has been adequately described. Environment is good but remember this is an evacuation route for people to get out.	Comment Noted.
109	11/18/2004	11/18/2004	General Public	B. Agreed that the Quantm Route Optimization process been explained adequately. An on-site assessment of traffic on Hwy 20 on the weekend would be beneficial.	Comment Noted.
110	11/18/2004	11/18/2004	General Public	C. Agreed that the information developed to date, the project's progress and the remaining steps to completion were presented in a clear and timely fashion.	Comment Noted.
111	11/18/2004	11/18/2004	General Public	I'm Leland Robichaux, and I'm the past president and director of SCIA, South Central Industrial Association. I am also the co-chairman of the infrastructure committee. We just passed a resolution, which is addressed to the DOTD, stating that we would like to see -- we make an appeal to the LADOTD to expand and modify the current study for the north-south access highway project, and that we request that the purpose and need be expanded to include transportation links. And tonight we understand that has been done. And we want to encourage that the study of inclusion of Alternate 7 route, which is the most direct from LA 90 to the Veterans Memorial Bridge near Gramercy, Vacherie, and that we believe Alternate 7 is the most cost effective, and I'll explain a little bit of that when we talk about cost effective. Alternate 7 will provide less wetlands impact by construction and we encourage the limit of the study area to be expanded to I-10. The long-term safety and essentially the general welfare of the bayou and the river regions are critically dependent upon the future improvements of the transportation system. Specifically, the most cost effective and direct route of the north-south corridor, hurricane evacuation route, is to the Interstate 10 system. We request that the Louisiana Department of Transportation and Development take immediate action to include transportation links and expansion of the limits of the study to Interstate 10 for the north-south corridor. Talking about being cost effective, and Senator Dupre made a reference between 6 and 6-A and 7-A, and reference to 7 being the cheapest. And regardless if it has to be elevated all the way and if that highway cost $400 million, you have to look at how you're going to pay for it. And the only way you can pay for it, as the chairman just mentioned before he left about toll roads. You need traffic to be able to pay the tolls to pay whatever the cost is. So to be cost effective, we believe making it a toll road and connecting to the Veterans Memorial Bridge will certainly give you the length for the traffic. So, again, we thank you for your time. We appreciate the hearings, and I'll give you a copy of this resolution. It's going to be mailed in to the DOTD. Thank you.	Comment Noted.
112	11/18/2004	11/18/2004	General Public	Good evening, my name's Paul Aucoin, I'm an attorney, and my office is right on the St. John/St. James Parish line right on the river. I want to thank y'all for having this little get-together tonight. It's nice to have an opportunity as a citizen to have input into some of these projects. I just hope we don't meet and study this project to death, you know. It's nice to have meetings and studies, but let's just get it off the drawing board and into the working stages. Some of us from the Vacherie area want to point out to you that the connection coming off of the Veterans Memorial Bridge is a little bit off. It actually has been changed to come closer to the west, closer to Highway 20. I'm in favor of some of the comments made by Senator Dupre in that we need the most direct route and it ought to connect directly in some fashion to the Veterans Memorial Bridge. I'm chairman of River Parishes Tourist Commission, and I might say that some of the routes I looked at, I think they might have been drawn up by some of the people on the tourist commission, looks like scenic routes, you know, going through a bayou countryside. I think what we're in interested here and I think the drawings that I saw, that people drew, everybody's in favor of some type of a direct route, and I strongly encourage that. Thank you.	Comment Noted.

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113	11/18/2004	11/18/2004	General Public	Thank you. My name is Jude Gravois. I'm also an attorney from Vacherie. Paul and I have about all the business in Vacherie. Anyway, I appreciate the opportunity again to come tonight. I've been involved with this from about '99, and it looks like we are making some serious progress with it. And I also agree with a lot of the comments that were made tonight by Senator Dupre and Mr. Walker and some of the others. The issue of tolls, it looks like will be one of the major issues. And as everyone said, if we're going to look at tolls, we really have to build this road in a location where people are going to use. And I'm talking about using and not just south to north, but really north to south. And, you know, some of us from the Vacherie area, you know, I mean, this is almost a suburb of Thibodaux. We come to school here. We come to college here. Our babies get born here. We come eat out here. And, you know, the Alternate 7 that was originally proposed and is not specifically on these maps now, it seems like it would service the needs more on a north-south route to get to Thibodaux and continuing on to the Houma area. I just wanted to maybe ask a question, and I didn't have an opportunity to study the 1999 project report very carefully, and it looks like there was a lot of very good and important data that came out of that. And I was just wondering if some of that data will be inputted into the work that y'all are doing with the Quantum study to, you know, actually see if those alternatives are also feasible and reasonable considering the purposes and the needs and the constraints that y'all are going to be involved with. Can you answer that?	Well, we're essentially starting with a clean slate from the standpoint of the Quantum process and the Quantum input. And what comes from that, many of them, some of them may well be very close to what some of the alternatives -- and, frankly, I forget the numbers because I'm thinking forward. I'm thinking of our process with the Quantum route optimization and the costing assumptions and the way the software works. I think what you'll probably see is that some of the alternatives that come out of the Quantum route optimization process are going to be pretty close to many of those alternatives, whether it be 6 or 7.
114	11/18/2004	11/18/2004	General Public	Right. I understand. And, obviously, we got all these wavy lines here, but I presume when the road's going to actually be built, this will be more straight lines than what we're looking at. I mean you think the study's going to come out more –	What we'll do from here is we'll gather more information, we'll input that information in Quantum, including some more strict engineering design and criteria, some elevation information. And then we can actually start to narrow those down, and once we get to -- once we start eliminating some of the ones that don't make any common sense, then you will see them start to probably straighten out. But I'm not going to stand here and tell you that we're going have a straight line from 90 to 31 -- to the bridge. I can't tell you that. We've got a lot of issues out there that, you know, just things that we will not be permitted to go through. The agencies won't permit us to make a straight line through cypress swamp, or something like that, if there's another option that we can minimize the impacts. So I can't promise you that, you know, it's going to be perfectly straight, but I also can't tell you that it's going zigzag through the project area either. We really have to gather more information and input that into Quantum, make it -- more constraints, so it's going to force it to follow a more, you know, more direct route.
115	11/18/2004	11/18/2004	General Public	Okay. And then in addition to that, after that study is done and advanced, I presume y'all are going to get down to only a limited number of routes that are going to come out of the study, right?	Yes.
116	11/18/2004	11/18/2004	General Public	Not necessarily just one or two, but maybe several.	Yes, several.
117	11/18/2004	11/18/2004	General Public	Right. Okay. And the limitations on the study that were up on the board about, this doesn't consider traffic information, you know, you got to take a common sense approach and ease of use of the roadway and the public needs and the public wishes and also picking the termination points, you know. Is that done as part of y'all's process, or is that something done after this study is done? Is that all a part of the final determination?	Ongoing. All the same time. It's part of the ongoing process. That's why we really are pleased when you choose to participate in the process and let us know what your considerations are because that way we get to bring it into the decision-making process. So you're being here, making these comments tonight are part of the decision-making process that we are handling.
118	11/18/2004	11/18/2004	General Public	Thank you. Alexis Duval. I'm from Houma. I'm going to be the chairman of Houma-Terrebonne Chamber of Commerce in 2005. I just want to ask a question mainly. The constraints that you've been talking about, that have been fed into the Quantum, are they on the website? Are they visible? And as you add things to your search, you know, is that made available to the public? Because as we all know, the output of any software is only as good as the input. So I mean I would like to see, you know, as time, you know, to be able to access that information.	After we get through this round of public involvement, we're going to put a lot of this updated mapping on the website. Some of the sources came from our sub. We have a sub, Shaw Coastal, that's handling national resource information. They're doing the searches. We did obtain -- some of it is available on-line. The sensitive biological areas are available on-line. Earth search was very diligent in getting our cultural resource information for us, and they may be able to tell a little bit more about the source of that information. But, currently, right now, some of the maps are on our web site, but the actual constraint map, everybody was drawing on it, it had everything on it at one time is not -- we were going to wait till after this meeting. And then we will also be putting up, most likely these three maps, or something similar, on the website, so you will be able to show initial – to show our efforts. It will continue to be updated. Some of that data is public information and will be very precise, but there's other data, like the locations of archeological resources that is protected. And so while we will have map of cultural resources, it's not going to be able to pinpoint where the information is because that will be a much different scale than more general information. The same with some of the rare species or the protected and threatened species, or rare in location of plants or animals, we're not going to give a precise location of those because we're not permitted to by the agreement we have use of that information. So while we will post a general description because it is a constraint, you're not going to then be able to go out and locate that.
119	11/18/2004	11/18/2004	General Public	No, I understand. We have to be able to understand the constraints that are being considered on everything. And I would also like to add that I think, personally, and speaking on behalf of all of the members of the chamber, that the most direct route to the Veterans Memorial Bridge, or the Gramercy-Wallace, is what we're in favor of, and thank you for your time.	Comment Noted.
120	11/27/2007	11/27/2007	Public	Requested that Madewood Plantation be on constraints maps listed as a historical structure.	Noted.
121	11/27/2007	11/27/2007	LA Department of Economic Development	Asked if this meeting is part of the Environmental Impact Study and when will the study be done.	This meeting is a part of the Environmental Impact Study but the completion date had not been determined at this time.

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122	11/27/2007	11/27/2007	Public	I know the Federal Government is saying to look at this other alternative, this alternate route, is it even a possibility or is this just kind of giving them…	Of course, it is a possibility. Any alternative is possible until you exhausted it. Some of the things we as the regional planning commission found early on as potential issues with this roadway and I will state them is that: One, we have a serious problem with conflicts with high-pressure gas lines and transmission lines that traverse Assumption Parish. So, every time such a roadway would travel across it there will be an increase cost of rectifying that problem. The second thing is that we are very concerned because the main industry in this parish is agriculture. If we would try to require this roadway to be on a ten contour this roadway would come basically equidistant between the bottom hardwoods and the ridge along Bayou Lafourche. If this roadway is on grade it severs that property except for those areas that have an elevated portion or some sort of elevated ramp system that would cross a major roadway. This would be considered a controlled access highway, meaning that the speeds would be upwards of 65 to 70 mph. This road would not allow everybody from their driveways to exit on to it or exit off. It would be a roadway that would have frontage roads and where elevated it would have ramps: on ramps, off ramps to get on or off. The particular red dots or areas of interest which would particularly be areas with ramps and off ramps – access points.
123	11/27/2007	11/27/2007	Public	The Eastern path depicted up to Hwy 70 from a little South of Labadieville to me that would be a very desirable area for this highway. Not only would it be a great evacuation route, it would be a great relief to Hwys 1 and 308 which is really horrible from all aspects. Especially 308, there has been some attempts to straighten out some curbs but there is still a lot of work that needs to be done. Anyway, 308 and LA 1, for a lot of reasons it will be very undesirable because securing the right-aways would be very difficult because of the highly developed residential areas so on and so forth. As far as the western corridor, my impression is that it would have a lot of undesirable features because of the areas it passes through. You know I am no engineer, that's my impression; the western corridor would be a lot more undesirable than the eastern corridor. I will tell you I have some interest in some real estate on the eastern side. Some doesn't touch the proposed highway, some would I think in one area. I think the greatest benefit would be again, it would be for hurricane evacuation. It would be a great relief for Hwy 308 and LA 1 in a very highly congested area. And we don't have, we probably should. Highway 24 to Houma. You know we probably should have directional traffic north on Hwy 308 and south on LA 1. But I don't think that would be feasible at this time. So all-in-all I think the eastern corridor would be a great benefit to the area."	Noted.
124	11/27/2007	11/27/2007	Public	I basically agree with everything that previous commentor said. That the eastern side along 308 would be the most feasible area. I don't want to go into too much; I believe the previous commentor pretty much summed it all up. I agree with his thinking on that completely	Noted.
125	11/27/2007	11/27/2007	Public	I am from the Thibodaux area. You know we've been over this many, many times. I personally think if we are going to look at hurricane evacuations, I personally think, especially with the large amount of people that you have in Terrebonne Parish and the large amount of people you are getting into the Thibodaux area. I really think we have gone over this now since before the last term of the Edwards administration that we have been working on this whole thing. If you go from Thibodaux to the curve in that river which is around St. James and go up to 3127 which is that highway, the majority of the land which you will go through is hardwood swamp, as is shown on that map number 1. Number 2, there is very little conventional wetlands that you have to go through as opposed to where Hwy 20 is now or some of these other proposed routes. Alright, number next, once you get to Hwy 3127 you are equally distant to the Gramercy Bridge and to the Sunshine Bridge. If a hurricane is coming from the east side of you, you have the prerogative to go left to go through the Sunshine Bridge and escape out that way. If a hurricane is coming on your left, it is coming on your left, as did Rita or our left, then it is easy to go up turn right, go to the Gramercy Bridge, up 55 and get out of town. Now, another problem looking solely and only at that Gramercy Bridge is when you get back to I-10, back of Gramercy, Reserve and all that where it's down on level and not an elevated highway, the elevation of that highway is only 5 or 6 feet above sea level. Now I know I have gone through it with the highway people and they have confirmed it. Well, we all know if a Katrina would've come 30 miles further west you could just about imagine the water that would've went through (Lake) Pontchartrain, Maurapas, into the swamp, over the highway, it would do you know good to concentrate all your efforts solely and only to that Gramercy Bridge. In fact there are two things in this whole exercise. I really think there are two things that have to be considered. Number one, would be the hurricane evacuation route in which you could come up from 311, coming up from Houma, come up to Hwy 90, turn left at Hwy 90, go about not even a mile, there is a rise in Hwy 90. There is a reason for that rise; it was built for a turn-around, about a mile from 311. It is already in place, the structure is in place. You then head straight up toward St. James to 3127. The right-aways of 3127 are already intact to four-lane the highway just as it is four-lane from about Edgard or somewhere all the way to Boutte. Now, so that would then be four-laned. You have, no matter which way the hurricane is; again we are wearing the hat of a hurricane evacuation, no matter which way it is coming you have the prerogative of going over one bridge or the other bridge going out east or going out west.	Noted.
126	11/27/2007	11/27/2007	Public	The second thing that really needs to be considered, as well as the north-south corridor, is a road equivalent to a 3127. Equivalent to a 3127 that would start at the Larose Bridge where it crosses over the Intercostal Canal on the 308 side and go all the way to 3127; just like you've showed it there. Don't cross Bayou Lafourche like you have showed it. You keep on going all the way down to Larose. And in fact the Highway Department put that new bridge and they put it on this side the Intercoastal, if they would've put it on the other side of the Intercoastal. I am sorry if they would've put the bridge across Bayou Lafourche. If it would've been put on the south side of the Intercoastal it would've been in the right place to do this because you already have the bridge built across the Intercoastal. You wouldn't have to build another one. Number next, as you travel along Bayou Lafourche, if you get in an airplane and go along Bayou Lafourche on the south or the west bank of Bayou Lafourche; whatever you want to call it. This is where you have all these little towns; you hit Napoleonville, be it whatever, Thibodaux, Raceland, or Paincourtville. Everybody drops off and there are houses all the way to the woods; whereas, if you fly and get on the 308 side you don't have that problem today. You don't have all that extra high price property to go purchase for the right away. So I think two things are needed. I really think you need for the people in lower Terrebonne, in Terrebonne, and for the people in Lafourche would be that North-South to go right on the west side of Thibodaux straight up to the curve in the river and you have the prerogative to go either way. Number next, would be to go from Spur 70 all the way down to the Intercoastal in Larose – the Intercoastal Bridge. Talking about this, I have said this many of times, from Morgan City to the Harvey Canal you have only two roads today. You have 3127 and you have 90 and the rest is nothing more than a bunch of cow pastures along the bayous and the ridges. That is all it is. That is the only true highways that are in a straight line for any distance is 3127 and what we would call New 90. That is the way I feel about it. These alignments that were made to the east side of Thibodaux, I think to get that through the wetlands, the EPA; whomever you have to fight to get through that swamp – that is a very bad swamp where 20 goes through. If you walk that hunting you are going to be to your waist a lot of times, whereas;	Noted.

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				if you walk that other one from the bottom of St. James to Chackbay it's no big deal. So, that is my suggestion. You should really be looking at two things one is going straight up and one is coming down the bayou.	
127	11/27/2007	11/27/2007	SCIA	I have a letter from SCIA along with the Chamber of Terrebonne. I am not going to read the whole thing the written part was good enough. But I will just read to yall some. First, from SCIA: as a group we continue to be committed to the North-South Interstate Access Highway Project which is a major issue and our highest priority of hurricane evacuation. The feasibility study of 2003 has been completed and alternate routes reviewed and considered. Federal and state funds were appropriated and an Environmental Impact Study of 2004. We continue to believe that the alternate seven is the most cost effective route offering the least amount of wetland impact. We also support the extension from the Gramercy-Wallace Bridge to Interstate 10 as a means of securing a complete evacuation for the bayou region. That is from the SCIA, which is the South Central Industrial Association. The Houma-Terrebonne Chamber, they had a resolution in 2002, saying they wanted it to go the Gramercy-Wallace Bridge and they still support that today.	Noted.
128	11/27/2007	11/27/2007	Public	I have heard both to the west of Thibodaux and ongoing north, I am thinking to the south of LA 1. I think the problem with going on the east side of Thibodaux is wetlands problems. But if it wasn't that problem it seems to be the quickest way out for most people. Most people are not going to go; I call that south I know it is east, south to get away from a hurricane. That is basically the way we would go except here in Napoleonville we would go on up Hwy 1 catch the Sunshine Bridge and get out. But the people from South Lafourche, if you take one of those two paths on either side of Thibodaux they are either headed up before they get to Thibodaux or headed up after they pass through Thibodaux. To me, if everything else being equal the east side seems to make sense for hurricane evacuation. If indeed it is as feasible as the west side, if it is not as feasible because of the wetlands then you have the sense that one out does the other.	Noted.
129	11/27/2007	11/27/2007	Belle Rose Police Jury	Are we just interested in building new interstates or actually evacuation routes? I mean all this leads up to 3127. Without 3127 being developed on the east side of the river everything has to go over the Sunshine Bridge. You are looking at a bottle neck again. You have people evacuating New Orleans trying to get to the interstate; we are trying to get to the interstate. Unless the loop around Baton Rouge is built where 3127 ties in to it where you can go east or west once you hit the loop to go I-12 or to the interstate or to get around Baton Rouge or even some area like that. I don't know what we are trying to get here. I love new roads through our parish, do not get me wrong, especially some corridor or something like that or expressway for economic development purposes would be wonderful. But for basic needs right now and I know no one wants to hear this but LA 1 and 308, you make those one way lanes for evacuation routes trying to get to 3127 for evacuation for parishes south of us would be the best alternative right now. For emergency purposes to get something done for the next big hurricane I believe that is what I am interested in. I think that is what a lot of people are saying for evacuation routes. What are we trying to achieve…	I wasn't going to make it a discussion. But you have raised a question on creating a couplet system basically along Bayou Lafourche where you would have those two lanes converted to one way north and maybe the west side be converted to two lanes south. The problem with that when you create a couplet system like that and you have such a large volume of traffic you now have to worry about conflicts, intersections. So that at every intersection with that roadway you are going to have to have a deputy and it rules it or a signal light. We have contemplated what you just said years and years ago and the existing conflicts it would create far exceed the benefit. You are looking at a roadway, first of all, LA 1 and 308 are typical state highways. They carry approximately on a daily event probably about 13-14,000 cars per day. Their maximum capacity with the existing speed limits because of the geometry of the roadways limits it to very little more. So you are talking at the very most on a very, very good sunny day and bumper-to-bumper traffic with no impediments, no wrecks you might get 25,000 vehicles out a day. When we are talking about an evacuation we are talking about likely in the event of somewhere in the range of about 150,000 vehicles. So if you played it in your mind, where do the majority of those vehicles gravitate to? Where are they going to go to get out of this area? The problem is the State Police has created what they called contra-flow. It imposes some challenges to where they literally direct them; you don't have choices any longer. You have to go where the police tell you to go. Right now our methods of evacuation are to travel down Hwy 90, get on 310, exit via 310 coming back toward Baton Rouge, and exit I-49. That is the only exit for Terrebonne and Lafourche Parish. Now what we talked about before exiting to the west, if you have a westerly type storm that is heading from basically the Galveston area and skirting the coast and coming up you have only one other exit and that is to the east, which now you are congested with the 310/New Orleans people coming out. To answer that question that is what we had thought of.
130	11/27/2007	11/27/2007	Belle Rose Police Jury	What about the bottleneck at the Sunshine Bridge as is presented? During Hurricane Katrina traffic was backed up to Morgan City.	For Hurricane Katrina and Rita traffic counts that were taken by, they weren't literally traffic counts, they were visual accounts. The visual accounts stated that the traffic along Spur 70 was moderate to high. Which meant that roadway probably could've taken about, maybe 13-15,000 more vehicles added to it. That does us no good. We need to have in excess of about 75 to 80 to 100,000 vehicles per day additional. When we talk about the Sunshine Bridge it does have a varied amount of capacity but keep in mind a lot of those people from the St. Mary, Assumption Parish area are trying to get out as well. That is usually a very good exit route for them because they don't want to get on Hwy 90 and go through Lafayette and get backed up in miles and 40 miles of traffic which we have seen. In fact for Hurricane Andrew traffic was backed up from Lafayette passed New Iberia from what I've gathered from some of the statements that were taken. We need a direct linkage in the bayou region to I-10; which is the conduit to get the traffic moving at a very efficient speed and a speed that is controlled access. That is why the alignments we have looked at from basically Thibodaux to Gramercy was the most advantageous.
131	3/9/2010	3/9/2010	Public	Local Business owner. One location was closed due to flooding and inability to raise slab elevation to meet new regulations. Concerned with the project not ever being built. I want the project in order to benefit both evacuation in times of hurricanes, and also, the economy of the area. I have been on numerous boards trying to develop the economy in this area and if we don't diversify and get some other kind of economy going here, we're gonna go down the drain, there's no question about it. You probably read the article in the paper about the lack of attendance in the various hotels and motels in the area. Two more hotels closed up in Thibodaux; Howard Johnsons and Holiday Inn because they just didn't have the occupancy. Now grant it we have two more hotels, but they're just getting by, by the skin of their teeth. My proposal is just a common sense proposal. You've got to forget about so many environmental facts and think about the people in terms of hurricanes and other evacuation. We also never think about the economy, but I want to mention to you. Concern for the loss of land below the Mississippi River. Well anyway, my proposal and it's a plain ole common sense proposal because you could get people out evacuation wise and you can improve the economy and you	Noted.

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				would start in Houma on 311 and improve the 311 area, if, if not the road itself; build one alongside of it and go north toward Lafourche Parish; the northern end of the Parish, if any of you remember where the old Kmart building used to be. That is on the other side of the bayou, Highway 304, and it extends to Shoepick and Shoepick is, if you don't know where it is, its a little community that's close to Chackbay. Ambrose Landry, now deceased, who was a very instrumental person in trying to improve the economy off of this area, and I got together and we interviewed a lot of people. Well we proposed that route 311 to 304 and Ambrose looked to see how much distance there was between Shoepick and 3127 and there's no more than about maybe eight miles of land that you would have to kind of think of environmental and that is five miles of it that you would probably have to have an elevated highway. So, you think about this and you will find that the most common sense approach to alleviate all of the problems that we have with the highways would be to funnel that. When you hit 3127 you can go to the east to the Gramercy Wallace Bridge or you could go to the west to the Sunshine Bridge. If we build a road on this alignment and move people to the Sunshine Bridge you're gonna create a big bottle neck just like you have on highway 90 at the New Orleans, um, Metairie area. If you've ever been caught when a wreck occurs over there you're gonna sit there for three hours sometimes. So, that's all I have to say and I hope a little of it sinks in to some of the people who are in charge and I know that they run a hard Gallo there.	
132	3/9/2010	3/9/2010	Public	I'm president of the Thibodaux City Council and I have some selfish views besides hurricane evacuation and I want to see about the goods and services come into our community. At one time we had money from DOTD to complete the four lane expansion on North Canal Boulevard and because we had opposition from the community the money died and dried up. We had six million dollars committed by DOTD to put a pump in the City of Thibodaux and because of opposition, that money dried up and that project is gone. So, I'm just asking you no matter what alternative, that's an excellent idea and maybe you can answer sir. Why is the shortest route not the chosen route? I agree with (previous speaker) on the route. Now, I originally served and was appointed on the original I-49 commission with the State of Louisiana and when they solicited the funds for the Gramercy Bridge the whole intent at that time is "Hey we want a north-south route. Give us the money for the bridge." Okay? There was no talk of Sunshine at the time, ever. So, the initial intent was Gramercy to start off with. So, I'm in favor of Gramercy. I'm also, I like the previous commentor's idea, but this is the shortest route. When you're talking about this route here then you're talking about a lot more money than this route. It's obviously a longer route and, and, and as long as things take to do on infrastructure at the State of Louisiana……I would suggest we go to the short route so I'm just asking y'all no matter what route DOTD supports y'all on, don't; don't fight the funding. If the funding's there, let whatever happens, you know, let it come through okay. I'm tired of losing infrastructures to other communities.	There was no chosen route at this point.
133	3/9/2010	3/9/2010	Public	Will these maps be available in the public area libraries and so forth in this area? So that people could have more input, could view the maps, and come up next meeting.	Those maps will be included in the projects newsletters that will be mailed out. Please go on the projects website and put your information on there 'cause we want to send this newsletter out to you guys. All project mapping will be shown on there. All project mapping will be shown on the projects website, on, once we publish the draft Purpose and Need, I'm sorry, the draft EIS. That'll be at your local libraries as well as, you can download from either DOTD's website or on the project's website. So yes, it will be available to the public.
134	3/9/2010	3/9/2010	Public	It beats any of the studies y'all have made so far. Will this road be a controlled of access road?	Depending on which alignment is chosen. If it's out that hadn't been determined just yet. If it's out in the middle of the wetlands we will have controlled access. If it happens to be an expansion of 20, which is one of the routes being considered, obviously we'll be looking at a partial control of access.
135	3/9/2010	3/9/2010	Public	Well I feel it'll be a control of access road because high level road in a swamp area has less of an environmental impact. That's why I would favor the short cut route through the swamps.	Correct. And we will use end-on construction.
136	3/9/2010	3/9/2010	Public	I reside in the city of Thibodaux and when this evacuation route was first proposed in 1996 there were only two routes. One east of Thibodaux one west of Thibodaux and to the people of Houma it didn't really make a difference which way they got around it as long as they got around it. The route the previous speaker is speaking of was the route to the west of Thibodaux; the other route which crosses lower plantation and ends up on LA 20 and its into Vacherie, is y'all other alternative route, that that was proposed at that time, by extending the route through the Assumption Parish area, you've committed that the whole of Terrebonne Parish, to going through Baton Rouge. By using one of the routes east to west of Thibodaux, you at least give the residents of Terrebonne Parish and the folks at the most upper portion of Lafourche Parish and even the lower portion of Lafourche Parish alternatives. They can either go to the Baton Rouge route because once they get to Vacherie they can use 3127 which is already has some right of ways dedicated for four lanes. It would just require the parts surfacing of the additional two lanes going to the Sunshine Bridge. Additionally that same corridor which is already owned by the state could be also utilized to go to the Gramercy Wallace Bridge or the Veterans Memorial Bridge. And would give people an alternative of going to LA, to interstate 55 and going north to the Jackson area by using, utilizing US Highway 61, although they wouldn't be able to use I10 at that point to get access to 55 because the contra flow; or if they wanted to proceed before that they could use I I10 to go to I55 and go north to Jackson. But if you do the route through Assumption Parish the whole of this area would be committed to going through Baton Rouge which is a bottleneck in and of itself during the contra flow situation. The whole purpose of north-south evacuation route is to go north. The way to escape a hurricane is to go north. East and west, is not a viable alternative especially for people who may leave late because you don't know if you're going into the storm or away from it. Hurricanes are not as predictable as we might hope they would be. We never know when they're gonna jog one way or the other. In this particular case it is time to stop the planning. I know this NEPA thing is a new thing; is brought about by a lot of different concerns, but in this particular case, the people south of us now have been very lucky. By lucky I mean that they have not had the situation which would make this road an imperative for them to go north. It is time to stop studying it and start doing it. It's way past time, and I would urge that the remainder of this study be done, but I would urge you to think about the alternatives and as far as purchasing new right of ways to build an alternative route, only going to the west, would be a waste of states and the taxpayers money.	Noted.
137	3/9/2010	3/9/2010	Public	I live in Raceland and I travel to Houma every day and the highway going to the largest city in our area between Raceland and Houma is 182. And it's always backed up in traffic so I was trying to parallel, imagine trying to get out of Houma for a hurricane and this; that's just the city of Houma, this is not everything below Houma to get everybody to highway 311, I think it would be a very huge task. You would have to probably start evacuating four days before the hurricane to get to 311. So what I'm thinking, is a plan that would serve Houma and Thibodaux and it would get the bulk of the people out of where most people live in Houma and South Terrebonne through Lafourche Parish just veering east of Thibodaux right below Lafourche Crossing somewhere around Little Wayne Construction. There's not that much population in that area. They might have to move two houses on both sides of the bayou if they are lucky, but that would be about it, but I don't know if y'all can see this, but this looks like a busy map, but that's the infrastructure that we do have right now. This blue green line right here is US 90 and I was thinking of continuing by Boulevard by Southland Mall and crossing over Koto Road and to Bayou Blue Road and making a new exit on US 90 between Bayou and Raceland which probably would be mile marker 207 and it would b-line from Houma to Vacherie, or Wallace whatever, and it would just skirt east of Thibodaux. Actually still be in the Thibodaux zip code right below Lafourche Crossing and on a sunny day Lafourche Parish would have the ability to utilize the railroad. We can have our; I've heard talk of the city of Thibodaux putting an airport in Lafourche Parish. We have a railway stretching from right outside Thibodaux all the way to Raceland and that could be an industrialized area. What I like about this map right here with the Sunshine Bridge, our friend, Governor Edwards, before he left office, was thinking about putting a	Noted.

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No.	Date	Meeting Date	Agency	Comment	Response
				huge airport right here creating ninety thousand jobs to Assumption, Lafourche, and St. James Parish. If that would be the case, yeah this road would really do well with an airport on a sunny day and it would get people out of here for hurricanes, but if they're not gonna build the airport right here, I don't see the need of going to the Sunshine Bridge. Like the previous speaker's idea getting in the middle between, the Sunshine Bridge and Veteran's Memorial Bridge in Gramercy. We have two of the largest cities in Louisiana in between them which is Baton Rouge and New Orleans, and frankly I would like to see a day when you are traveling I-10 its gonna say Houma – Thibodaux, and it would get the goods, to our area. Another thing you have to consider too is Port Fouchon. If we can get this road to, what we call Prospect Avenue and go through Terrebonne Parish the Lafourche Terrebonne line and probably parallel, LA 24, maybe we can link Port Fouchon to this corridor also, and there's a coalition of people, through LA 1. This would be a way to get our goods from Port Fouchon north to Baton Rouge, but the big picture is to get people out of Terrebonne and Lafourche Parish. They should be looking at going toward Hammond and Hattiesburg. The three H's, Houma, Hammond, and Hattiesburg would probably be about the best route because that's due north of Hammond and Hattiesburg and due north of Houma and I think you know a lot of people say that the Governor of Mississippi doesn't like us to go out there but we do have high land in Washington and Tangipahoa Parish and if we had a highway to get there, our people could go to those places and that's probably where the state's gonna go in the next twenty years.	
138	3/9/2010	3/9/2010	Public	I would like to express my frustration at being involved somewhat in this project many, many years ago and knowing that we are still in the same stage of the process, NEPA process, and trying to define the project. It seems like it's been ten, twelve years that's what we been doing. Always it's been from the community is been desired to build a roadway just like a previous commentor said. Either east or west of Thibodaux trying to get to the Gramercy Wallace Bridge which I would imagine, if you built it today, would be what four hundred, five hundred million dollars? Yet the road doesn't really go anywhere. And the frustrating part is in each and every step of the way there's been a federal agency, the Army Corps of Engineers, who's constantly said that you can't build it because they would never grant you a permit, but that person's never had to, as a government official, federal agency, never had to express his reasoning in writing, but yet he is, or the person with Army Corp of Engineers, is the one who's been pushing for this east – west alignment and I really haven't heard of anyone else through the years make that; make that push other than the gentlemen of the Army Corps and I think it's with no accountability in not even having to provide the technical reasons for that. No matter where you build such a road to this magnitude, you're gonna have environmental problems, but to say that you just can't build it because you can't get a permit, I would think, I think, is stepping way beyond the bounds of his responsibility. I think what we… you know I would support either an east or west alignment to the US 90. I think if we had that determined by good technical justification and good modeling, then I could live with either decision. I think if you look at the MEAN Center Population for the area you would find it probably supports a little more to the eastern alignment. Also which frustrates this project for many years, this boundary is pretty much the limits of what you can determine have your starting point and end point to the roadway. For years we've tried to push just to have this boundary extended slightly below to Prospect Street LA 38 four lane roadway built for good speeds, but yet when you model these projects to determine what has the best utility, what road carries the most traffic. You can't consider LA 3087 the model that exists and also, I-55; the model really doesn't take into account that this is a proximity to the Gramercy Wallace Bridge. Also, you're gonna bring a lot of traffic to the Sunshine Bridge. We're talking about if this road was funded; if we got through this EIS process tomorrow we'd be lucky to have a road near 15 to 20 years from now. Think about the traffic on the Sunshine Bridge today! How many more cars and trucks would be there twenty, twenty five years from now as development continues? It seems like it only makes sense to take a very under-utilized high investment of Gramercy Wallace Bridge and take advantage of that there structure. I think it's not within the desire with what people wanting to see, but yet some federal resource agencies, and I think that should be at the very least, ask for technical justification so people can see why they are being denied good alternatives through this area and that's just my comments.	Noted.
139	3/9/2010	3/9/2010	Public Official	A couple of things I haven't heard today. I live in Vacherie. I live on 20. One thing we've got to realize, if you bring that road through to the west of 20, you're still closer to Baton Rouge going to the Wallace Gramercy Bridge. When I leave home, I go east, take that bridge and go to Baton Rouge and it cuts time off my trip. And when you talk about putting traffic, truck traffic, on 3127 you have to take into two accounts. You're creating a hazard as far as the trucks have to stop and turn and then turn across traffic to go to Gramercy Bridge. Another thing to take into consideration: you adding time to a trip. People that ship goods to and from Houma and Thibodaux across the river to Baton Rouge and New Orleans would be better served if they didn't have to make these turns; didn't have to make these stops. This is not just an evacuation route, this is something that's going to spur the economy, make goods and services move quicker, safer, from one point to another point and that, that would justify going closer to or directly on the Gramercy Bridge. If that route goes to the Gramercy Bridge to get to 3127 you go west, 61 East-West, I-10 East-West, but if you come to the west you got to turn on 3127; if you have to go under the Gramercy Bridge you have to turn across traffic and we want to move these goods as quickly as possible; as safely as possible and save the shippers money and time. So you need to consider this thing	Noted.
140	3/9/2010	3/9/2010	Public	I would like to get additional information before making a remark about which location to use. Please keep me informed.	Noted.
141	3/16/2010	3/9/2010	Public	The route of the new highway should begin at 308, follow Hwy 304 and extend it to 3127. This is the shortest route. It would be most cost effective and have less interruption to the environment.	Noted.
142	3/17/2010	3/9/2010	Public	I would favor a N/S Route linking Hwy. 90 to Hwy. 3127 somewhere near the Grammercy/Wallace Bridge, thus giving traffic 3 options: (1) North - over Grammercy/Wallace Bridge, (2) West - over Sunshine Bridge, (3) East- over Boggs Bridge. This would prevent overload on any one bridge at hurricane evacuation time. Why is hurricane evacuation not priority #1?	Noted.
143	3/18/2010	3/9/2010	Public	Build a four lane highway from Houma to LA 3127 by a Northern direction as much as possible, by-passing Thibodaux, but near enough to Highway LA 20 to help relieve this over capacity need. This road should be a limited access highway with intersections to Hwy 90, 24, 308, 1, 20, 314 only. To meet Corp of Engineer and EPA incremental concerns of least impact, it should be built elevated through the swamp areas. West of Thibodaux would be good, but east would be better. The primary need for this highway is for moving people and goods from north to south and south to north and hurricane evacuation. Land development should play no part. For financing it, it may be required to buy it only 2 lanes first, with the remaining lanes built later, however the entire right of way should be acquired first.	Noted.

List of Preparers

Name	Primary Responsibility

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LADOTD

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Buchart Horn

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List of Agencies, Organizations, and Persons to Whom Copies of the DEIS were Sent

Lead Agencies:	Section/Division:	Primary Contact:	Number of Copies:
Federal Highway Administration	Louisiana Division	Robert Mahoney	3
Louisiana Department of Transportation and Development	Environmental	Maria Reid	15
Louisiana Department of Transportation and Development	District 61	Chad Vosburg	5
Louisiana Department of Transportation and Development	District 02	Chris Morvant	5
Cooperating Agencies			
US Army Corps of Engineers - Regulatory Division	New Orleans District	Rob Heffner	1
Participating Agencies			
US Environmental Protection Agency – Regional Office in Dallas, TX	Office of Planning and Coordination	Craig Weeks	2
United States Fish and Wildlife Service	Administration	Cynthia Dohner – Regional Director	1
Houma – Thibodaux MPO	Administration	Leo Maretta - Administrator	3
Other Agencies			
Louisiana Department of Natural Resources	Coastal Management Division	Christine Charrier	1
Louisiana Department of Wildlife and Fisheries	Ecological Investigations	Chris Davis	1
Louisiana Department of Environmental Quality	Southeast Regional Office	Mike Alegro – Regional Manager	1
St. James Parish	Administration	Timmy Roussel – Parish President	1
Lafourche Parish	Administration	Charlotte Randolph – Parish President	1
St. John the Baptist Parish	Administration	Natalie Robottom – Parish President	1
Terrebonne Parish	Administration	Michel Claudet – Parish President	1
Assumption Parish	Administration	Martin Triche – Parish President	1
St. Charles Parish	Administration	V.J. St. Pierre Jr. – Parish President	1
St. Mary Parish	Administration	Paul Naquin Jr. – Parish President	1
City of Thibodaux	Administration	Tommy Eschette - Mayor	1
City of Houma	Administration	Michel Claudet – Mayor/ President	1
Louisiana Department of Culture, Recreation, and Tourism	Administration	Kyle Edmiston – Assistant Secretary	1
Louisiana Department of Agriculture and Forestry	Administration	Mike Strain - Commissioner	1
Governor's Office of Homeland Security and Emergency Preparedness	Administration	Kevin Davis - Director	1
United States Department of Agriculture and Farm Service Agency	Administration	Craig McCain – Executive Director	1
United States Department of Housing and Urban Development	Administration	Earl Randall, III – Field Office Director	1

List of Agencies, Organizations, and Persons to Whom Copies of the DEIS were Sent (continued):

Other Agencies			
Department of the Interior	Headquarters, Washington DC		12
Environmental Protection Agency	Headquarters, Washington DC		1 (electronically filed)
Pontchartrain Levee District	Administration	Monica Salins – Executive Director	1
United States Coast Guard	Administration	David Frank	1
Federal Aviation Administration	Administration	Lacey Spriggs – ADO Manager	1
Indian Nation Tribal Historic Preservation Office	United Houma Nation	Brenda Dardar	1
Indian Nation Tribal Historic Preservation Office	Chitimacha Tribe	Kimberly Walden	1
Louisiana Office of Historic Preservation	Administration	Nicole Hobson-Morris – Executive Director	1
The South Central Planning & Development Commission	Administration	Kevin Belanger – Chief Executive Officer	1
Elected Officials (Federal)			
United States Senate		Bill Cassidy	1
United States Senate		David Vitter	1
US House of Representatives	6th District	Garrett Graves	1
US House of Representatives	2nd District	Cedric Richmond	1
US House of Representatives	1st District	Steve Scalise	1
Elected Officials (State)			
Louisiana House of Representatives	District 51	Joe Harrison	1
Louisiana House of Representatives	District 52	Gordon Dove	1
Louisiana House of Representatives	District 55	Jerome Richard	1
Louisiana House of Representatives	District 56	Gregory Miller	1
Louisiana House of Representatives	District 58	Edward Price	1
Louisiana House of Representatives	District 81	Clay Schexnayder	1
Louisiana State Senate	District 2	Senator Troy Brown	1
Louisiana State Senate	District 18	Senator Jody Amedee	1
Louisiana State Senate	District 19	Senator Gary Smith	1
Louisiana State Senate	District 20	Senator Norby Chabert	1
Louisiana State Senate	District 21	Senator R.L. Bret Allain	1
Libraries			
State Library			20 + digital (pdf) copy
Terrebonne Parish Library	Main Branch		2
St. James Parish Library	Main Branch		2
Lafourche Parish Library	Main Branch		2

List of Acronyms

LIST OF ACRONYMS

A

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act of 1990
ADT	average daily traffic
APE	Area of Potential Effect
ASTM	American Society for Testing and Materials

B

BFE	Base Flood Elevation
BLFWD	Bayou Lafourche Fresh Water District
BMPs	best management practices
BTNEP	Barataria-Terrebonne National Estuary Program

C

C-CAP	Coastal Change Analysis Program
CEDS	Comprehensive Economic Development Strategy
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESQG	conditionally-exempt small quantity generator
cm	centimeter
CMD	Coastal Management Division
CO	carbon monoxide
CORRACT	RCRIS Corrective Action
CWA	Clean Water Act of 1977

D

dBA	A-weighted decibels
DCRT	Department of Culture, Recreation and Tourism
DEIS	Draft Environmental Impact Statement
DFIRM	Digital Flood Insurance Rate Maps
DHHS	U.S. Department of Health and Human Services
DO	dissolved oxygen

E

EDA	Economic Development Administration
EDD	Economic Development District
EFH	essential fish habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Endangered Species Act
ESI	Earth Science, Inc.

F

FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act
FRS	Facility Registry System
ft/ft	feet per feet
FTA	Federal Transit Association

G

GIS	geographic information system
GNO, Inc.	Greater New Orleans, Inc.
GOHSEP	Governor's Office of Homeland Security and Emergency Preparedness
GPS	global positioning system

H

HC	hydrocarbons
HEI	Health Effects Institute
HSWA	Hazardous and Solid Waste Amendments
HTMPO	Houma-Thibodaux Metropolitan Planning Organization
HUC	hydrologic unit code

I

I-10	Interstate 10
ITS	Intelligent Transport Systems

K

km	kilometer

L

LA 1	Louisiana Highway 1
LA 3127	Louisiana Highway 3127
LA FWS	Louisiana Fish and Wildlife Service
LA WL&F	Louisiana Department of Wildlife and Fisheries
LA WL&F-NHP	Louisiana Department of Wildlife & Fish, National Heritage Program
LADOT	Louisiana Department of Transportation
LADOTD	Louisiana Department of Transportation and Development
LASHPO	Louisiana Office of Historic Preservation
LBP	lead-based paint
LDAF	Louisiana Department of Agriculture and Forestry
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LEP	Limited English Proficiency
Leq	equivalent continuous level of sound
LIMA	Louisiana Interactive Mapping Application
LOS	Level of Service
LOSCO	Louisiana Oil Spill Coordinator's Office
LPDES	Louisiana Pollutant Discharge Elimination System
LQG	large quantity generator
LSTP	Louisiana Statewide Transportation Plan
LWCF	Land and Water Conservation Fund
LWQMP	Louisiana Water Quality Management Plan

M

m	meter
mg/m^3	milligrams per cubic meter
$\mu g/m^3$	micrograms per cubic meter
mgd	million gallons per day
MSA	Metropolitan Statistical Area
MSAT	Mobile Source Air Toxic
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MTP	Metropolitan Transportation Plan

N

NAAQS	National Ambient Air Quality Standards
NAVD88	North American Vertical Datum of 1988
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act of 1969
NFIP	National Flood Insurance Program
NFRAP	No Further Remedial Action Planned
NHPA	National Historic Preservation Act of 1966
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	National Oceanic Atmospheric Administration, Office of Marine Fisheries

NOI	Notice of Intent
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NPSMP	Non-Point Source Management Plan
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory

O

O_3	ozone
OCM	Office of Coastal Management
P	
PIP	Public Involvement Plan
PM	particulate matter
ppm	parts per million
Program	Title VI Compliance Program

Q

Quantm™	Quantm™ Alignment Optimization Software

R

RCRA	Resource Conservation and Recovery Act
RCRAInfo	Resource Conservation and Recovery Act Information
RCRIS	Resource Conservation and Recovery Information System
ROD	Record of Decision
ROW	right-of-way
RREDI	River Region Economic Development Initiative
RV	recreational vehicle

S

SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SARA	Superfund Amendments and Reauthorization Act
SCIA	South Central Industrial Association
SCPDC	South Central Planning and Development Commission
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Officer
SLEC	South Louisiana Economic Counsel
SO_2	sulfur dioxide
SOV	solicitation of views
SQG	small quantity generator
SWMP	Surface Water Monitoring Plan

T

TEA-21	Transportation Equity Act for the 21st Century
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TSDF	Treatment, Storage, and Disposal Facility
TSM	Traffic System Management

U

Uniform Act	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
US 90	U.S. Highway 90
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank

V

V/C ratio	volume to capacity ratio
VMT	Vehicle Miles of Travel

W

WMA	Wildlife Management Area
WQC	Water Quality Certification

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Glossary

GLOSSARY

Alternative: Alternatives are different options under consideration for a project. By evaluating the impacts associated with different Alternatives, a decision can be made as to which one will be the "Preferred Alternative" or "Recommended Alternative." There have been a number of Alternatives considered as part of this project.

American Association of State Highway and Transportation Officials (AASHTO): A non-profit, non-partisan association representing highway and transportation departments in the 50 states, the District of Columbia, and Puerto Rico whose primary goal is to foster the development, operation, and maintenance of an integrated national transportation system.

American Society for Testing and Materials (ASTM): Founded in 1898, ASTM is a non-profit organization providing standards that are accepted and used in research and development, product testing, quality systems, and commercial transactions around the globe. In over 130 varied industry areas, ASTM standards serve as the basis for manufacturing, procurement, and regulatory activities.

Archaeological Site: The location of past cultural activity that could be used to describe and explain the nature and evolution of cultural systems; a defined space with mainly continuous archaeological evidence. Most archaeological resources are below ground level and yield information important in history or pre-history.

Area of Potential Effects (APE): In the context of cultural resources, the APE is the geographic area or areas within which a project may directly or indirectly cause alterations in the character or use of historic or archaeological resources, if any such properties exist. The APE is influenced by the size and nature of a project and may be different for different kinds of effects caused by the project.

Arterial: A class of roads serving major traffic movements (high-speed, high volume) for travel between major points.

Average Daily Traffic (ADT): The average number of vehicles passing a fixed point on a roadway in a 24-hour timeframe. Used as a measure of traffic volume on a roadway. To reflect daily variation over time, annual average daily traffic (AADT) may also be used; this measure averages the daily traffic volumes over the course of a year.

Build Alternatives: A collective description of all Alternatives that include physical construction and therefore are distinct from the No-build Alternative.

Capacity: The maximum hourly rate at which persons or vehicles can reasonably be expected to traverse to a point during a given time period under prevailing roadway and traffic conditions.

Clean Air Act Amendments (CAAA): The CAAA is legislation designed to curb three major threats to the nation's environment and to the health of Americans: acid rain, urban air pollution, and toxic air emissions. It called for establishing a national permits program to make the law more workable, and an improved enforcement program to help ensure better compliance with the Act. The original Clean Air Act of 1970 was last amended in 1990.

Clean Water Act (CWA): The CWA provides for comprehensive federal regulation of all sources of water pollution. It prohibits the discharge of pollutants from non-permitted sources.

Congestion: The level at which transportation system performance is no longer acceptable due to traffic interference. The level of acceptable performance may vary by type of transportation facility, geographic area, and/or time of day.

Collector: A low or moderate-capacity road that is below a highway or arterial road level of service. Collector roads tend to lead traffic from local roads or sections of neighborhoods to activity areas within communities, arterial roads, or (occasionally) directly to expressways or freeways.

Cooperating Agency: According to the Council of Environmental Quality (CEQ) (40 CFR 1508.5), "cooperating agency" means any governmental agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): Created in 1980, it is also known unofficially as "Superfund." CERCLA provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. By creating the designation of "Superfund" sites, CERCLA established provisions for the liability, use, and funding for remediation of hazardous waste sites, particularly when no responsible party could be identified.

Comprehensive Plan: A document used by local, county, and regional bodies in the land planning process that contains a statement of objectives, projections, and short- and long-term planning.

Contra Flow: Contra flow is the process where travel lanes are reversed to flow in the opposite direction allowing for an increase in roadway capacity.

Controlled Access: This is the regulated limitation of access into (ingress) and out of (egress) properties abutting a roadway. A controlled access roadway has few (or no) driveways, may be physically separated by a median, and intersections with crossroads are widely spaced. A freeway would have limited access with access to and from the roadway limited to interchange ramps.

Council of Environmental Quality (CEQ): This agency is a division of the Executive Office of the President of the United States that coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental and energy policies. Under the National Environmental Policy Act (NEPA), CEQ works to balance environmental, economic, and social objectives in pursuit of NEPA's goal of "productive harmony" between humans and the natural environment.

Cultural Resources: A location, building, structure, or place with potential historic or archaeological significance.

Cumulative Impacts: The impact on the environment that results from the incremental impact of action(s) when added to other past, present, and reasonably foreseeable future actions.

Delay: Occurs when a vehicle cannot travel at the free flow speed for a segment of roadway because of the density of traffic. Usually measured using a qualitative measure called Level of Service (see definition below).

Design Speed: A speed used to design the curvature and grades of a highway, taking into account the composition and volume of traffic. To ensure safe operations, it is typically desirable for engineers to choose a design speed that equals or exceeds the anticipated posted speed, and complements the highway type, setting, functional classification, traffic volume, and terrain.

Design Year: A selected year used to estimate future traffic volumes and produce highway design to ensure a project will meet future traffic needs. For this project, the design year is 2032.

Disproportionate Impacts: Predominately impacts a minority or low-income population group or, the impact is "more severe" than that experienced by non-minority or non-low income populations.

Direct Impacts: A direct impact is an impact caused by a project that occurs at the same place as the project and at the same time as the project is implemented, i.e., is a direct result of the project.

Diverge: A movement in which a single lane of traffic separates into two lanes without the aid of traffic control devices such as when vehicles exit a freeway.

Draft Environmental Impact Statement (DEIS): See Environmental Impact Statement.

Endangered Species: Endangered Species are any species of animal or plant life that is in danger of extinction throughout all or a significant part of its range. Species can be designated "endangered" by either the U.S. Fish and Wildlife Service or a state's Natural Heritage program. With this designation comes legal protection at the federal level (Endangered Species Act) and/or the state level. Species can also be designated by state or federal government as Threatened Species or Special Concern Species for species with populations that are somewhat less in jeopardy than endangered species.

Environmental Consequences: The Environmental Consequences discussion in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) assesses the anticipated effects of the proposed project alternatives on all possible resources (air quality, wildlife, wetlands, etc.) that may be affected by the project. This discussion compares and contrasts the impacts associated with all alternatives, including the No-build Alternative.

Environmental Impact Statement (EIS): An environmental document that is prepared when it is initially determined that the action/project may cause significant impacts to the environment, when environmental studies and early coordination indicate significant impacts, or when review of a previously prepared environmental assessment indicates that the impacts anticipated to result from the project may be significant.

Draft EIS (DEIS): compares all reasonable alternatives to the proposed project and summarizes the studies, reviews, consultations, and coordination required by legislation and Executive Orders to the extent appropriate at the draft stage in the environmental process.

Final EIS (FEIS): identifies and addresses the social, economic, and environmental impacts of a Recommended Alternative and addresses public comments received during the formal public commenting period as well as the public comments received throughout the NEPA process.

Record of Decision (ROD): After publishing the Draft and Final EIS, the NEPA process concludes with a Record of Decision (ROD). The ROD identifies the selected alternative, presents the basis for the decision, identifies all the alternatives considered, specifies the "environmentally preferable alternative," and provides information on the adopted means to avoid, minimize, and compensate for environmental impacts.

Facility: Any type of transportation infrastructure such as highways, local roads, transit centers, etc. that is used to move people and goods.

Farmland Protection Policy Act (FPPA): The purpose of FPPA is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. FPPA ensures, to the maximum extent practicable, that federal programs are administered in a manner that is compatible with state, unit of local government, and private programs to protect farmland.

Farmlands of Local Importance: The Natural Resources Conservation Service defines these farmlands as those lands that are nearly Prime Farmland and that economically produce high yields when treated and managed according to modern farming methods. Some may produce as high a yield as prime farmlands, if conditions are favorable.

Federal Highway Administration (FHWA): Division of the U.S. Department of Transportation that funds highway planning and construction programs and is headquartered in Washington, D.C., with field offices located across the United States. The FHWA provides expertise, resources, and information to continually improve the quality of our nation's highway system and its intermodal connections. The Federal-Aid Highway Program is the main program through which the FHWA performs its mission. The Federal-Aid Highway Program provides federal financial assistance to the states to construct and improve the National Highway System, urban and rural roads, and bridges.

Final Environmental Impact Statement (FEIS): See Environmental Impact Statement.

Floodplain: Any land area susceptible to being inundated by floodwaters from any source.

Freeway: A divided highway for through traffic with controlled access. All crossings of the freeway by other roadways are vertically grade-separated (i.e., bridges carry the freeway above the other roadway or vice versa) and all access to the roadway is provided exclusively by interchange ramps that merge with the freeway traffic.

Gathering Places: Convenient locations to gather, hold special events, and are accessible to public transportation.

Geographic Information System (GIS): GIS captures, stores, analyzes, manages, and presents data that is linked to location. GIS allows us to view, understand, question, interpret, and visualize data in many ways that reveal relationships, patterns, and trends in the form of maps, globes, reports, and charts.

Habitat: An area that provides an animal or plant with adequate food, water, shelter, and living space.

Hazardous Materials: Substances or materials capable of posing unreasonable risk to health, safety, and property when transported in commerce, or when encountered in above-ground or below-ground contamination.

Historic Resources: Historic resources are properties that may possess potential historic significance based on age, type, or association with a person(s) or event(s). Such a property may have the distinctive characteristics of a type, period, or method of construction or may represent the works of a master or may possess high artistic values.

Hydric Soils: A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to favor the growth of wetland plants.

Impacts: Effects that occur as a result of implementing a transportation improvement. Direct impacts most commonly occur when proposed right-of-way actually crosses a resource in question such as a residence, business, wetland, or other regulated resources.

Indirect Impacts: Impacts that are caused by the project, but occurring later in time or farther removed in distance than direct impacts. Indirect effects include changes in land use attributable to the project (induced growth) and impacts on environmental resources that occur as a result of the project's influence on land use, such as the effect of habitat fragmentation on species viability over time or changes in wetland functions due to stormwater runoff.

Infrastructure: Term used to describe the physical assets of a society or community including roads, bridges, transit facilities, bikeways, sidewalks, parks, sewer/water systems, communications networks, and other capital facilities.

Invasive Species: Invasive species are non-native plants or animals that are introduced far from their original range, and become more successful at competing with native species for space and resources.

Land Use: The way specific portions of land or the structures on them are used or planned for future use. Land use is typically based on local zoning guidelines and long-term land use plans. Example land uses include commercial, residential, industrial, retail, agricultural, vacant, etc.

Level of Service (LOS): A qualitative assessment of a road's operating conditions. This term refers to a standard measurement used by transportation officials that reflects the relative ease of traffic flow on a scale of A to F, with free-flow being rated LOS-A and congested conditions rated as LOS-F.

Median: A barrier, often found on multi-lane roadways or freeways, which provides separation distance between opposing traffic movements. A median can consist of either a grass or natural setting typical of a rural cross-section, or a concrete wall or guardrail barrier that is typical of an urban setting.

Mitigation: Actions provided to avoid, minimize, or compensate the negative effects of a project.

Mobile Source Air Toxics (MSAT): Regulated by the U.S. Environmental Protection Agency (EPA), MSATs are known as "hazardous air pollutants." Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

National Ambient Air Quality Standards (NAAQS): Air quality standards set by EPA for pollutants considered harmful to public health and the environment.

National Environmental Policy Act (NEPA): Federal act passed in 1969 that requires the assessment of the social, economic, and environmental impacts that a federally-funded or federally-permitted project might cause. This includes the identification of the purpose of and need for the project, and evaluation of alternatives to minimize resulting impacts.

National Pollutant Discharge Elimination System (NPDES): The national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 318, 402, and 405 of the Clean Water Act.

National Register of Historic Places (NRHP): The NRHP is the nation's official list of cultural resources worthy of preservation. This list was established under the National Historic Preservation Act of 1966 and is administered by the Department of the Interior.

Natural Resources Conservation Service (NRCS): The federal agency responsible for providing leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment. NRCS was formerly known as the Soil Conservation Service.

Navigable Waters of the United States: Those waters that are subject to the ebb and flow of the tide and/or are presently used or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Network: A transportation system with its many roadways and routes often showed either graphically or mathematically.

No-build Alternative: The No-build Alternative consists of making no improvements in the study area. The "no-build" alternative is always included as a benchmark against which the impacts of other alternatives can be compared.

Participating Agencies: Federal, state, tribal, regional, and local government agencies that may have an interest in the project.

Peak Hour: The 60 minute period in the AM or PM in which the largest volume of travel is generally experienced on a roadway segment (e.g., rush hour).

Preliminary Alternatives: Preliminary concepts developed at the onset of a transportation planning project. Preliminary Alternatives are typically very conceptual by nature and are intended to examine all reasonable alternatives to address the transportation needs of the study area, prior to detailed study to identify their feasibility.

Prime Farmland: The NRCS has designated prime farmland as land that has the best combination of physical and chemical characteristics for producing food, forage, fiber, and oilseed crops. The land could be crop, pasture, range, forest, or other uses, but does not include urban built up land or water bodies since these two are considered irreversible uses. It has the soil quality, growing season, and moisture supply needed to economically produce and sustain high yields when treated and managed according to modern farming methods, including water management.

Principal Arterial: Major streets or highways, many with multi-lane or freeway design, serving high-volume traffic corridor movements that connect major generators of travel.

Reasonable Alternatives: Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense. Reasonable is considered to be any alternative that meets the project's purpose & need and can feasibly be built.

Recommended Preferred Alternative: The Recommended Preferred Alternative is selected from the Reasonable Alternatives after extensive engineering, social, economic, and environmental analysis. It could include components of several Practical Alternatives in any combination found to be the most beneficial.

Record of Decision (ROD): A final environmental document published after a FEIS that identifies the selected alternative. A ROD discusses the alternatives considered and the basis of the decision as well as any mitigation measures for environmental impacts.

Resource Conservation and Recovery Act (RCRA): Passed by Congress in 1976 to provide cradle-to-grave management of hazardous waste. Regulation is enforced by EPA.

Right-of-Way (ROW): Public land reserved for locating infrastructure such as a roadway or a utility line. A road ROW includes area for any required shoulders, drainage ditches, curb, median, barriers, and fences in addition to the roadway.

Section 4(f): This is Section 4(f) of the Department of Transportation Act of 1966 as amended. Section 4(f) states that no highway project should be approved which requires the "use" of any publicly owned land from a public park, recreation area, wildlife and waterfowl refuge, or historic site unless there is no feasible or prudent alternative to the use of such land. In addition, adverse impacts to these 4(f) sites must include all possible planning to minimize harm resulting from such use. In the context of Section 4(f), "use" can be either a direct impact (taking of property), or a "constructive use," which may not actually require acquisition of land, but otherwise impairs the function of the resource through changes in access or surroundings.

Section 6(f): The Land and Water Conservation Fund Act of 1965 established funding to provide matching grant assistance to states and local governments for the planning, acquisition, and development of outdoor public recreation sites and facilities. Section 6(f) of the Act prohibits the conversion of property acquired or developed with these grants to a non-recreational purpose without the approval of the Department of Interior's National Park Service (NPS).

Section 106: Section 106 of the National Historic Preservation Act of 1966 is the main protection that archaeological, historical, and cultural resource sites have against the encroachment of federally-funded programs in the United States. Section 106 requires that the State Historic Preservation Office (SHPO) review all federal actions for any potentially adverse effect on cultural resources.

Sole Source Aquifers: Aquifer that supplies 50 percent or more of the drinking water in a given area.

State Historic Preservation Office (SHPO): The state agency having jurisdiction over protecting archaeological and above ground historic architectural resources (e.g., cultural resources).

Stopping Sight Distance: Stopping sight distance is the sum of two distances: (1) the distance traversed by a vehicle from the instant the driver sights a reason for stopping until the instant the brakes are applied; and (2) the distance needed to stop the vehicle from the instant brake application begins. These are referred to as brake reaction distance and braking distance, respectively.

Superelevation: The slope to which a roadway is banked between the inner-most lane and the outer-most lane. On freeways and other high-speed facilities, curved segments are often superelevated so traffic can safely travel through the curve at higher speeds.

Technical Memorandum: Reports detailing the processes and descriptions of various analyses such as Traffic, Noise, Natural Resources, and others which were used to prepare a Draft and/or Final Environmental Impact Statement.

Temporary Impact: Refers to impacts occurring during construction that cease to exist after construction associated with the project is completed (e.g., dust associated with construction activities).

Threatened Species: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Traffic Count: Mechanical, digital, or photographic means of quantifying the number and type of vehicles at a given location. Counts may be determined from raw base data (axle counts divided by two to give an estimation of passenger vehicles), or by more sophisticated means to quantify vehicle type (passenger, light truck, heavy truck, bus, etc.). Counts typically are performed for an identified peak period (AM - early/"rush hour" morning, PM - late/"rush hour" afternoon, or other industry-determined period) or for a 24-hour period. 24-hour counts may be adjusted for weather, seasonal, and other factors to arrive at a representative annual average daily traffic count (AADT).

Transit: Transportation mode involving buses, trains, and other vehicles that individually move larger numbers of people than do individual automobiles. Also known as mass transit, public transit, public transportation, or urban transit.

Transportation System Management (TSM): An Alternative that includes reasonable small-scale roadway improvements such as traffic signal improvements, turn restrictions, turn lanes, and short distance local road improvements. TSM does not include major construction.

Travel Demand: The counted or projected volume of traffic that is or will be utilizing a roadway in a specified time period (i.e., 24-hours, peak periods, etc.).

Underground Storage Tank Site (UST): Sites containing one or more USTs or those found to show evidence of an existing or removed tank during background research or site visits. Depending on the type, age, and condition of the UST and associated underground piping, sites of this type may present a risk for soil and/or groundwater contamination. If the UST is documented as leaking or shows visible signs of leakage at ground level, it is referred to as a Leaking Underground Storage Tank (LUST).

Unique Farmlands: The NRCS has defined unique farmlands as land other than prime farmland that is used for the production of specific high value food and fiber crops. These lands have a special combination of factors needed to economically produce sustained high quality yields of a specific crop when treated and managed according to modern farm methods. The special factors that make the land unique include soil quality, growing season, temperature, humidity, elevation, moisture supply, or other conditions such as nearness to market that favor growth of a specific crop. Moisture supply is in the form of stored moisture, precipitation, or a developed irrigation system.

United States Army Corps of Engineers (USACE): The federal agency responsible for review of all water crossings of navigable streams. USACE also serves in an advisory role on wetland impacts of Louisiana highway projects.

United States Department of Agriculture (USDA): The federal agency responsible for review of any prime and unique farmland impacts.

United States Environmental Protection Agency (EPA): A federal agency that is charged with protecting the natural resources of the country.

United States Fish and Wildlife Service (USFWS): The federal agency responsible for review of the impacts on any federally listed threatened and endangered species along with other game and non-game species. The USFWS also serves as an advisory agency for many other environmental issues including wetland and habitat impacts.

Upland: An area that is not classified as a wetland.

Vehicle Hours of Travel (VHT): This is the number of vehicle-hours spent by travelers measured on a segment of roadway for a given time.

Vehicle Miles Traveled (VMT): The total number of vehicle miles travelled within a specific geographic area over a given period of time.

Volume to Capacity (V/C) Ratio: The V/C ratio indicates the percentage of total available roadway capacity that is being used during the peak traffic period. A V/C ratio of 1.0 means that all the capacity has been used up and the facility is highly congested. This performance standard for highways varies according to location, category, and function of the highway.

Wetland: Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support plants typically adapted for life in saturated soil conditions. The term "wetland" encompasses many different types of plant communities, and is dependent on the duration and depth of inundation. These different types can include fens, bogs, wet meadows, wooded wetlands, scrub-shrub wetlands, open water wetlands, etc. A "wetland complex" describes a contiguous area composed of more than one type of wetland. An area that is not classified as a wetland is called "upland."

Wetland Delineation: The process used to determine the jurisdictional boundaries of a wetland. Wetland delineations are a function of the soils, hydrology, and vegetation observed.

Wetland Mitigation: Avoidance, minimization, and compensation for the loss of functional values associated with wetlands impacted by an activity. The most common types of compensation include wetland restoration (reestablishing some or all of the values associated with wetland where wetlands have been drained), and wetland creation (establishing new wetland) in an upland or drained area.

Wild and Scenic Rivers: The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to protect designated rivers and adjacent areas by preventing construction or modification to the area. Wild and Scenic Rivers are those rivers with free-flowing conditions approved by the Secretary of the U.S. Department of Interior being classified, designated, and administered as one of the following:

- **Wild River Areas** – Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
- **Scenic River Areas** – Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
- **Recreational River Areas** – Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Houma- Thibodaux to LA 3127 Connection

Appendices

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

U.S. Department of Transportation
Federal Highway Administration

3127
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State Project Number H.005257
FAP Number H.005257

Appendix A. Federal Laws

NORTH SOUTH CONNECTOR

Appendix A
Federal Laws

State Project No. H.005257
FAP No. H.005257

CDM Smith

Laws that fall under the National Environmental Policy Act

Federal Laws

- The National Environmental Policy Act of 1969 ("NEPA" P.L. 91-190;42 U.S.C. 4321);
- The Clean Air Act (as amended by P.L. 91-604);
- The Noise Control Act of 1972 (P.L. 92-574; 42 U.S.C. 4901);
- Homeland Security Act of 2002;
- Section 106, National Historic Preservation Act of 1966 (P.L. 89-665; 16 U.S.C. 470(f));
- The Archaeological and Historic Data Preservation Act of 1974 (P.L. 86-253, as amended by P.L. 93-291, 16 U.S.C. 469);
- The Endangered Species Act of 1973 (P.L. 93-205; 16 U.S.C. 1531 (a-d));
- The Rivers and Harbors Act of 1899 (33 U.S.C. 403);
- Federal Water Pollution Control Act Amendments for 1972 (P.L. 92-500; 33 U.S.C. 1344), as amended by the Clean Water Act of 1977 (P.L. 95-217; 33 U.S.C. 1251 et seq.);
- The Fish and Wildlife Act of 1956 (16 U.S.C. 7421 et seq.);
- The Migratory Marine Game-Fish Act (16 U.S.C. 760 (c-g);
- The Magnuson-Stevens Fishery Conservation Management Act;
- The Fish and Wildlife Coordination Act (16 U.S.C. 661-666c);
- The Wild and Scenic Rivers Act (16 U.S.C. 1279 et seq.);
- The Coastal Zone Management Act of 1972 (P.L. 92-583; 16 U.S.C. 1451-1464);
- The Coastal Barrier Resources Act of 1982 (P.L. 97-348; 16 U.S.C. 3501-3510);
- The Water Bank Act (P.L. 91-559; 16 U.S.C. 1301);
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-528; 42 U.S.C. 4601);
- The Farmland Protection Policy Act (P.L. 97-98 and 7 CFR 658);
- The Federal Land Policy and Management Act of 1976 (P.L. 97-579; 43 U.S.C. 1701 et seq.);
- The Department of Transportation Act (49 U.S.C.);
- The Resource Conservation and Recovery Act of 1976 (P.L. 94-580; 42 U.S.C. 6901 et seq., as amended by the Solid Waste Disposal Act of 1980 (P.L. 96-482), and the 1984 Hazardous and Solid Waste Amendments (P.L. 98-616);
- The Comprehensive Environmental Response Compensation, and Liability Act of 1980 (P.L.96-510; 42 U.S.C. 9601 et seq.);
- The Community Environmental Response Facilitation Act of 1992 (P.L. 102-426; 42 U.S.C. 9601 et seq.);
- Forest and Rangeland Renewable Resources Planning Act of 1974 (P.L. 93-378; 42 U.S.C. 1601-1614) as amended by the National Forest Management Act of 1976 (P.L. 94-588); and
- The Weeks Law of March 1, 1911 (P.L. 61-435, 36 Stat. 961, as amended).

Federal Resources

- 33 CFR 1 – 200;
- 33 CFR 320 – 332;
- 40 CFR 220 – 230;
- 40 CFR 1500 – 1508;
- 36 CFR 800 (39 FR 3365; January 25, 1974, and 51 FR 31115; September 1986);
- 7 CFR 657 (43 FR 4030; January 31, 1978);
- 49 CFR 18 (March 11, 1988);
- 49 CFR 24 (March 2, 1989);
- 33 CFR 320 et seq.;
- 40 CFR 230;
- 36 CFR 215;
- 36 CFR 251; and
- 36 CFR 254.

Executive Orders

- Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 13, 1971;
- Executive Order 11988, Floodplain Management (43 FR 6030);
- Executive Order 11990, Protection of Wetlands;
- Executive Order 123772, Intergovernmental Review of Federal Programs, July 14, 1982;
- President's 1979 Environmental Message Directive on Wild and Scenic Rivers, August 2, 1979;
- Executive Order 11514, Protection and Enhancement of Environmental Quality, March 4, 1970;
- Executive Order 11296, Flood Hazard Evaluation Guidelines;
- Executive Order 12898, Federal Actions Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994; and
- Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks.

Memoranda of Understanding/Memoranda of Agreement

- MOA Between the Department of Commerce and the Department of the Army
- MOA Between the United States Army Corps of Engineers and the United States Coast Guard
- MOA among the USDA, USEPA, DOI, and the Department of the Army (DA) Concerning the Delineation of Wetlands for the Purposes of Section 404 of the Clean Water Act and Subtitle B of the Food Security Act
- MOA Between the USEPA and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines
- MOA Between the Department of the Army and the USEPA Concerning the Determination of the Section 404 Program and the Application of the Exceptions under Section 404(f) of the Clean Water Act
- Amendment to the January 19, 1989 DA/EPA Memorandum of Agreement Concerning the Determination of the Geographic Jurisdiction of the Section 404 Program and the Application of the Exemptions Under Section 404(f) of the Clean Water Act (USEPA and Department of the Army)
- MOA Between the Department of the Army and the USEPA Concerning Federal Enforcement for the Section 404 Program of the Clean Water Act
- Section 404 Enforcement Memorandum of Agreement (MOA) Procedures Regarding the Applicability of Previously-Issued Corps Permits
- Guidance on Judicial Civil and Criminal Enforcement Priorities
- Corps/EPA Enforcement Procedures for Section 404 Unpermitted Violations
- MOA Between the USEPA and the Department of the Army concerning Clean Water Act Section 404(Q)
- MOA Between the Department of the Army and the USEPA Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines
- MOA Between the USEPA (Asst. Secretary of the Army for Civil Works) Concerning Regulation of Discharge of Solid Waste under the Clean Water Act
- Memorandum for the Field: Clean Water Act Section 404 Regulatory Program and Agricultural Activities (USEPA and Department of the Army)
- Memorandum to the Field: Appropriate Level of Analysis Required for Evaluating Compliance with the Section 404(b)(1) Guidelines Alternatives Requirements (USEPA and Department of Defense, USCOE)
- Memorandum for the Field: Individual Permit Flexibility for Small Landowners (Department of Defense)
- Federal Guidance for the Establishment, Use and Operation of Mitigation Banks (Federal Register, November 28, 1995; Volume 60, Number 228), Page 58605-58614) (Agencies: Corps of Engineers, USEPA, NRCS, USF&WS, NMFS)
- MOU Between the Corps of Engineers, United States Army, and the United States Nuclear Regulatory Commission for Regulation of Nuclear Power Plants

Appendix B. Notice of Intent

NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Notice of Intent

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

meeting also available on the ARAC calendar at *http://www.faa.gov/avr/arm/araccal/htm.* To insure that sufficient telephone lines are available, please notify the person listed in the **FOR FURTHER INFORMATION CONTACT** section of your intent by June 7, 2004. Anyone participating by telephone will be responsible for paying long-distance charges.

The public must make arrangements by June 7, 2004, to present oral statements at the meeting. Written statements may be presented to the committee at any time by providing 25 copies to the person listed in the **FOR FURTHER INFORMATION CONTACT** section or by providing copies at the meeting. Copies of the documents to be presented to ARAC for decision or as recommendations to the FAA may be made available by contacting the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

If you are in need of assistance or require a reasonable accommodation for the meeting or meeting documents, please contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section. Sign and oral interpretation, as well as a listening device, can be made available if requested 10 calendar days before the meeting.

Issued in Washington, DC on June 1, 2004.

Tony F. Fazio,

Director, Office of Rulemaking.

[FR Doc. 04–12826 Filed 6–4–04; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement; North South Hurricane Evacuation Corridor, Houma-Thibodaux to LA 3127; Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary Parishes, LA

AGENCY: Federal Highway Administration, (FHWA), DOT.

ACTION: Notice of intent.

SUMMARY: The FHWA is issuing this notice to advise interested agencies and the public that, an Environmental Impact Statement will be prepared for a proposed highway project, a hurricane evacuation route, the Houma-Thibodaux to LA 3127 project servicing Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary Parishes in Louisiana.

FOR FURTHER INFORMATION CONTACT: William C. Farr, Program Operations Manager, Federal Highway Administration, 5304 Flanders Drive, Suite A, Baton Rouge, Louisiana 70808, Telephone (225) 757–7615; Facsimile: (225) 757–7601 or Michele Deshotels, Environmental Impact Manager 2, Louisiana Department of Transportation and Development, PO Box 94245, Baton Rouge, Louisiana 70804, Telephone: (225) 242–4506; Facsimile: (225) 242–4500. Please refer to project designation numbers State Project No. 700–99–0302 & Federal Aid Project No. HP–9902 (518) in any correspondence.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the Louisiana Department of Transportation and Development (LADOTD), will prepare an Environmental Impact Statement (EIS) on a proposal to provide a hurricane evacuation route linking the Houma-Thibodaux area to more direct access to I–10 via LA 3127. Recent planning efforts for this project, known regionally as the Houma-Thibodaux to I–10 Connection (North-South Corridor/Hurricane Evacuation) include the development of a 1999 Louisiana Department of Transportation and Development (LADOTD) study, ''Hurricane Evacuation Corridor Study to Connect Relocated US 90 to LA 3127''. Also used to establish the project construction limits for this project was a 2002 LADOTD study, ''Corridor Feasibility Study Extension of LA 3235 (Larose to US 90). These planning efforts included public involvement. Using these studies, it has been determined that the proposed project limits would be US 90 (Future I–49) on the south and State Route 3127 on the north. The approximate distance of the project is 23 miles.

This project is intended to serve as a primary north-south hurricane evacuation route. It is part of the State's efforts to provide more direct access to the system network servicing the I–10 corridor during emergency evacuation events.

Alternatives under consideration include (1) taking no action; and (2) constructing a four lane highway on new location within the limits described above, on various alignments.

Letters describing this proposal and soliciting comments will be sent to appropriate Federal, State, and local agencies and to private organizations and individuals that have previously expressed, or are known to have, an interest in this proposal. A series of public meetings will be held. In addition, a public hearing will be held. Public notice will be given, in local newspapers and on the LADOTD Web site, of the time and place of the meetings and hearing. The draft EIS will be available for public and agency review and comment prior to the public hearing. A formal scoping meeting will be held upon initiation of this project.

To ensure that the full range of issues related to this proposed action is addressed, and all significant issues identified, comments and suggestions are invited from all interested parties. Comments or questions concerning this proposed action and the EIS should be directed to the FHWA at the address provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

Issued on May 24, 2004.

William A. Sussmann,

Division Administrator, FHWA, Baton Rouge, Louisiana.

[FR Doc. 04–12739 Filed 6–4–04; 8:45 am]

BILLING CODE 4910–22–M

DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

[STB Finance Docket No. 34506]

Great Basin and Northern Railroad—Change in Operators Exemption—The City of Ely and the White Pine Historical Railroad Foundation

Great Basin and Northern Railroad, a noncarrier, has filed a verified notice of exemption under 49 CFR 1150.31 to operate over approximately 28.8 miles of rail line owned by the City of Ely (the City) and the White Pine Historical Railroad Foundation (the Foundation) as follows: (a) Between milepost 127.9 at McGill Junction and milepost 146.1 at Keystone; (b) between milepost 127.9 at McGill Junction and milepost MB 2.6 at McGill; and (c) between milepost 135.3 at Hiline and milepost H–8 at Adverse, in White Pine County, NV.[1]

The transaction was expected to be consummated on or about May 19, 2004, the effective date of the exemption.

If the verified notice contains false or misleading information, the exemption is void *ab initio.* Petitions to revoke the exemption under 49 U.S.C. 10502(d) may be filed at any time. The filing of

[1] Previously, rail service had been provided by the BHP Nevada Railroad Company (BHP) over the main line segment between Keystone and McGill Junction, NV, pursuant to a license agreement with the City and the Foundation. BHP discontinued its rail service pursuant to a decision in *BHP Nevada Railroad Company—Discontinuance of Service Exemption—in Elko and White Pine Counties, NV,* STB Docket No. AB–598X (STB served May 24, 2002).

General information concerning USTR is available at *http://www.ustr.gov.*

Carmen Suro-Bredie,

Chair, Trade Policy Staff Committee.

[FR Doc. 2010–6653 Filed 3–24–10; 8:45 am]

BILLING CODE 3190–W0–P

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

[Docket No. FRA–2010–0005–N–4]

Proposed Agency Information Collection Activities; Comment Request

AGENCY: Federal Railroad Administration, DOT.

ACTION: Notice and request for comments.

SUMMARY: In compliance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*), this notice announces that the Information Collection Requirements (ICRs) abstracted below have been forwarded to the Office of Management and Budget (OMB) for review and comment. The ICRs describe the nature of the information collection and its expected burden. The **Federal Register** notice with a 60-day comment period soliciting comments on the following collections of information was published on January 20, 2010 (75 FR 3275).

DATES: Comments must be submitted on or before April 26, 2010.

FOR FURTHER INFORMATION CONTACT: Mr. Robert Brogan, Office of Planning and Evaluation Division, RRS–21, Federal Railroad Administration, 1200 New Jersey Ave., SE., Mail Stop 17, Washington, DC 20590 (telephone: (202) 493–6292) or Ms. Kimberly Toone, Office of Information Technology, RAD–20, Federal Railroad Administration, 1200 New Jersey Ave., SE., Mail Stop 35, Washington, DC 20590 (telephone: (202) 493–6132). (These telephone numbers are not toll-free.)

SUPPLEMENTARY INFORMATION: The Paperwork Reduction Act of 1995 (PRA), Public Law 104–13, section 2, 109 Stat. 163 (1995) (codified as revised at 44 U.S.C. 3501–3520), and its implementing regulations, 5 CFR Part 1320, require Federal agencies to issue two notices seeking public comment on information collection activities before OMB may approve paperwork packages. 44 U.S.C. 3506, 3507; 5 CFR 1320.5, 1320.8(d)(1), 1320.12. On January 20, 2010, FRA published a 60-day notice in the **Federal Register** soliciting comment on ICRs that the agency was seeking OMB approval. *See* 75 FR 3275. FRA received no comments after issuing this notice. Accordingly, DOT announces that these information collection activities have been re-evaluated and certified under 5 CFR. 1320.5(a) and forwarded to OMB for review and approval pursuant to 5 CFR 1320.12(c).

Before OMB decides whether to approve these proposed collections of information, it must provide 30 days for public comment. 44 U.S.C. 3507(b); 5 CFR 1320.12(d). Federal law requires OMB to approve or disapprove paperwork packages between 30 and 60 days after the 30-day notice is published. 44 U.S.C. 3507(b)–(c); 5 CFR 1320.12(d); *see also* 60 FR 44978, 44983, Aug. 29, 1995. OMB believes that the 30-day notice informs the regulated community to file relevant comments and affords the agency adequate time to digest public comments before it renders a decision. 60 FR 44983, Aug. 29, 1995. Therefore, respondents should submit their respective comments to OMB within 30 days of publication to best ensure having their full effect. 5 CFR 1320.12(c); *see also* 60 FR 44983, Aug. 29, 1995.

The summaries below describe the nature of the information collection requirements (ICRs) and the expected burden. The unchanged requirements are being submitted for clearance by OMB as required by the PRA.

Title: Control of Alcohol and Drug Use in Railroad Operations.

OMB Control Number: 2130–0526.

Type of Request: Extension without change of a currently approved collection.

Affected Public: Railroads.

Form(s): FRA F 6180.73; 6180.74.

Abstract: The information collection requirements contained in pre-employment and "for cause" testing regulations are intended to ensure a sense of fairness and accuracy for railroads and their employees. The principal information—evidence of unauthorized alcohol or drug use—is used to prevent accidents by screening personnel who perform safety-sensitive service. FRA uses the information to measure the level of compliance with regulations governing the use of alcohol or controlled substances. Elimination of this problem is necessary to prevent accidents, injuries, and fatalities of the nature already experienced and further reduce the risk of a truly catastrophic accident.

Annual Estimated Burden Hours: 31,797 hours.

Addressee: Send comments regarding this information collection to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 Seventeenth Street, NW., Washington, DC, 20503, Attention: FRA Desk Officer.

Comments are invited on the following: Whether the proposed collection of information is necessary for the proper performance of the functions of the Department, including whether the information will have practical utility; the accuracy of the Department's estimate of the burden of the proposed information collection; ways to enhance the quality, utility, and clarity of the information to be collected; and ways to minimize the burden of the collection of information on respondents, including the use of automated collection techniques or other forms of information technology.

A comment to OMB is best assured of having its full effect if OMB receives it within 30 days of publication of this notice in the **Federal Register**.

Authority: 44 U.S.C. 3501–3520.

Issued in Washington, DC, on March 22, 2010 .

Kimberly Coronel,

Director, Office of Financial Management, Federal Railroad Administration.

[FR Doc. 2010–6660 Filed 3–24–10; 8:45 am]

BILLING CODE 4910–06–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement; Houma-Thibodaux to LA 3127 Connection; Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary Parishes, LA

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Revised Notice of intent.

SUMMARY: The FHWA is issuing this Revised Notice of Intent (NOI) to advise the public and interested agencies of modifications to the scope and environmental review process for the Houma-Thibodaux to LA 3127 Connection Environmental Impact Statement (EIS). The project study area has been expanded due to resource agency concerns to include a potential alternative to the west in the vicinity of the LA 1 and LA 308 corridor to the Sunshine Bridge. FHWA also intends to utilize the environmental review provisions afforded under Section 6002 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA–LU). The EIS will build upon the environmental and technical studies and public comments and outreach conducted to date. This NOI revises the NOI that was

published in the **Federal Register** on June 7, 2004.

FOR FURTHER INFORMATION CONTACT: Carl M. Highsmith, Project Delivery Team Leader, Federal Highway Administration, 5304 Flanders Drive, Suite A, Baton Rouge, Louisiana 70808, Telephone 225–757–7615; Facsimile: (225) 757–7601 or Noel Ardoin, Environmental Engineer Administrator, Louisiana Department of Transportation and Development, PO Box 94245, Baton Rouge, Louisiana 70804, Telephone: (225) 242–4501; Facsimile: (225) 242–4500. Please refer to project designation numbers State Project No. 700–99–0302 & Federal Aid Project No. HP–9902(518) in any correspondence.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the Louisiana Department of Transportation and Development (LADOTD), will prepare an Environmental Impact Statement (EIS) on a proposal to provide a functional north-south transportation link between the Houma-Thibodaux area and LA 3127 and to provide more direct access to I–10 to the north and future I–49 to the south. The proposed link would also serve as a hurricane evacuation route. The original NOI for this project was published in the **Federal Register**: June 7, 2004 (Volume 69, Number 109). Subsequent to scoping meetings and a public meeting that occurred after the original NOI, the project area was expanded west to address resource agency concerns. An additional alternatives screening study, which analyzed potential alternatives traversing the Bayou Lafourche Ridge, was conducted with the input of the public and resource agencies. As a result of the recommendations of the study, the project scope was revised to include an alternative within the expanded study area. Coordination with the resource agencies and the public will be conducted in early March 2010 to notify them that the project has restarted and to advise them that additional coordination will occur during the development of the reasonable range of alternatives for the project. In addition, previous studies conducted for the project are being updated.

Letters describing this proposal and soliciting comments will be sent to appropriate Federal, State, and local agencies and to private organizations and individuals that have previously expressed, or are known to have, an interest in this proposal. A series of agency and public meetings as well as a public hearing will be held. Public notice will be given of the time and place of the meetings and hearing. The draft EIS will be available for public and agency review and comment prior to the public hearing.To ensure that the full range of issues related to this proposed action is addressed, and all significant issues identified, comments and suggestions are invited from all interested parties. Comments or questions concerning this proposed action and the EIS should be directed to the FHWA at the address provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

Issued on March 10, 2010.

Charles "Wes" Bolinger,

Division Administrator, FHWA, Baton Rouge, Louisiana.

[FR Doc. 2010–6536 Filed 3–24–10; 8:45 am]

BILLING CODE 4910–22–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Fifty-First Meeting: RTCA Special Committee 186: Automatic Dependent Surveillance—Broadcast (ADS–B)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of RTCA Special Committee 186: Automatic Dependent Surveillance—Broadcast (ADS–B) meeting.

SUMMARY: The FAA is issuing this notice to advise the public of a meeting of RTCA Special Committee 186: Automatic Dependent Surveillance—Broadcast (ADS–B).

DATES: The meeting will be held April 13–16, 2010 from 8 a. m. on April 16th/ 9 a.m. on the other days unless stated otherwise.

ADDRESS: The meeting will be held at the RTCA Conference Rooms at 1828 L Street, NW., Suite 805, Washington, DC 20036

FOR FURTHER INFORMATION CONTACT: (1) RTCA Secretariat, 1828 L Street, NW., Suite 805, Washington, DC 20036, (202) 833–9339; fax (202) 833–9434; Web site *http://www.rtca.org.*

SUPPLEMENTARY INFORMATION: Pursuant to section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92–463, 5 U.S.C., Appendix 2), notice is hereby given for a Special Committee 186: Automatic Dependent Surveillance—Broadcast (ADS–B) meeting. The agenda will include:

Specific Working Group Sessions

Tuesday, April 13

- RTCA—All Day, WG–1, SURF IA (Leaders), Garmin Room.
- RTCA—All Day, WG–4, Application Technical Requirements, Colson Board Room.

Wednesday, April 14

- RTCA—All Day, WG–1, SURF–IA (Leaders), Garmin Room.
- RTCA—All Day, WG–1, Wake Vortex, ARINC Room.
- RTCA—All Day, WG–4, Application Technical Requirements, Colson Board Room.

Thursday, April 15

- RTCA—All Day, WG–1, SURF IA (Leaders), Garmin Room.
- RTCA—All Day, WG–1, Wake Vortex, MacIntosh-NBAA Room & Hilton-ATA Room.
- RTCA—All Day, WG–4, Application Technical Requirements, Colson Board Room.

Friday, April 16

Plenary Session—See Agenda Below

Joint RTCA SC–186/EUROCAE WG–51

Agenda—Plenary Session—Agenda

April 16, 2010

(RTCA—Washington, DC—MacIntosh-NBAA Room & Hilton-ATA Room and EUROCAE)

Starting at 8 a.m. at RTCA and 2 p.m. in Europe

(*WebEx and Phone Bridge information To Be Provided*)

- Chairman's Introductory Remarks, Review of Meeting Agenda.
- Review/Approval of the Fiftieth Meeting Summary, RTCA Paper No. 011–10/SC186–292.
- Consider for Approval—New Document—*Safety, Performance and Interoperability Requirements Document for ATSA–SURF Application,* RTCA Paper No. 018–10/SC186–293.
- FAA Surveillance and Broadcast Services (SBS) Program—Status.
- Review of EUROCAE WG–51 Activities.
- Date, Place and Time of Next Meeting.
- Working Group Reports.
  - WG–1—Operations and Implementation.
  - WG–2—TIS–B MASPS.
  - WG–3—1090 MHz MOPS.
  - WG–4—Application Technical Requirements.
  - WG–5—UAT MOPS.
  - WG–6—ADS–B MASPS.
  - RFG—Requirements Focus Group.

Appendix C.
Solicitation of Views

NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Solicitation of Views

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245
www.dotd.louisiana.gov

KATHLEEN BABINEAUX BLANCO
GOVERNOR

JOHNNY B. BRADBERRY
SECRETARY

June 24, 2004

RECEIVED
JUN 29 2004

RECEIVED
JUL 08 2004
BUCHART-HORN, INC.

State Project No. 700-99-0302
F.A.P. No. HP-9902 (518)
Houma – Thibodaux to LA 3127 Connection
(North-South Corridor/Hurricane Evacuation) EIS.
Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist,
St. Charles, and St. Mary Parishes, Louisiana

Re: Solicitation of Views

Dear Sir or Madam,

Early in the planning stages of a transportation project, views from federal, state, and local agencies, organizations, and individuals are solicited. The special expertise of these groups can assist us with the early identification of possible adverse economic, social, or environmental effects or concerns. Your assistance in this regard will be appreciated.

Due to the earliness of this request for your input, very limited data concerning the proposed project exists. We have, however, attached a study area map showing the general location of the project, along with a preliminary project description.

We request that you review the attached information and provide us with your views and comments regarding the proposed project by Friday July 30, 2004. Replies should be addressed to:

Ed Gabsewics, Project Manager,
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue,
Metairie, LA 70002

Or by email at: egabsewics@bh-ba.com

Please reference the State Project Number, 700-99-0302, in your reply. Thank you in advance for you response.

Sincerely,

Vincent Russo,
Environmental Engineer Administrator,

Attachments

PRELIMINARY PROJECT DATA

State Project No. 700-99-0302
F.A.P. No. HP-9902(518)
Houma – Thibodaux to LA 3127 Connection (North-South Corridor/Hurricane Evacuation) EIS.
Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary Parishes, Louisiana

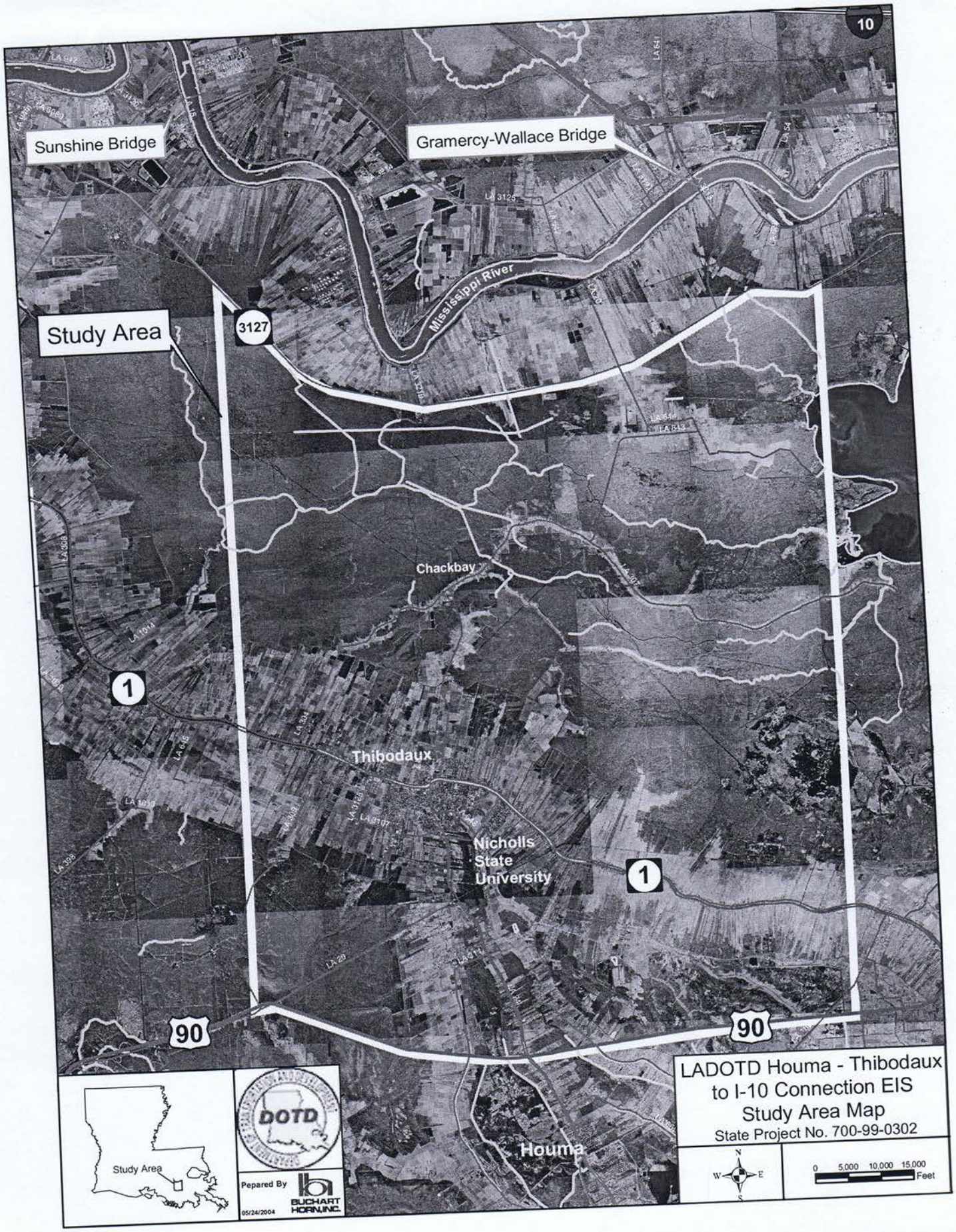
The Federal Highway Administration (FHWA), in cooperation with the Louisiana Department of Transportation and Development (LADOTD), will prepare an Environmental Impact Statement (EIS) to evaluate the potential impacts of the proposed construction of a limited-access hurricane evacuation route to be known as the Houma-Thibodaux to LA 3127 Connection (North-South Corridor/Hurricane Evacuation). The project limits would be US 90 on the south and LA 3127 on the north. The approximate distance of the project is 23 miles. Based on previous studies, the project area is known to contain a rich variety of natural, cultural and socio-economic resources. This project is intended to serve as a primary north-south hurricane evacuation route to provide direct access to LA 3127 during emergency evacuation events (see attached map). From LA 3127 there are choices to access the I-10 corridor.

More specifically, this project will involve preliminary environmental (including natural, cultural and social environment) and engineering constraints studies and the development of preliminary alternatives using State-of-the-Art "Route Optimization" software. Subsequent tasks include initial impact evaluation, a more detailed study of alternatives and environmental impacts, the development of a draft EIS, a public hearing, preparation of a final EIS with complete, detailed environmental and line and grade studies, and a Record of Decision. The Draft Environmental Impact Statement will be made available for public and agency review and comment prior to the public hearing.

There will be a total of three public meetings and one public hearing throughout the project development process to present findings to the public and to obtain public input. The first public meeting will be held on July 15, 2004 @ 7:00 p.m. on Nicholls State University campus at the Gouaux Auditorium located at 906 East First Street, Thibodaux, Louisiana. Additionally, small group informational meetings may be held at the request of community groups throughout the duration of the project.

Interested individuals, organizations, and public agencies are invited to attend the public meetings to participate in identifying any important environmental issues related to the proposed alternatives. Those in attendance at the public meetings may also suggest alternatives which may be more economical, or which have less environmental effects while at the same time achieving similar transportation objectives. The public will receive notices on the location and time of future opportunities for participation at meetings and public hearings through newspaper advertisements and other means.

Although valuable resources will be avoided to the extent possible, it is reasonable to assume that a project of this type and magnitude will have some degree of impact on the natural and human environments. The potential impacts fall into three categories: (1) construction impacts, (2) operational impacts, and (3) indirect impacts. Careful consideration of potential impacts within the limits of the proposed action will be required during the planning and design phases of the proposed project in order to minimize these impacts.



LADOTD Houma - Thibodaux to I-10 Connection EIS
Study Area Map
State Project No. 700-99-0302

STATE MAILING LIST
UPDATED May 27, 2004

DEPT OF TRANSPORTATION
FEDERAL AVIATION
ATTN: ASW-472
FT WORTH, TX 76193

DEPT OF WILDLIFE & FISHERIES
ECOLOGICAL STUDIES SECTION
PO BOX 98000
BATON ROUGE, LA 70898-9000

HONORABLE W J "BILLY" TAUZIN
US HOUSE OF REPRESENTATIVES
107 FEDERAL BUILDING
HOUMA, LA 70360

DEPT ECONOMIC DEVELOPMENT
OFFICE OF COMMERCE & INDUSTRY
PO BOX 94185
BATON ROUGE, LA 70804-9185

EXECUTIVE DIRECTOR
LA FORESTRY ASSOC
PO DRAWER 5067
ALEXANDRIA, LA 71301

HONORABLE JIM MCCRERY
US HOUSE OF REPRESENTATIVES
2104 RAYBURN BLDG
WASHINGTON DC 20515-1804

DEPT OF AGRI & FORESTRY
OFFICE OF FORESTRY
PO BOX 1628
BATON ROUGE, LA 70821

HONORABLE CHRIS JOHN
US HOUSE OF REPRESENTATIVES
800 LAFAYETTE ST, SUITE 1400
LAFAYETTE, LA 70501

FEDERAL ACTIVITIES BR (6E-F)
US ENVIRONMENTAL PROTECTION AGENCY
1445 ROSS AVE
DALLAS, TX 75202-2733

DEPT OF AGRICULTURE & FORESTRY
OFFICE OF SOIL / WATER CONSERV
PO BOX 3554
BATONROUGE, LA 70821-3554

HONORABLE RODNEY ALEXANDER
US HOUSE OF REPRESENTATIVES
1900 STUBBS AVENUE, SUITE B
MONROE LA 71201

HONORABLE DAVID VITTER
US HOUSE OF REPRESENTATIVES
SUITE 201
2800 VETERANS MEMORIAL BLVD
METAIRIE, LA 70002-6130

DEPT OF CULTURE RECREATION & TOURISM
DIVISION OF ARCHAEOLOGY
PO BOX 44247
CAPITOL ANNEX 3RD
BATON ROUGE, LA 70804

DEPT OF PUBLIC SAFETY
HIGHWAY SAFETY COMMISSION
PO BOX 66336
BATON ROUGE, LA 70896

HONORABLE RICHARD H BAKER
US HOUSE OF REPRESENTATIVES
5555 HILTON AVENUE, SUITE 100
BATON ROUGE, LA 70808

MS LISA MILLER
LA DEPT OF ENVIRONMENTAL QUALITY
OFFICE OF MANAGEMENT & FINANCE
CONTRACTS & GRANTS DIVISION
PO BOX 4303
BATON ROUGE, LA 70821-4303

HONORABLE WILLIAM J JEFFERSON
US HOUSE OF REPRESENTATIVES
501 MAGAZINE ST, SUITE 1012
NEW ORLEANS, LA 70130

LA DEPT OF NATURAL RESOURCES
OFFICE OF CONSERVATION
PO BOX 94275 (625 NORTH 4TH)
BATON ROUGE, LA 70804-9275

GREGG GOTHREAUX /LAF ECON
211 DEVALCOURT ST
LAFAYETTE, LA 70506-4121

DEPT OF WILDLIFE & FISHERIES
ATTN: MR MAURICE WATSON
PO BOX 98000
BATON ROUGE, LA 70898-9000

LA GOOD ROADS ASSOCIATION
ATTN: PRESTON EGGERS
646 NORTH ST
BATON ROUGE, LA 70802

STATE PLANNING OFFICE
CAPITOL ANNEX BLDG, 2ND FLOOR
PO BOX 94095
BATON ROUGE, LA 70804-4095

MR DONALD GOHMERT
NATURAL RESOURCES CONS SERVICE
3737 GOVERNMENT ST
ALEXANDRIA, LA 71302

REGION ENVIRONMENTAL OFFICER
US DEPT OF HOUSING / URBAN DEV
PO BOX 2905
FORT WORTH, TX 76113

LA NATURAL HERITAGE PROGRAM
LA DEPT OF WILDLIFE & FISHERIES
PO BOX 98000
BATON ROUGE, LA 70898-9000

MR MICHAEL P JANSKY
6ENXP
ENVIRONMENTAL PROTECTION AGCY
1445 ROSS AVE
DALLAS, TX 75202-2733

LA STATE MINERAL BOARD
PO BOX 2827
BATON ROUGE, LA 70821-2827

DIVISION OF ADMINISTRATION
STATE LAND OFFICE
PO BOX 44124
BATON ROUGE, LA 70804

US DEPT OF INTERIOR
NATIONAL PARK SERVICE
1924 BUILDING
100 ALABAMA STREET, SW
ATLANTA GA 30303

DEPT OF THE INTERIOR
GEOLOGICAL SURVEY
3535 SOUTH SHERWOOD FOREST, SUITE 120
BATON ROUGE, LA 70806

LA STATE ATTORNEY GENERAL
PO BOX 94095
BATON ROUGE, LA 70804-9095

HONORABLE MARY LANDRIEU
UNITED STATE SENATOR
FEDERAL BUILDING, ROOM 326
707 FLORIDA BLVD
BATON ROUGE, LA 70801

US FISH & WILDLIFE SERVICE
646 CAJUNDOME BLVD, SUITE 400
LAFAYETTE, LA 70506

MR GREG SOLVEY
FEMA REGION VI
800 NORTH LOOP 288
DENTON, TX 76201

HONORABLE JOHN B BREAUX
UNITED STATES SENATOR
HALE BOGGS FEDERAL BLDG
501 MAGAZINE ST, SUITE 1005
NEW ORLEANS, LA 70301

ENVIRONMENTAL ASSESSMENT
SIERRA CLUB / DELTA CHP
PO BOX 19469
NEW ORLEANS, LA 70179-0469

OFFICE OF STATE PARKS
DEPT OF CULTURE REC & TOURISM
PO BOX 44426
BATON ROUGE, LA 70804

US DEPT OF COMMERCE
ECONOMIC DEVELOPMENT ADMN
327 CONGRESS AVE, SUITE 200
AUSTIN, TX 78701

MR FRANK DEFFES
DHH / PUBLIC HEALTH / SANITATION
ROOM 210
PO BOX 60630
NEW ORLEANS, LA 70160

US ENVIRON PROTECTION AGENCY
OFFICE OF GROUNDWATER
1445 ROSS AVE
DALLAS, TX 75202-2733

LOUISIANA STATE UNIVERSITY
SEA GRANT LEGAL PROGRAM
170 LAW CENTER, LSU
BATON ROUGE, LA 70803-118

COMMANDER
8TH COAST GUARD DISTRICT
HALE BOGGS FEDERAL BUILDING
501 MAGAZINE ST
NEW ORLEANS, LA 70130-3396

MR TROY HILL
US ENVIRON PROTECTION AGCY
MARINE & WETLANDS SECTION
6WQ-EM
1445 ROSS AVE
DALLAS, TX 75202-2733

FLOODPLAIN MANAGEMENT PGM
DOTD – ROOM 430
PO BOX 94245
BATON ROUGE, LA 70804-9245

DEPT OF HEALTH & HOSPITALS
DIVISON OF ENVIRONMENTAL HEALTH
ATTN: DOUG VINCENT, CHIEF ENGINEER
6867 BLUEBONNET RD
BATON ROUGE, LA 70810

MR MARK S DAVIS
EXECUTIVE DIRECTOR
COALITION TO RESTORE COASTAL LA
746 MAIN ST, SUITE B-101
BATON ROUGE, LA 70802-5526

CHITIMACHA TRIBE OF LA
ALTON LEBLANC, CHAIRMAN
PO BOX 661
CHARENTON, LA 70523

COUSHATTA TRIBE OF LA
LOVELIN PONCHO, CHAIRMAN
PO BOX 818
ELTON, LA 70532

MS. BEVERLY SMITH, CHAIRPERSON
JENA BAND OF CHOCTAWS
PO BOX 14
JENA, LA 71342

TUNICA BILOXI INDIANS OF LA
EARL J BARBRY SR, CHAIRMAN
PO BOX 1589
MARKSVILLE, LA 71351

MISSISSIPPI BAND OF CHOCTAW
INDIANS
PHILLIP MARTIN, CHAIRMAN
PO BOX 6257
PHILADELPHIA, MS 39350

QUAPAW TRIBE OF OKLAHOMA
JOHN VERRY, CHAIRMAN
PO BOX 765
QUAPAW, OK 74363-0765

CADDO ADAI INDIANS OF LA
RUFUS DAVIS, JR, CHAIRMAN
ROUTE 2, BOX 246
ROBELINE, LA 71469

CLIFTON CHOCTAW TRIBE OF LA
ROY L TYLER, CHAIRMAN
1312 CLIFTON RD
CLIFTON, LA 71447

UNITED HOUMA NATION
BRENDA DARDAR, CHAIRMAN
20986 LA HWY 1
GOLDEN MEADOW, LA 70357

APALACHEE TRIBE OF LA
GILMER BENNETT
PO BOX 84
LIBUSE, LA 71348

OFFICE OF INDIAN AFFAIRS
MR. JOEY STRICKLAND, DIRECTOR
365 N FOURTH ST
PO BOX 94004
BATON ROUGE, LA 70804-9004

INTER-TRIBAL COUNCIL OF LA, INC
MONA KOGEL, DIRECTOR
5723 SUPERIOR DR, S.B-1
BATON ROUGE, LA 70816

ALABAMA COUSHATTA TRIBE OF TEXAS
KEVIN BATTISE, CHAIRMAN
RT. 3, BOX 640
LIVINGSTON TX 77351

HONORABLE ROB MARIONNEAUX JR
THE STATE SENATE
DISTRICT 17
PO BOX 577
LIVONIA LA 70755-0577

HONORABLE ROY QUEZAIRE JR
LA HOUSE OF REPRESENTATIVES
DISTRICT 58
PO DRAWER 269
DONALDSONVILLE LA 70346

MS. AMY POWELL
DEPT OF THE ARMY
TECH SUPPORT
PO BOX 60267
NEW ORLEANS LA 70538

MR. RANDY THIGPEN
3247 EMILY DRIVE
PORT ALLEN LA 70767

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P. O. BOX 60267
NEW ORLEANS, LOUISIANA 701600267

SEP 13 2004

REPLY TO
ATTENTION OF

Operations Division
Operations Manager
Completed Works

RECEIVED
SEP 17 2004
BUCHART-HORN, INC.

Mr. Vince Russo
Environmental Engineer Administrator
Louisiana Department of Transportation
And Development
Post Office Box 94245
Baton Rouge, Louisiana 70804-9245

Dear Mr. Russo:

This is in response to your Solicitation of Views request dated June 24, 2004, concerning the Houma-Thibodaux to LA 3127 Connection (North-South Corridor/Hurricane Evacuation) EIS, in Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary Parishes, Louisiana (State Project Number 700-99-0302).

We have reviewed your request for potential Department of the Army regulatory requirements and impacts on any Department of the Army projects.

We do not anticipate any adverse impacts to any Corps of Engineers' projects.

Based on review of recent maps, aerial photography, and soils data, we have determined that wetland areas subject to Corps of Engineers' jurisdiction occur on this property. However, these wetlands cannot be accurately delineated without a field investigation. If an accurate delineation is needed, please furnish us with the field data concerning vegetation, soils, and hydrology that we require for all jurisdictional decisions. A Department of the Army (DA) permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into these wetlands.

Off-site locations of activities such as borrow, disposals, haul-and detour-roads and work mobilization site developments may

be subject to Department of the Army regulatory requirements and may have an impact on a Department of the Army project.

You should apply for said permit well in advance of the work to be performed. The application should include sufficiently detailed maps, drawings, photographs, and descriptive text for accurate evaluation of the proposal.

This determination of permit requirements is valid for a period of five years from the date of this letter unless new information warrants a revision prior to the expiration date. In addition, any changes or modifications to the proposed project may require a revised determination.

Please contact Dr. John Bruza, of our Regulatory Branch by telephone at (504) 862-1288, or by e-mail at John.D.Bruza@mvn02.usace.army.mil for questions concerning wetlands determinations or need for on-site evaluations. Questions concerning regulatory permit requirements may be addressed to Mr. Martin Mayer by telephone at (504) 862-2276 or by e-mail at Martin.S.Mayer@mvn02.usace.army.mil.

Future correspondence concerning this matter should reference our account number MVN-2004-3384-SY. This will allow us to more easily locate records of previous correspondence, and thus provide a quicker response.

We apologize for missing the target date of July 30, 2004, listed in your request. Thank you for your patience in this matter.

Sincerely,

Amy E. Powell

Amy E. Powell
Solicitation of Views Manager

Copy Furnished:

Buchart-Horn, Inc.
Attn: Ed Gabsewics

State of Louisiana

RECEIVED
AUG 1 2 2004
BUCHART-HORN, INC.

Dwight Landreneau
Secretary

Department of Wildlife & Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(225) 765-2800

Kathleen Babineaux Blanco
Governor

Name	Mr. Vincent G. Russo, Jr.
Company	LADOTD Environmental Engineer Administrator
Street Address	P.O. Box 94245
City, State, Zip	Baton Rouge, LA 70804-9245
Project	State Project No. 700-99-0302 - F.A.P. No. HP-9902 (518) Houma - Thibodeaux to LA 3127 Connection EIS; Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles and St. Mary Parishes
Date	August 4, 2004
Invoice Number	04080402

Personnel of the Habitat Section of the Fur and Refuge Division have reviewed the preliminary data for the captioned project. Parts of your project area are in the coastal zone. Contact the State of Louisiana Department of Natural Resources Coastal Management Division to determine if a coastal use permit is required. Your project area appears to contain the Louisiana Department of Wildlife and Fisheries Lake Boef State Wildlife Management Area (WMA). Contact Lake Boef WMA Manager Dave Soileau at 337-373-0032 to discuss boundaries and coordinate all activity.

Our database indicates observations of waterbird nesting colonies in your project area. Rookeries can move from year to year and no current information is available on the status of these rookeries. No activity is permitted within 300 meters around rookeries during the breeding season which is generally March 15-July 15. We recommend that a qualified biologist inspect the proposed work site for the presence of nesting colonies during the nesting season. To minimize disturbance to colonial nesting birds, the following restrictions on activity should be observed:
-For colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills, anhingas, and/or cormorants), all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, depending on species present).
-For colonies containing nesting gulls, terns, and/or black skimmers, all activity occurring within 650 feet of a rookery should be restricted to the non-nesting period (i.e., September 16 through April 1, depending on species present).

We recommend that on-site contract personnel be informed of the need to identify colonial nesting birds and their nests, and should avoid affecting them during the breeding season. You will need to contact and coordinate all activities with the United States Fish and Wildlife Service in Lafayette at (337) 291-3124.

Our database also indicates several observations of bald eagle nests in Lafourche, St. James and St. John the Baptist Parishes. The nests were observed in the following areas of your project:
- Near the western shores of Lac Des Allemands

- In and around Section 59, Township 12 South, Range 16 East
- In and around Sections 34 & 32, Township 14 South, Range 18 East
- In and around Section 78, Township 14 South, Range 17 East

The bald eagle (Haliaeetus leucocephalus) is provided a threatened status on the federal species list and an endangered status on the state species list. Human activities, both short-term and long-term, and alteration of habitat may affect the reproductive success of nesting eagles. In the Southeast, the nesting period of most eagle pairs will fall between October 1 and May 15. Disturbance during this critical period may lead to nest abandonment, cracked and chilled eggs, and exposure of small young to the elements. Human activity (including aircraft operation) near a nest late in the nesting cycle may cause flightless birds to jump from the nest tree. We recommend that there be no activity within a 1,500-foot radius (457meters) from the nest tree at any time (nesting area). A buffer zone should be arranged to be contiguous to feeding area and provide protected access between nests and the food source; it should be approximately circular and with a minimum radius of 1 mile (1,609 meters) from the nest tree. In general, no major activities should occur during the nesting period. Even intermittent use or activities of short duration are likely to provide such disturbance (ex. Logging, seismographic activities w/explosives, mining, low level aircraft operations). Acceptable minor activities within this buffer zone include hiking, bird watching, camping, and recreational off-road vehicle use. You will need to contact and coordinate all activities with the United States Fish and Wildlife Service in Lafayette at (337) 291-3124.

Other recommendations:
•Existing nests are often rebuilt and occupied after years of inactivity and, therefore, cannot be removed or destroyed even though they have been seemingly abandoned. Non-nest trees within the nesting area should also be protected until the nest tree is destroyed by the elements.
•Eliminate the use of toxic chemicals in the watersheds of lakes and rivers where eagles feed.
•Discourage the construction of buildings along shorelines where eagles feed.
•There must be no clear-cut or high-grade logging along the shore line of feeding waters. This will prevent the removal of large trees preferred by eagles for hunting, roosting, and loafing perches.
•If possible, prevent or reduce shoreline erosion to protect roost or perch trees.
•Within the nesting area, no large tree should be removed. Within the buffer zone, a minimum of three to five large trees should be saved for potential roost and perch trees. Characteristically, these should be the largest trees in the timber stand which provide safety from any threat from the ground. Trees with open crowns and stout lateral limbs are preferable.

Our database also indicates 1977 & 1978 observations of swamp milkweed (Asclepias incarnata) in your project area. While no legal protection is afforded this species, it does hold a state rank of S2 and is considered imperiled in Louisiana.

Our database also indicates a 1980 observation of common water-willow (Justicia americana) in your project area. While no legal protection is afforded this species, it does hold a state rank of S2 and is considered imperiled in Louisiana.

Our database also indicates a 2003 observation of floating antler fern (Ceratopteris pteridoides) in your project area. While no legal protection is afforded this species, it does hold a state rank of S2 and is considered imperiled in Louisiana.

Our database also indicates a 2003 observation of hairy comb fern (Ctenitis submarginalis) in your project area. While no legal protection is afforded this species, it does hold a state rank of S1 and is considered critically imperiled in Louisiana. This population is extant as of November 2003 and is the only known population in Louisiana. This population is located in and around Section 74, Township 15 South, Range 16 East in Terrebonne Parish.

Our database also indicates the following Natural Communities in your project area:
- Freshwater marsh in and around Section 72, Township 15 South, Range 18 East

- Cypress-tupelo swamp in and around Section 39, Township 13 South, Range 16 East
- Cypress-tupelo swamp in and around Section 84, Township 12 South, Range 18 East

For more information on natural communities, please visit our website at http://www.wlf.state.la.us/apps/netgear/index.asp?cn=lawlf&pid=1178.

In reviewing our database, no other rare, threatened, or endangered species or critical habitats were found within the areas of the captioned project that lie in Louisiana. No other state or federal parks, wildlife refuges, scenic streams, or wildlife management areas are known at the specified sites within Louisiana's boundaries.

The Louisiana Natural Heritage Program has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. The quantity and quality of data collected by the LNHP are dependent on the research and observations of many individuals. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Louisiana have not been surveyed. This report does not address the occurrence of wetlands at the site in question. Heritage reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The Louisiana Natural Heritage Program requires that this office be acknowledged in all reports as the source of all data provided here. If you have any questions or need additional information, please call Louisiana Natural Heritage Program Data Manger Jill Kelly at (225) 765-2643.

Sincerely,

J. Kelly for

Gary Lester, Coordinator
Natural Heritage Program

Cc: Ed Gabsewics, Buchart-Horn, Inc.

EXPLANATION OF RANKING CATEGORIES EMPLOYED BY NATURAL HERITAGE PROGRAMS NATIONWIDE

Each element is assigned a single global rank as well as a state rank for each state in which it occurs. Global ranking is done under the guidance of NatureServe, Arlington, VA. State ranks are assigned by each state's Natural Heritage Program, thus a rank for a particular element may vary considerably from state to state. Federal ranks are designated by the U.S. Fish & Wildlife Service under the provisions of the Endangered Species Act of 1973.

FEDERAL RANKS (USESA FIELD):

LE = Listed Endangered

LT = Listed Threatened

PE = Proposed endangered

PT = Proposed Threatened

C = Candidate

PDL = Proposed for delisting

E (S/A) or T (S/A) = Listed endangered or threatened because of similarity of appearance

XE = Essential experimental population

XN = Nonessential experimental population

No Rank = Usually indicates that the taxon does not have any federal status. However, because of potential lag time between publication in the Federal Register and entry in the central databases and state databases, some taxa may have a status which does not yet appear.

(Rank, Rank) = Combination values in parenthesis = The taxon itself is not named in the Federal Register as having U.S. ESA status; however, all of its infraspecific taxa (worldwide) do have official status. The statuses shown in parentheses indicate the statuses that apply to infraspecific taxa or populations within this taxon. *THE SPECIES IS CONSIDERED TO HAVE A COMBINATION STATUS IN LOUISIANA*

(PS) = partial status= Status in only a portion of the species' range. Typically indicated in a "full" species record where an infraspecific taxon or population has U.S. ESA status, but the entire species does not. *THE SPECIES DOES NOT HAVE A STATUS IN LOUISIANA*

(PS: Rank) = partial status= Status in only a portion of the species' range. The value of that status appears because the entity with status does not have an individual entry in Natureserve. *THE SPECIES MAY HAVE A STATUS IN LOUISIANA*

GLOBAL ELEMENT RANKS:

G1 = critically imperiled globally because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extinction

G2 = imperiled globally because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extinction throughout its range

G3 = either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single physiographic region) or because of other factors making it vulnerable to extinction throughout its range (21 to 100 known extant populations)

G4 = apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery (100 to 1000 known extant populations)

G5 = demonstrably secure globally, although it may be quite rare in parts of its range, especially at the periphery (1000+ known extant populations)

GH = of historical occurrence throughout its range; i.e., formerly part of the established biota, with the possibility that it may be rediscovered (e.g., Bachman's Warbler)

GU = possibly in peril range-wide, but status uncertain; need more information

G? = rank uncertain. Or a range (e.g., G3G5) delineates the limits of uncertainty

GQ = uncertain taxonomic status

GX = believed to be extinct throughout its range (e.g., Passenger Pigeon) with virtually no likelihood that it will be rediscovered

T = subspecies or variety rank (e.g., G5T4 applies to a subspecies with a global species rank of G5, but with a subspecies rank of G4)

STATE ELEMENT RANKS:

S1 = critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation

S2 = imperiled in Louisiana because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extirpation

S3 = rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations)

S4 = apparently secure in Louisiana with many occurrences (100 to 1000 known extant populations)

S5 = demonstrably secure in Louisiana (1000+ known extant populations)

(B or N may be used as qualifier of numeric ranks and indicating whether the occurrence is breeding or nonbreeding)

SA = accidental in Louisiana, including species (usually birds or butterflies) recorded once or twice or only at great intervals hundreds or even thousands of miles outside their usual range

SH = of historical occurrence in Louisiana, but no recent records verified within the last 20 years; formerly part of the established biota, possibly still persisting

SR = reported from Louisiana, but without conclusive evidence to accept or reject the report

SU = possibly in peril in Louisiana, but status uncertain; need more information

SX = believed to be extirpated from Louisiana

SZ = transient species in which no specific consistent area of occurrence is identifiable

State of Louisiana

KATHLEEN BABINEAUX BLANCO
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

JAMES H. WELSH
COMMISSIONER OF CONSERVATION

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF CONSERVATION

RECEIVED
AUG 05 2004
BUCHART-HORN, INC.

July 29, 2004

TO: Mr. Ed Gabsewics, Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, LA 70002

RE: State Project No. 700-99-0302
F.A.P. No. HP-9902 (518)
Houma - Thibodaux to LA 3127 Connection
Parishes: Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary

Dear Mr. Gabsewics:

In response to Mr. Vincent Russo's letter dated June 24, 2004, regarding the referenced matter, please be advised that the Office of Conservation collects and maintains many types of information regarding oil and gas exploration, production, distribution, and other data relative to the petroleum industry as well as related and non-related injection well information, surface mining and ground water information and other natural resource related data. Most information concerning oil, gas and injection wells for any given area of the state, including the subject area of your letter can be obtained through records search via the SONRIS data access application available at:

http://www.dnr.state.la.us/CONS/Conserv.ssi

A review of our computer records for the referenced area indicates a large number of oil, gas and water wells located within the boundaries of the proposed project area. A thorough research of all relevant records is recommended.

The Office of Conservation maintains records of all activities within its jurisdiction in either paper, microfilm or electronic format. These records may be accessed during normal business hours, Monday through Friday, except on State holidays or emergencies that require

the Office to be closed. Please call 225-342-5540 for specific contact information or for directions to the Office of Conservation, located in the LaSalle Building, 617 North Third Street, Baton Rouge, Louisiana. For pipelines and other underground hazards, please contact Louisiana One Call at 1-800-272-3020 prior to commencing operations. Should you need to direct your inquiry to any of our Divisions, you may use the following contact information:

Division	Contact	Phone No.	E-mail Address
Engineering	Jeff Wells	225-342-5638	JEFFW@dnr.state.la.us
Pipeline	Don Hebert	225-342-2989	Donh@dnr.state.la.us
Injection & Mining	Laurence Bland	225-342-5515	LaurenceB@dnr.state.la.us
Geological	Mike Kline	225-342-3335	MikeKl@dnr.state.la.us
Ground Water	Tony Duplechin	225-342-5528	TonyD@dnr.state.la.us

If you have difficulty in accessing the data via the referenced website because of computer related issues, you may obtain assistance from our technical support section by selecting "Help" on the SONRIS tool bar and submitting an email describing your problems and including a telephone number where you may be reached.

Sincerely,

James H. Welsh
Commissioner of Conservation

JHW:MBK/kdj

State of Louisiana

KATHLEEN BABINEAUX BLANCO
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

June 23, 2004

BUCHART-HORN, INC.
ATTN: MR. GABSEWICS
CAUSEWAY PLAZA III, SUITE 201 3330 WEST ESPLANADE AVENUE
METAIRIE, LA 70002

RE: P20040911, La Department Of Transportation And Development, **Coastal Use Permit Application**

Description: construct the Houma-Thibodaux to LA 3127 connection (North-South Corridor) hurricane evacuation route (State Project #700-99-0302)

Dear Mr. Gabsewics:

You are hereby advised that your application for a Coastal Use Permit was received and it has been determined that your proposed activity is a use of state concern in accordance with Louisiana Revised Statue 49:214.5.

The Coastal Management Division (CMD) has sent a copy of this permit application to the New Orleans District Corps of Engineers (NOD/COE). The NOD/COE and CMD will each process this application separately. All correspondence and calls regarding this application should reference the Coastal Use Permit Number indicated above. The analyst responsible for processing your application is Tim Robertson and should be the primary contact with CMD.

Please note that all information concerning your application is in our database and can be found on our webpage at http://lamap.dnr.state.la.us/permit/index.htm. The information in the database is updated throughout the day as charges to the status of the appplication are reported by the analyst.

Should you have any questions, please check the online database or contact Tim Robertson at 225-342-7472 or timr@dnr.state.la.us.

Sincerely,
Permit Coordinator

COASTAL MANAGEMENT DIVISION
P. O. BOX 44487 • BATON ROUGE, LA 70804-4487 • 617 N. THIRD STREET • 10TH FLOOR • BATON ROUGE, LA 70802
PHONE (225) 342-7591 • FAX (225) 342-9439 • WEB http://www.dnr.state.la.us
AN EQUAL OPPORTUNITY EMPLOYER

St. John District Office
197 Belle Terre Boulevard
P. O. Box 1960
LaPlace, Louisiana 70069-1960
E-Mail: larep057@legis.state.la.us
Telephone: (985) 651-3886
(800) 462-5017
Fax: (985) 651-0151

St. James District Office
230 Main Street
P. O. Box 367
Gramercy, Louisiana 70052
Telephone: (225) 869-3944
Fax: (225) 869-9180

STATE OF LOUISIANA

HOUSE OF REPRESENTATIVES

ROBERT R. "BOBBY" FAUCHEUX, JR.
District 57

Judiciary
Insurance
Ways and Means
Joint Legislative Committee on Capital Outlay

July 7, 2004

RECEIVED
JUL 08 2004
BUCHART-HORN, INC.

Mr. Ed Gabsewics, Project Manager,
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, LA 70002

RE: State Project No. 700-99-0302
Houma-Thibodaux to LA 3127 Connection

Dear Mr. Gabsewics:

I feel that the patten from Highway 90 to Highway 3127 should concentrate on the Laurel Valley Ridge North in an elevated type highway that would do the least harm to the wetland areas located within the study.

Thank you for your consideration.

With kindest regards, I am

Very sincerely yours,

Robert R. "Bobby" Faucheux, Jr.
State Representative
District 57

RRFJr:gcn
enclosure

cc: Vincent Russo

LOUISIANA DEPARTMENT OF AGRICULTURE & FORESTRY
BOB ODOM, COMMISSIONER

RANDAL JOHNSON
DEPUTY COMMISSIONER

ASSISTANT COMMISSIONERS

Agricultural & Environmental Sciences
Matthew Keppinger, III
P.O. Box 3596
Baton Rouge, LA 70821
(225) 925-3770
Fax: 925-3760

Agro-Consumer Services
Manning Broussard
P.O. Box 3098
Baton Rouge, LA 70821
(225) 922-1341
Fax: 922-0477

Animal Health Services
Terrel Delphin
P.O. Box 1951
Baton Rouge, LA 70821
(225) 925-3962
Fax: 925-4103

Forestry
Paul D. Frey
P.O. Box 1628
Baton Rouge, LA 70821
(225) 925-4500
Fax: 922-1356

Management & Finance
Skip Rhorer
P.O. Box 3481
Baton Rouge, LA 70821
(225) 922-1255
Fax: 925-6012

Marketing
Bryce Malone
P.O. Box 3334
Baton Rouge, LA 70821
(225) 922-1277
Fax: 922-1289

Soil & Water Conservation
Bradley E. Spicer
P.O. Box 3554
Baton Rouge, LA 70821
(225) 922-1269
Fax: 922-2577

RECEIVED
AUG 0 2 2004
BUCHART-HORN, INC.

July 29, 2004

Ed Gabsewics, Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Ave.
Metairie, LA 70002

RE: Solicitation of Views:

State Project No. 700-99-0302
F.A.P. No. HP-9902 (518)
Houma Thibodaux to LA 3127 Connection
(North-South Corridor/Hurricane Evacuation) EIS
Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist,
St. Charles and St. Mary Parishes, LA

Dear Mr. Russo:

I have no comment at this time regarding the above referenced projects.

Sincerely,

Bradley E. Spicer
SLM

Bradley E. Spicer
Assistant Commissioner
BES: SLM

State of Louisiana

KATHLEEN BABINEAUX BLANCO
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

July 28, 2004

RECEIVED
AUG 02 2004
BUCHART-HORN, INC.

Louisiana Department of Transportation and Development
c/o Buchart-Horn, Inc
Causeway Plaza III, Suite 201
3330 West Esplanade Ave.
Metairie, LA 70002
Attn: Ed Gabsewics

RE: P20040911, Solicitation of Views
Houma - Thibodaux to LA 317 Connection
State Project No. 700-99-0302
F.A.P No. HP-9902 (518)
Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles and St. Mary Parishes, LA

Dear Mr. Gabsewics:

We have received your Solicitation of Views for the above referenced project, which a portion of has been found to be inside the Louisiana Coastal Zone. In order for us to properly review and evaluate this project, we require that a complete Coastal Use Permit Application (U. S. Army Corps of Engineers ENG 4345 permit application form, locality maps, project illustration plats with plan and cross section views, etc.) be submitted to our office. Using your complete application, we can provide you with an official determination, and begin the processing of any Coastal Use Permit that may be required for your project. You may obtain a free application packet by calling our office at (225) 342-7591 or (800)-267-4019, or by visiting our website at http://www.dnr.state.la.us/crm/coastmgt/cup/cup.ssi.

We recommend that, during your planning process, you make every effort to minimize impacts to vegetated wetlands. As our legislative mandate puts great emphasis on avoiding damages to these habitats, in many cases the negotiations involved in reducing such disturbances and developing the required mitigation to offset the lost habitat values delay permit approval longer than any other factor. Additionally, the following sensitive features may require additional processing time by the appropriate resource agencies: nine environmentally sensitive features, four eagle's nests, two mitigation projects, and two mitigation areas area within the proposed project area.

Should you desire additional consultation with our office prior to submitting a formal application, we recommend that you call and schedule a pre-application meeting with our Permit Section staff. Such a preliminary meeting may be helpful, especially if a permit application that is as complete as possible is presented for evaluation at the pre-application meeting.

If you have any questions, or if you would like to request an application packet or schedule a pre-application meeting, please contact Mr. Rocky Hinds or Mr. Bill Pittman of the Permit Section.

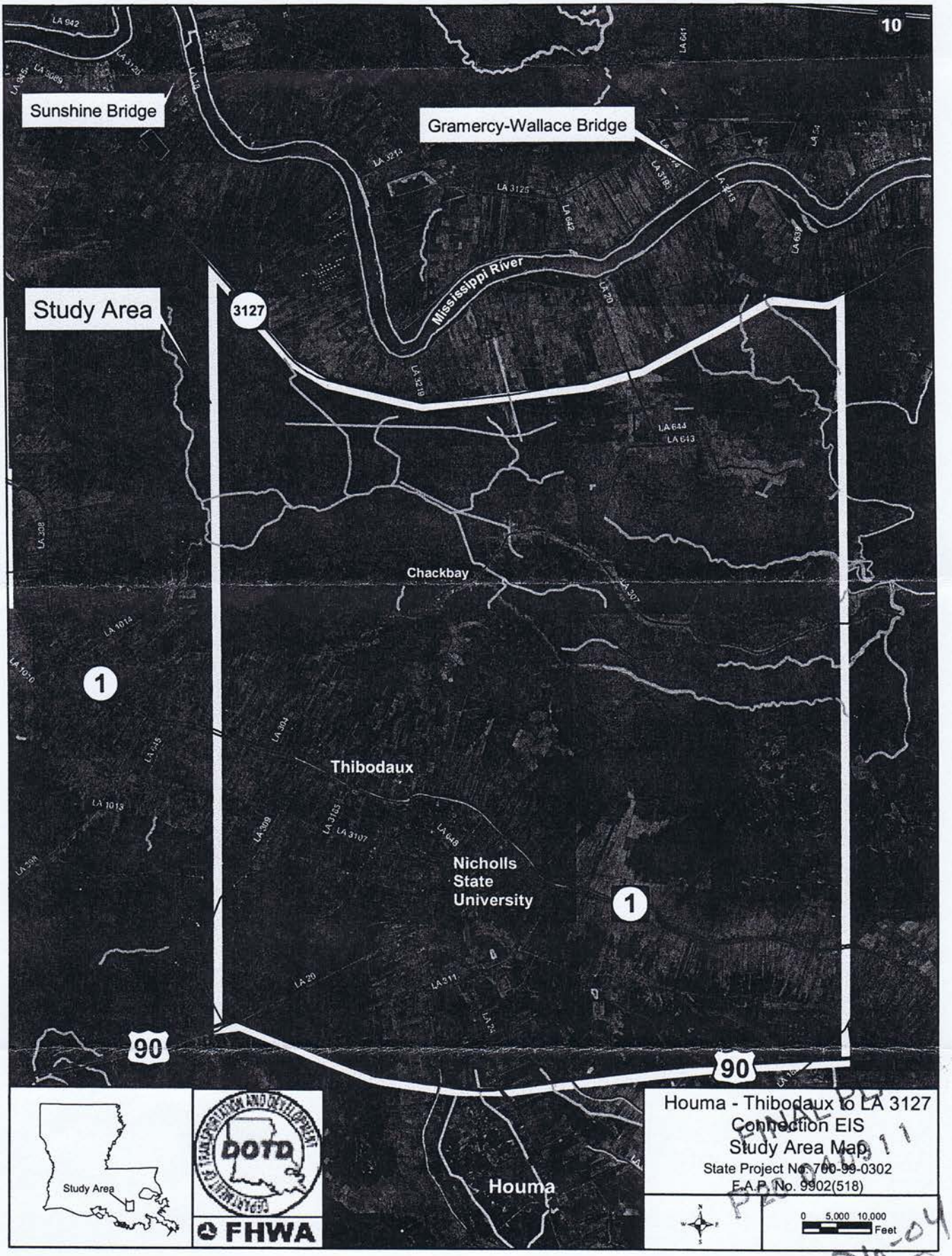
Sincerely,

Karl L Morgan for

David W. Frugé
Administrator

DWF/trr

cc: Ron Ventola, COE
Fred Dunham, LDWF
Karl Morgan, CMD/SS
Tim Killeen, CMD/FI
Charles Mestayer, CMD/FI
Kirk Kilgen, CMD/FI
Rod Pierce, CMD/FI
Jess Curole, Lafourche Parish
James Miller, Terrebonne Parish



Houma - Thibodaux to LA 3127
Connection EIS
Study Area Map
State Project No. 700-99-0302
F.A.P. No. 9902(518)

0 5,000 10,000 Feet

FINAL 7-26-04

United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

July 21, 2004

Mr. Ed Gabsewics
Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, Louisiana 70002

Dear Mr. Gabsewics:

Please reference the Louisiana Department of Transportation and Development's June 24, 2004, letter, requesting our review of the proposed Houma-Thibodaux to Louisiana Highway 3127; North-South Hurricane Evacuation Corridor project. That project would be located in Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, St. Mary, and Terrebonne Parishes, Louisiana. The new 4-lane highway would be approximately 23 miles long, and would connect U.S. Highway 90, near Houma, Louisiana, and Louisiana Highway 3127, near St. James, Louisiana, via new interchanges. The U.S. Fish and Wildlife Service has reviewed the information you provided, and offers the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), the Migratory Bird Treaty Act (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.), and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

Portions of the proposed project may be located in areas that are inhabited by the threatened bald eagle (*Haliaeetus leucocephalus*). Bald eagles nest in Louisiana from October through mid-May. Eagles typically nest in bald cypress trees near fresh to intermediate marshes or open water in the southeastern Parishes. Areas with high numbers of nests include the Lake Verret Basin south to Houma, the southern marsh/ridge complex from Houma to Bayou Vista, the north shore of Lake Pontchartrain, and the Lake Salvador area. Eagles also winter and infrequently nest near large lakes in central and northern Louisiana. Major threats to the species include habitat alteration, human disturbance, and environmental contaminants (i.e., organochlorine pesticides and lead).

Bald eagles usually return to the same nest year after year, but they may also use alternate nests in the same general vicinity in different years. Bald eagles are most vulnerable to disturbance during courtship, nest building, egg laying, incubation, and brooding (roughly the first 12 weeks of the nesting cycle). Disturbance during this critical period may lead to nest abandonment, cracked and chilled eggs, and exposure of small young to the elements. Human activity near a nest late in the nesting cycle may also cause flightless birds to jump from the nest tree, thus reducing their chance of survival. Should the proposed project or associated work activities encroach within 1,500 feet of an eagle nest, further consultation with this office will be

necessary. We further caution that the project should not damage any portion of bald eagle nest trees, including their root systems (i.e., through soil compaction or disturbance).

Depending on its final alignment, wading bird nesting colonies could potentially be impacted by project-related construction activities. Within Louisiana, colonies not currently listed in the database maintained by the Louisiana Department of Wildlife and Fisheries may be present within the potential alignments, and undocumented colonies may exist elsewhere throughout the study area. That Louisiana database is updated primarily by monitoring the colony sites that were previously surveyed during the 1980s. Until a comprehensive survey is conducted to determine the location of newly-established nesting colonies, we recommend that a qualified biologist inspect the proposed alignments for the presence of undocumented nesting colonies prior to the selection of the preferred alternative. That survey should focus on early successional scrub/shrub and forested swamp wetlands, as these are most commonly inhabited by colonial nesting wadingbirds. If colony sites are located within or adjacent to the proposed route, the Service's Lafayette, Louisiana, Field Office should be contacted for additional recommendations to ensure that those colonies are protected during the nesting season.

The proposed project may impact wetlands. For a complete jurisdictional wetland delineation of the proposed project, please contact Mr. John Bruza (504/862-1288) at the New Orleans District Corps of Engineers (Corps). If the Corps determines that the proposed project is within their regulatory jurisdiction, official U.S. Fish and Wildlife Service comments will be provided in response to the corresponding Public Notice.

We appreciate the opportunity to provide comments during the early planning stages of these proposed projects. If you need further assistance please contact Derek Hamilton (337/291-3138) of this office.

Sincerely,

Russell C. Watson
Supervisor
Louisiana Field Office

cc: FHWA, Baton Rouge, LA
Corps of Engineers, New Orleans, LA
LDOTD, Baton Rouge, LA
LDWF, Natural Heritage Program, Baton Rouge, LA

SENATE
STATE OF LOUISIANA

JODY AMEDEE
State Senator
District 18
2111 S. Burnside Ave.
Gonzales, Louisiana 70737
225/644-1526
Fax: 225/644-7392

COMMITTEES:
Transportation, Highways& Public Works Vice-Chair
Commerce
Environmental Quality

July 19, 2004

Ed Gabsewics, Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, Louisiana 70002

Re: State Project No. 700-99-0302
Houma-Thibodaux to LA 3127 Connection
(North-South Corridor/Hurricane Evacuation) EIS

Dear Mr. Gabsewics:

I am pleased to hear that DOTD has finally initiated the EIS for the North-South Hurricane Evacuation Corrider.

I, as well as many South Louisiana Citizens, support this project.

For your information, I personally think that the alternate seven (7) route would be the most advantageous route for the following reasons:

1. Serve more populated areas than Alternates 6, 6-A & 7A, including North Vacherie, South Vacherie, Chackbay/Choupic and Bayou Beouf/Kraemer, Choctaw, Raceland and Central and Lower Lafourche, Thibodaux, Schriever, Gray and Houma.

2. Provide easier access from River Parishes area to Nicholls State University, Thibodaux General Hospital, Thibodaux/Houma area businesses, schools, churches, etc., and vice versa.

3. Allow for easier flow of tourism between River Parishes area and Lafourche/Terrebonne Parishes.

4. Provide the best location for easier flow of traffic between the River Region and the Lafourche/Terrbonne Region which will allow for greatly enhanced economic development of River Region area and Lafourche/Terrebonne.

5. Replace Highway 20 as main through-way between Thibodaux and Vacherie, especially the extremely hazardous section of Highway 20 between Vacherie and Chackbay.

Please let me know if I can be of any assistance. Thanks for your time.

Sincerely,

Jody Amedee

LJA/sr
enclosure

U.S. Department
of Transportation
**Federal Aviation
Administration**

Southwest Region
Arkansas, Louisiana,
New Mexico, Oklahoma,
Texas

Fort Worth, Texas 76193-0000

JUL 1 6 2004

Ed Gabsewics
Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, LA 70002

RE: Solicitation of Views on State Project No. 700-99-0302

Dear Mr. Gabsewics:

Thank you for the opportunity to review and comment on your upcoming environmental and engineering constraints study for the construction of a limited-access hurricane evacuation route. At this time, the Federal Aviation Administration (FAA) cannot identify any possible adverse effects to any of our facilities due to this project.

In the future, if any new or proposed structure in the area protrudes higher than any existing structures, Form 7460-1, Notice of Proposed Construction or Alteration, may be required. This form is located at www.faa.gov. Please ensure compliance with "Subpart B – Notice of Construction or Alteration" of the Federal Aviation Regulations, Part 77, Objects Affecting Navigable Airspace, if applicable.

If you have any questions or comments, please contact Mr. Mike Goodrich, Environmental/Integration Engineering Section, ASW-472, at 817-222-4724.

Jo L. Tarrh
Manager, Airway Facilities Division,
Southwest Region

Department of Public Safety and Corrections

Public Safety Services

KATHLEEN BABINEAUX BLANCO
GOVERNOR

HENRY L. WHITEHORN, COLONEL
DEPUTY SECRETARY, PUBLIC SAFETY SERVICES
SUPERINTENDENT, OFFICE OF STATE POLICE

July 9, 2004

RECEIVED
JUL 14 2004
BUCHART-HORN, INC.

RECEIVED
JUL 14 2004
BUCHART-HORN, INC.

Ed Gabsewics, Project Manager,
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, Louisiana 70002

Ref: State Project No. 700-99-0302
Houma-Thibodaux to La. 3127 Connection

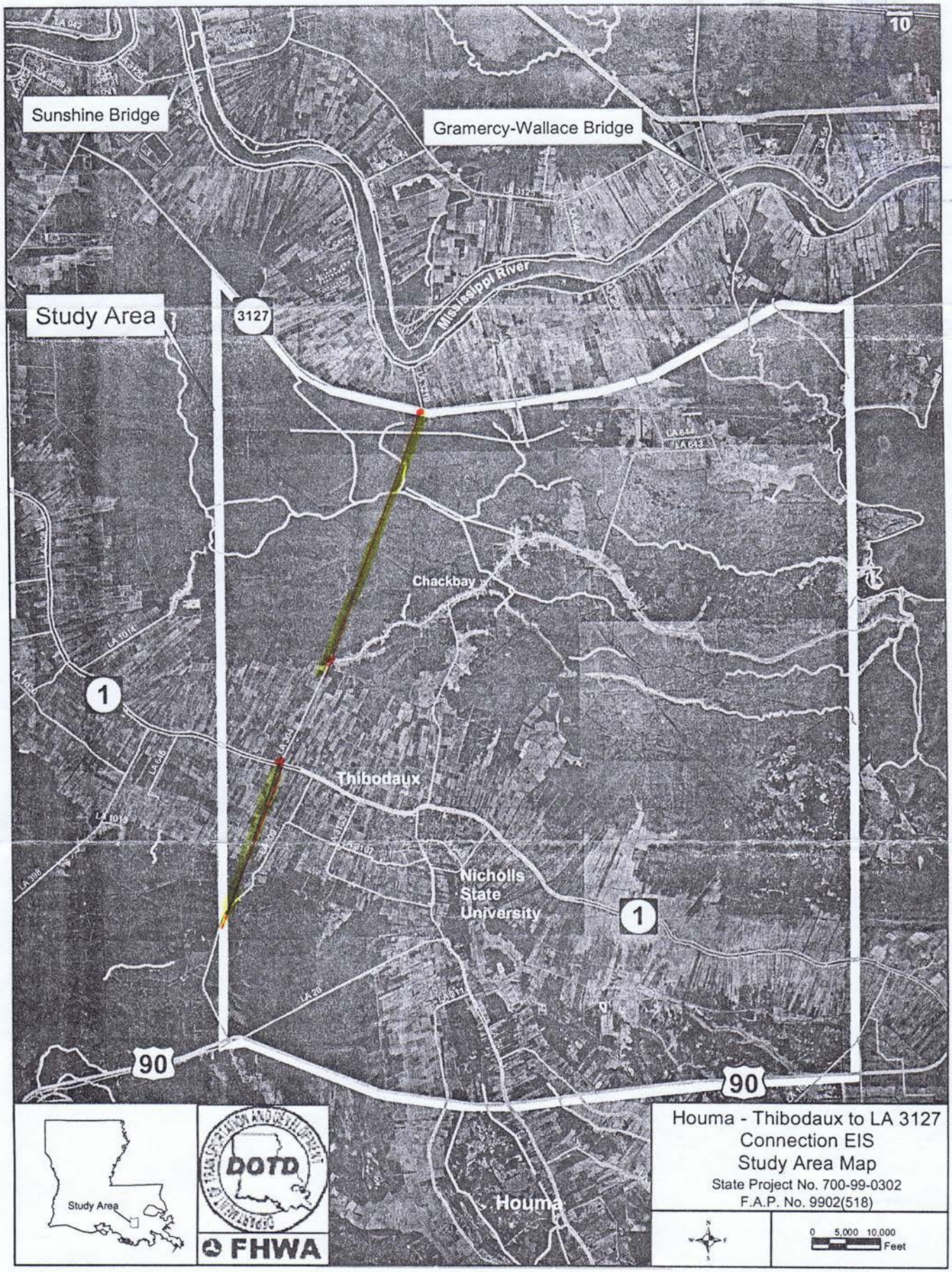
Mr. Gabsewics:

Thank you for the opportunity to provide input on the proposed enhancement project to construct a limited-access hurricane evacuation route connecting the Houma-Thibodaux area to La. Hwy. 3127. After reviewing the information provided and using my personal knowledge and experiences of evacuation problems in the proposed areas, I feel that the proposed evacuation route would be a positive addition for residents of Terrebonne and Lafourche Parishes, as well as other areas of south Louisiana. After reviewing the provided map I feel that the most practical route would take the highway close to the Gramercy-Wallace Bridge. Use of the Gramercy-Wallace Bridge would facilitate evacuation routing to I-55 via U.S. 61 and Interstate 10. This would allow evacuees to move northward rather than sending them to congested areas near Baton Rouge using I-10. I feel that an additional evacuation route for this area of south Louisiana is vital to ensure a safe and expedient evacuation in the event of a hurricane or other type of disaster and would have a positive safety impact for residents.

If you have any questions or need further information please feel free to call.

Sincerely,

Captain Ralph D. Mitchell, Jr.
Commander
Louisiana State Police-Troop C



Henry Adolph
4388 Hwy. 1
Napoleonville, LA 70390-8506

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245
www.dotd.louisiana.gov
Floodplain Management
(225) 274-4354

KATHLEEN BABINEAUX BLANCO
GOVERNOR

JOHNNY B. BRADBERRY
SECRETARY

July 7, 2004

RECEIVED
JUL 09 2004
BUCHART-HORN, INC.

STATE PROJECT N0.:700-99-0302
HOUMA-THIBODAUX TO LA 3127 CONNECTION
NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION EIS
TERREBONNE, LAFOURCHE, ASSUMPTION, ST. JAMES,
ST. JOHN THE BAPTIST, ST. CHARLES AND ST. MARY PARISHES

Mr. Ed Gabsewics
Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, LA 70002

SUBJECT: SOLICITATION OF VIEWS

Dear Mr. Gabsewics:

In response to your request, it appears that the project areas will cover several areas of Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles and St. Mary parishes, that are both in and out of Special Flood Hazard Areas.

During and after the North-South Corridor/Hurricane Evacuation EIS project, consideration must be given to the occurrence of a base flood inundation. At this time, consideration should also be given to the responsibility for clearing debris and keeping the area cleared so as not to interfere with its function.

In order to assure compliance with parish requirements for the National Flood Insurance Program (NFIP) and so that appropriate permits are obtained please contact the floodplain administrators for these areas. The contact person for the Parishes are as follows: **Terrebonne;** Mr. Pat Gordon, P. O. Box 6097, Houma, LA, 70361, **Lafourche;** Ms. Kyra Hendricks, P. O. Box 1661, Raceland, LA, 70394, **Assumption;** John Boudreaux, P. O. Box 520, Napoleonville, LA, 70390, **St. James;** Mr. Jody Chenier, P. O. Box 106, Convent, LA, 70723, **St. John the Baptist;** Ms. Adrienne Labat, 102 East Airline Hwy., LaPlace, LA, 70068, **St. Charles;** Mr. Earl Matherne, P. O. Box 302, Hahnville, LA, 70057, and **St. Mary;** Mr. Carol J. Vinning, Courthouse, 5th floor, Franklin, LA, 70538.

We thank you for the opportunity to comment on this project. If you need additional information, please contact our office at (225) 274-4354.

Sincerely,

Lorie Davis

Lorie Davis
Flood Insurance Program Coordinator

pc: Mr. Pat Gordon, **Terrebonne**
Ms. Kyra Hendricks, **Lafourche**
Mr. John Boudreaux, **Assumption**
Mr. Jody Chenier, **St. James**
Ms. Adrienne Labat, **St. John the Baptist**
Mr. Earl Matherne, **St. Charles**
Mr. Carol J. Vinning, **St. Mary**

State of Louisiana
Department of Environmental Quality

KATHLEEN BABINEAUX BLANCO
GOVERNOR

MIKE D. McDANIEL, Ph.D.
SECRETARY

July 6, 2004

RECEIVED
JUL 08 2004
BUCHART-HORN, INC.

Mr. Edward S. Gabsewics, C.E.P.
Buchart-Horn, Inc.
3330 West Esplanade Ave., Ste. 201
Metairie, LA 70002

RE: State Project No. 700-99-0302; BH Project No. 76027-00; Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary Parishes
Proposed Houma-Thibodaux to LA 3127 Connection (North-South Corridor/Hurricane Evacuation) EIS

Dear Mr. Gabsewics:

The Department of Environmental Quality, Office of Environmental Assessment and Office of Environmental Services has received your request for comments on the above referenced project.

There were no objections based on the limited information submitted to us. However, the following comments have been included and/or attached. Should you encounter a problem during the implementation of this project, please make the appropriate notification to this Department.

The Office of Environmental Services has made the following comments:

Please see the letter from the Office of Environmental Services, Permits Division.

"Any approval, or letter of no objection, granted by LDEQ is relevant only to the granting of funds for the proposed project. This does not relieve the applicant of his responsibility for obtaining any other permits or approvals necessary from LDEQ or other State, Local, or Federal agencies, nor does it influence the Department's ultimate decision on those permits or approvals. A copy of our brochure on construction best management practices is enclosed."

Currently, Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles and St. Mary Parishes are classified as attainment parishes with the National Ambient Air Quality Standards for all criteria air pollutants.

Please forward all future requests to the Louisiana Department of Environmental Quality, Office of Management and Finance, Contracts & Grants, P. O. Box 4303, Baton Rouge, LA 70821-4303, and we will expedite your request as quickly as possible. Should you need any additional information please call me at (225) 219-3815.

Sincerely,

Lisa Miller

Lisa L. Miller
Contracts & Grants

llm:vhn
Enclosures

State of Louisiana

Department of Environmental Quality

KATHLEEN BABINEAUX BLANCO
GOVERNOR

JUN 16 2004

MIKE D. McDANIEL, Ph.D.
SECRETARY

RECEIVED
JUL 08 2004
BUCHART-HORN, INC.

Mr. Edward S. Gabsewics, C.E.P.
Buchart-Horn, Inc.
Suite 201, 3330 West Esplanade Ave.
Metairie, LA 70002

RE: Project No. 700-99-0302; proposed Houma-Thibodaux to LA 3127 Connection (North-South Corridor/Hurricane Evacuation) EIS; Buchart-Horn, Inc.; Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary Parishes

Dear Mr. Gabsewics:

The Department of Environmental Quality (DEQ), Office of Environmental Services (OES), has received your request for comments dated June 11, 2004, regarding the above referenced project. Based on an in-house review of the information you have submitted to this Department, the OES has no objection to the implementation of the proposed project, provided that the issues listed below are satisfied if required. Please note that no field investigation was conducted on this project.

Please note that any project that results in a discharge to waters of the state may require submittal of a Louisiana Pollutant Discharge Elimination System permit application.

This Office recommends that you investigate the following requirements that may impact your proposed project:

1. if any of the proposed work is located in wetlands or other areas subject to the jurisdiction of the U.S. Army Corps of Engineers, you should contact the Corps in order to apply for any necessary permits;
2. if a permit is required from the Corps, a Water Quality Certification from OES may also be required;
3. all precautions should be observed to protect the groundwater of the region (SEE ATTACHMENT);
4. all precautions should be observed to control nonpoint source pollution from construction activities (SEE ATTACHMENT); and
5. the Department of Environmental Quality (DEQ), has stormwater general permits for construction areas equal to or greater than one acre. It is recommended that you contact Yvonne Wingate at (225) 219-3111 to determine whether your proposed

improvements are covered under these general permits.

If you have any questions, please contact Jim Delahoussaye at (225) 219-3002.

Sincerely,

Jim Delahoussaye

Jim Delahoussaye
Environmental Scientist Senior
Permits Division

JD\ar
Attachment

c:

Capital/Southeast Regional Office
Surveillance Division

REGGIE P. DUPRE, JR.
District 20

P. O. Box 3893
Houma, Louisiana 70361
Telephone: (985) 876-9902
Fax: (985) 873-2016

STATE OF LOUISIANA
SENATE

COMMITTEES:

Senate & Governmental Affairs Vice Chairman
Judiciary A
Revenue & Fiscal Affairs
Transportation, Highways & Public Works
Select Committee on Coastal Restoration & Flood Control Chairman

July 1, 2004

Ed Gabsewics, Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, LA 70002

RE: State Project No. 700-99-0302
Houma-Thibodaux to LA 3127 Connection
(North-South Corridor/Hurricane Evacuation) EIS

Dear Mr. Gabsewics:

I am very pleased to hear that DOTD has finally initiated the EIS for the North-South Hurricane Evacuation Corridor. I have always been a staunch supporter of this project. I represent approximately 120,000 citizens in Lafourche and Terrebonne Parishes. My district is one of the most vulnerable for hurricanes tidal surges. This project will provide safe evacuation to approximately 300,000 of south Louisiana citizens.

Two years ago, my two parishes were struck by Tropical Storm Isidore and Hurricane Lili within two weeks. Had Hurricane Lili continued straight for Morgan City at the original Category 4 strength, most of my district would have faced a tidal surge of approximately 14 foot above sea level. Considering the average height of the homes in my district is only 7 ft. above sea level, over 90% of the structures in my area would have been under 7 foot of water. I feel Hurricane Lili was a wake up call to us public officials. There are currently no adequate North-south highways to evacuate South Central Louisiana.

About two years ago a route study was done on this project. I personally prefer the most eastern route which would line up the Gramercy-Wallace Bridge to U.S. 90 on the Lafourche/Terrebonne border (Bayou Blue area). It is obvious that we may have to consider tolls to construct this vital highway. A direct link to the Gramercy-Wallace Bridge would have more traffic counts to justify tolls, if necessary. Furthermore, the Gramercy-Wallace Bridge connects with I-10 much closer to I-55 for our citiens wishing to travel north out of harms way. I will try to participate at one of the future meetings planned for this project.

Sincerely,

Reggie P. Dupre, Jr.
State Senator
District 20

cc: Members of the Terrebonne & Lafourche State Delegation
Charlotte Randolph, Lafourche Parish President
Don Schwab, Terrebonne Parish President
Johnny Bradberry, Secretary, DOTD
Kandy Theriot, Houma-Terrebonne Chamber of Commerce
Kathy Terracina, Thibodaux Chamber of Commerce
Lin Kiger, Chamber of Lafourche & the Bayou Region

Gabsewics, Edward

From: Franklin Police Department [swat@teche.net]
Sent: Thursday, July 01, 2004 1:19 PM
To: Gabsewics, Edward
Subject: STATE PROJECT NO. 700-99-0302

THE ABOVE PROJECT SHOULD HAVE NO IMPACT WITH THE FRANKLIN POLICE DEPARTMENT AS WE SEE IT.

CPT JIMMY BROUSSARD
FRANKLIN POLICE DEPT
FRANKLIN, LA.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

July 8, 2004

F/SER44/RH:jk
225/389-0508

Mr. Vincent G. Russo, Jr.
Environmental Engineer Administrator
Louisiana Department of Transportation and Development
Post Office Box 94245
Baton Rouge, Louisiana 70804-9245

Dear Mr. Russo:

The National Marine Fisheries Service (NOAA Fisheries) has reviewed the project information transmitted in the Solicitation of Views identified below. The resources affected are not ones for which NOAA Fisheries is responsible. Therefore, we have no comments to provide regarding this project.

STATE PROJECT NO.	LOCATION	NOTICE DATE	DUE DATE
283-09-0114	Jefferson	06-01-04	07-20-04
700-45-0108	St Charles	05-14-04	07-02-04
700-99-0302	Terrebonne, et al	06-24-04	07-30-04

Sincerely,

for Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE
DALLAS, TEXAS 75202-2733

NOTICE

The Ground Water/UIC Section, Region 6 U.S. Environmental Protection Agency (EPA) has received a description of the following project:

State Project No. 700-99-0302
FAP No. HP-9902(518)
Houma-Thibodaux to
LA 3127 Connection
North-South Corridor/
Hurricane Evacuation EIS
Terrebonne, Lafourche, Assumption,
St. James, St. John the Baptist,
St. Charles and St. Mary Parishes, Louisiana

In administering the sole source aquifer (SSA) program under Section 1424 of the Safe Drinking Water Act our Office performs evaluations of projects with federal financial assistance which are located over a designated sole source aquifer.

Based on the information provided, we have concluded that the project does not lie within the boundaries of a designated sole source aquifer and is thus not eligible for review under the SSA program.

For further information on this determination or on the sole source aquifer program, please contact the project evaluator listed below.

Project evaluated by: Clay Chesney
(214) 665-7128.

Date: July 8, 2004

HP-4402(518)

JMP ___
WCF ___
PJM ___

United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

July 2, 2004

Mr. William A. Sussmann
Division Administrator
Federal Highway Administration
5304 Flanders Drive, Suite A
Baton Rouge, Louisiana 70808

Re: Notice of Intent for Proposal to Construct the North-South Hurricane Evacuation Corridor (ER 04/430)

The U.S. Fish and Wildlife Service (Service) has reviewed the subject document and provides the following comments in response to the Federal Highway Administration's June 7, 2004, Federal Register Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for the proposed construction of the North-South Hurricane Evacuation Corridor. That project would be located in Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, St. Mary, and Terrebonne Parishes, Louisiana. The new 4-lane highway would be approximately 23 miles long, and would connect U.S. Highway 90, near Houma, Louisiana, and Louisiana Highway 3127, near St. James, Louisiana, via new interchanges. The Service offers the following comments in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), the Migratory Bird Treaty Act (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.), the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), and the National Environmental Policy Act (NEPA) of 1969 (83 Stat. 852, as amended; 42 U.S.C. 4321 et seq.).

General Comments

The forthcoming draft EIS should fully evaluate impacts of the proposed project on significant, fish and wildlife resources. Within the proposed study area, those resources potentially include threatened and endangered species and their habitats, migratory birds, wetland habitats, and interjurisdictional fishes. Because the evaluation of potential project effects on fish and wildlife resources will be a key factor in determining the least environmentally damaging project alignment, we are pleased to provide the following specific scoping-level comments.

Specific Comments

Portions of the proposed project may be located in areas that are inhabited by the threatened bald eagle (*Haliaeetus leucocephalus*). Federally listed as threatened, bald eagles nest in Louisiana

from October through mid-May. Eagles typically nest in bald cypress trees near fresh to intermediate marshes or open water in the southeastern Parishes. Areas with high numbers of nests include the Lake Verret Basin south to Houma, the southern marsh/ridge complex from Houma to Bayou Vista, the north shore of Lake Pontchartrain, and the Lake Salvador area. Eagles also winter and infrequently nest near large lakes in central and northern Louisiana. Major threats to the species include habitat alteration, human disturbance, and environmental contaminants (i.e., organochlorine pesticides and lead).

Bald eagles usually return to the same nest year after year, but they may also use alternate nests in the same general vicinity in different years. Bald eagles are most vulnerable to disturbance during courtship, nest building, egg laying, incubation, and brooding (roughly the first 12 weeks of the nesting cycle). Disturbance during this critical period may lead to nest abandonment, cracked and chilled eggs, and exposure of small young to the elements. Human activity near a nest late in the nesting cycle may also cause flightless birds to jump from the nest tree, thus reducing their chance of survival. If bald eagle nests are located within or adjacent to the proposed alternative we recommend you contact the Lafayette, Louisiana, Field Office at 337/291-3100.

In accordance with Section 7 of the ESA, the draft EIS should contain a Biological Assessment of the proposed project effects on the threatened bald eagle, together with the rationale for the Federal Highway Administration's determination of whether the proposed project is likely (or not likely) to adversely affect that species. For further information regarding endangered species, please contact our Lafayette, Louisiana, Field Office at the above-referenced telephone number.

Depending on its final alignment, wading bird nesting colonies could potentially be impacted by project-related construction activities. Within Louisiana, colonies not currently listed in the database maintained by the Louisiana Department of Wildlife and Fisheries may be present within the potential alignments, and undocumented colonies may exist elsewhere throughout the study area. That Louisiana database is updated primarily by monitoring the colony sites that were previously surveyed during the 1980s. Until a comprehensive survey is conducted to determine the location of newly-established nesting colonies, we recommend that a qualified biologist inspect the proposed alignments for the presence of undocumented nesting colonies prior to the selection of the preferred alternative. That survey should focus on early successional scrub/shrub and forested swamp wetlands, as these are most commonly inhabited by colonial nesting wadingbirds. If colony sites are located within or adjacent to the proposed route, the Service's Lafayette, Louisiana, Field Office should be contacted for additional recommendations to ensure that those colonies are protected during the nesting season.

Implementation of the proposed project would likely result in the placement of fill in wetlands; therefore, Clean Water Act Section 404 permits may be necessary. We recommend that the New Orleans District, U.S. Army Corps of Engineers be contacted for a complete jurisdictional wetland delineation of the proposed project. If the Corps determines that the proposed project is within their regulatory jurisdiction, additional Service comments regarding permit issuance may be provided in response to the corresponding Public Notice(s). Wetland and aquatic habitats that would potentially be impacted by the proposed project, and that are of particular concern to the Service (based primarily on their quality, extent, and habitat value for Federal trust species), include: Bayou Chevreuil, Bayou Citamon, Bayou Cutoff, Bayou Grand Coteau, Bayou

Lafourche, Bayou Lassene, Grand Bayou, and the Rathborne Swamp. Accordingly, the forthcoming draft EIS should fully evaluate project-related wetland impacts and identify any necessary mitigation measures that would be implemented to avoid, reduce, or compensate for those impacts.

We appreciate the opportunity to provide comments during the early planning stages of the proposed project. Please contact Mr. Derek Hamilton of our Lafayette, Louisiana, Field Office (337/291-3138) if further information is needed.

Sincerely,

Russell C. Watson
Supervisor
Louisiana Field Office

cc: U.S. Department of the Interior, Office of Environmental Policy and Compliance
U.S. Fish and Wildlife Service, Atlanta, GA
Louisiana Department of Transportation and Development
Louisiana Department of Wildlife and Fisheries, Natural Heritage Program

Appendix D.
Alternative Screening and Analysis

NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Alternative Screening and Analysis

September 2013

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

Alternatives Analysis

The Build Alternatives

In conjunction with the Louisiana Department of Transportation and Development (LADOTD) and the Federal Highway Administration (FHWA), the project team developed guidelines for the engineering design criteria used in developing the alternatives for the Houma-Thibodaux to LA 3127 Connection. The LADOTD Roadway Design Procedures and Details (2009) and the American Association of State Highway and Transportation Officials (AASHTO) "Green Book" (2004) were used to establish engineering design criteria that complies with state and federal guidelines for vehicle safety and mobility. For the purpose of developing the preliminary alternatives, it was assumed that all new location alternatives would be a four-lane divided, limited-access freeway with a minimum corridor width of 300 feet. This assumption for the need of a minimum corridor width of 300 feet was confirmed through traffic forecasts and modeling. The development of alternatives was broken down into three phases.

The first phase used Quantm™ Alignment Optimization Software (Quantm™) to develop conceptual routes within the study area. Quantm™ is a route optimization tool that allows users to test numerous corridors and segments using a defined set of criteria. Criteria was developed and used by engineers, planners, and environmental scientists in order to create a wide range of corridors. These corridors were then evaluated against the purpose and need of the project. This analysis identified a reasonable number of corridors (3) to be further analyzed.

The second phase presented the proposed reasonable corridors to the various federal, state, and local agencies, including the public, to provide feedback and issues and concerns associated with these three proposed corridors. This phase included the development of additional corridors which required the expansion the original study area. The request to develop additional corridors came through the feedback, comments and requests, provided by the resource agencies.

The third and final phase reviewed the recommended corridors against the purpose and need, to define the corridors that would be further analyzed within the Draft Environmental Impact Statement (DEIS).

Other Alternatives Taken Into Consideration

CEQ regulations require that an agency will "include the alternative of no-action" as one of the alternatives considered in an EIS (40 CFR 1502.14[d]). Federal Highway Administration (FHWA) guidance states that a No-build Alternative "may be a reasonable alternative, especially where the impacts are high and the need is relatively minor.

The No-build Alternative allows the evaluation of the study area in its current condition without potential impacts related to construction of the proposed project. The No-build Alternative establishes a baseline of traffic, environmental, and human conditions to which the build alternatives can be compared.

The No-build Alternative consists of the anticipated roadway network and forecast land use in 2035 without the completion of a build alternative.

In addition to the No-build, FHWA guidance requires the analysis of Transportation System Management (TSM). TSM can be defined as improvements to an existing transportation facility or facilities that improve the flow of traffic. These types of improvements include but are not limited to optimization of signal timing, intersection improvements, turning lanes, and grade separation.

Phase I Analysis

The first phase used to determine potential corridors utilized Quantm™ Alignment Optimization Software (Quantm™) as the starting point in developing conceptual corridors within the study area.

Quantm™ uses a Global Information System (GIS) platform as a planning analysis tool, which generates possible corridors between two fixed points. The software navigates routes through a geographical area using a digital terrain model (having x, y, and z coordinates), unit costs, engineering design criteria (e.g., side slopes, maximum/minimum grades), and user defined constraints. Quantm™ will generate numerous corridor segments which allow engineers, planners, and environmental scientists the opportunity to balance potential environmental and social impacts against project costs and engineering factors.

The criteria, used by Quantm™ to identify the preliminary corridors, can be grouped into two main categories engineering and environmental. The tool then applied the defined criteria to generate potential corridor segments for the Houma-Thibodaux to LA 3127 Connection. The two main categories including the criteria used are discussed in further detail below.

Engineering

Engineering criteria consisted of items such as design speed, horizontal and vertical geometry, typical sections, and right-of-way widths (see **Table 3.1**). In addition to creating potential corridors, Quantm™ can also approximate the construction cost of each corridor. By supplying Quantm™ with cost data such as pavement costs, cut and fill costs, bridging costs, and overpass costs, allowed for the consistent analysis of construction costs among the various corridor segments.

Table 3.1 Louisiana Department of Transportation and Development Design Standards for F3 Freeway

Item No.	Item	F3 Freeway
1	Design Speed (mph)	70
2	Level of Service	B
3	Number of Travel Lanes (Minimum	4
4	Width of Travel Lanes (ft)	12
5	Width of Shoulders (Where Used)(ft)	
	(A) Outside	10
	(B) Inside	6
6	Type of Shoulders	Paved
7	Width of Median (ft)	
	(A) Depressed	72-100
	(B) Continuous Barrier (4 lane)	15
	Continuous Barrier (6 lane)	27
8	Fore Slope Ratio	6:1
9	Back Slope Ratio	4:1
10	Pavement Cross Slope (ft per ft)	0.025
11	Minimum Stopping Sight Distance (ft)	730
12	Maximum Superelevation (ft per ft)	0.10
13	Minimum Radius (ft) (w/Superelevation 10%)	1700
14	Maximum Grade (%)	3

Table 3.1 Louisiana Department of Transportation and Development Design Standards for F3 Freeway

Item No.	Item	F3 Freeway
15	Minimum Vertical Clearance (ft)	16
16	Width of Right of Way (ft)	
	(A) Depressed Median	300-330
	(B) Median Barrier	As Needed
	© Minimum From Edge of Bridge Structure	15-20
17	Bridge Design Load	AASHTO
18	Width of Bridges (ft)(Min.)(Face to Face Bridge Rail)	Roadway Width
19	Guardrail Required at Bridge Ends	Yes
20	Horizontal Clearance(ft)(From Edge of Travel Lane)	
	(A) 4:1 Foreslope	N/A
	(B) 6:1 Foreslope	34

Environmental

Since Quantm™ allows for the use of spatial data sets, environmental spatial data was used as part of the criteria in determining potential corridors. Various spatial data sets were acquired from numerous state, federal, and local agencies and provided to the project team (refer to **Table 3.2**). These data sets included streams, roads, wetlands, threatened and endangered species habitat, urban boundaries, historic resources, archeological resources, water bodies, etc. Areas that are of high importance and/or areas of concern can be identified as locations to be completely avoided during corridor development. Data sets used as constraints (areas that would be avoided by the tool) are shown in Table 3.2.

Table 3.2 Constraints Data

Feature	Source
SOCIO ECONOMIC DATA	
CENSUS DATA	
Census Tracts	TIGER
Census Blocks	TIGER
Census Block Groups	TIGER
LAND USE	
Land Cover Map	USGS
Land Cover GAP	USGS
Land Cover nd Change Data	NOAA
FACILITIES	
Offices of Family Support	OFS
Care Facilities	LDHH
Hospitals	LDHH
Emergency Evacuation Routes	LaDOTD
Colleges	LDHH
School Districts	LOSCO
Airports	LaDOTD
Schools	LDHH
Passenger Rail Facilities	LaDOTD
Day Cares	LDSS
INFRASTRUCTURE	
State Highways	LaDOTD
BOUNDARIES	
State Boundary	LaDOTD
Parishes	LaDOTD
DOTD Districts	LaDOTD
Economic Development Zones	LAGIC

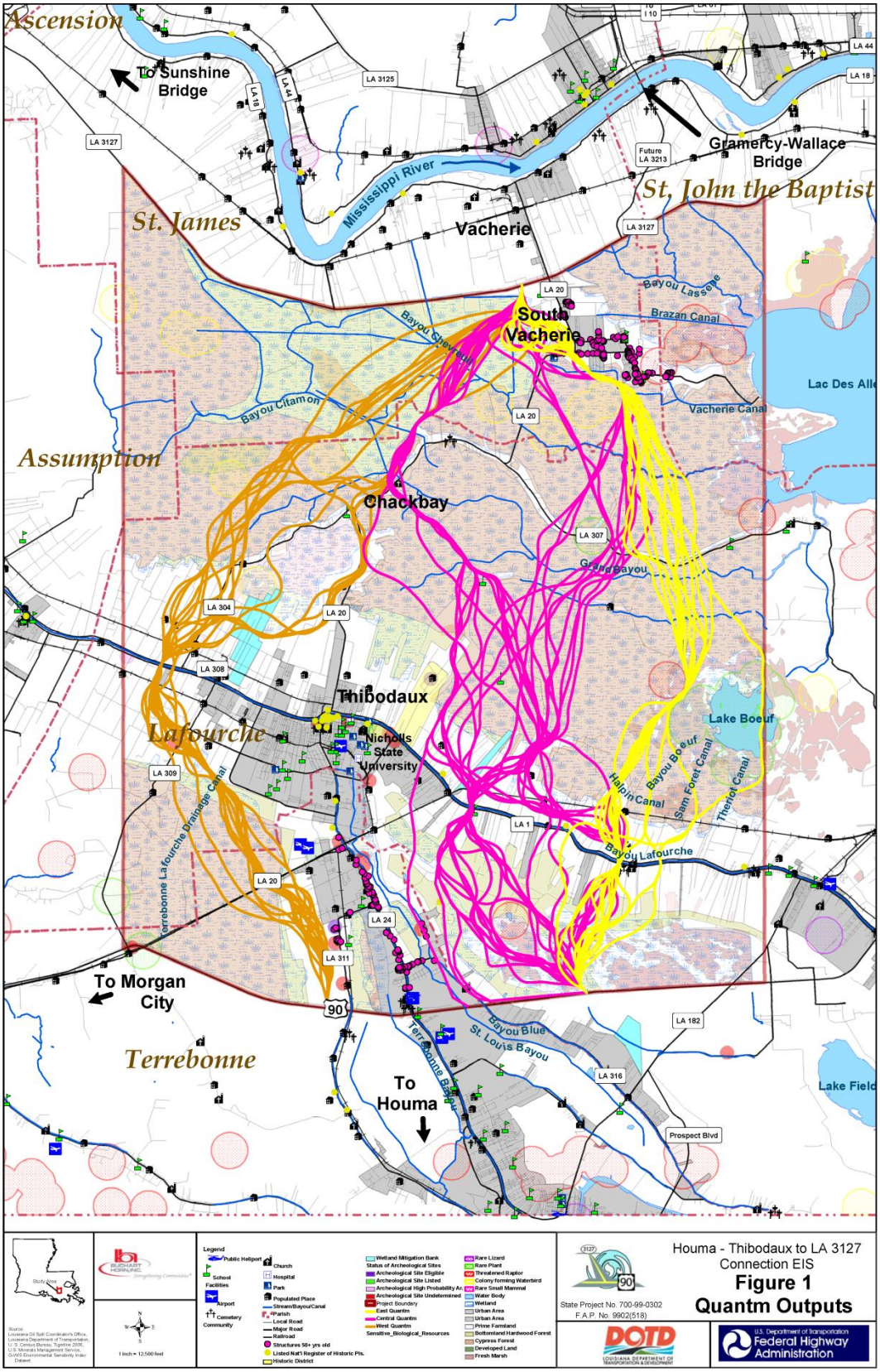
Table 3.2 Constraints Data

Feature	Source
HAZARDOUS MATERIAL	
Facility Registry System Sites	EPA
Pipelines	USGS
PROTECTED LANDS	
Sensitivity Index SE features in coastal La	MMS
Sensitivity Index Natl Heritage Program Database	MMS
Sensitivity Index Managed Lands	MMS
Wildlife Management Areas and Refuges	LDWF
State Parks	LaDOTD
State Lands and Buildings	SLABS
Navigated Waterways	LOSCO
National Wildlife Refuges	USFWS
National Parks	USNPS
Scenic Rivers	LDWF
Scenic Rivers	LDWF
Wetland Conservation	USFWS
Federal Lands	EPA
AIR QUALITY	
Nonattainment Areas	EPA

Aerial photography was also obtained in May 2011 for the Houma-Thibodaux to LA 3127 Connection study area. This photography along with the GIS data served as the base data for the alternatives development process.

Additionally, environmental costs were also assumed for use in Quantm™. These environmental costs assumed that the roadway would be elevated 10 feet on a bridge type structure over cypress swamps and bottomland hardwood wetlands and that the proposed project would avoid fresh marsh wetlands to the greatest extent possible. Additional mitigation costs were assigned to impacted wetlands. Mitigation costs were calculated using a 3 to 1 ratio and included $10,000 per acre for Bottomland Hardwoods, $15,000 per acre for Cypress swamp, and $20,000 per acre for Fresh Marsh. It should be noted that mitigation costs for archeological sites were also applied based on best professional judgment.

Prior to Quantm™ generating the potential corridors, beginning and end points must be established. Traffic analysis was used heavily in determining the best location for these termini points. The project team established both beginning and end points, a southern terminus along US Route 90, and a northern terminus point along LA 3127. Quantm™ then investigated millions of variations (sometimes hundreds of millions), simultaneously considering all of the criteria, constraints, and cost inputs. The tool provided 50 corridors spatially distributed across the study area that met the defined search criteria. These initial 50 corridors included costs, earthworks, and cross section profiles. The 50 corridors were then analyzed by the project team to identify the corridors that best met the purpose and need of the project and also had the lowest impacts and costs. The preferred corridors were then further refined using additional constraint data and cost information which were input into Quantm™. The program maintained the preferred corridors, but adjusted the routes slightly to fit the refined criteria (see **Figure 1**).


Ascension
To Sunshine Bridge
LA 3125
LA 18
LA 44
LA 3127
Mississippi River
Gramercy-Wallace Bridge
Future LA 3213
St. John the Baptist
St. James
Vacherie
South Vacherie
LA 20
Bayou Lasseye
Brazan Canal
Bayou Sherman
Bayou Citamon
Vacherie Canal
Lac Des Alle
Assumption
Chackbay
LA 307
Grand Bayou
LA 304
LA 308
Thibodaux
Lafourche
Nicholls State University
LA 309
Lake Boeuf
Halpin Canal
Bayou Boeuf
Sam Forest Canal
Thenot Canal
LA 1
Bayou Lafourche
Terrebonne Lafourche Drainage Canal
LA 24
LA 311
To Morgan City
90
Bayou Blue
St. Louis Bayou
Terrebonne Bayou
LA 182
LA 316
Terrebonne
To Houma
Lake Field
Prospect Blvd
Study Area
Source: Louisiana Oil Spill Coordinator's Office, Louisiana Department of Transportation, U. S. Census Bureau, Tigerline 2005, U.S. Minerals Management Service, GIWIS Environmental Sensitivity Index Dataset
1 inch = 12,500 feet
Legend
Public Heliport
School Facilities
Airport
Cemetery
Church
Hospital
Park
Populated Place
Stream/Bayou/Canal
Parish
Local Road
Major Road
Railroad
Structures 50+ yrs old
Listed Nat'l Register of Historic Pls.
Historic District
Wetland Mitigation Bank
Status of Archeological Sites
Archeological Site Eligible
Archeological Site Listed
Archeological High Probability Ar
Archeological Site Undetermined
Project Boundary
East Quantm
Central Quantm
West Quantm
Sensitive_Biological_Resources
Rare Lizard
Rare Plant
Threatened Raptor
Colony forming Waterbird
Rare Small Mammal
Water Body
Wetland
Urban Area
Urban Area
Prime Farmland
Bottomland Hardwood Forest
Cypress Forest
Developed Land
Fresh Marsh
Houma - Thibodaux to LA 3127 Connection EIS
Figure 1
Quantm Outputs
State Project No. 700-99-0302
F.A.P. No. 9902(518)
DOTD
Louisiana Department of Transportation & Development
U.S. Department of Transportation
Federal Highway Administration

After the preliminary screening of the millions of corridors generated by Quantm™, the remaining corridors were grouped into three areas that will be referred to as footprints. The three main footprints were identified as the Western Footprint (orange), the Central Footprint (pink), and the Eastern Footprint (yellow) (see **Figure 2**).

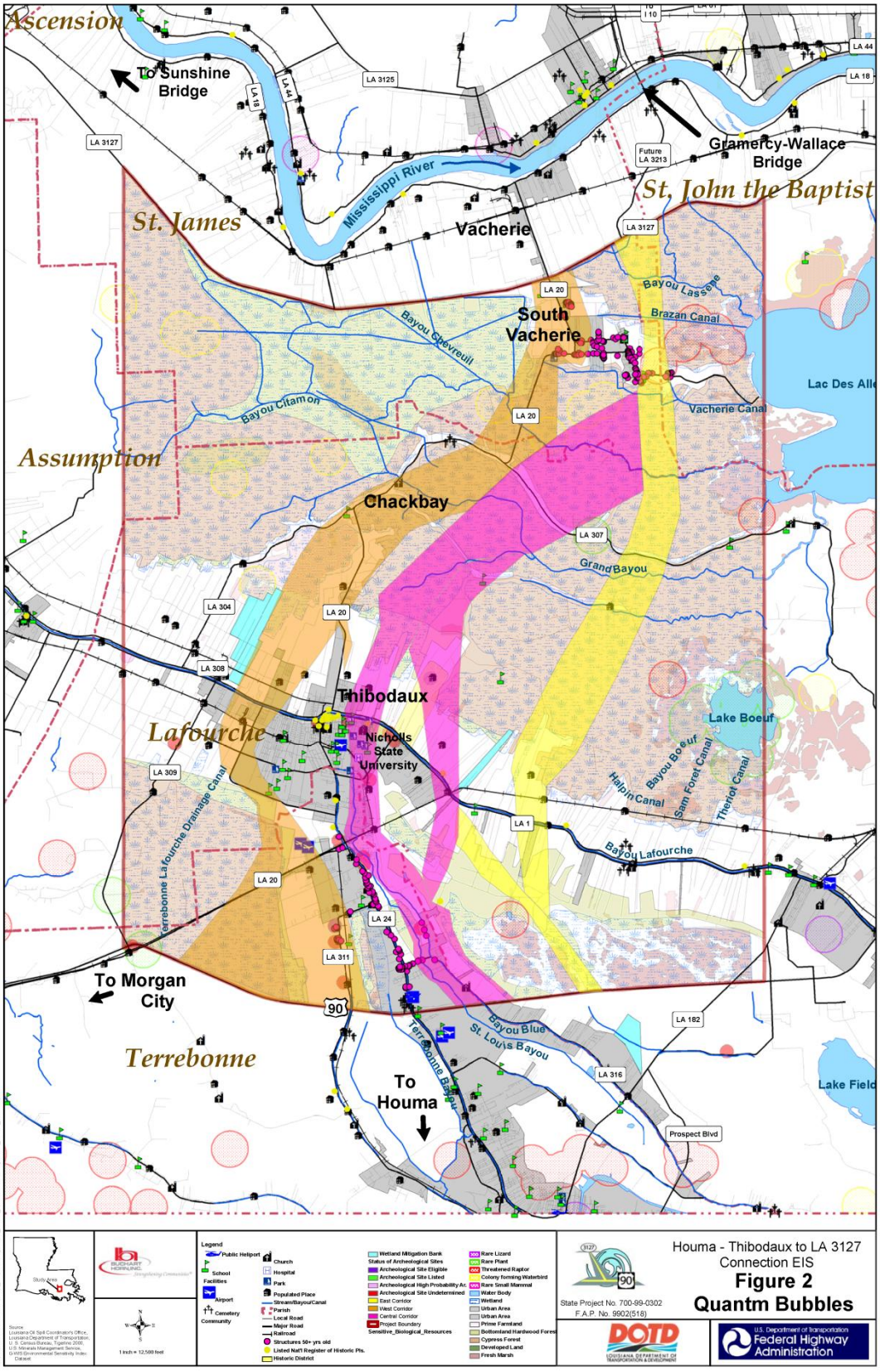
These three general footprints contain 33 corridor segments identified as meeting the project criteria. The project team, using their knowledge of the study area while including agency and public input, analyzed various combinations of these 33 corridor segments. After analyzing numerous combinations, the project team developed 13 continuous alignments. It should be noted that some of the combinations share common segments.

The 13 potential alignments consisted of 3 western alignments, 5 central alignments and 5 eastern alignments. Impacts associated with each of the 13 alignments were tabulated and analyzed to identify the alignments that had the least impacts.

The engineering team then evaluated all 13 alignments and took into account issues that included: the existing roadway network, key transportation links, primary access roadways, and secondary access roadways in order to further refine the alignments. A total of 15 potential alignments were identified. The 15 potential alignments consisted of 4 western alignments, 10 central alignments, and 1 eastern alignment (see Level 1 Screening Criteria on next page, **Figure 3** and **Figure 4**).

The final analysis identifying the alignments that had the least amount of impacts and included the modification of the alignments based on the engineering analysis identified a total of three potential alignments, one for each footprint that was identified (see Level 1 Screening Criteria below, Figure 3 and Figure 4). These three potential alignments defined below:

- Alignment 1 (Western Alignment)—Alignment 1 was originally identified as segments AOPBCDNEG.
- Alignment 2 (Central Alignment)—Alignment 2 was originally identified as segments HIJNEG.
- Alignment 3 (Eastern Alignment)—Alignment 3 was not originally identified in the initial screening using Quantm™ due to the environmental constraints applied in the screening process. To ensure there were no additional benefits to the existing transportation network from an alignment located within the eastern part of the study area (from a traffic standpoint), an eastern alignment was included. As a result, the eastern alignment was identified and included as part of the traffic analysis.


Ascension
To Sunshine Bridge
LA 18
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To Morgan City
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St. Louis Bayou
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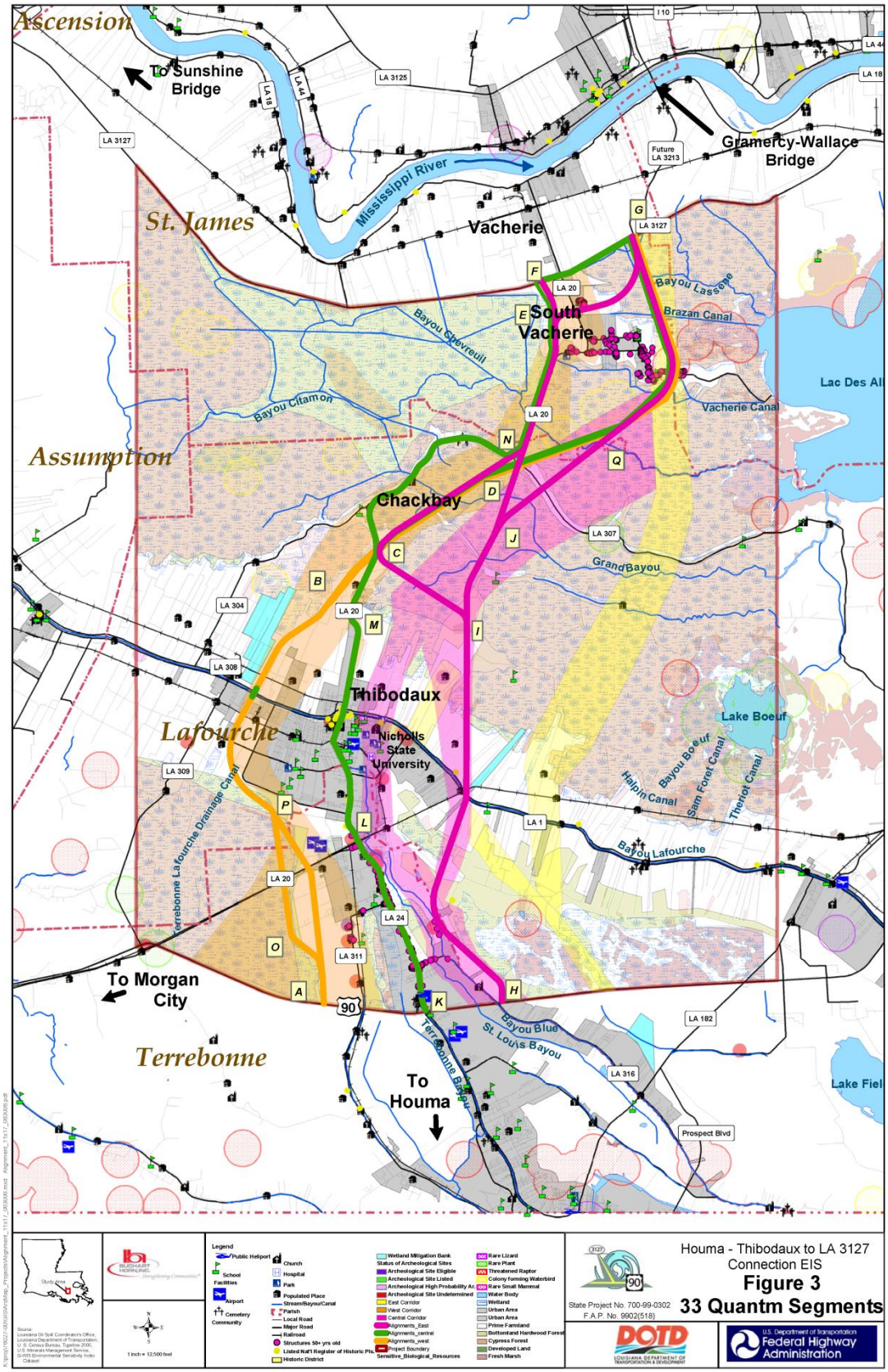
Terrebonne Bayou
To Houma
LA 316
Lake Field
Prospect Blvd
Study Area
Source: Louisiana Oil Spill Coordinator's Office, Louisiana Department of Transportation, Louisiana Bureau, Tigerline 2000, U.S. Minerals Management Service, G-WIS Environmental Sensitivity Index Dataset
1 inch = 12,500 feet
Legend
Public Heliport
School
Facilities
Airport
Cemetery
Community
Church
Hospital
Park
Populated Place
Stream/Bayou/Canal
Parish
Local Road
Major Road
Railroad
Structures 50+ yrs old
Listed Nat'l Register of Historic Pls.
Historic District
Wetland Mitigation Bank
Status of Archeological Sites
Archeological Site Eligible
Archeological Site Listed
Archeological High Probability Ar.
Archeological Site Undetermined
East Corridor
West Corridor
Central Corridor
Project Boundary
Sensitive_Biological_Resources
Rare Lizard
Rare Plant
Threatened Raptor
Colony forming Waterbird
Rare Small Mammal
Water Body
Wetland
Urban Area
Urban Area
Prime Farmland
Bottomland Hardwood Fores
Cypress Forest
Developed Land
Fresh Marsh
Houma - Thibodaux to LA 3127
Connection EIS
Figure 2
Quantm Bubbles
State Project No. 700-99-0302
F.A.P. No. 9902(518)
DOTD
Louisiana Department of Transportation & Development
U.S. Department of Transportation
Federal Highway Administration

North South Alternative Corridor Impacts

CATEGORIES	CONSTRAINTS (OTHER)									ARCHEOLOGICAL & HISTORICAL							ENDANGERED SPECIES					ENVIRONMENTAL CONSTRAINTS						HUMAN ENVIRON MENT	ROW		COST		
Segment	Airport/Heliport	School	Developed Land (acres)	Cemetery	Church	Hospital	Park	Populated Place	Railroad (linear feet)	Historic District (acres)	Structures 50+ yrs old - eligibility undetermined	Listed on the Nat'l Register of Historic Places	Archeological Site Eligible (acres)	Archeological Site Listed (acres)	Archeological High Probability (acres)	Archeological Site Undetermined (acres)	Rare Lizard (acres)	Rare Plant (acres)	Threatened Raptor (acres)	Colony forming Waterbird (acres)	Rare Small Animal (area in acres)	Wetland Mitigation Bank (acres)	Prime Farmland (acres)	Bottomland Hardwood (acres)	Cypress Forest (acres)	Stream/Bayou/Canal (linear feet)	Fresh Marsh (acres)	Total Structures	Total at grade ROW (acres)	Total on Structure ROW (acres)	Wetland Mitigation Cost	Total Alignment Cost	Total Project Cost
AO (Structure)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0		15			
BC (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	0	2	0	0	0	53				
BC (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0		7			
CD (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	1	0	0	2	17				
CD (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	42	433	0	0		50			
DN (Grade)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	59	414	0	1	71				
DQ (Grade)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	10	0	155	2875	0	34	166				
EF (Structure)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	0	0	0		27			
EG (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	0	0	0	0	0	62				
EG (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	36	681	0	0		42			
FG (Structure)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	0		54			
HI (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	261	67	53	7806	11	67	381				
HI (S)	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	763	0	9		13			
IC (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	41				
IC (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	44	289	0	0		45			
IJ (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	21				
IJ (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	34	207	0	4		36			
JN (Grade)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	99	939	0	23	111				
JQ (Grade)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	175	1859	0	7	184				
KL (Structure)	0	0	10	0	0	0	0	0	0	0	1	0	0	0	0	7	0	0	0	0	0	0	95	0	0	2353	0	81		95			
LM (Structure)	0	0	36	0	0	0	0	0	320	0	0	2	0	0	0	5	0	0	0	0	0	0	125	0	0	164	0	88		125			
MB (Structure)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	342	0	0		20			
MN (Structure)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	0	44	876	0	96		172			
NE (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	13				
NE (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	47	164	0	0		52			
OP (E) (G)	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109	18	36	829	3	12	163				
OP (E) (S)	0	0	2	0	0	0	0	0	161	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6		6			
OP (W) (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	16	113	337	3	0	165				
OP (W) (S)	0	0	0	0	0	0	0	0	169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	169	0	0		6			
PB (G)	0	0	0	0	0	0	0	0	601	0	0	0	0	0	0	0	0	0	0	0	0	0	218	45	0	324	0	0	263				
PB (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	160	0	0		5			
QG (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	34	0	0	137	0	1	34				
QG (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	7	0	84	1121	0	1		91			
Alignments																																	
Western (East side)																																	
AOPBCDQG	0	0	5	0	0	0	0	0	762	0	0	0	0	0	0	0	0	0	33	25	0	0	489	63	319	5880	3	56	696	174	$3,851,941	$669,140,038	$672,991,979
AOPBCDNEG	0	0	5	0	0	0	0	0	762	0	0	0	0	0	0	0	0	0	0	0	0	0	536	63	221	3004	3	21	642	177	$2,870,988	$562,739,184	$565,610,172
AOPBCDNEFG	0	0	5	0	0	0	0	0	762	0	0	0	0	0	0	0	0	0	0	0	0	0	516	64	185	2323	3	21	581	216	$2,516,036	$506,101,714	$508,617,749
Western (West side)																																	
AOPBCDQG	0	0	0	0	0	0	0	0	770	0	0	0	0	0	0	0	0	0	33	25	0	0	410	61	403	5557	3	38	698	174	$4,667,790	$668,553,810	$673,221,600
AOPBCDNEG	0	0	0	0	0	0	0	0	770	0	0	0	0	0	0	0	0	0	0	0	62	0	396	61	305	2681	3	3	645	177	$3,686,837	$535,852,956	$539,539,793
AOPBCDNEFG	0	0	0	0	0	0	0	0	770	0	0	0	0	0	0	0	0	0	0	0	0	0	437	61	269	2001	3	3	583	217	$3,331,884	$505,215,485	$508,547,370
La 20																																	
KLMNEFG	0	0	46	1	0	0	0	0	320	0	1	2	0	0	0	12	0	0	0	0	0	0	414	0	90	3557	0	265	13	525	$908,284	$558,137,879	$559,046,163
KLMNEG	0	0	46	1	0	0	0	0	320	0	1	2	0	0	0	12	0	0	0	0	0	0	434	0	126	4238	0	265	75	486	$1,263,237	$515,158,409	$516,421,646
KLMBCDQG	0	0	46	0	0	0	0	0	320	0	1	2	0	0	0	12	0	0	33	25	0	0	376	0	284	7426	0	207	270	388	$2,837,796	$704,006,626	$706,844,422
KLMBCDNEG	0	0	46	0	0	0	0	0	320	0	1	2	0	0	0	12	0	0	0	0	0	0	423	0	186	4550	0	172	216	391	$1,856,843	$571,105,772	$572,962,615
KLMBCDNEFG	0	0	46	0	0	0	0	0	320	0	1	2	0	0	0	12	0	0	0	0	0	0	403	0	150	3870	0	172	154	431	$1,501,890	$566,468,302	$567,970,192
Eastern																																	
HIJQG	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	2	0	0	33	0	0	0	325	67	367	11893	11	89	621	139	$4,459,192	$594,483,264	$598,942,455
HIJNEFG	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	2	0	0	0	0	0	0	353	68	254	9878	11	103	527	182	$3,330,900	$487,054,165	$490,385,065
HIJNEG	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	2	0	0	0	0	0	0	373	67	290	10559	11	103	589	142	$3,685,853	$517,691,635	$521,377,488
HICDNEFG	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	2	0	0	0	0	0	0	401	68	245	9868	11	79	523	241	$3,236,389	$594,281,633	$597,518,021
HICDNEG	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	2	0	0	0	0	0	0	422	67	281	10549	11	79	585	202	$3,591,342	$572,919,103	$576,510,444


Ascension
To Sunshine Bridge
Mississippi River
Gramercy-Wallace Bridge
St. James
Vacherie
South Vacherie
Bayou Lassepe
Brazan Canal
Bayou Chevreuil
Bayou Citamon
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Lafourche
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Theriot Canal
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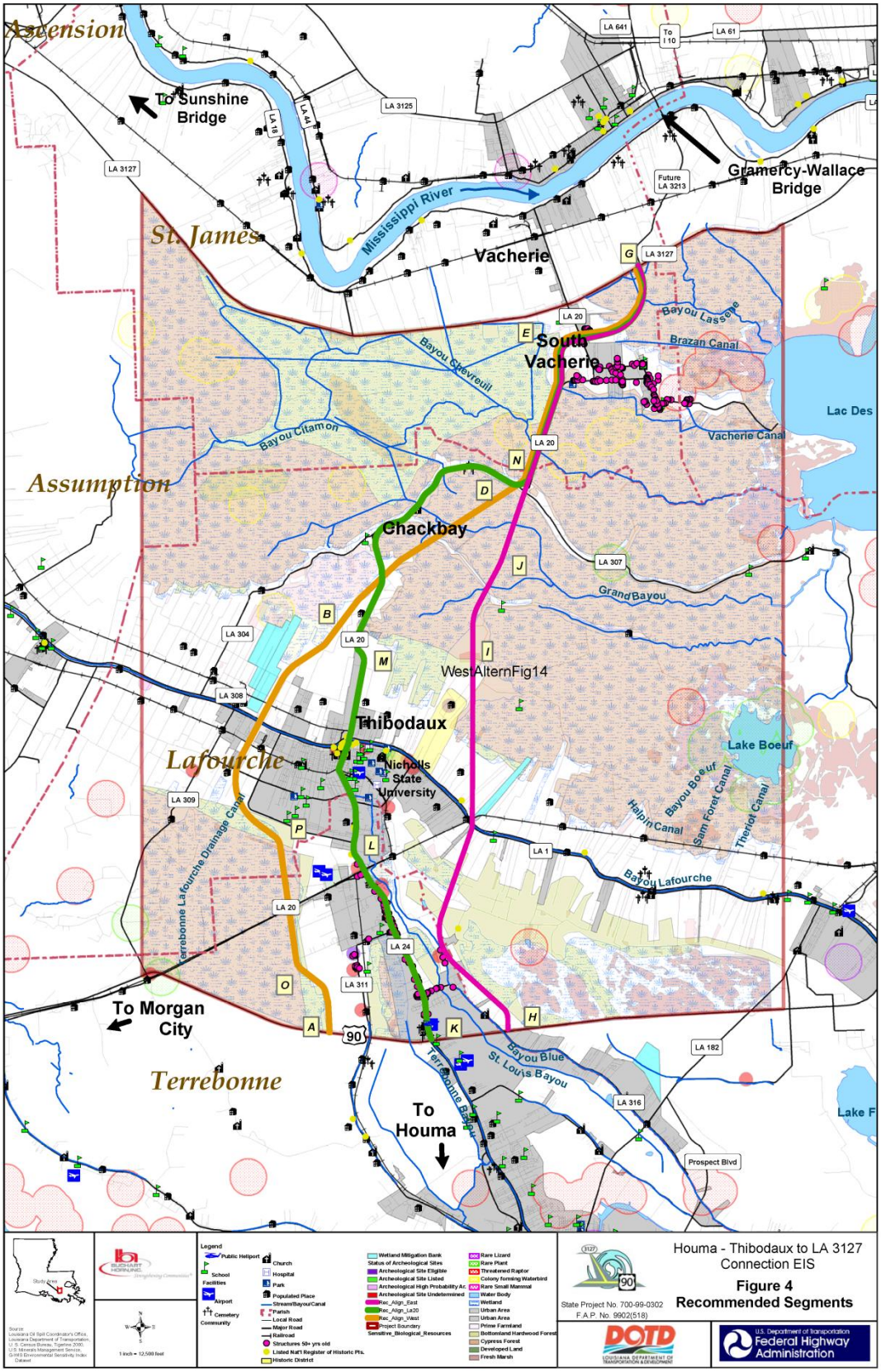
Terrebonne Lafourche Drainage Canal
Bayou Lafourche
To Morgan City
Terrebonne
Bayou Blue
St. Louis Bayou
Terrebonne Bayou
To Houma
Prospect Blvd
Legend
Houma - Thibodaux to LA 3127 Connection EIS
Figure 3
33 Quantm Segments
State Project No. 700-99-0302
F.A.P. No. 9902(518)
DOTD
Federal Highway Administration


Ascension
To Sunshine Bridge
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LA 3125
LA 641
To I 10
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Mississippi River
Future LA 3213
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St. James
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South Vacherie
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Brazan Canal
Bayou Choveuil
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Bayou Citamon
Vacherie Canal
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Thibodaux
Lafourche
Nicholls State University
Lake Boeuf
LA 309
Terrebonne Lafourche Drainage Canal
Bayou Boeuf
Sam Forest Canal
Theriot Canal
Halpin Canal
P
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LA 1
Bayou Lafourche
LA 20
LA 24
LA 311
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K
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Terrebonne
Terrebonne Bay
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LA 316
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Study Area
Source: Louisiana Oil Spill Coordinator's Office, Louisiana Department of Transportation, U. S. Census Bureau, Tigerline 2000, U.S. Minerals Management Service, S-MIS Environmental Sensitivity Index Dataset
BURKHART HORSLUNDE Strengthening Communities
1 inch = 12,500 feet
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Facilities
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Cemetery
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Hospital
Park
Populated Place
Stream/Bayou/Canal
Parish
Local Road
Major Road
Railroad
Structures 50+ yrs old
Listed Nat'l Register of Historic Pls.
Historic District
Wetland Mitigation Bank
Status of Archeological Sites
Archeological Site Eligible
Archeological Site Listed
Archeological High Probability Ar.
Archeological Site Undetermined
Rec_Align_East
Rec_Align_La20
Rec_Align_West
Project Boundary
Sensitive_Biological_Resources
Rare Lizard
Rare Plant
Threatened Raptor
Colony forming Waterbird
Rare Small Mammal
Water Body
Wetland
Urban Area
Urban Area
Prime Farmland
Bottomland Hardwood Forest
Cypress Forest
Developed Land
Fresh Marsh
Houma - Thibodaux to LA 3127 Connection EIS
Figure 4
Recommended Segments
State Project No. 700-99-0302
F.A.P. No. 9902(518)
DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT
U.S. Department of Transportation
Federal Highway Administration

A toll feasibility study and traffic analysis was conducted for the three reasonable alignments (Alignment 1, Alignment 2, and Alignment 3). The analysis determined that both Alignment 1 (Western Alignment) and Alignment 2 (Central Alignment) would improve system linkage and would provide an effective north-south connection. Alignment 3 (Eastern Alignment) did not provide the same level of improvement to system linkage. As a result, Alignment 3 was removed from further study due to environmental impacts and poor performance in the traffic analysis. This data can be found in the December 2005 Traffic Analysis and the 2005 Houma-Thibodaux LA3127 Connection Preliminary Toll Study.

Phase II Analysis

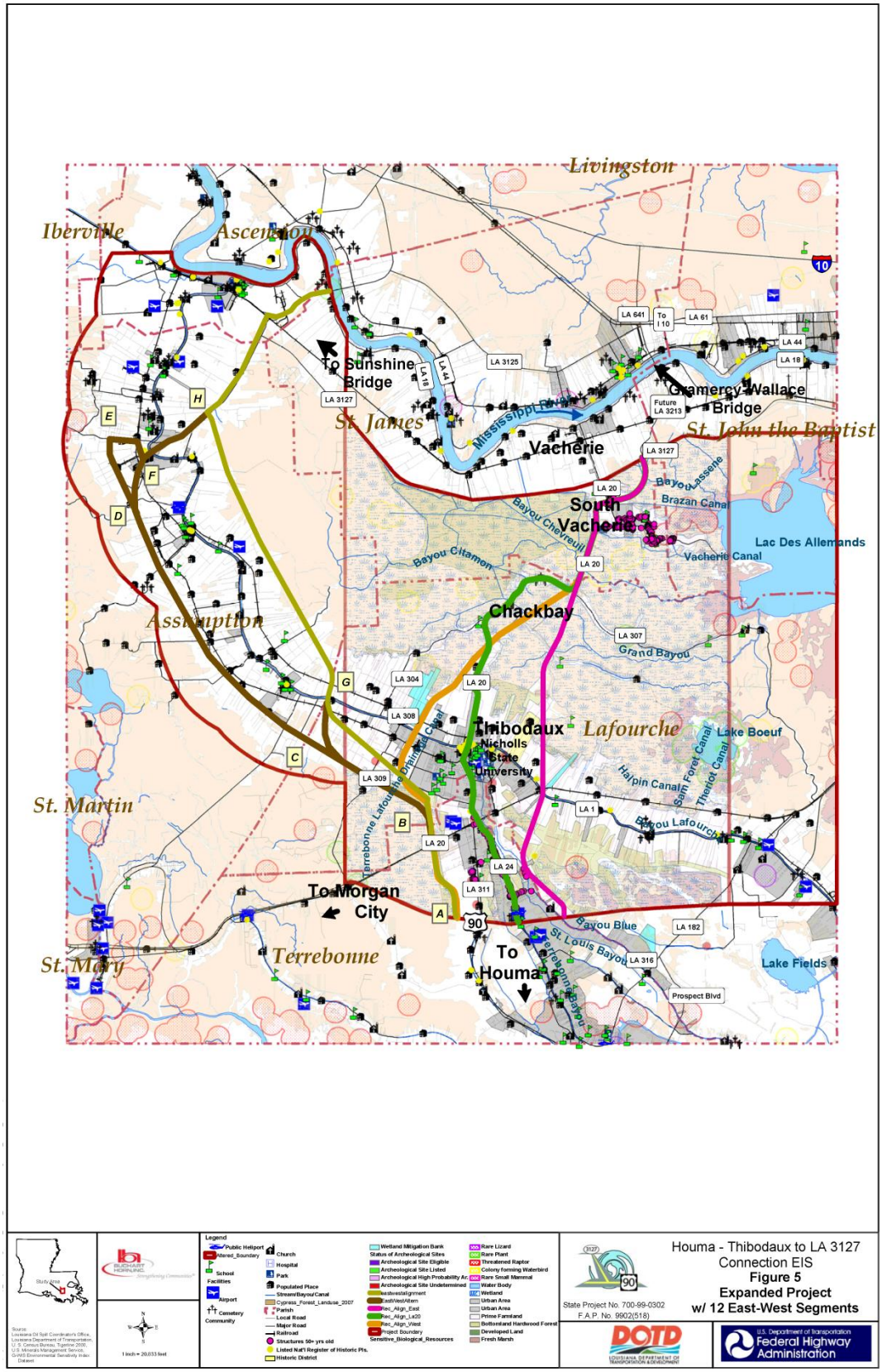
On May 2, 2006 a resource agency meeting was held at the South Central Planning Development Commission. The methodology used to select the three north-south corridors in addition to the traffic analysis and toll study were presented to the agencies at this meeting.

Out of the review process came considerable agency concern that corridors traversing what is known as the Bayou Lafourche Ridge connecting Houma-Thibodaux to the Sunshine Bridge (east-west connections) were not given due consideration as viable options to meet the project's purpose and need. As a result, the agencies requested that east-west alignments be considered for the proposed project.

In April 2007, an additional screening study was conducted which analyzed potential corridors connecting Houma-Thibodaux to the Sunshine Bridge via the Bayou Lafourche Ridge. A total of 14 corridor segments were developed that met the project criteria. The project team analyzed various combinations of these 14 corridor segments and developed 12 continuous alignments (see **Figure 5**). The 12 east-west alignments are shown in brown and gold.

In order to ensure that every potential alignment was evaluated equally, all 25 potential alignments were screened through this new screening study. These 25 alignments include the 13 original north-south alignments and the 12 additional east-west alignments.

Screening criteria was developed and considered based upon the project objectives. Alignments were evaluated against 16 screening criteria categories and ranked on a scale of high, medium, and low. Ratings were based upon the degree that the alignment met or did not meet the project's accepted Purpose and Need and screening criteria. Tables to show the criteria and the individual ratings for each alignment can be found below.



Study Area

Source: Louisiana Oil Spill Coordinator's Office, Louisiana Department of Transportation, U. S. Census Bureau, Tigerline 2000, U.S. Minerals Management Service, GAMS Environmental Sensitivity Index Dataset

BURKHART HORN, INC. Strengthening Communities

1 inch = 20,033 feet

Legend

Public Heliport
Altered_Boundary
School Facilities
Airport
Cemetery
Community
Church
Hospital
Park
Populated Place
Stream/Bayou/Canal
Cypress_Forest_Landuse_2007
Parish
Local Road
Major Road
Railroad
Structures 50+ yrs old
Listed Nat'l Register of Historic Pls.
Historic District
Wetland Mitigation Bank
Status of Archeological Sites
Archeological Site Eligible
Archeological Site Listed
Archeological High Probability Ar.
Archeological Site Undetermined
eastwestalignment
EastWestAltern
Rec_Align_East
Rec_Align_La20
Rec_Align_West
Project Boundary
Sensitive_Biological_Resources
Rare Lizard
Rare Plant
Threatened Raptor
Colony forming Waterbird
Rare Small Mammal
Water Body
Wetland
Urban Area
Urban Area
Prime Farmland
Bottomland Hardwood Forest
Developed Land
Fresh Marsh

State Project No. 700-99-0302
F.A.P. No. 9902(518)

Houma - Thibodaux to LA 3127 Connection EIS
Figure 5
Expanded Project w/ 12 East-West Segments

DOTD Louisiana Department of Transportation & Development

U.S. Department of Transportation Federal Highway Administration

The screening criteria have been arranged under the headings of "Purpose and Need" and "Environmental." The Purpose and Need heading has been further divided into two principle elements: "system linkage" and "hurricane evacuation."

System linkage was evaluated using the following four criteria:

1. Improves north-south connectivity
2. Provides north-south system redundancy
3. Improves north-south capacity
4. Improves access to Interstate 10 and future Interstate 49

Hurricane evacuation was evaluated using the following three criteria:

5. Improves hurricane evacuation from the study area
6. Uniformly distributes traffic between the Sunshine and Gramercy-Wallace Bridges
7. Maximizes efficient use and operation of hurricane evacuation routes and the transportation network

The Environmental heading was further divided into two principle elements; "human" and "natural" environment.

The human environment was evaluated using the following four criteria:

8. Minimizes the disruption of communities
9. Minimizes the disruption of farm operations
10. Minimizes the disruption of economic/commercial activities
11. Optimizes user benefits and costs

The natural environment was evaluated using the following five criteria:

12. Minimizes impacts on NWI Wetlands
13. Minimizes impacts on Bottomland Hardwoods
14. Minimizes impacts on Endangered Species
15. Minimizes impacts on Cypress Forests
16. Minimizes impacts on Freshwater Marshes

ALIGNMENTS	Level 1 Screening Criteria: NORTH-SOUTH ALTERNATIVES																Recommendation for Alternative
	Purpose and Need							Environmental Criteria									
	Sytem Linkage				Hurricane Evacuation			Human				Natural					
	Improves North-South Connectivity	Provides North-South System Redundancy	Improves North-South Capacity	Improves access to I-10 & future I-49	Improves Hurricane Evacuation from Project Study Area	Uniformly distributes traffic between Sunshine and Gramercy Wallace bridges	Maximizes efficient use and operation of Hurricane Evacuation Routes and the Transportation Network	Minimizes Disruption of Communities	Minimizes Disruption of Farm Operations	Minimizes Disruption of Economic/Commercial activities	Optimizes User Benefits	Minimizes impacts on NWI Wetlands	Minimizes impacts on Bottomland Hardwoods	Minimizes impacts on Endangered Species Habitat	Minimizes impacts on Cypress Forests	Minimizes impacts on Freshwater Marshes	
Western (East side)																	
AOPBCDQG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	HIGH	MEDIUM	LOW	LOW	MEDIUM	
AOPBCDNEG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	LOW	MEDIUM	
AOPBCDNEFG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	MEDIUM	MEDIUM	
Western (West side)																	
AOPBCDQG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	MEDIUM	LOW	LOW	MEDIUM	
AOPBCDNEG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	MEDIUM	MEDIUM	LOW	MEDIUM	
AOPBCDNEFG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	MEDIUM	HIGH	LOW	MEDIUM	
La 20																	
KLMNEFG	HIGH	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	LOW	HIGH	LOW	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	
KLMNEG	HIGH	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	LOW	HIGH	LOW	HIGH	HIGH	HIGH	HIGH	MEDIUM	HIGH	
KLMBCDQG	HIGH	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	LOW	HIGH	LOW	HIGH	HIGH	HIGH	LOW	LOW	HIGH	
KLMBCDNEG	HIGH	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	LOW	HIGH	LOW	HIGH	HIGH	HIGH	HIGH	MEDIUM	HIGH	
KLMBCDNEFG	HIGH	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	LOW	HIGH	LOW	HIGH	HIGH	HIGH	HIGH	MEDIUM	HIGH	
Eastern																	
HIJQG	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	MEDIUM	MEDIUM	LOW	LOW	
HIJNEFG	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	MEDIUM	HIGH	LOW	LOW	
HIJNEG	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	MEDIUM	HIGH	LOW	LOW	
HICDNEFG	MEDIUM	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	MEDIUM	HIGH	LOW	LOW	
HICDNEG	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	MEDIUM	HIGH	LOW	LOW	

ALIGNMENTS	Level 1 Screening Criteria: EAST-WEST ALTERNATIVES																Recommendation for Alternative
	Purpose and Need							Environmental Criteria									
	Sytem Linkage				Hurricane Evacuation			Human				Natural					
	Improves North-South Connectivity	Provides North-South System Redundancy	Improves North-South Capacity	Improves access to I-10 & future I-49	Improves Hurricane Evacuation from Project Study Area	Uniformly distributes traffic between Sunshine and Gramercy Wallace bridges	Maximizes efficient use and operation of Hurricane Evacuation Routes and the Transportation Network	Minimizes Disruption of Communities	Minimizes Disruption of Farm Operations	Minimizes Disruption of Economic/Commercial activities	Optimizes User Benefits	Minimizes impacts on NWI Wetlands	Minimizes impacts on Bottomland Hardwoods	Minimizes impacts on Endangered Species Habitat	Minimizes impacts on Cypress Forests	Minimizes impacts on Freshwater Marshes	
SOUTHERN																	
S1	LOW	LOW	LOW	LOW	LOW	LOW	LOW	HIGH	LOW	LOW	LOW	HIGH	LOW	high	MEDIUM	HIGH	
S2	LOW	LOW	LOW	LOW	LOW	LOW	LOW	HIGH	LOW	LOW	LOW	HIGH	LOW	High	MEDIUM	HIGH	
CENTRAL																	
C1	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	LOW	High	MEDIUM	HIGH	
C2	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	HIGH	HIGH	MEDIUM	HIGH	
C3	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	LOW	HIGH	MEDIUM	HIGH	
C4	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	HIGH	High	MEDIUM	HIGH	
C5	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	LOW	HIGH	MEDIUM	HIGH	
C6	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	HIGH	HIGH	MEDIUM	HIGH	
C7	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	LOW	HIGH	MEDIUM	HIGH	
C8	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	HIGH	HIGH	HIGH	MEDIUM	HIGH	
NORTHERN																	
N1	Medium	LOW	LOW	MEDIUM	MEDIUM	LOW	LOW	HIGH	MEDIUM	Medium	MEDIUM	MEDIUM	LOW	HIGH	LOW	MEDIUM	
N2	Medium	LOW	LOW	MEDIUM	MEDIUM	LOW	LOW	HIGH	MEDIUM	Medium	MEDIUM	MEDIUM	HIGH	HIGH	LOW	MEDIUM	

Through the screening process, it was determined that a viable east-west alignment exists, that would connect Houma-Thibodaux to the Sunshine Bridge. The northernmost east-west alignment (N1) provides additional capacity between US90 and I10; however, its inability to provide north-south system redundancy and improved connectivity to the underutilized Gramercy Wallace Bridge makes it less effective than a direct north-south route at achieving the project's stated Purpose and Need.

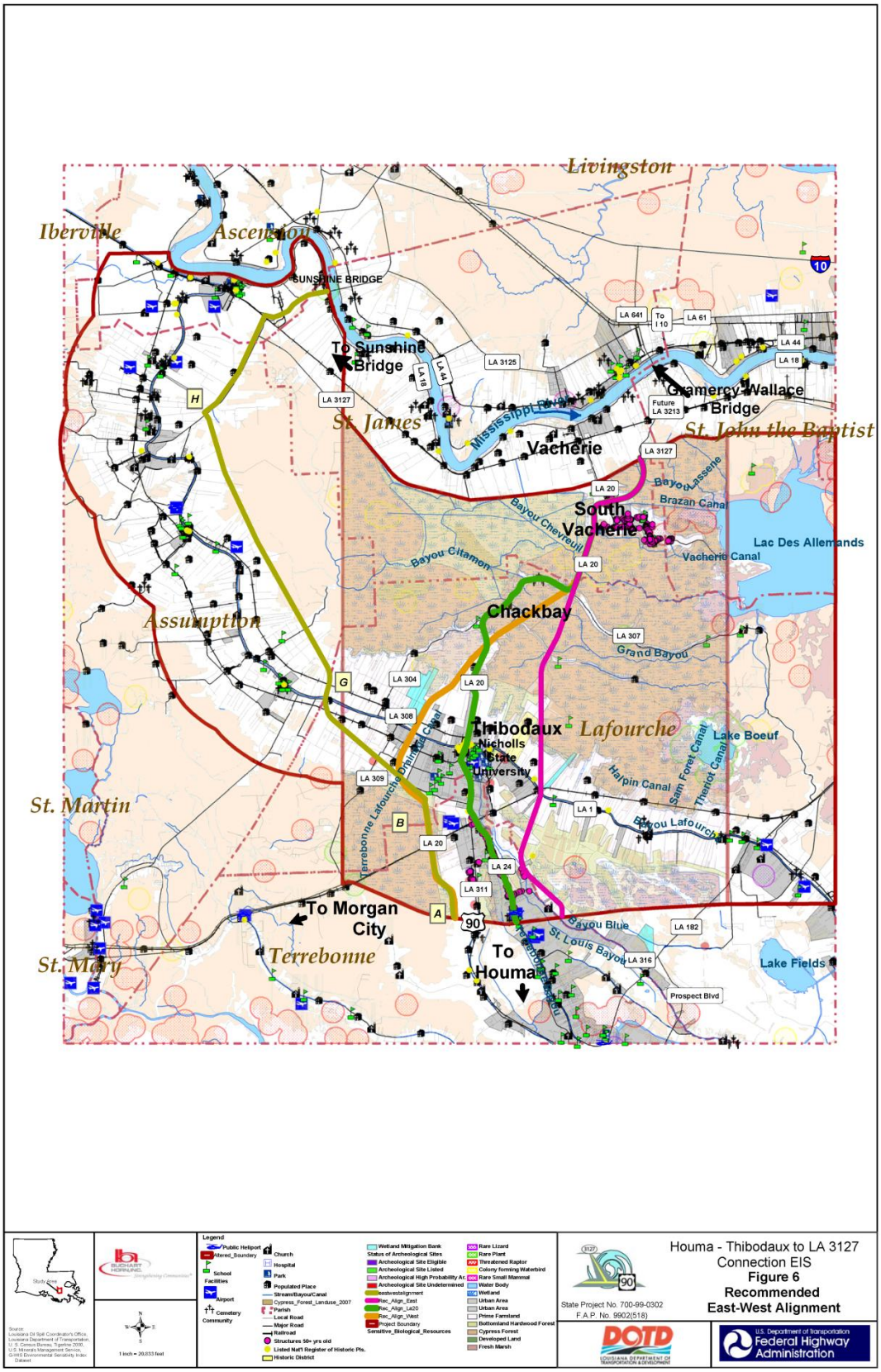
Based on the forecasted regional traffic, the northernmost alignment was considered reasonable and was carried forward to a more detailed level of analysis. Details of the methodology including traffic volumes and analysis can be found in The Final Screening Report, March 2009. A meeting was held with the various Federal, state and local agencies to present the Final Screening Report.

At the agency meeting, three alignments were identified to be carried forward in the project development process. These alignments included the two original alignments (Alignment 1 - Western Alignment and Alignment 2 - Central Alignment) and the new east-west alignment (N1) (see **Figure 6**).

After further evaluation, the LA 20 alignment and the east-west alignment were no longer considered based on impacts and the inability to meet the purpose and need (see **Figure 7**). The western alignment, shown in orange, and the central alignment, shown in pink, were carried forward as viable options.

At this point in the project development process, it was determined to revise and update both the tolling and traffic studies due to the time that had elapsed and changes that may have occurred within the study area. A decision was made to include Alignment 3 (Eastern Alignment) and the East –West alignment that had previously been removed in both the tolling and traffic studies. The decision to include the previously thrown out Eastern Alignment and East-West Alignment was made to ensure that the tolling and traffic analyses remained consistent and to ensure that the revised data had not changed the effectiveness of these alternatives. The alternatives taken into Phase III of the analysis included: (see **Figure 8**)

- Alignment 1 (Phase I – Western Alignment)
- Alignment 2 (Phase I – Central Alignment)
- Alignment 3 (Phase I – Eastern Alignment)
- Alignment 4 (Phase II- East-West)



Legend

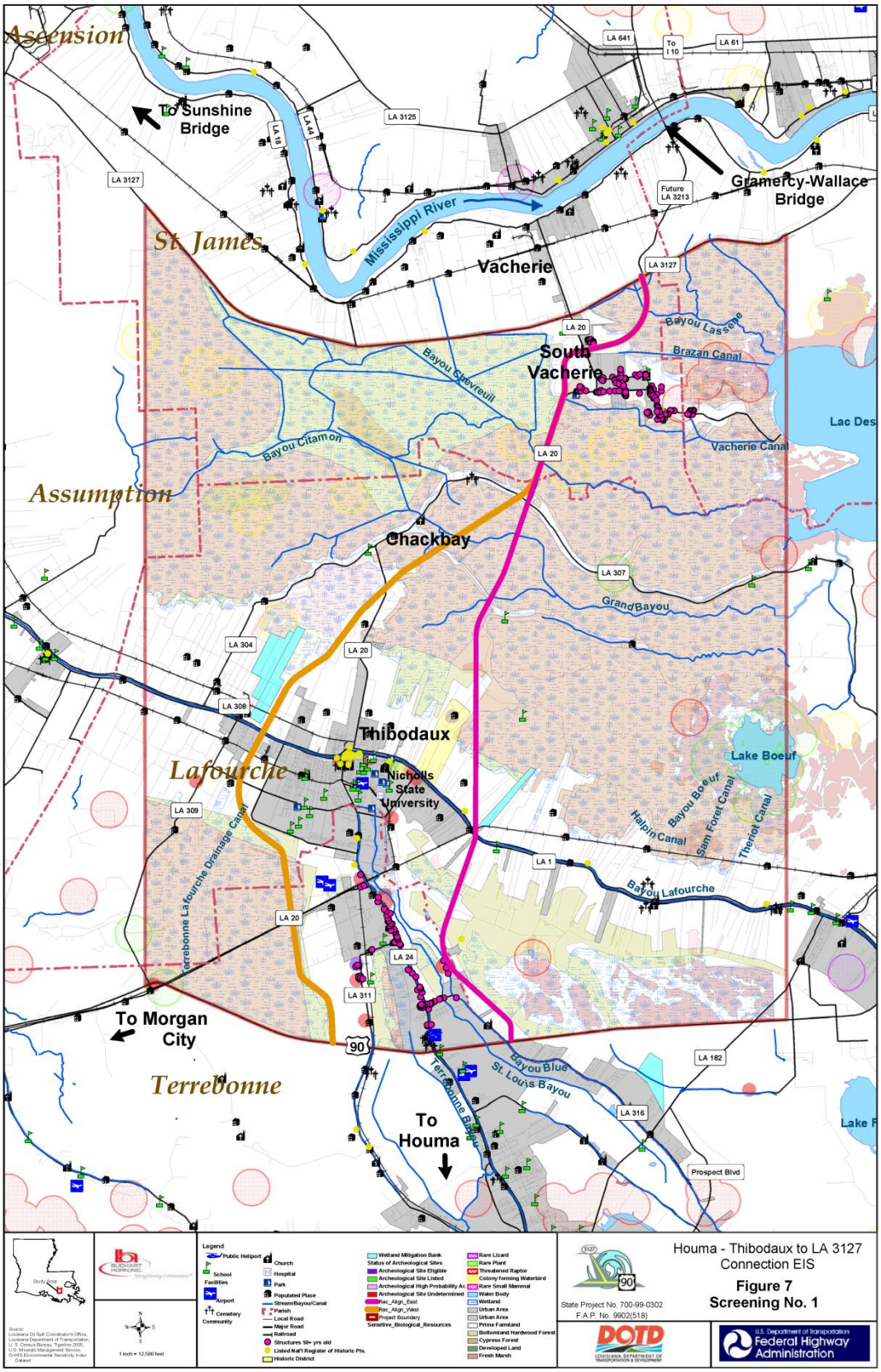
Public Heliport
Cemetery Community
Church
Hospital
Park
Populated Place
Stream/Bayou/Canal
Cypress_Forest_Landuse_2007
Parish
Local Road
Major Road
Railroad
Structures 50+ yrs old
Listed Nat'l Register of Historic Pls.
Historic District
Wetland Mitigation Bank
Status of Archeological Sites
Archeological Site Eligible
Archeological Site Listed
Archeological High Probability Ar
Archeological Site Undetermined
Rare Lizard
Rare Plant
Threatened Raptor
Colony forming Waterbird
Rare Small Mammal
Water Body
Wetland
Urban Area
Urban Area
Prime Farmland
Bottomland Hardwood Forest
Cypress Forest
Developed Land
Fresh Marsh

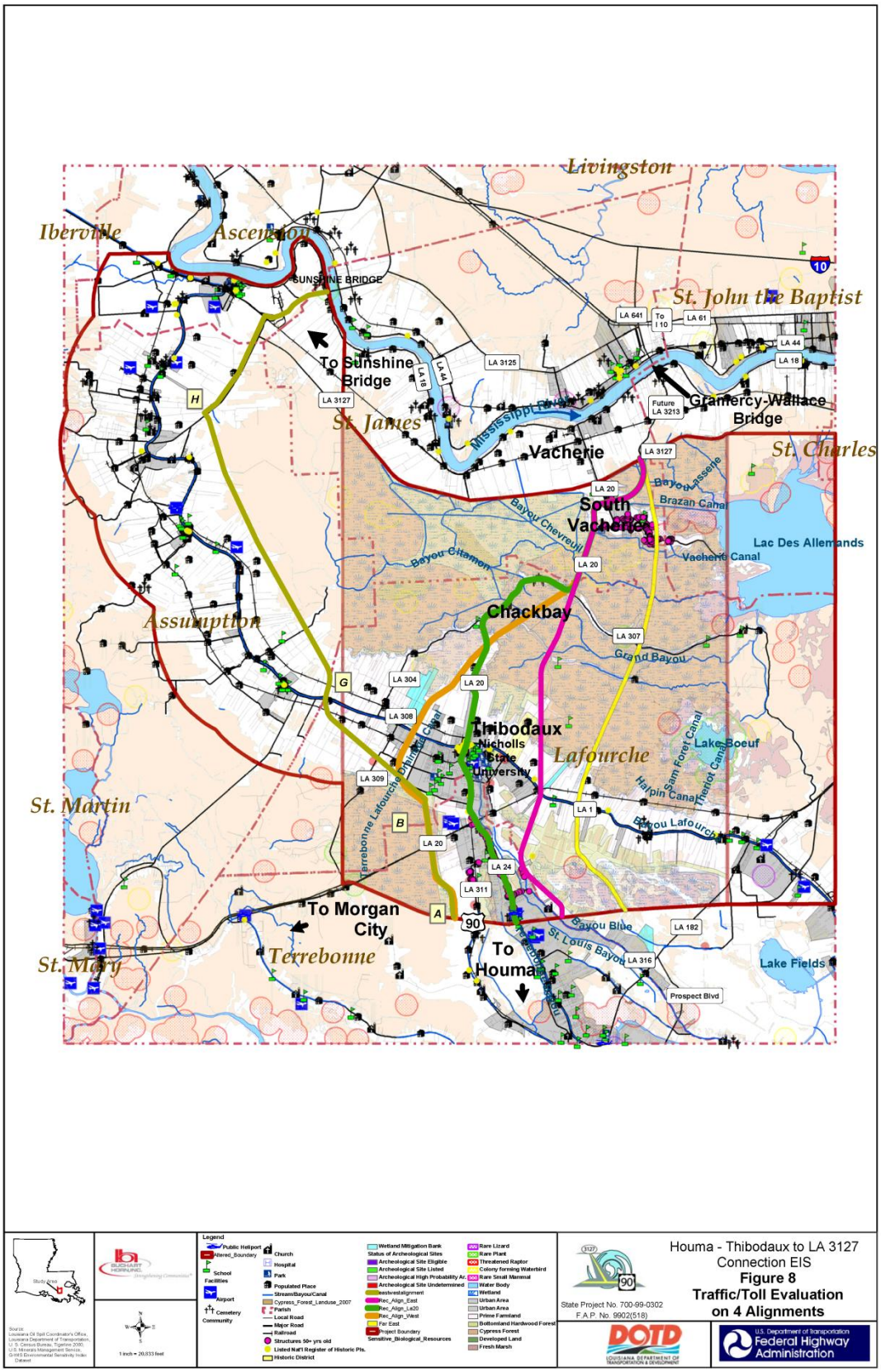
Source: Louisiana Oil Spill Coordinator's Office, Louisiana Department of Transportation, U. S. Census Bureau, Tigerline 2000, U. S. Minerals Management Service, GAP Environmental Sensitivity Index Dataset

1 inch = 20,833 feet

State Project No. 700-99-0302
F.A.P. No. 9902(518)

Houma - Thibodaux to LA 3127 Connection EIS
Figure 6
Recommended East-West Alignment


Ascension
To Sunshine Bridge
LA 3125
LA 641
To I 10
LA 61
LA 3127
Mississippi River
Future LA 3213
Gramercy-Wallace Bridge
St. James
Vacherie
LA 3127
LA 20
Bayou Lasseine
Brazan Canal
South Vacherie
Bayou Chevreuil
Lac Des
Bayou Citamon
Vacherie Canal
LA 20
Assumption
Chackbay
LA 307
Grand Bayou
LA 304
LA 20
LA 308
Thibodaux
Lafourche
Nicholls State University
Lake Boeuf
LA 309
Bayou Boeuf
Halpin Canal
Sam Foret Canal
Theriot Canal
Terrebonne Lafourche Drainage Canal
LA 1
Bayou Lafourche
LA 20
LA 24
LA 311
To Morgan City
90
Bayou Blue
St. Louis Bayou
LA 182
Terrebonne
Terrebonne Bayou
To Houma
LA 316
Lake F
Prospect Blvd
Study area
Sources:
Louisiana Oil Spill Coordinator's Office
Louisiana Department of Transportation
U. S. Census Bureau, Tigerline 2005
U.S. Minerals Management Service
S-MIS Environmental Sensitivity Index Dataset
BUSHART HORNLINE
Strengthening Communities
1 inch = 12,500 feet
Legend
Public Heliport
School
Facilities
Airport
Cemetery
Community
Church
Hospital
Park
Populated Place
Stream/Bayou/Canal
Parish
Local Road
Major Road
Railroad
Structures 50+ yrs old
Listed Nat'l Register of Historic Pls.
Historic District
Wetland Mitigation Bank
Status of Archeological Sites
Archeological Site Eligible
Archeological Site Listed
Archeological High Probability Ar
Archeological Site Undetermined
Rac_Algn_East
Rac_Algn_West
Project Boundary
Sensitive_Biological_Resources
Rare Lizard
Rare Plant
Threatened Raptor
Colony forming Waterbird
Rare Small Mammal
Water Body
Wetland
Urban Area
Urban Area
Prime Farmland
Bottomland Hardwood Forest
Cypress Forest
Developed Land
Fresh Marsh
State Project No. 700-99-0302
F.A.P. No. 9902(518)
Houma - Thibodaux to LA 3127 Connection EIS
Figure 7
Screening No. 1
DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT
U.S. Department of Transportation
Federal Highway Administration


Livingston
Iberville
Ascension
SUNSHINE BRIDGE
St. John the Baptist
To Sunshine Bridge
Grammercy-Wallace Bridge
St. James
Mississippi River
Vacherie
St. Charles
South Vacherie
Bayou Lassene
Brazan Canal
Lac Des Allemands
Vacherie Canal
Bayou Chevreuil
Bayou Citamon
Chackbay
Assumption
Grand Bayou
Thibodaux
Nicholls State University
Lafourche
Lake Boeuf
Sam Forest Canal
Harpin Canal
Heriot Canal
Bayou Lafourche
St. Martin
Terrebonne Lafourche Drainage Canal
To Morgan City
Terrebonne
To Houma
Bayou Blue
St. Louis Bayou
Lake Fields
St. Mary
Prospect Blvd
Legend
Public Heliport
Altered_Boundary
School Facilities
Airport
Cemetery Community
Church
Hospital
Park
Populated Place
Stream/Bayou/Canal
Cypress_Forest_Landuse_2007
Parish
Local Road
Major Road
Railroad
Structures 50+ yrs old
Listed Nat'l Register of Historic Pls.
Historic District
Wetland Mitigation Bank
Status of Archeological Sites
Archeological Site Eligible
Archeological Site Listed
Archeological High Probability Ar.
Archeological Site Undetermined
Rec_Align_East
Rec_Align_Lx20
Rec_Align_West
Far East
Project Boundary
Sensitive_Biological_Resources
Rare Lizard
Rare Plant
Threatened Raptor
Colony forming Waterbird
Rare Small Mammal
Water Body
Wetland
Urban Area
Urban Area
Prime Farmland
Bottomland Hardwood Forest
Cypress Forest
Developed Land
Fresh Marsh
1 inch = 20,333 feet
State Project No. 700-99-0302
F.A.P. No. 9902(518)
Houma - Thibodaux to LA 3127 Connection EIS
Figure 8
Traffic/Toll Evaluation on 4 Alignments
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Louisiana Department of Transportation & Development
U.S. Department of Transportation
Federal Highway Administration

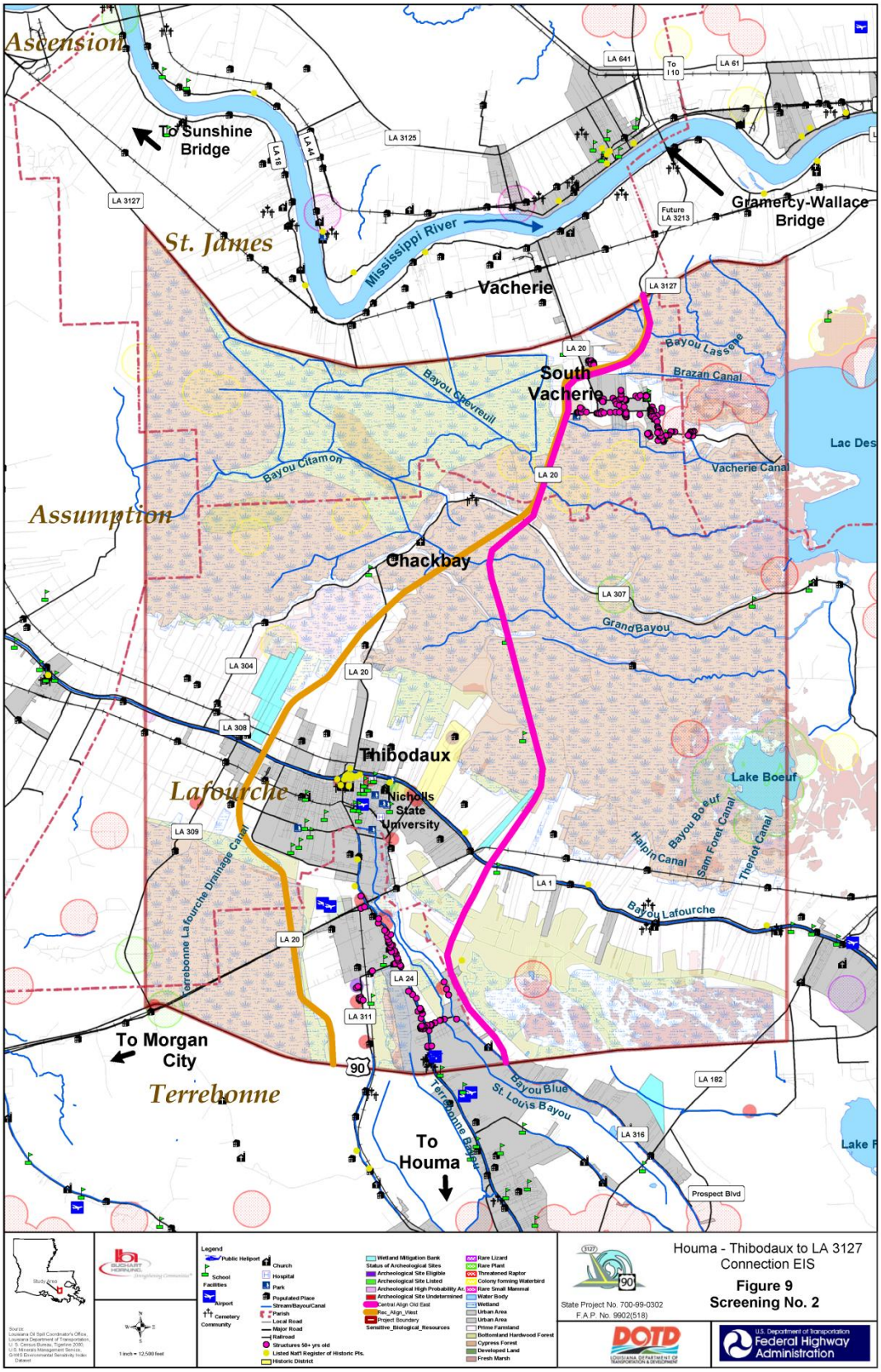
Phase III Alternative Analysis

The Alternative Analysis for this phase included four potential alignments and it was divided into two parts. The first part was updating the tolling and traffic studies (see Traffic Analysis 2010 and the Update to 2005 Houma-Thibodaux LA 3127 Connection Preliminary Toll Study 2010). All four alternatives were modeled and analyzed for the effectiveness of improving the system linkage within the study area and the region. The second part included re-screening the alignments to evaluate how well they meet the undated purpose and need (See **Table 3.4**).

Table 3.4 Summary of Screening Process

Criteria	Alignment 1	Alignment 2	Alignment 3	Alignment 4
Purpose and Need Criteria				
System Linkage				
Improves North-South Connectivity	Medium	High	Medium	Medium
Provides North-South System Redundancy	High	Medium	High	Low
Improves North-South Capacity	High	High	Medium	Low
Improves Access to I-10 and future I-49	Medium	Medium	High	Medium
Hurricane Evacuation				
Improves Hurricane Evacuation from Study Area	High	High	High	Medium
Uniformly distributes traffic between the Sunshine and Gramercy-Wallace Bridges	High	High	High	Low
Maximizes Efficient use and operation of the hurricane evacuation routes and transportation network	High	Medium	Medium	Low
Environmental Criteria				
Human Environment				
Minimizes disruption of communities	High	Low	High	High
Minimizes disruption of farm operations	High	High	High	Medium
Minimizes disruption of economic/commercial activities	High	Low	Medium	Medium
Optimizes user benefits	High	High	Medium	Medium
Natural Environment				
Minimizes impacts on NWI Wetlands	High	High	High	Medium
Minimizes impacts on Bottomland Hardwoods	Medium	High	Medium	Low
Minimizes impacts on Endangered Species	High	High	High	High
Minimizes impacts on Cypress Forests	Low	Medium	Low	Low
Minimizes impacts on Freshwater Marshes	Medium	High	Low	Medium

After reviewing the updated tolling and traffic studies and the additional screening report, two viable alternatives were identified to be taken forward into the DEIS. These alternatives include Alignment 1 (Western Alignment) and Alignment 2 (Central Alignment). The remaining two alignments {Alignment 3 (Eastern Alignment) and Alignment 4 (East-West Alignment)} were removed from further consideration. Alignment 3 (Eastern Alignment) was removed due to its poor performance from a traffic perspective; and Alignment 4 (East-West Alignment) was removed because of its low score in meeting the purpose and need (see **Figure 9**).


Ascension
To Sunshine Bridge
LA 3127
LA 18
LA 44
LA 3125
LA 641
To I 10
LA 61
Future LA 3213
Gramercy-Wallace Bridge
St. James
Mississippi River
Vacherie
LA 3127
LA 20
Bayou Lasseye
Brazan Canal
South Vacherie
Bayou Chevreuil
Lac Des
Bayou Citamon
Vacherie Canal
Assumption
Chackbay
LA 307
GrandBayou
LA 304
LA 308
Thibodaux
Lafourche
Nicholls State University
Lake Boeuf
LA 309
Terrebonne Lafourche Drainage Canal
Halpin Canal
Sam Foret Canal
Bayou Boeuf
Theriot Canal
LA 1
Bayou Lafourche
LA 24
LA 311
To Morgan City
90
Terrebonne
Bayou Blue
St. Louis Bayou
LA 182
LA 316
To Houma
Prospect Blvd
Houma - Thibodaux to LA 3127 Connection EIS
Figure 9
Screening No. 2
State Project No. 700-99-0302
F.A.P. No. 9902(518)
DOTD
U.S. Department of Transportation
Federal Highway Administration

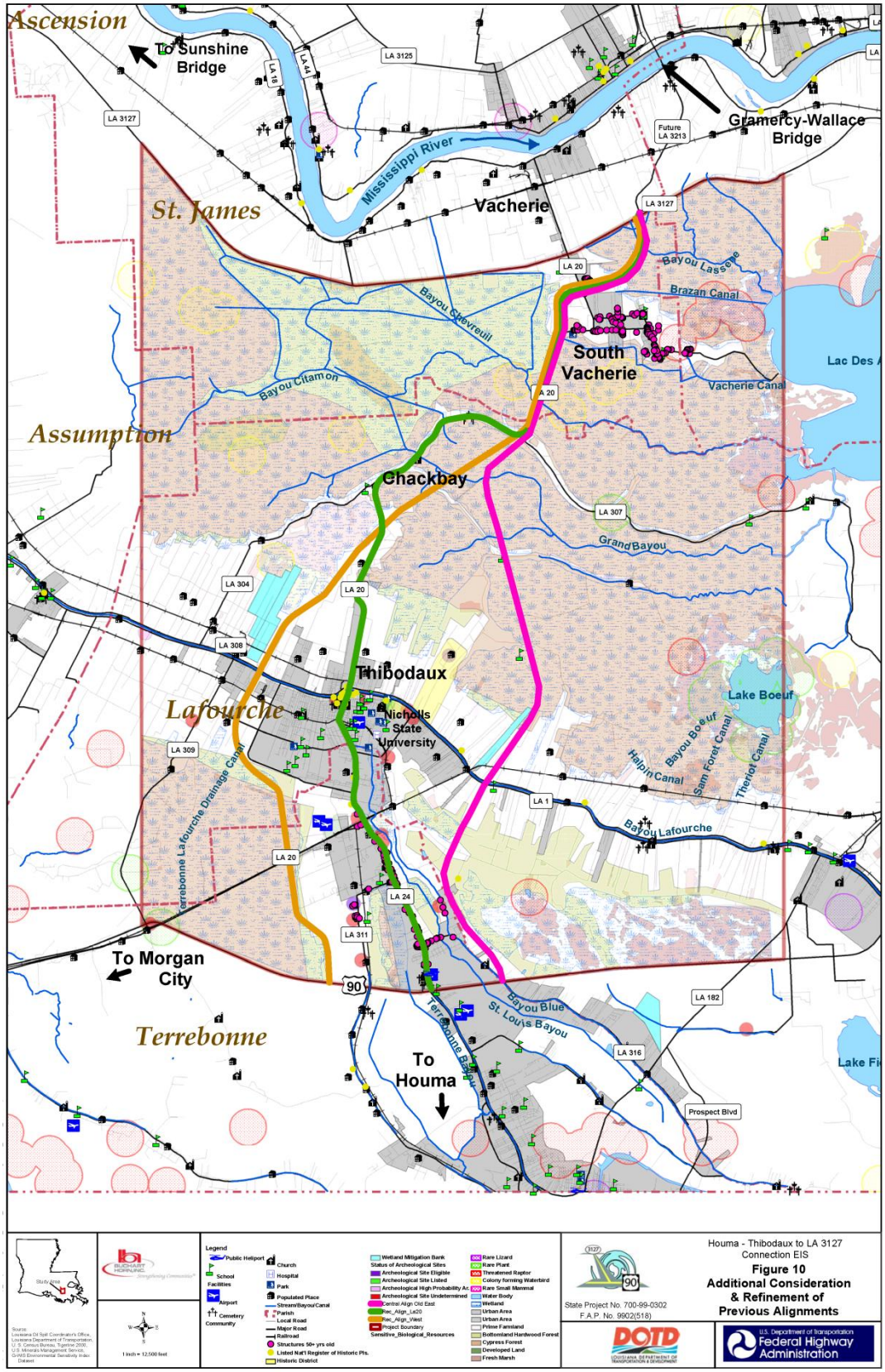
On November 18, 2010, an Agency Coordination Meeting was held at the South Central Planning and Development Commission. The purpose of this coordination meeting was to present the results of a revised traffic analysis. Also presented at this coordination meeting was a refined project Purpose and Need, prepared in response to the updated traffic results, and the alternatives recommended to be carried into the DEIS.

It was during the discussion period of this meeting that information further supporting the refined Purpose and Need was requested in order to comment on the recommendations presented. It was agreed that an advanced copy of the draft document's Purpose and Need chapter would be furnished to facilitate agency review of information presented. On January 24, 2011 the draft Purpose and Need chapter was made available for agency review and comment via a project FTP site; comments on alternatives carried into the DEIS were requested by February 14, 2011.

Through comments provided by USFWS and USCOE it was determined to consult with the project team to determine if widening of LA 20 as a stand-alone alternative would meet the purpose and need and whether it should be considered further. The alternatives that were presented to the project team are Alignment 1 (Western Alignment), Alignment 2 (Central Alignment), widening of LA 20 north of Rienzi Drive, and the N-build Alternative (see **Figure 10**).

After consideration, it was determined that the widening of LA 20 as a stand-alone alternative did not meet the purpose and need and was removed from further consideration (see **Figure 11**).

And although LA 20 (as a stand-alone alternative) was removed from further consideration, a decision was made to incorporate portions of existing alignment (LA 20, LA 311, and LA 316) into Alignment 1 (Western Alignment) and Alignment 2 (Central Alignment). Subsequently, the initial classification of F3 for the alignments is no longer valid due to the fact that it was assumed that all alignments would be new construction. In order to accommodate for the incorporation of existing infrastructure into the alignments, the roadway classification had to be modified to accommodate the classifications of the existing infrastructure. The alignments were broken up into sections of UA-2, UA-4, and RA-2 classifications. **Tables 3.5 and 3.6** outline the engineering criteria for each section.


Ascension
To Sunshine Bridge
LA 3125
LA 3127
LA 18
LA 44
Mississippi River
Future LA 3213
Gramercy-Wallace Bridge
Vacherie
St. James
LA 20
Bayou Lassee
Brazan Canal
Bayou Sievreuil
South Vacherie
Vacherie Canal
Lac Des A
Bayou Citamon
Assumption
Chackbay
LA 307
Grand Bayou
LA 304
LA 308
Thibodaux
Lafourche
Nicholls State University
LA 309
Lake Boeuf
Bayou Boeuf
Halpin Canal
Sam Foret Canal
Theriot Canal
LA 1
Bayou Lafourche
Terrebonne Lafourche Drainage Canal
LA 24
LA 311
To Morgan City
90
Bayou Blue
St Louis Bayou
LA 182
Terrebonne
To Houma
LA 316
Lake Fi
Prospect Blvd
Study Area
Source: Louisiana Oil Spill Coordinator's Office, Louisiana Department of Transportation, U. S. Census Bureau, Tigerline 2000, U. S. Minerals Management Service, GAP Environmental Sensitivity Index Dataset
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Major Road
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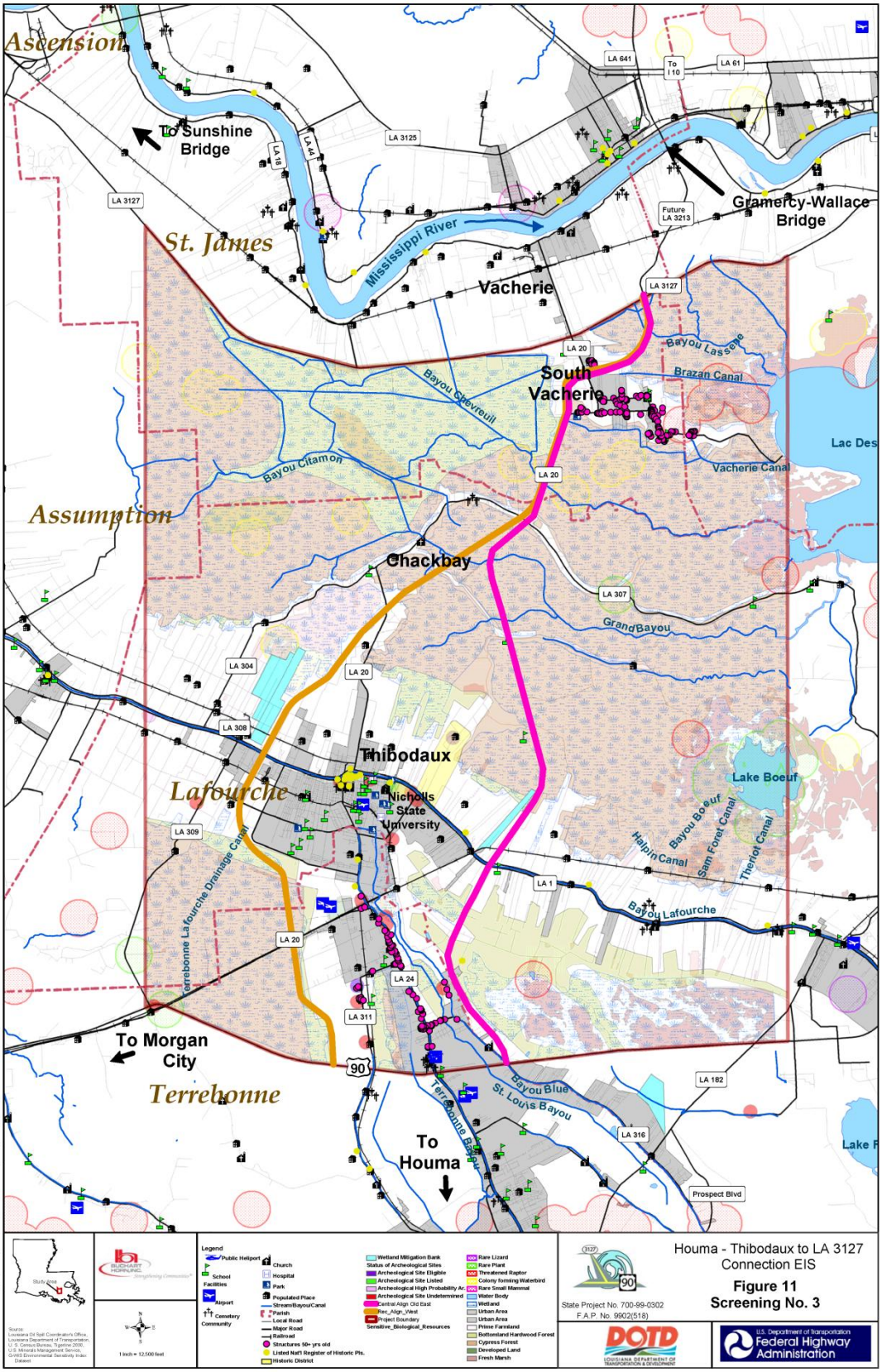
Structures 50+ yrs old
Listed Nat'l Register of Historic Pts.
Historic District
Wetland Mitigation Bank
Status of Archeological Sites
Archeological Site Eligible
Archeological Site Listed
Archeological High Probability Ar.
Archeological Site Undetermined
Central Align Old East
Rec_Align_La20
Rec_Align_Vacl
Project Boundary
Sensitive_Biological_Resources
Rare Lizard
Rare Plant
Threatened Raptor
Colony forming Waterbird
Rare Small Mammal
Water Body
Wetland
Urban Area
Urban Area
Prime Farmland
Bottomland Hardwood Forest
Cypress Forest
Developed Land
Fresh Marsh
State Project No. 700-99-0302
F.A.P. No. 9902(518)
Houma - Thibodaux to LA 3127 Connection EIS
Figure 10
Additional Consideration & Refinement of Previous Alignments
DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT
U.S. Department of Transportation
Federal Highway Administration


Ascension
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LA 3127
LA 18
LA 42
LA 3125
LA 641
To I 10
LA 61
Future LA 3213
Gramercy-Wallace Bridge
St. James
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Bayou Boeuf
Sam Foret Canal
Theriot Canal
Halpin Canal
LA 1
Bayou Lafourche
LA 24
LA 311
To Morgan City
90
Terrebonne
Bayou Blue
St. Louis Bayou
Terrebonne Bayou
LA 182
LA 316
To Houma
Prospect Blvd
Study Area
Source:
Louisiana Oil Spill Coordinator's Office,
Louisiana Department of Transportation,
U. S. Census Bureau, Tigerline 2008,
U.S. Minerals Management Service,
GIWED Environmental Sensitivity Index Dataset
BUCHART HORN INC.
1 inch = 12,500 feet
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Historic District
Wetland Mitigation Bank
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Central Align Old East
Rec_Align_West
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Colony forming Waterbird
Rare Small Mammal
Water Body
Wetland
Urban Area
Urban Area
Prime Farmland
Bottomland Hardwood Forest
Cypress Forest
Developed Land
Fresh Marsh
Houma - Thibodaux to LA 3127 Connection EIS
Figure 11
Screening No. 3
State Project No. 700-99-0302
F.A.P. No. 9902(518)
DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT
U.S. Department of Transportation
Federal Highway Administration

Table 3.5: Urban Roadway Classifications

Urban Roadway Classifications- Houma-Thibodaux to LA 3127			
DESIGN FEATURES		**UA-2**	**UA-4**
Facility Utilization (Station #)			
	(a) Central Alignment	100+00 - 282+83.04	282+83.04 - 595+13.15
	(b) West Alignment	100+00 - 380+00	380+00 - 720+46.01
Design Speed (mph)		45	55
Level of Service		C	C
Travel Lane Width (ft)		11 - 12	12
Width of Shoulders (Minimum) (ft)			
	(a) Inside on MultiLane	N/A	4
	(b) Outside	8[1]	8
Width of Median on Multilane			
	(a) Raised	6 - 30	30
	(b) Two Way Left Turn Lane	14	N/A
	(c) Depressed	N/A	34 - 42
Pavement Cross-Slope (%)		2.5	2.5
Stopping Sight Distance (ft)		360	495
Maximum Superelevation (%)		4	6
Minimum Radius (ft)		1000	19700
Minimum Radius with Full Superelevation (ft)		700	
Maximum Grade (%)		6	5
Minimum Vertical Clearance (ft)		16	16
	(a) Roadways	16.5	16.5
	(a) Rail	23.5	23.5
Minimum Clear Zone (ft)			
	(a) From edge of through travel lane	24	22
	(b) Outside from the back of Curb	6 (min)- 22 (des)	13
	(c) Median from back of curb (when curb is used)	4 (min) - 18(des)	8 (min) - 17 (des)
Fore Slope Ratio (vertical - horizontal)		1:3 (min)-1:4 (des)	1:6
Back Slope Ratio		1:3	1:4
Design Specifications		AASHTO as modified by LADOTD's Road Design Manual	AASHTO as modified by LADOTD's Road Design Manual[1]

[1] Curb may be used in place of shoulder.

Table 3.6: Rural Roadway Classifications

Rural Roadway Classifications- Houma-Thibodaux to LA 3127		
DESIGN FEATURES		**RA-2**
Facility Utilization (Station #)		
	(a) Central Alignment	595+13.15 - 998+34.60
	(b) West Alignment	720+46.01-1217+99.17
	(c) North Section A	2000+00 - 2298+62.11
	(d) North Section B	2000+00 - 2414+85.55
Design Speed (mph)		60
Travel Lane Width (ft)		12
Width of Shoulders (Minimum) (ft)		
	(a) Inside on MultiLane Facilities	4
	(b) Outside	8
Width of Median on Multilane Facililities (ft)		
	(a) Raised	N/A
	(b) Two Way Left Turn Lane	N/A
	(c) Depressed	42 - 60
Pavement Cross-Slope (%)		2.5
Stopping Sight Distance (ft)		570
Maximum Superelevation (%)		10
Minimum Radius with Full Superelevation (ft)		1100
Maximum Grade (%)		3
Minimum Vertical Clearance (ft)		16
Minimum Clear Zone (ft)		
	(a) From edge of through travel lane	30
Fore Slope Ratio (vertical - horizontal)		1:6
Back Slope Ratio		1:4
Design Specifications		AASHTO as modified by LADOTD's Road Design Manual

Additionally, a second potential alignment segment was added for the northern portion of the corridors.

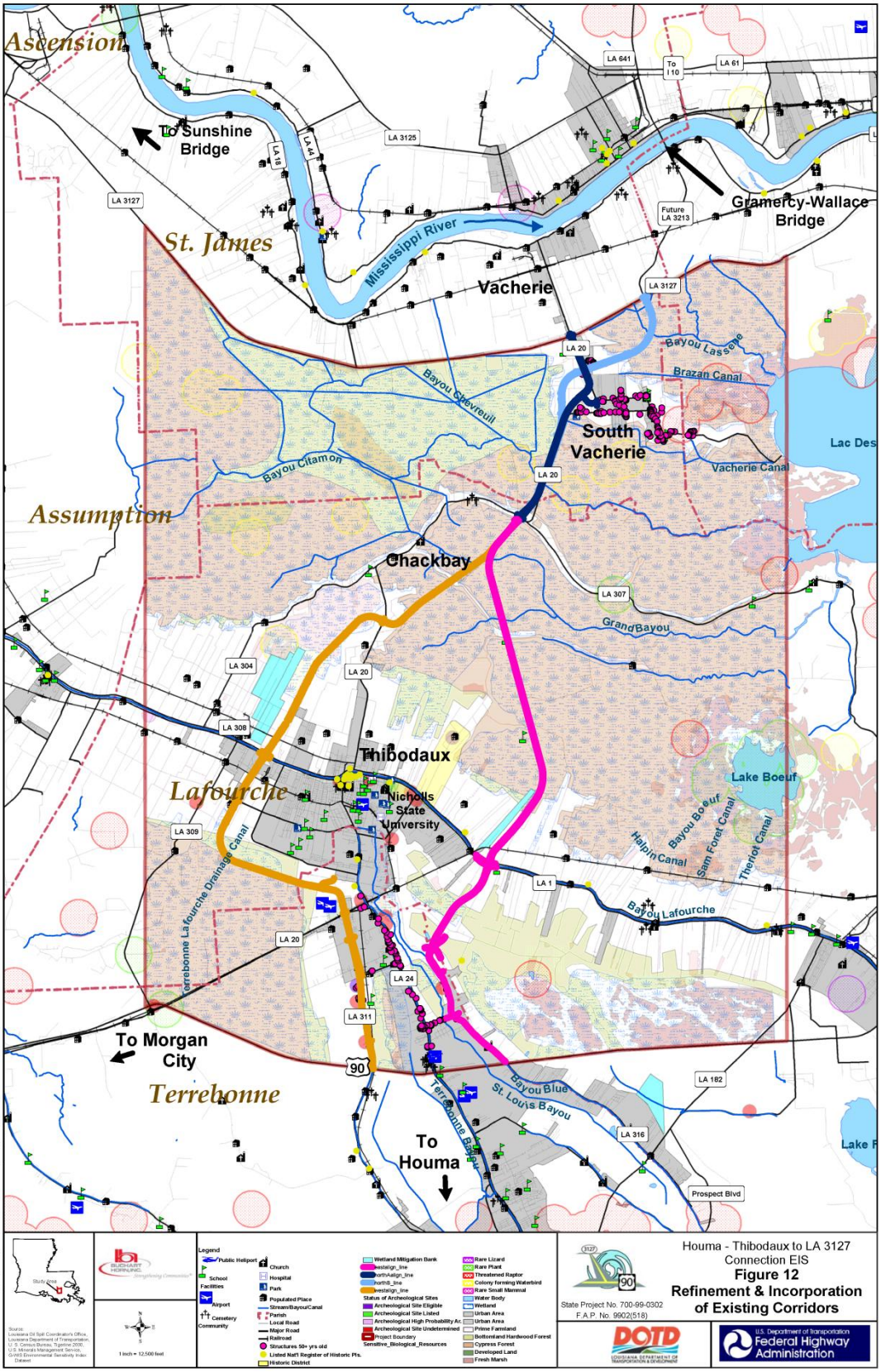
The two potential alignment segments for the Northern portion of the LA 3213 corridor are as follows:

1. North A: This segment will propose the incorporation of LA 20 from LA 3127 to LA 307 into the LA 3213 corridor.

2. North B: This segment will propose using a portion of LA 20 above LA 307, but will connect the future corridor to LA 3127 at the original proposed junction of LA 3127 and the LA 3213 corridor.

The addition of these two northern alignment segments allows for four alternatives to be taken forward into the DEIS (see **Figure 12**).

On March 27, 2012, DOTD and FHWA staff, local officials, Agency representatives and the project consultant participated in a coordination meeting for the captioned project. Based on this meeting, the Corps presented comments (March 30 and May 9, 2012) related to the project and the environmental process. Modifications to the western project alignment were made to address comments presented during the Agency meeting (see **Figure 13**). The alignment shown in yellow displays the improvements of the original western alignment. The improvements allow for the minimization of impact along the western alignment.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LA 44
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Study Area
Sources:
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Strengthening Communities
1 inch = 12,500 feet
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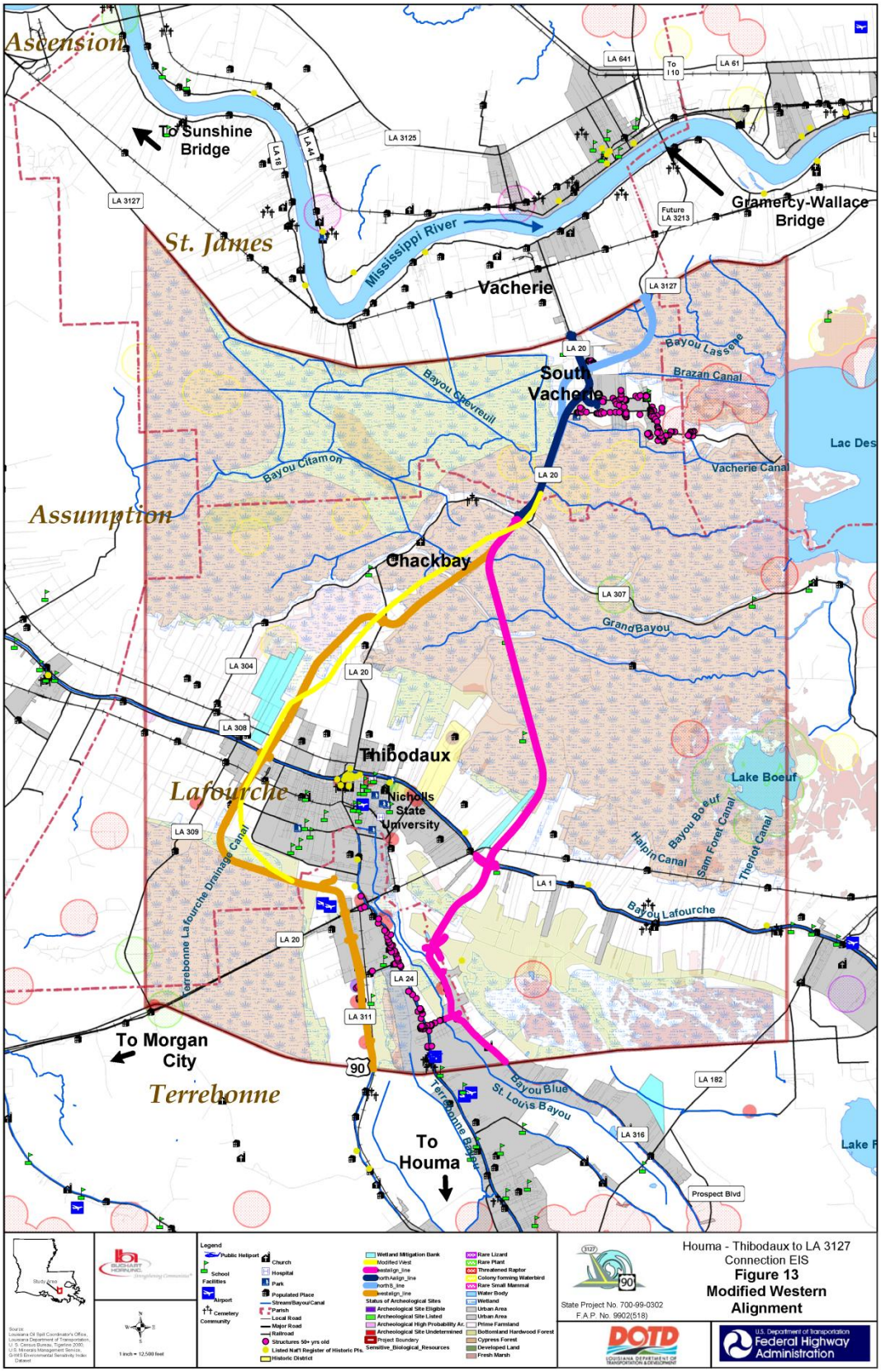
State Project No. 700-99-0302
F.A.P. No. 9902(518)
Houma - Thibodaux to LA 3127 Connection EIS
Figure 12
Refinement & Incorporation of Existing Corridors
DOTD
Louisiana Department of Transportation & Development
U.S. Department of Transportation
Federal Highway Administration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Houma - Thibodaux to LA 3127
Connection EIS
Figure 13
Modified Western
Alignment
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Federal Highway Administration

The four alternatives to be taken into the DEIS (see **Figure 14**) are as follows:

Alternative 1 will connect the Western Alignment with segment North A.

Alternative 1 proposes to connect US 90 and LA 3127 by incorporating existing alignment along LA 311 Western Alignment) and LA 20 (Segment North A) as well as construction on new location, resulting in a 22.9 mile, 4-lane divided roadway. The northern terminus of Alternative 1 will be the intersection of LA 20 and LA 3127 and the southern terminus will be the intersection of LA 311 and US 90.

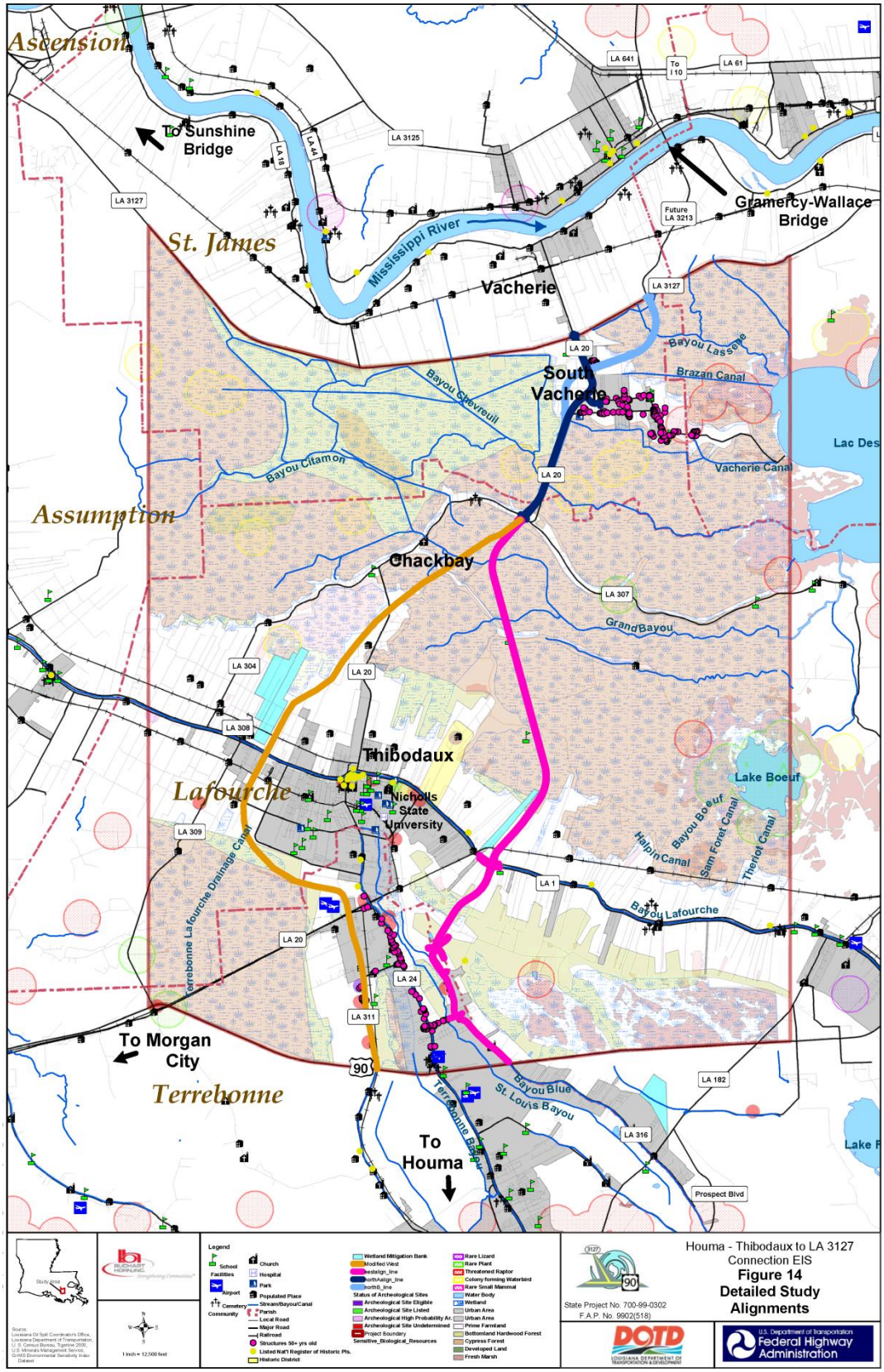
Western Alignment

Beginning at the southern terminus, Alternative 1 will maintain the existing interchange (currently a folded diamond interchange) and will move in a generally northern direction along LA 311. North of the interchange, the raised grass median transitions from the existing 28' width to 16' in width, remaining within the range deemed acceptable by LADOTD UA-2 design criteria.

The alignment will continue in a generally northern direction for 4.3 miles before intersecting with LA 20 and Amtrak Rail approximately 0.5 miles before shifting westward and transitioning to a UA-4 design. Under the guidance of LADOTD UA-4 design criteria, the median will transition from a 16' raised, grass median to a 53' depressed, grass median and will maintain 4 lanes. Shortly after the transition to a UA-4 roadway, the alignment will move onto a proposed bridge structure. Potential wetlands have been identified in this area so to minimize impact it is suggested that the alignment be elevated. The elevated alignment will continue in the westerly direction for 3 miles before reaching the end of the bridge structure, where the alignment will transition back to the previously described UA-4 design, and shifting to a northeasterly direction.

The alignment will continue in the northeasterly direction for approximately 2.5 miles overpassing LA 1, Bayou Lafourche, and LA 308 with a proposed bridge structure. Due to constraints associated with the proposed interchange, northbound traffic will be able to exit the alignment to LA 1 and enter from LA 308, while southbound traffic will be able to exit the alignment to LA 308 and enter from LA 1. Due to this circumstance, U-turns will be constructed on either side of the bridge structure to allow traffic to change direction on the alignment to accommodate for instances when the current direction of travel does not allow for the desired exit to be taken.

Shortly after the interchange, the alignment will leave the bridge structure and promptly transition to a RA-2 roadway classification, with the median remaining a 53' depressed, grass median. The alignment will then continue in the northeasterly direction for approximately 2 miles before again moving onto a proposed bridge structure. Again, elevation of the roadway is suggested in this area to minimize impacts to potential wetlands. The alignment will continue on the bridge structures until reaching the intersection of LA 20 and the alignment, where it will transition back to at-grade roadway.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Houma - Thibodaux to LA 3127 Connection EIS
Figure 14
Detailed Study Alignments
DOTD
Federal Highway Administration

Shortly after the intersection with LA 20, the alignment will move onto a proposed bridge structure to accommodate for more potential wetlands. The elevated alignment will continue in the northeasterly direction, eventually crossing Bayou Boeuf, and will come to a proposed diamond interchange with LA 20 for a second time. This second intersection of LA 20 marks the end of the Western Alignment portion of Alternative 1 and begins the North A portion of Alternative 1.

Segment North A

The alignment will continue in a northeasterly direction on the bridge structures, crossing Chevreuil Bayou, and will shift slightly to run parallel with the existing LA 20 corridor. The alignment running parallel to the existing LA 20 allows for continued access throughout construction, with the intention of using the new alignment to replace portions of LA 20 once complete. Approximately 2 miles after crossing Chevreuil Bayou, the alignment will stray from the existing LA 20 corridor for approximately 1 mile. Within this section, proposed, intersecting roadways will allow for access to existing properties, and the alignment will transition from the bridge structure to at-grade roadway before reconnecting to the existing LA 20 corridor. The alignment will continue along the existing LA 20 corridor for approximately 1.5 miles before reaching its northern terminus at the current intersection of LA 20 and LA 3127.

Alternative 2 will connect the Western Alignment with segment North B.

Alternative 2 Alternative 1 proposes to connect US 90 and LA 3127 by incorporating existing alignment along LA 311 (Western Alignment as described above), but will not utilize segment North A as in Alternative 1 to reach LA 3127. Instead, Alternative 2 connect the Western alignment with Segment North B resulting in a 28.9 mile 4-lane, divided roadway.

Segment North B

Arriving at the end of the Western Alignment (as fully described in Alternative 1), Alternative 2 will now connect to segment North B for the remainder of the alignment. Similar to segment North A, the alignment will continue in a northeasterly direction on the bridge structures, crossing Chevreuil Bayou, and will shift slightly to run parallel with the existing LA 20 corridor. The alignment running parallel to the existing LA 20 allows for continued access throughout construction, with the intention of using the new alignment to replace portions of LA 20 once complete. Approximately 2 miles after crossing Chevreuil Bayou, the alignment will stray from the existing LA 20 corridor for approximately 1 mile. Within this section, proposed, intersecting roadways will allow for access to existing properties, and the alignment will transition from the bridge structure to at-grade roadway before momentarily reconnecting to LA 20. The alignment will then leave the LA 20 corridor and shift easterly as at-grade roadway on new location. The alignment will soon move onto bridge structures in order to minimize impact to potential wetlands. The alignment will remain elevated as it shifts northerly and continues until it reaches its northern terminus at the intersection of LA 3127 and LA 3213.

Alternative 3 will connect the Central Alignment with segment North A.

Alternative 3 proposes to connect US 90 and LA 3127 by incorporating existing alignment along LA 316 Central Alignment) and LA 20 (Segment North A) as well as construction on new location, resulting in a 22.6 mile, 4-lane divided roadway. The northern terminus of Alternative 3 will be the intersection of LA 3213 and LA 3127 and the southern terminus will be the intersection of US 90 and LA 316.

Central Alignment

Beginning at the southern terminus, Alternative 3 will maintain the existing interchange and will move in a northwesterly direction along LA 316. North of the interchange, the raised grass median transitions from to 16' in width, remaining within the range deemed acceptable by LADOTD UA-2 design criteria. For this portion of the Central Alignment a lane width of 11' has been proposed in order to minimize impact to surrounding properties.

The alignment will continue in the northwesterly direction along the existing LA 316 corridor for approximately 2 miles before arriving at the T-Intersection of LA 316 and Bayou Blue Bypass Rd, leaving the LA 316 corridor and following Bayou Blue Bypass Rd while still continuing in the northwesterly direction. At this point the median will decrease to 6' to minimize impact to surrounding properties. The alignment will follow the existing Bayou Blue Bypass Rd for approximately 1.2 miles before departing to at-grade roadway on new location in order to continue in the northwesterly direction. Shortly after this departure the median will transition to a 45' depressed, grass median and the alignment will shift to the northeasterly direction.

Continuing in the northeasterly direction, the alignment will come to a signalized intersection with Waterplant Rd in approximately 0.5 miles. Shortly after this intersection, the alignment will elevate onto proposed bridge structures in order to overpass Grand Coteau Bayou and Burma Rd and to minimize impacts to potential wetlands. The alignment's classification will also transition to a UA-4 design. The alignment will continue on bridge structures in the northeasterly direction for approximately 2 miles before transitioning back to at-grade roadway on new location, still with a UA-4 classification with a 45' depressed, grass median.

The alignment will continue in the northeasterly direction for approximately 0.5 miles before overpassing LA 1, Bayou Lafourche, and LA 308 with a proposed bridge structure. Due to constraints associated with the proposed interchange, northbound traffic will be able to exit the alignment to LA 1 and enter from LA 308, while southbound traffic will be able to exit the alignment to LA 308 and enter from LA 1. Due to this circumstance, U-turns will be constructed on either side of the bridge structure to allow traffic to change direction on the alignment to accommodate for instances when the current direction of travel does not allow for the desired exit to be taken.

Shortly after leaving the bridge structure used to overpass LA 1, Bayou Lafourche, and LA 308, the alignment will continue in the northeasterly direction and enter a short bridge structure in order to overpass the Southern Pacific Rail before again returning to at-grade roadway on new location with a 45' depressed, grass median. The alignment will continue on for approximately 1.7 miles before entering another bridge structure and promptly transitioning to a RA-2 classification. In order to minimize impacts to the wetlands in the area, the alignment will continue in a northerly direction for approximately 8 miles, overpassing Lepeans Canal and Choctaw Rd within that span, before reaching a proposed diamond interchange with LA 20. This intersection marks the end of the Central Alignment portion of Alternative 3 and the beginning of the Segment North A portion of Alternative 3.

Segment North A

Refer to Alternative 1 for a full description of Segment North A. Alternative 3 will reach its northern terminus at the intersection of LA 20 and LA 3127.

Alternative 4 will connect the Central Alignment with segment North B.

Alternative 4 will begin with the Central Alignment (as fully described in Alternative 3) and connect to segment North B (as fully described in Alternative 2). The connection of the Central Alignment and segment North B will result in a 22.6 mile 4-lane, divided roadway.

On the following page, an environmental consequences summary matrix can be found for the four alternatives. The matrix is color coded to help compare the impacts between the alternatives. The legend is as follows:

- Green represents the lowest impact among the alternatives.
- Yellow represents a median level of impact among the alternatives.
- Red represents the highest level of impact among the alternatives.

North-South Connector Environmental Consequences Summary Matrix

	No-build	Western & North A	Western & North B	Central & North A	Central & North B
Length (miles)		26.6 miles	28.8 miles	22.6 miles	24.8 miles
Total Acreage		1,105.1	1,167.8	974.8	1,037.5
Human Environment					
Land Use					
Cultivated Crops	no additional impacts	274.35	310.81	379.52	415.99
Developed, Low Intensity	no additional impacts	150.14	122.52	198.51	170.88
Developed, Medium Intensity	no additional impacts	3.77	0.41	6.34	2.99
Developed, High Intensity	no additional impacts	2.58	0	4.94	2.36
Developed, Open Space	no additional impacts	36.62	22.91	43.22	29.52
Open Water	no additional impacts	7.23	7.86	5.94	6.58
Pasture/Hay	no additional impacts	35.92	35.92	9.55	9.55
Grassland/	no additional impacts	5.57	5.57	0.7	0.7
Herbaceous	no additional impacts	0.31	0.02	0.95	0.66
Shrub/Scrub	no additional impacts	0	0	0.02	0.02
Mixed Forest	no additional impacts	1.15	2.52	14.85	16.21
Emergent Herbaceous Wetlands	no additional impacts	457.13	528.92	440.58	512.37
Community Impacts					
LA Dept of Social Services Facilities	no additional impacts	1	1	0	0
Relocations					
Total	0	**39**	**34**	**45**	**40**
Commerical	0	15	10	7	2
Residential	0	24	24	38	38
Agricultural and Farmland					
Prime Farmland					
Complete Loss (acreage)	no additional impacts	207.1	208.4	103.5	104.7
Partial Loss (acerage)	no additional impacts	61	66	54.2	59
Agricultural					
Land Loss (acerage)	no additional impacts	389	425.5	310.3	346.7
Cultural Resources (w/in 150m of req'd ROW)					
Standing Structure	no additional impacts	12	15	9	12
Archealogical Site	no additional impacts	1	1	1	1
NRHP Property	no additional impacts	1	1	0	0
Noise					
Definite	no additional impacts	1	1	1	1
Potential	no additional impacts	6	5	5	4
Hazardous Materials					
Total	no additional impacts	**33**	**32**	**31**	**30**
Hazardous Materials Sites	no additional impacts	11	9	6	4
Petroleum Pipes	no additional impacts	20	21	22	23
Waste Pits	no additional impacts	1	1	1	1
Oil and Gas Wells	no additional impacts	1	1	2	2
Protected Lands					
6(f) Resources	no additional impacts	1	1	0	0
4(f) Resources	no additional impacts	0	0	1	1
Natural Environment					
Vegetation and Habitat					
Built on Existing Roads (miles)	no additional impacts	6.1	4.8	4.4	3.1
Elevated over Forested Wetland (acerage)	no additional impacts	406.47	474.78	443.31	511.62
Built over Farmlands (acreage)	no additional impacts	389.1	425.6	310.26	346.73
Invasive Species					
Total	no additional impacts	no anticipated impacts	no anticipated impacts	no anticipated impacts	no anticipated impacts
Wild and Scenic Rivers					
Total Rivers	none	none	none	none	none
Threatened and Endangered Species					
Listed Species	none	none	none	none	none
Essential Fish Habitat					
Total Habitats	none	none	none	none	none
Water Quality					
Distance to Impaired Water Body (miles)	no additional impacts	0.42	0.42	2.66	2.66
Runoff Volume based on 25-year 24-hour storm event (gallons)	no additional impacts	18,742,118	20,319,870	16,024,686	17,602,375
Potential Relocated NPDES Facilities	no additional impacts	10	9	3	3
Impaired Water Bodies	no additional impacts	3	3	3	3
Floodplains					
Floodplains (acerage)	no additional impacts	57.5	84.3	47.3	74.1
Coastal Zone Impacts (acerage)	no additional impacts	0.75	5.2	0.75	5.2
Wetlands					
Total Wetlands (acreage)	no additional impacts	425.3	498.0	460.7	538.8
cypress-tupelo swamps	no additional impacts	185.6	238.2	239.1	297.0
cypress	no additional impacts	37.7	37.7	55.8	55.8
freshwater marsh	no additional impacts	3.3	3.3	0.0	0.0
shrub-scrub	no additional impacts	12.8	21.8	55.1	64.0
riverine	no additional impacts	5.0	5.0	5.5	5.5
bottomland hardwoods	no additional impacts	175.2	186.5	105.3	116.5
farmed wetlands	no additional impacts	0.9	0.9	0.0	0.0
lake		4.7	4.7	0.0	0.0
Non-Wetland (acreage)	no additional impacts	679.9	669.8	514.1	498.7
Wetland Percentage	no additional impacts	38.5%	42.6%	47.2%	51.9%

No impacts to hospitals, schools, or Louisiana Department of Health and Hospitals Facilities are anticipated for the project; therefore these categores are not shown in the Matrix.

Appendix E.
Preliminary Alternatives Screening Study for an East West Corridor from Houma Thibodaux to the Sunshine Bridge

U.S. Department of Transportation
Federal Highway Administration

LADOTD

Final Screening Report

Preliminary Alternatives Screening Study
for an
East-West Corridor from Houma-Thibodaux to the
Sunshine Bridge

(Supplement to Houma-Thibodaux to LA 3127 Connection EIS)
State Project No. 700-99-0302
F.A.P. No. HP-9902(518)

March 2009

Executive Summary

On May 2nd, 2006 a resource agency meeting was held for the Environmental Impact Statement for a Houma/Thibodaux to LA 3127 Connector connecting the Houma-Thibodaux area to La. 3127 (State Project No. 700-99-0302, Federal Aid Project No. HP-9902 (518)). Out of this meeting came a request for a series of resource agency reviews and comments on the project's corridors, alignments and evaluation criteria as they were being developed. The resource agency reviews were completed between May and July of 2006.

In July of 2006 work on the project was stopped by the DOTD to allow for the resolution of concerns of the various resource agencies, including the U S Army Corps of Engineers, the Environmental Protection Agency (EPA) and U. S. Fish and Wildlife. Due to Agency concern that all possible alternatives had not been considered, it was decided by DOTD to supplement the project with a study on the possible east-west corridors connecting the Houma-Thibodaux area to the Sunshine Bridge via the Bayou Lafourche Ridge. The scope of the supplement included an expansion of the study area and a preliminary evaluation of alternatives within the expanded study area.

The study boundary was expanded to include the area known as the Bayou Lafourche Ridge from the Houma-Thibodaux area northwest to the Sunshine Bridge. The study area includes the parishes of Assumption, Lafourche and Ascension.

Through the use of readily available information, four (4) potential corridors were developed. In placing the potential corridors, every effort was made to minimize impacts to cultural, agricultural and environmental resources. Two (2) of the four (4) corridors were expansions of existing facilities, LA 1 and LA 308. The remaining two (2) corridors were placed along the ridges delineating prime farmland and the environmentally protected wetlands along the northern and southern boundaries of the ridge. The alternative corridors are limited access with a width of 300 feet. The lengths of the potential corridors range from approximately 34 to 40 miles.

Using available GIS data and information obtained from sited references, a qualitative analysis was conducted on the corridors' ability to achieve the project's *Purpose and Need* while minimizing impacts on the human and natural environment. Screening criteria used in evaluating the alternatives' ability to achieve the project's *Purpose and Need* were broken into two categories, system linkage and hurricane evacuation. Through the use of rationale presented herein, matrices presented in Appendix B were created. These matrices and preliminary findings were presented and discussed at an April 2008 Agencies' meeting.

Resource agency comments received in response to the draft of this screening report warranted a supplemental study comparing the effectiveness of a north-south alternative versus an east-west alternative at moving traffic in a northerly direction. This study evaluated forecasted traffic conditions for a representative north-south and east-west alternative utilizing the statewide travel demand model. Results from the study indicate a

relatively minor impact to regional travel for the north-south alternative compared to the east-west alternative. This is due in part to the east-west alternative's tendency to divert traffic from the north-south corridor in addition to facilitating regional trips to as far north as Baton Rouge.

Given the relative performance of the representative east-west corridor compared to the north-south corridor with respect to travel demand and it's ability to reasonably achieve the project's stated Purpose and Need, it is our recommendation that the northern most east-west alternative be carried forward to a more detailed level of analysis in the NEPA document.

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1. Introduction

1.1. Project Background

In April of 2004 the Louisiana Department of Transportation and Development (DOTD) in cooperation with the Federal Highway Administration (FHWA) awarded Buchart Horn, Inc a contract to render environmental and engineering services in the preparation of an Environmental Impact Statement (EIS) for a Houma/Thibodaux to LA 3127 Connector along with supporting line and grade information (State Project No. 700-99-0302, Federal Aid Project No. HP-9902 (518)). The document was to be prepared in accordance with the National Environmental Protection Act (NEPA), as amended, and FHWA's regulations and guidelines.

Following the project's kickoff and early coordination with lead and regulatory agencies, efforts were expended to develop various aspects of the project including but not limited to:

- Development of the project's *Purpose and Need*,
- Traffic analysis of the existing network with and without proposed North-South connection
- Preparation of a preliminary tolling study
- Gathering of available GIS data to develop constraints mapping
- Coordinating Quantm route optimization efforts
- Identifying cultural resources within the project study area
- Coordinating with the 7 regional Parish presidents and other key stakeholders

On May 2nd, 2006 a resource agency meeting was held at the South Central Planning Development Commission. The methodology used in selecting North-South corridors along with the traffic and toll studies was presented to the agencies at this meeting. It was agreed upon, going forward; agencies would be given an opportunity to review and comment on corridor and alignment selection via an FTP website.

Out of the review process came considerable agency concern that corridors traversing what is known as the Bayou Lafourche Ridge connecting Houma/Thibodaux to the Sunshine Bridge were not given due consideration as viable alternatives meeting the project's purpose and need. As a result of this agency concern, in July of 2006 DOTD stopped work on the project in order to reach a resolution.

In April of 2007 DOTD decided to supplement the project with a preliminary screening study analyzing corridors connecting Houma/Thibodaux to the Sunshine Bridge via the Bayou Lafourche Ridge. This report documents the procedures used in developing the alternative corridors, screening criteria and rationale used in evaluating the corridors along with the results of the study.

1.2. Purpose and Need

The project's *Purpose and Need* as agreed to in January of 2006 is as follows:

The purpose of the Houma-Thibodaux to LA 3127 Connection is to establish a north-south functional transportation link to the roadway network including the interstate system to the north, as well as the future I-49 route to the south, in the South Central Planning and Development District serving the Parishes of Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles and St. Mary.

Existing north-south access in the region between the Houma-Thibodaux area to the south and the Mississippi River Corridor area to the north, for approximately a 38-mile east-west stretch, is mainly limited to LA 20. LA 20 is a two-lane circuitous route, with doglegs and narrow shoulders, which serves this region as the main roadway linking the Houma-Thibodaux area (regionally served by the trending east west routes, US 90 (Future I-49), LA 1 and LA 308) to the Mississippi River Corridor (regionally served by the trending east west routes LA 3127, LA 18, LA 3125, US 61 and I-10). The existing LA 20 roadway, which partly tracks a narrow winding ridge through the wetlands, also functions as the main street for the communities of Chackbay and Vacherie. Narrow LA 20 has multiple driveway access points in these developed areas, increasing conflict points and limiting the efficient movement of people, goods and services and hurricane evacuation between the Houma-Thibodaux area and the central Mississippi River Corridor.

The *Purpose and Need* is broken into two categories: North-South System Linkage and Hurricane Evacuation. These categories were considered in developing screening criteria used in the evaluation of the East-West corridors. Screening criteria used in evaluating the corridors' ability to meet the project's *Purpose and Need* are discussed in further detail in section 4.2 of this report.

1.3. Study Approach

At this level of screening, the analysis supporting the evaluation of the alternatives is primarily qualitative in answering questions about how well the proposed alternative meets the criteria identified herein, and how the proposed alternative compares to other alternatives within the study area. In order to identify corridor impacts, a preliminary engineering and environmental assessment of each of the alternatives was performed based on the existing conditions, information compiled to date and the conceptual alignments for the alternatives. Each alternative was evaluated against the criteria detailed in Section 4 of this report. Each proposed alternative was rated on a high, medium and low scale for each category. Each rating was based upon the degree that the alternative met or did not meet the project's objectives and screening criteria. A table was developed to show the criteria and the individual ratings for each alternative.

1.4. Goal of the Study

The objective of this preliminary study of corridors connecting Houma/Thibodaux to the Sunshine Bridge is to determine whether or not these corridors meet the EIS' accepted *Purpose and Need* of enhancing north-south connectivity within the region in addition to providing functional hurricane evacuation. Corridors should also minimize impact to the human and natural environment. Upon completion of the study, it is the goal of the project team to provide recommendation of which, if any, alternatives to carry forward into the Draft EIS phase of the project. Upon receipt of the recommendation and supporting documentation, resource agency concurrence will be the critical path to moving into the Draft EIS phase of the project.

2. Existing Conditions

2.1. General Conditions

Assumption and Lafourche Parishes are located just east of the central coastal region of South Louisiana. They are defined by their proximity to the Mississippi River industrial corridor to the north and the strong oil and gas industry to the south at the Gulf of Mexico. Assumption Parish Louisiana covers a geographic area of approximately 364.55 square miles, of which 25.87 square miles are water. Lafourche Parish has a land area of 1,085 square miles, and 387 square miles of water. Bayou Lafourche splits the parishes, which at one time was a major tributary of the Mississippi River. The geography of the region is a mix of fertile farming land found along the natural ridges of Bayou Lafourche and other bayous, and the vast wetlands of the Lake Verret watershed, situated between the uplands of the bayou ridges and the Atchafalaya River.

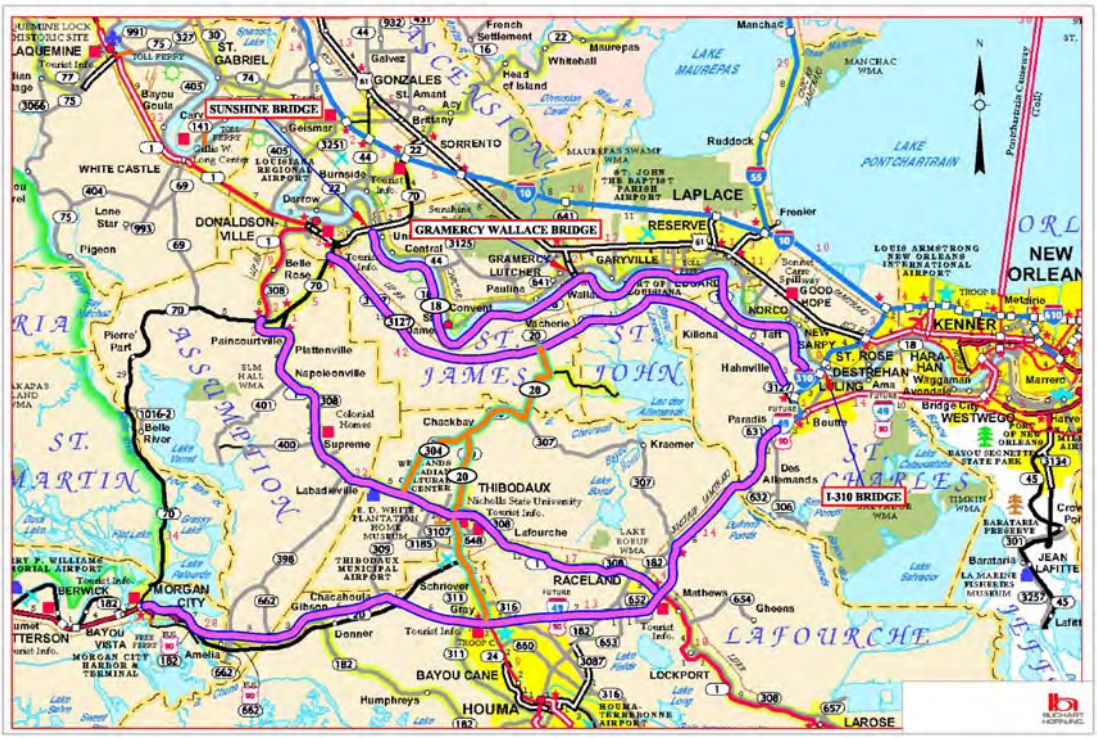
2.2. Transportation Network

The existing transportation network within the Bayou Lafourche Ridge primarily consists of LA 1 and LA 308. These 2-lane 2-way arterials parallel one another along the west and east banks of Bayou Lafourche, respectively. There is unlimited access throughout both facilities as they traverse through Lafourche and Assumption Parishes. Access points within the Bayou Lafourche Ridge include but are not limited to:

- LA 3185, which serves as a southwest bypass around the Thibodaux;
- LA 309, which serves as an alternative to LA 24 for access into and out of Houma;
- LA 304, which serves as alternative access to Chackbay via LA 20 north of Thibodaux;
- LA 645

- LA 398
- LA 1014
- LA 1010
- LA 400
- LA 401
- LA 1008
- LA 1007

Facilities listed above provide access to several small, unincorporated communities including Pierre Part, Belle Rose, Labadieville and Bayou L'Ourse; in addition, they provide primary access to the only incorporated area within the ridge, Napoleonville, LA. The unlimited access and heavy commercial and residential development associated with these numerous small municipalities make unimpeded travel through this region difficult. Below is an area map highlighting the existing facilities within the project boundary.



2.3. Land Use

Assumption Parish is centrally situated in the Barataria-Terrebonne National Estuary, an EPA funded national estuary program. Lake Verret has been identified by the Barataria Terrebonne National Estuary Program (BTNEP) as one of Louisiana's most productive lakes with an abundance of aquatic organisms and support for recreational and commercial fisheries. The Parish is also included in the Louisiana Atchafalaya Basin Program.

Population in Assumption Parish was reported at 23,196 in 2005. The population density was 68 people per square mile. 8,239 housing units were reported in 2005 with an average density of 23 houses per square mile.

There are a couple of large marine fabrication industries in the southern most tip of the Parish, which serve the offshore petroleum exploration and production industries. While these industries typically employ a large number of persons and pay well, the jobs are subject to the ups and downs of petroleum exploration and production. Several old bayou communities, such as Pierre Part, are found on the edges of the abundant Lake Verret swamp, from which nearby residents historically derived a living from harvesting fish and wildlife.

The Parish landscape remains largely agrarian with sugar cane being the predominate crop. It is this agricultural industry that has and continues to be the backbone of the community's economic structure. The natural levees of Bayou Lafourche are fertile farming lands. The area has been farmed since the earliest colonial days and sugarcane production dates to the 1700's. Today, Assumption is one of 25 Louisiana Parishes with sugarcane acreage. There were 690 farms with an average size of 715 acres. In Assumption Parish there were 42,117 acres planted in cane in 2005, roughly 8.6% of the State total planted that year. The amount of harvested sugar cane acreage is approximately 62% of all acres planted. The parish also has about the same percentage of the total number of the State's sugar cane farms. The amount of farms in the State has remained fairly stable since 1993, but the number of mills has dropped from 20 to 15, two of which are located in Assumption Parish.

The soil of the entire parish is alluvial and divided into three classes – sandy loam, mixed soil (a mix of sand and humus), and black land (contains little or no sand). As stated many thousands of acres are flooded, however, because of their low elevation and lack of adequate outlets most of the flooded soils are in woodland areas. The most valuable land of the parish lies along Bayou Lafourche, extending back some 2.5-3 miles; no better land than this is to be found in the state.

Lafourche Parish is located on Louisiana's Gulf Coast about 50 miles South South-West of New Orleans. The parish has a land area of 1,085 square miles, and 387 square miles of water. In 2005, the population was reported at 92,179 with a population density of 85 people per square mile. Settlement is concentrated along Bayou Lafourche, which runs the length of the one hundred-mile long parish.

2.4. Local and Regional Economy

2.4.1. Assumption Parish

In Assumption Parish, the unemployment rate in 2004 was 8.4%; however, it dropped to 4.7% by September of 2007. In 2005 the estimated median household income was reported as $35,152 for Assumption Parish compared to $36,729 for the state of Louisiana. The median house value was reported at $103,406 for Assumption Parish compared to $101,700 for the state of Louisiana. Distribution of employment among males in Assumption Parish is summarized as follows:

- Construction 27%
- Chemical Industry 9%
- Agriculture, forestry, fishing and hunting, 8%
- Transportation equipment, 6%
- Mining, 5%
- Food, 3%
- Food and beverage stores, 3%

Distribution of employment among females in Assumption Parish is summarized as follows:

- Education Services, 19%
- Health Care, 16%
- Accommodations and food services, 8%
- Food and beverage stores, 7%
- Finance and Insurance, 7%
- Department and other merchandise stores, 5%
- Public Administration, 4%

Louisiana produces about 20% of the sugar grown in the United States and the State industry employs some 27,000 people. In the year 2002, there were 446,000 acres harvested in Louisiana for sugar. The amount of sugar produced per acre was 5,989 tons. According to the Louisiana Extension Service the yield for Assumption in 2004 was 1,120,718 tons of sugar cane, which delivered gross revenue of $ 21,644,161.

2.4.2. Lafourche Parish

In Lafourche Parish, the unemployment rate in 2004 was reported at 5%; however, it dropped to 2.9% by September of 2007. In 2005 the estimated median household income was reported as $39,373 for Lafourche Parish compared to $ 36,729 for the state of Louisiana. The median house value was reported at $103,537 for Lafourche Parish compared to $101,700 for the state of Louisiana. Distribution of employment among males in Lafourche Parish is summarized as follows:

- Construction 13%
- Transportation equipment, 10%
- Mining, 9%
- Other transportation and support activities and couriers, 6%
- Education services, 5%
- Public Administration, 4%
- Agriculture, forestry, fishing and hunting, 3%

Distribution of employment among females in Lafourche Parish is summarized as follows:

- Education Services, 21%
- Health Care, 16%
- Accommodations and food services, 7%
- Finance and Insurance, 5%
- Department and other merchandise stores, 5%
- Public Administration, 4%

The Parish's slogan, "Feeding and Fueling America," reflects an economy based on natural resources and agriculture. For generations, Lafourche Parish's coastal zone has provided natural resources and agriculture. Lafourche Parish's coastal zone has been a fertile spawning ground for fisheries, including shrimp, crabs, oysters and finfish. Port Fourchon is the service hub for the Gulf offshore energy industry, critical to both the national economy and security. The Louisiana Offshore Oil Port (LOOP) is the Gulf's only supertanker port for receiving imported oil. The Gulf Intracoastal Waterway (GIWW) and Bayou Lafourche are key navigation channels for the energy industry. Lafourche also continues to grow and process sugar cane and maintains its historic prominence in developing and manufacturing mechanized sugar harvesting technology used both domestically and in other countries.

3. Development of Alternatives

As stated, the objective of this study was to determine whether a viable alternative existed connecting Houma/Thibodaux to the Sunshine Bridge. Four (4) potential corridors were developed in an effort to consider all feasible alternatives within the Bayou Lafourche Ridge. Corridors were arranged such that impacts to cultural, agricultural, human and environmental resources were minimized.

Two (2) of the four (4) corridors were expansions of existing roadways, LA 1 and LA 308; while these alternatives do not do much in way of avoiding cultural resources, they must be considered in order to fully evaluate every feasible alternative within the ridge. The remaining two (2) corridors were placed along the ridges delineating prime farmland and the environmentally protected wetlands along the northern and southern boundaries of the ridge.

The alternative corridors are limited access 4 lane 2 way facilities with a width of 300 feet. The lengths of the potential corridors range from approximately 34 to 40 miles. These dimensions were used to calculate the acreage of impacted natural resources. Based on the GIS and other readily available data, the corridors were evaluated on their ability to meet the project's accepted *Purpose and Need* while minimizing impacts to the human and natural environment.

Included in Appendix B are spreadsheets presenting the corridors' impacts to the cultural, human and natural environment. Corridor segments presented in the spreadsheets are illustrated on project maps found in Appendix A. Estimated construction costs are also presented in these spreadsheets. Costs presented are the summation of the following for each alternative:

- Displaced residential and commercial relocations at a rate of $125K/residence and $300K/business respectively
- Wetland mitigation at a cost of $10,000/acre
- Construction cost at a rate of $4,620/ft for roadway on structure and $1,080/ft for roadway at grade. Portions of the corridor traversing wetlands were assumed to be on structure.

4. Alternative Screening Process

4.1. Objectives

The purpose of the preliminary screening of alternatives was to evaluate the ability of the alternatives to meet broad objectives that have been established for the project based upon its *Purpose and Need*. It is important to note that the preliminary alternatives are conceptual and based on readily available data. Specific aspects such as routing and specific station locations will be determined at later stages of the study. The intent of this evaluation was to determine the alternatives that meet or exceed the project evaluation criteria by narrowing the initial broad range of alternatives to a reasonable number of feasible options that can be carried forward to a more detailed level of analysis in the NEPA document. The Houma-Thibodaux to the Sunshine Bridge east-west corridors were evaluated using the following broad objectives:

- Meeting the accepted Purpose and Need from the Houma-Thibodaux to LA 3127 Connection EIS, which includes providing a functional north-south system linkage and a secondary purpose of improving hurricane evacuation. A functional linkage is defined as being capable of operating or functioning in a manner that serves the traffic demand for the purpose for which the transportation facility was designed.

- Minimizing impacts to the human and natural environment, including the consistency of the potential east-west corridors with existing/future conditions and growth trends of the communities and economy of the project study area.

- Consistency of project alternatives with transportation, land use, economic development or growth objectives identified in applicable Federal, state, regional, and local documents/plans.

4.2. Screening Criteria

Screening criteria were developed and considered in the evaluation of the alternatives based upon the project objectives noted above. In Appendix B the screening criteria for the east west alternatives are presented. The criteria are arranged under the headings of "*Purpose and Need*" and "*Environmental*". The *Purpose and Need* heading has been further divided into two principle elements: "system linkage" and "hurricane evacuation".

System linkage was evaluated using the following four criteria:

- Improves north-south connectivity
- Provides north-south system redundancy
- Improves north-south highway capacity
- Improves access to Interstate 10 and future Interstate 49

Hurricane evacuation was evaluated using the following three criteria:

- Improves hurricane evacuation from the project study area
- Uniformly distributes traffic between the Sunshine and Gramercy-Wallace Bridges
- Maximizes efficient use and operation of hurricane evacuation routes and the transportation network

The Environmental heading was further divided into two principle elements, "human" and "natural" environment.

The human environment was evaluated using the following four criteria:

- Minimizes the disruption of communities
- Minimizes the disruption of farm operations
- Minimizes the disruption of economic/commercial activities
- Optimizes user benefits and costs

The natural environment was evaluated using the following three criteria:

- Minimizes impacts on NWI Wetlands
- Minimizes impacts upon bottomland hardwoods
- Minimizes impacts on endangered species
- Minimizes impacts upon cypress forests

- Minimizes impacts on freshwater marshes

4.3. Screening Criteria Considerations

Each alternative was evaluated against the 16 criteria detailed above. The evaluation considered readily available information (including previously completed traffic, engineering, and hurricane evacuation studies), aerial photography and digital data for the study area that was collected and evaluated for acceptable quality and applicability. GIS was used to display the information and identify potential impacts in order to facilitate the screening process. Information considered in the alternative development and screening processes to determine the relative impacts and resultant ratings included:

- Local, regional and state plans
- Land use
- Population and demographics
- Employment, income and economic conditions
- Public parks, wild refuge and recreational areas-Sections 4(f) and 6(f)
- Farmlands
- Wetlands
- Threatened and endangered species
- Vegetation and wildlife
- Water resources
- Floodplains/floodways
- Community resources
- Local and regional economy
- Historic and Archeological/Sections 106 and 4(f)
- Hazardous waste sites
- Pipelines
- Hurricane evacuation
- Traffic impact/congestion
- Constructability and estimated costs

Each of the proposed alternatives were rated on a high, moderate and low scale for each of the sixteen criteria using the “high”, “medium”, and “low” rating scale. The greater the degree to which the alternatives met the screening criteria, the higher their rating was. The ratings in the individual criteria were summarized to produce a composite rating for each alternative. As applicable, the following considerations were also used in evaluating the sixteen criteria:

- Environmental: Does the alternative minimize negative environmental, economic and social effects?

- Regional Transportation System Capacity: Does the proposed alternative improve the capacity, reliability and quality of the regional transportation system?

- Access to Opportunity: Does the proposed alternative improve access to opportunities such as employment, education, and health care for area residents?

- Mobility/Connectivity/Emergency Response: Does the proposed alternative improve mobility and connectivity within the area's transportation system? Does the alternative provide hurricane evacuation opportunities?

- Compatibility with Land Use: Does the proposed alternative fit within the context of the area's existing and future land use? Does the proposed alternative comply with economic development and land use plans for the area?

- Environmental Justice: Does the proposed alternative disproportionately burden or alleviate the burden on environmental justice populations?

- Cost: Does the proposed alternative provide transportation system user benefits at a reasonable capital and operating cost? Are there energy and timesavings for the facility users? Is it cost-effective to design, construct and maintain?

- Design and Constructability: Can the proposed alternative be designed and constructed within a reasonable time frame, with a minimum of impact on the existing transportation system/network and existing land owners, and by utilizing existing infrastructure?

At this level of screening, the analysis supporting the evaluation of the alternatives is primarily qualitative in answering the above questions as to how well the proposed alternatives meet the criteria and how the impacts of the proposed alternative compares to other alternatives within the study area. Based on the existing conditions, information compiled to date and the conceptual alignments for the alternatives (Appendix A), a broad preliminary engineering and environmental assessment of each of the alternatives to identify its impacts was performed. Tables presented in Appendix C were developed to show the criteria, the individual ratings for each alternative, explanations or identifications of key issues used in determining the ratings and the summary rating for each alternative.

4.4. Screening Results

4.4.1. System Linkage

System linkage criteria were rated using information from the following sources:

- May 2006 Resource Agency meeting minutes
- GIS data and project mapping
- Houma-Thibodaux to LA 3127 Connection EIS-Technical Appendix: Traffic Analysis prepared by Urban Systems
- Hurricane Evacuation Corridor Study to Connect Relocated US 90 to LA 3127 prepared by URS
- Houma-Thibodaux to LA 3127 Connection Preliminary Toll Study prepared by Wilbur Smith Associates
- Technical Memorandum: Traffic Impacts/Congestion Data Review for the Preliminary Alternatives Screening Study for an East-West Corridor From Houma-Thibodaux to the Sunshine Bridge prepared by Wilbur Smith Associates

1. Improves north-south connectivity

Transportation system connectivity refers to the directness of connections and the density of links in the road network. Considerations included higher ratings for those alternatives that provided more direct north-south connectivity and for those that increased the density of north-south routes in the roadway network. East-west density and system connectivity is well established via LA 18, LA 3127, LA 308, LA 1 and US 90 within the project study area. LA 20 is the only north-south connection with the project study area. This is a minor arterial roadway with sections of two, three, and four lanes. The three and four sections are located in the Thibodaux area. North of Thibodaux, LA 20 is a two lane facility with no shoulders or emergency lanes. In the event of a stalled vehicle or accident/crash, one or both of the lanes may become blocked with no other options available to facility users for north-south travel.

<u>Ratings</u>

The alternatives were rated HIGH, MEDIUM, or LOW based upon a review of the studies noted above and how the alternatives would provide direct north-south connectivity and improve the density of north-south routes in the roadway network.

Ratings of Alternatives

None of the east-west alternatives rated HIGH as they did not provide or improve direct north-south connections in the transportation network. They also did not increase the density of direct north-south links in the roadway network. All of the east-west alternatives increased the density of east-west links in the project study area. The northern and southern alternative corridors (N1, N2, S1, and S2) would enhance the roadway network, but primarily in an east-west direction. The central alternatives (C1, C2, C3, C4, C5, C6, C7, and C8) would not enhance the network in any direction as they represent an upgrade to existing facilities and were not an expansion of the transportation network. They would not address the primary need of improvement in north-south connectivity and system linkage.

The northern-most of the east-west alternatives, N1 and N2, rated MEDIUM, as they were the most direct routes of the alternatives, were the furthest north, and were closest to the population being served by the proposed facilities. However, N1 and N2 would not provide direct or functional north-south connections to the transportation network. They would also not increase the density of direct north-south links. C1, C2, C3, C4, C5, C6, C7, C8, S1, and S2 were rated low as they did not improve north-south connections within the network, were not as direct of routes as the northern alternatives, and did not increase density of north-south links in the network. Alternatives S1 and S2 were the furthest away from the population being served by the proposed roadways.

2. Provides north-south system redundancy

Transportation system redundancy is where the transportation network connections are duplicated in order to provide alternative routes in case one link in the network fails; reaches its capacity, or is blocked due to crashes, incidents, emergency situations or maintenance activities. The duplicated or redundant links can accommodate the diverted traffic demand. Redundancy represents flexibility with optional route choices for facility users when a link fails. A review of the highway network indicated that the network in the project area lacks redundancy in the north-south direction, as LA 20 is the only north-south route within the study area. Therefore if LA 20 should become closed due to incidents such as those noted above, residents would not have access north to LA 3127 from the Houma-Thibodaux area except for using US 90 or LA 1/LA 308 to LA 70 or south from South Vacherie-Chackbay area to Houma-Thibodaux except for using LA 3127 to LA 70 to LA1/LA 308 to LA 20. This results in adverse travel distance for those facility users who regularly use LA 20 for north-south travel when it is closed due to the incidents noted above.

The existing highway network has redundancy in the east-west direction via LA 18, LA 3127, LA 308, LA 1 and future I-49/ current US 90. There is redundancy with the crossings of the Mississippi River with the Sunshine Bridge to the west of the project study area, the Gramercy-Wallace Bridge north of Thibodaux, and the I-310 Bridge outside of the New Orleans area. The Sunshine and I-310 bridges are accessible from the Houma-Thibodaux area via the existing east-west roadway network. However, the east-west routes are not as direct as north-south connections to the Gramercy-Wallace Bridge. The Gramercy-Wallace Bridge is not as accessible from the Houma-Thibodaux area due to the lack of an improved route from this area to the bridge. With the completion of the LA 3213 connector from the bridge to LA 3127, there is available capacity for an improved north-south route to connect to from the Houma-Thibodaux area. However, traffic diverted to this route from the east-west corridors (US 90, La 1 and LA 308) of the project study area will be limited without improvements to north-south connectivity and redundancy within the transportation network of the region.

Ratings

A combination of considerations was used in determining the HIGH, MEDIUM or LOW rating for each alternative, including the information and studies noted above.

Rating of Alternatives

None of the east-west alternatives rated HIGH, as they did not provide north-south system redundancy. All of them rated LOW, as they did not provide redundancy for LA 20, the only north-south route in the project study area. They also would not improve connectivity to the Gramercy-Wallace Bridge, which represents a redundancy in Mississippi River crossings for the transportation network of the study area.

3. Improves north-south capacity

The results of the traffic analysis for the Houma-Thibodaux to LA 3127 Connection indicated that the existing east-west routes provide good capacity for east-west traffic movements via the US 90, LA 1, LA 308, and LA 3127 corridors with acceptable levels of service. LA 1 and LA 308 are projected to operate at or near capacity under the projected future conditions. The study noted that the demand for north-south travel is greater than what is represented in the traffic counts on LA 20 and LA 24. The excess demand is represented in traffic counts on US 90 by motorists who elect to travel this route to access the area's interstate system (I-10 and I-55) via the US 90/I-310 interchange rather than accessing the interstate system via the circuitous LA 20 or the longer LA 1/LA 308 corridors. It also concluded that the need for additional capacity in the Houma-Thibodaux area is greatest in the north-south

direction, which is only served by LA 20. LA 20 will not have sufficient capacity to serve the projected traffic volumes and will have poor levels of service. The Gramercy-Wallace Bridge is not as accessible from the Houma-Thibodaux area due to the lack of an improved route from this area to the bridge. With the completion of the LA 3213 connector from the bridge to LA 3127, there is available capacity for an improved north-south route to connect to from the Houma-Thibodaux area.

Ratings

A combination of considerations was used in determining the HIGH, MEDIUM or LOW rating for each alternative, including the information and studies noted above.

Ratings of Alternatives

None of the alternatives rated HIGH, as they do not address the need for increased north-south system capacity in the manner that a direct north-south alternative would nor would they improve connectivity and access to the available capacity for river crossing at the Gramercy-Wallace Bridge. All of the east-west alternatives would add capacity in an east-west direction, which would address the potential future capacity issues on LA1 and LA 308. However, they all were rated LOW because they would not address the primary north-south capacity needs of the study area for a north-south facility.

4. Improves access to Interstate 10 and future Interstate 49.

The Houma-Thibodaux Metropolitan Area is the only major metropolitan area not directly served by an interstate highway facility in Louisiana. When US 90 is upgraded to interstate standards and designated as Interstate 49, the area will have interstate access in an east-west direction. However, the lack of a high capacity/interstate type facility connecting the region to I-10 has negative effects in terms of regional connectivity and may adversely affect economic development and emergency preparedness. Lafourche Parish is known for "Feeding and Fueling America" with its agricultural production in the northern and central sections of the parish and the oil/natural gas industry at Port Fourchon in the southern part of the parish. Over 30% of the gas and oil entering the United States passes through this port. More direct and reliable access to the interstate system is important to this industry and others in the study area in order for them to provide reliable, timely and cost effective movement of goods and services to the area, region and country. In order to access the area's interstate system to the north (I-10 and I-55), residents, employees and truckers elect to travel US 90 via the US 90/I-310 interchange rather than accessing the interstate system via the circuitous, LA 20 or the longer LA 1/LA 308 corridors. Existing travel distances for US 90 at LA 24 to

I-10 are approximately 49 miles via LA 1/LA 308, 44 miles via US 90 and 40 miles via LA 20/24.

Ratings

The considerations used in determining the HIGH, MEDIUM or LOW rating for each alternative, included the information and studies noted above.

Ratings of Alternatives

None of the east-west alternatives rated HIGH, as they did not provide the most direct routes to the interstate system to the north. With the completion of the LA 3213 connector from the Gramercy-Wallace Bridge to LA 3127, alternatives that improved access to the connector and the bridge would provide the most direct and convenient access to I-10 to the north and future I-49 to the south. These alternatives would have rated HIGH. While the east-west alternatives would improve access to the interstate system, they would not do so as efficiently as more direct north-south routes, which in addition to providing access to I-10, would provide more direct access to I-55. Alternatives N1 and N2 were rated MEDIUM as they would improve access to I-10 via their terminus at LA 70 and they were the shortest by six miles of the east-west alternatives. They were also better located to serve the population that would use them than the other east-west alternatives. The remaining east-west alternatives were rated LOW as they were the longest of these alternatives, by around five miles, and did not serve the population as well as Alternatives N1 and N2.

4.4.2. Hurricane Evacuation

Hurricane evacuation criteria were rated using information from the following sources:

- May 2006 Resource Agency meeting minutes
- GIS data and project mapping
- Houma-Thibodaux to LA 3127 Connection EIS-Technical Appendix: Traffic Analysis prepared by Urban Systems
- Hurricane Evacuation Corridor Study to Connect Relocated US 90 to LA 3127 prepared by URS
- Houma-Thibodaux to LA 3127 Connection Preliminary Toll Study prepared by Wilbur Smith Associates
- Technical Memorandum: Traffic Impacts/Congestion Data Review for the Preliminary Alternatives Screening Study for an East-West Corridor From Houma-Thibodaux to the Sunshine Bridge prepared by Wilbur Smith Associates

The studies noted above investigated the performance of the transportation system under emergency and non-emergency situations. The studies noted that in spite of limited transportation access to the area, the Houma-Thibodaux region has experienced population and employment growth. The studies also noted that because of the low elevation of the area, the roadway network is susceptible to flooding during heavy precipitation, high tides and storms surges. The studies concluded that the need for a new and/or improved route to provide hurricane evacuation is underscored by the many instances of roadway inundation and traffic congestion along the limited number of hurricane evacuation routes.

The studies also identified the Sunshine and Gramercy-Wallace Bridges as the critical transportation links in providing northbound hurricane evacuation options for the residents of the Houma-Thibodaux area. At this time the east-west roads of the existing network provide good access to the Sunshine Bridge. However, due to limited north-south system connectivity, the Gramercy-Wallace Bridge is under-utilized. With the completion of the LA 3213 connector from the bridge to LA 3127, access to the bridge will be improved from LA 3127. However, traffic diverted to this route from the east-west corridors (US 90, La 1 and LA 308) of the project study area will be limited without improvements to north-south connectivity and redundancy within the transportation network of the project study area. Because the critical links control the amount of time it takes to evacuate the area, the best alternatives for hurricane evacuation are those that are able to provide a more balanced distribution of traffic between the critical links so that the overall time to clear the area is reduced.

The only designated hurricane evacuation routes for the residents of the Houma-Thibodaux area are LA 1/LA 308 and US 90. LA 70 also provides some hurricane evacuation capacity north to I-10 and US 61 for St. Mary and Assumption parishes. However the project study area does not contain a designated north-south hurricane evacuation route.

Lafourche Parish Hurricane Needs Assessments (as part of the Louisiana Speaks Program) indicated that after Hurricane Katrina and the experiences of residents in evacuating the Houma-Thibodaux area, a north-south evacuation route to I-10 was identified as a priority issue to be addressed for the area to recover and prepare for future emergency situations.

Prior to Hurricane Gustav making landfall in August of 2008, South Central Planning and Development Commission placed traffic counters in locations that would best measure any traffic that may evacuate the region. Traffic counters were placed on evacuation routes, such as US90, LA20, LA1 and LA308. The recorded traffic numbers show that a significant amount of vehicles were heading in the northern direction. On LA20 just south of LA3127 in Vacherie, 25,532 vehicles were recorded; while on LA1 and

LA308 just north of Thibodaux, 21,727 vehicles were recorded headed toward LA70. These routes represent the northern evacuation routes out of the area. In comparison, 29,878 vehicles were recorded as traveling east on US90 in Des Allemands and 29,594 vehicles were recorded traveling west of US90 near the Terrebone/Assumption boundary.

1. Improves hurricane evacuation from the project study area

Ratings

The considerations used in determining the HIGH, MEDIUM or LOW rating for each alternative, included the discussion and studies noted above.

Rating of Alternatives

None of the east-west alternatives rated HIGH in terms of improving hurricane evacuation from the Houma-Thibodaux area. While the east-west alternatives would add capacity in an east-west direction which would address the potential future capacity issues on LA1 and LA 308 and generally improve hurricane evacuation in the area, they would not address the primary regional north-south evacuation and capacity needs of the study area for the addition of a direct north-south facility to the highway network of the area identified in the studies noted previously. Alternatives N1 and N2 were rated as MEDIUM as they were the northern-most of the east-west alternatives, were the shortest routes of these alternatives, and were closest to the population being served by the proposed facilities. However, N1 and N2 would not provide or improve direct north-south connections to the transportation network. None of the east-west alternatives would improve access to one of the critical hurricane evacuation route links, the Gramercy-Wallace Bridge. The remaining east-west alternatives, S1, S2, C1, C2, C3, C4, C5, C5, C6, and C8, were rated LOW as they would not provide or improve direct or functional north-south connections to the transportation network and were the longest of the east-west alternatives which would result in longer evacuation times from the area. None of the east-west alternatives would improve access to one of the critical hurricane evacuation route links, the Gramercy-Wallace Bridge.

2. Uniformly distributes traffic between the Sunshine and Gramercy-Wallace Bridges

Ratings

The considerations used in determining the HIGH, MEDIUM or LOW rating for each alternative, included the above discussion and studies previously noted. The best alternatives for hurricane evacuation are those that are able to

provide a more balanced distribution of traffic between these critical links so that the overall time to clear/evacuate the area is reduced.

The completion of the LA 3213 connector from the bridge to LA 3127 will be improved access from LA 3127 to the bridge. However, the traffic diverted to this route from the east-west corridors (US 90, La 1 and LA 308) of the project study area will be limited without improvements to north-south connectivity and redundancy within the transportation network of the project study area.

Rating of Alternatives

None of the east-west alternatives rated HIGH or MEDIUM, as they would not uniformly distribute traffic between the Sunshine and Gramercy-Wallace Bridge. They would add capacity and redundancy to the east-west transportation network, but they would do nothing to improve access and system linkage to the Gramercy-Wallace Bridge.

3. Maximizes efficient use and operation of hurricane evacuation routes and the transportation network.

Ratings

The considerations used in determining the HIGH, MEDIUM or LOW rating for each alternative, included the discussion and studies noted above.

Rating of Alternatives

None of the east-west alternatives rated HIGH or MEDIUM, as they did not maximize the efficient use and operation of hurricane evacuation routes and the transportation network. They would add capacity and redundancy to the east-west transportation network, but they would do nothing to improve north-south network redundancy, access and system linkage to the Gramercy-Wallace Bridge.

4.4.3. Human Environment

The human environment criteria were rated using the range in the number of structures impacted, aerial photography with property lines delineated, and information from the draft Impact Analysis prepared by South Central Planning & Development Commission.

1. **Minimizes the disruption of communities**

A combination of considerations was used in determining the ratings for each alternative. These considerations included: number of churches, schools, residences, and commercial structures displaced; a review of aerial photography to determine how the communities would be affected by a limited access highway and the limited availability of replacement housing which could adversely affect social activities, community cohesion/interaction and neighborhoods through such things as displacement of residences and businesses; change in population distribution, and barrier/shadow effects caused by the new facility. Wider roads and interchanges can create physical barriers between residents and community facilities where, prior to the transportation change, the facility could be accessed by an easy walk, bicycle ride, or short drive. In general, any transportation change that impedes pedestrian and local traffic in an area can hinder community cohesion. New larger transportation facilities act as visual edges and boundaries: widening a facility can cut away portions of a neighborhood and isolate members of a community from their friends and neighborhoods.

Schools

Alternatives C1 and C2 would displace 6 schools each which resulted in a LOW rating for those alternatives. The remaining alternatives do not relocate any schools, which resulted in a HIGH rating.

Churches

The Northern and Southern Alternatives (S1, S2, N1, and N2) do not relocate any churches which was resulted in a HIGH rating The Central Alternatives would relocate between 2 to 8 churches. Alternatives C3, C4, C7, and C8 received MEDIUM ratings with 2 churches impacted. Alternatives C1, C2, C5, and C6 impacted 7-8 churches apiece which resulted in a LOW rating.

Residences

Residential ratings were based upon the range in the number of displacements/relocations and a preliminary assessment of the impacts upon the communities within the project study area. The relocation of households disrupts a neighborhood. The removal of residents can dismantle informal social networks upon which residents rely for ride-sharing, childcare responsibilities or other reciprocal services—what economists might call the "social capital" within a neighborhood. Furthermore, if a large number of households are relocated outside the community, community facilities such as schools, churches, police and fire stations, and community centers may face

declines in enrollment or demand that ultimately result in closure or reduced services. This potential exists within the east-west project area due to the limited availability of replacement housing.

Ratings

The range of impact was from 0 to 558 residential structures

HIGH- 0 to 50 residential structures
MEDIUM- 51 to 100 residential structures
LOW- 101 and more residential structures

Ratings of Alternatives

S1, S2, N1, and N2 were rated HIGH with their little or no relocations. No alternatives rated MEDIUM. C1, C2, C3, C4, C5, C6, C7, and C8, all of which impacted over 345 residential structures, were rated LOW.

Commercial

Commercial ratings were based upon the number of commercial structures being relocated with consideration of the effect of the loss of jobs and shopping opportunities would have on the rural communities. Business relocations may mean that residents need to look outside of their community for shopping and services, and some residents may lose their jobs or be forced to commute long distances to the site of the relocated businesses. There is a potential for this occurring, as there isn't sufficient replacement commercial property available within the east-west corridor to accommodate the displaced businesses.

Ratings

Range of impact was 0 to 70 businesses
HIGH= 0 to 15 businesses
MEDIUM= 16 to 30 businesses
LOW= 31 or more businesses

Rating of Alternatives

Alternatives S1, S2, N1, and N2 rated HIGH as they did not require the relocation of any commercial structures. Alternatives C3, C4, C7, and C8 rated MEDIUM. Alternatives C1, C2, C5 and C6 were rated LOW.

Overall Community Disruption Rating of Alternatives

Alternatives S1, S2, N1, and N2 rated HIGH as they minimized their impacts upon the communities along the east-west corridor due to their location away from the development that occurs along LA 1 and LA 308. These alternatives, with the exception of one residence each for N1 and N2, would not displace any schools, churches or commercial structures.

Alternatives C1, C2, C3, C4, C5, C6, C7, and C8 rated LOW due to the large number of residential and commercial relocations and the limited availability of replacement housing and commercial sites within the LA 1/LA 308 area. They would have significant adverse impacts upon the communities of St. Rose Plantation, Labadieville, Chula, Supreme, Ingleside, Napoleonville, Ratliff, Munsons, Church Spur, Plattenville and Spur. All of the central alternatives also would create physical barriers between residents and community facilities where, prior to the transportation change, the facility could be accessed by an easy walk, bicycle ride, or short drive. This in turn would negatively affect community cohesion with the communities and neighborhoods along the LA 1/LA 308 corridor. The new highway would also create visual edges and boundaries within the surrounding communities; cut away portions of neighborhoods and isolate members of a community from their friends and neighborhoods.

If large number of households and businesses are relocated outside the communities and the Bayou Lafourche area, community facilities such as schools, churches, police and fire stations, and community centers may face declines in enrollment or demand that ultimately result in closure or reduced services. Business relocations may mean that residents need to look outside of their community for shopping and services, and some residents may lose their jobs or be forced to commute long distances to the site of the relocated businesses. This potential exists within the east-west project area due to the limited availability of replacement housing and commercial locations.

2. Minimizes the disruption of farm operations

The considerations used in determining the rating for each alternative included a review of aerial photography to determine how the farming operations would be affected by a limited access highway (considered field fragmentation/isolation, access to fields/equipment storage facilities) and the number of acres of prime farmland impacted.

<u>Ratings</u>

Range of acres impacted was 557 to 1515

HIGH= 0 to 500 acres
MEDIUM= 501 to 1000 acres
LOW= 1001 or more acres

Rating of Alternatives

None of the alternatives rated high due to the number of acres of prime farmland that they impact and the disruption to farming operations. Alternatives C1, C2, C3, C4, C5, C6, C7, N1, and N2 rated MEDIUM, although Alternatives C7, N1, and N2 were all near or above 900 acres. Alternatives S1, S2, and C8 rated LOW as they all impacted over 1,000 acres of prime farmland.

3. Minimizes the disruption of economic/commercial activities

The considerations used in determining the rating for each alternative included a review of aerial photography to see how businesses would be affected, consideration of the effect of the potential loss of jobs and shopping opportunities would have on the rural communities, the economic effect of the loss of farmlands on crop production and sales, the number of commercial structures displaced, and consideration of the economic trends of the project study area.

Ratings

HIGH, MEDIUM, and LOW ratings were determined based upon a combination of the number of residential displacements which could reduce the tax base of the area, the number of acres of prime farmland impacted which would reduce income for farmers and potential affect support industries such as sugar refineries and farm equipment sales, the number of commercial structures displaced which would reduce employment and shopping opportunities in the area, and the alternative does not serve or support the areas of the project study area where economic growth currently exists and is projected to occur.

Rating of Alternatives

None of the east-west alternatives rated HIGH. The central alternatives, C1, C2, C3, C4, C5, C6, C7, and C8; rated LOW due to the direct and cumulative economic impact of the large number of residential and commercial relocations, the lack of sufficient replacement housing and commercial sites, the loss of some employment and shopping opportunities due to businesses not

relocating back within the communities along Bayou Lafourche Alternatives S1 and S2 also rated low, however this was due to the direct and cumulative impacts due to the number of acres of prime farmland lost, both alternatives impact over 1,400 acres, which would impact crop production, affect the efficiency of farm operations, reduce income for farmers and potential affect to support industries such as sugar refineries and farm equipment sales. N1 and N2 were rated as MEDIUM as they would not impact as much farmland as the southern alternatives, over 400 fewer acres.

4. Optimizes user benefits and costs

The considerations used in determining the HIGH, MEDIUM or LOW rating for each alternative included a review of aerial photography, estimating travel time and distance, also directly correlated to the travel efficiencies would be amount of energy used. A savings in travel time is usually the primary user benefit of a transportation project. Reductions in the variability of travel time also have become a major consideration in projects serving freight transportation. The value of travel time savings, and of the reduced variability of travel time, can be thought of in terms of reduced opportunity costs. In other words, savings in time can be used for activities other than traveling, allowing individuals and firms to be more productive or to have more time for recreational activities. For example, when a business reduces its delivery times as a benefit of a transportation improvement, it may become more competitive and gain a larger customer base. The saved time can then be used in production activities. Savings in travel time can also be valuable for commuters who gain additional time for work, household activities, and recreational activities as travel times to destinations are reduced.

Rating of Alternatives

None of the east-west alternatives rated HIGH in terms of optimizing user benefits and costs. The alternatives that improve access to the LA 3213 connector and the Gramercy-Wallace Bridge would provide the most direct and convenient access to I-10 to the north and future I-49 to the south would have rated HIGH. While the east-west alternatives would improve access to the interstate system, they would not do so as efficiently as more direct north-south routes, particularly for residents of Thibodaux. They also would not provide the user benefits, energy, time, vehicle operational cost and driving distance savings that the more direct alternatives would. Alternatives N1 and N2 were rated MEDIUM, as they were the shortest by six miles of the east-west alternatives and would provide the greatest travel time savings of the east-west alternatives. The remaining east-west alternatives were rated LOW as they were the longest of these alternatives, by around five

miles, and would not provide the travel time savings as N1/N2 and the north-south alternatives.

4.4.4. Natural Environment

The natural environment criteria were rated using the range in the number of acres impacted:

1. Minimizes impacts on NWI Wetlands

Ratings

Range of Impact was 0 to 7 acres
HIGH= 0 to 5 acres
MEDIUM= 5 to 10 acres
LOW= 10 acres or more

Ratings of Alternatives

HIGH- S1, S2, C1, C2, C3, C4, C5, C6, C7, and C8.
MEDIUM- N1 and N2.
There were not any LOWS.

2. Minimizes impacts on Bottomland Hardwoods

Ratings

Range of Impact was 30 to 151 acres
HIGH= 0 to 50 acres
MEDIUM= 51 to 100 acres
LOW= 101 or more acres

Rating of Alternatives

HIGH- C2, C4, C6, C8, and N2.
There were not any MEDIUMS.
LOW- S1, S2, C1, C3, C5, C7, and N1.

3. **Minimizes impacts on Endangered Species**

Ratings

Range of Impact 0 acres (for all east-west alternatives)
HIGH= 0 to 5 acres
MEDIUM= 6 to 10 acres
LOW= 11 acres or more

Rating of Alternatives

They all rated HIGH.

4. **Minimizes impacts on Cypress Forests**

Ratings

Range of impact was 117 to 350 acres
HIGH= 0 to 100 acres
MEDIUM= 101 to 200 acres
LOW= 201 acres or more

Rating of Alternatives

There were not any HIGHS.
MEDIUM- S1, S2, C1, C2, C3, C4, C5, C6, C7, and C8.
LOW- N1 and N2.

5. **Minimizes impacts on Freshwater Marshes**

Rating

Range of impact was 0 to 11 acres
HIGH= 0 to 5 acres
MEDIUM= 6 to 10 acres
LOW= 10 acres or more

Rating of Alternatives

HIGH- S1, S2, C1, C2, C3, C4, C5, C6, C7, and C8.
MEDIUM- N1 and N2.
There were not any LOWS.

5. Traffic Modeling Study of East-West and North-South Routes

Resource agency comments on the draft of this screening report resulted in the need to evaluate the effectiveness of the east-west alternatives in moving traffic in a northerly direction and compare this with the north-south alternatives. Therefore this study was conducted in order to evaluate forecasted traffic conditions for both a general north-south alignment and an east-west alignment under the same conditions. The alternatives both run generally north – south from US 90 to I 10. Each crosses the Mississippi River just south of I 10. The Louisiana Statewide Traffic Model was used to model the traffic conditions in the Thibodaux – Houma region of southwest Louisiana.

The East – West alternative is a section of new construction from US 90 to LA 1, and then follows the existing alignment of LA 1 as far as Spur 70. Continuing north on LA 70, it crosses the Sunshine Bridge and intersects LA 22 just before reaching I 10. It should be noted that LA 308 parallels LA 1 for its entire length in this alternative; the two roads are similar two-way facilities on either side of Bayou Lafourche, with periodic connecting bridges. While only LA 1 is included as an alternative for expansion to a four-lane arterial, the two roads function as a single unit.

The North – South alternative follows the alignment of existing roads. Starting at US 90, it follows LA 24 and LA 20 to LA 3127, following it to LA 3213 and crossing the Mississippi River at the Gramercy Wallace Bridge. It then follows LA 641 to I 10.

The model results indicate that both alternatives primarily serve local traffic and that they divert minimum traffic from other routes. The E-W alternative has the greater impact both because it diverts some traffic from the N – S corridor. Also, the E-W corridor facilitates regional trips as far north as Baton Rouge and alleviates congestion along the corridor.

The N – S corridor has relatively minimal impact upon traffic volumes in the area, partly because large portions of it are already constructed with four lanes, and partly due to its existing level of service at LOS A – C and lack of congestion in the base case and in all scenarios and years. Construction of the N – S alternative will not divert traffic from the E – W corridor. Please see Appendix D or a copy of the Traffic Modeling Study.

6. Summary and Recommendation

SUMMARY

The purpose of this preliminary screening of alternatives was to evaluate the ability of the alternatives to meet broad objectives that have been established for the project based upon its purpose and need:

1. Meeting the accepted Purpose and Need from the Houma-Thibodaux to LA 3127 Connection EIS, which includes providing a functional north-south system

linkage and a secondary purpose of improving hurricane evacuation. A functional linkage is defined as being capable of operating or functioning in a manner that serves the traffic demand for the purpose for which the transportation facility was designed.

2. Minimizing impacts to the human and natural environment, including the consistency of the potential east-west corridors with existing/future conditions and growth trends of the communities and economy of the project study area.

3. Consistency of project alternatives with transportation, land use, economic development or growth objectives

It is important to note that the screening was based on best data and information readily available. The intent of this evaluation was to determine the alternatives that meet or exceed the project evaluation criteria by narrowing the initial broad range of alternatives to a reasonable number of feasible options that can be carried forward to a more detailed level of analysis in the NEPA document. The Houma-Thibodaux to the Sunshine Bridge east-west corridors were evaluated using the following broad objectives:

Sixteen screening criteria were developed and considered in the evaluation of the alternatives based upon the project objectives noted above. The criteria were developed under the headings of "purpose and need" and "environmental". The purpose and need heading was further divided into two principle elements: "system linkage" and "hurricane evacuation". The environmental goals for the project were divided into the "human" and "natural" environment.

PURPOSE AND NEED: SYTEM LINKAGE

System linkage was evaluated using the following four criteria:

1. Improves north-south connectivity

   None of the east-west alternatives improves north-south connectivity to the degree that a north-south alternative would. They do not provide or improve direct north-south connections in the transportation network. They also did not increase the density of north-south links in the roadway network.

2. Provides north-south system redundancy

   None of the east-west alternatives provide north-south system redundancy for LA 20, the only north-south route in the project study area. They also would not improve connectivity to the Gramercy-Wallace Bridge, which represents a redundancy in Mississippi River crossings for the transportation network of the study area.

3. Improves north-south highway capacity

All of the east-west alternatives add capacity in an east-west direction, which would address the potential future capacity issues on LA1 and LA 308; however, they would not address the primary north-south capacity needs of the study area for a north-south facility. They do not address the need for improving connectivity to the available capacity at the Gramercy-Wallace Bridge.

4. Improves access to Interstate 10 and future Interstate 49.

None of the east-west alternatives provide the most direct route to the interstate system to the north. With the completion of the LA 3213 connector from the Gramercy-Wallace Bridge to LA 3127, alternatives that improved access to the connector and the bridge would provide the most direct and convenient access to I-10 to the north from the Houma-Thibodaux area and future I-49 to the south. These alternatives would be approximately 9 miles shorter than the east-west alternatives. While the east-west alternatives would improve access to the interstate system, they would not do so as efficiently as more direct north-south routes, particularly for residents of Thibodaux.

PURPOSE AND NEED: HURRICANE EVACUATION

Hurricane evacuation was evaluated using the following three criteria:

1. Improves hurricane evacuation from the project study area

None of the east-west alternatives would improve access to one of the critical hurricane evacuation route links, the Gramercy-Wallace Bridge, from the Houma-Thibodaux area. While the east-west alternatives would add capacity in an east-west direction, which would address the potential future capacity issues on LA1 and LA 308 and generally improve hurricane evacuation in the area, they would not address the immediate regional north-south evacuation need identified in the Lafourche Parish Hurricane Needs Assessments as part of the Louisiana Speaks Program. Nor would they address the capacity needs of the study area for the addition of a direct north-south facility to the highway network.

2. Uniformly distributes traffic between the Sunshine and Gramercy-Wallace Bridges

None of the east-west alternatives would uniformly distribute traffic between the Sunshine and Gramercy-Wallace Bridge. They would add capacity and redundancy to the east-west transportation network, but they would do nothing to improve access and system linkage to the Gramercy-Wallace Bridge.

3. Maximizes efficient use and operation of hurricane evacuation routes and the transportation network.

   None of the east-west alternatives would maximize the efficient use and operation of hurricane evacuation routes and the transportation network. They would add capacity and redundancy to the east-west transportation network, but they would do nothing to improve north-south network redundancy, access and system linkage for the Houma-Thibodaux area and to the Gramercy-Wallace Bridge.

HUMAN ENVIRONMENT

The human environment was evaluated using the following four criteria:

1. Minimizes the disruption of communities

   Alternatives S1, S2, N1, and N2 minimized their impacts upon the communities along the east-west corridor due to their location away from the development that occurs along LA 1 and LA 308. These alternatives, with the exception of one residence each for N1 and N2, would not displace any schools, churches or commercial structures.

   Alternatives C1, C2, C3, C4, C5, C6, C7, and C8 did not minimize the disruption of communities due to the large number of residential and commercial relocations and the limited availability of replacement housing and commercial sites within the LA 1/LA 308 area. They would have significant adverse community impacts.

2. Minimizes the disruption of farm operations

   Alternatives C1, C2, C3, C4, C5, C6, C7, N1, and N2 were moderately successful in minimizing their disruption of farm operations. Alternatives S1, S2, and C8 did not minimize the disruption of farm operations as they all impacted over 1,000 acres of prime farmland.

3. Minimizes the disruption of economic/commercial activities

   The central alternatives, C1, C2, C3, C4, C5, C6, C7, and C8 did not minimize the disruption of economic activities due to the direct and cumulative economic impacts of the large number of residential and commercial relocations, the lack of sufficient replacement housing and commercial sites, the loss of some employment and shopping opportunities due to businesses not relocating back within the communities along Bayou Lafourche. Alternatives S1 and S2 also did not minimize the disruption of economic activities, however this was due to the direct and cumulative impacts resulting from the significant number of acres of prime farmland impacted. N1 and N2 were moderately successful in minimizing their disruption of economic activities.

4. Optimizes user benefits and costs

   The east-west alternatives would not optimize user benefits and costs as well as the north-south alternatives. While they improve access to the interstate system, they would not do so as efficiently as more direct north-south routes, particularly for residents of Thibodaux. They also would not provide the user benefits, energy, time, vehicle operational cost and driving distance savings that the more direct north-south alternatives would. Alternatives N1 and N2 were more efficient than the other east-west alternatives as they were the shortest by six miles of the east-west alternatives and would provide the greatest travel time savings of the east-west alternatives. The remaining east-west alternatives did not optimize user benefits and costs as well as the other alternatives as they were the longest of these alternatives, by around five miles, and would not provide the travel time savings as N1/N2 and the north-south alternatives.

NATURAL ENVIRONMENT

The natural environment was evaluated using the following three criteria:

1. Minimizes impacts on NWI Wetlands

   Alternatives S1, S2, C1, C2, C3, C4, C5, C6, C7, and C8 minimized their impacts as they did not impact any acres of NWI wetlands. Alternatives N1 and N2 had minimal impacts upon NWI wetlands as they impacted 7 acres.

2. Minimizes impacts upon bottomland hardwoods

   Alternatives C2, C4, C6, C8, and N2 minimized their impacts upon bottomland hardwoods as they impacted less than 50 acres. Alternatives S1, S2, C1, C3, C5, C7, and N1 did not minimize impacts as they each impacted over 100 acres.

3. Minimizes impacts on endangered species

   All of the east-west alternatives minimized their impacts upon endangered species. No acres of habitat were affected.

4. Minimizes impacts upon cypress forests

   Alternatives S1, S2, C1, C2, C3, C4, C5, C6, C7, and C8 were moderately successful in minimizing impacts on cypress forests. Alternatives N1 and N2 did not minimize their impacts.

5. Minimizes impacts on freshwater marshes

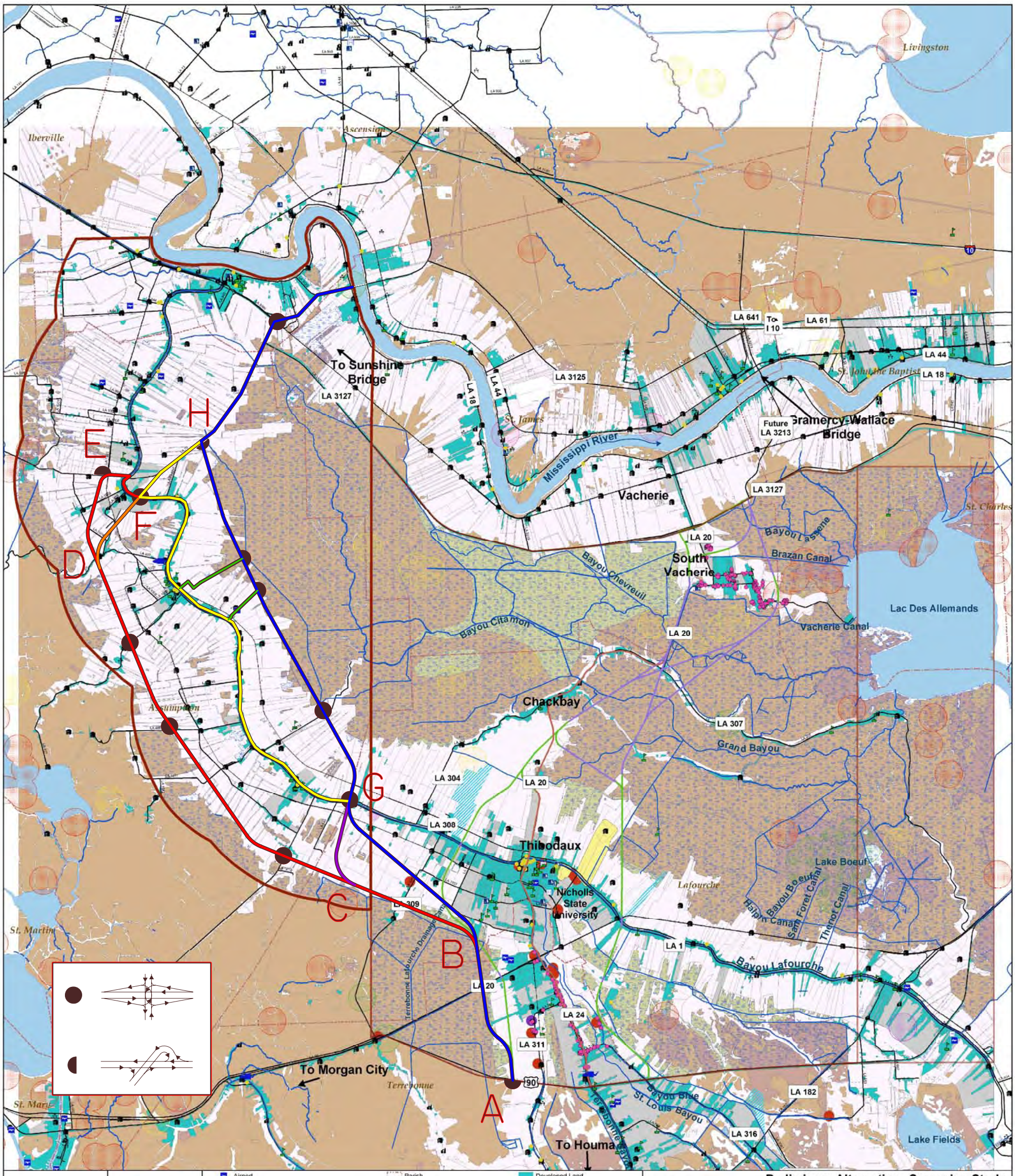
Alternatives S1, S2, C1, C2, C3, C4, C5, C6, C7, and C8 minimized their impacts on freshwater marshes. Alternatives N1 and N2 were moderately successful in minimizing their impacts.

RECOMMENDATION

The northernmost east-west alternatives provide additional capacity between US90 and I10; however, their inability to provide north-south system redundancy and improved connectivity to the underutilized Gramercy Wallace Bridge makes them less effective than a direct north-south route at achieving the project's stated Purpose and Need. Based upon this and the impacts to forecasted regional traffic demands documented in the attached Traffic Modeling Study (see Appendix D), the northernmost alternatives are considered reasonable and should be carried forward to a more detailed level of analysis in the NEPA document.

Appendix A

Project Mapping



Study Area

Source:
Louisiana Oil Spill Coordinator's Office, Louisiana Department of Transportation, U. S. Census Bureau, Tigerline 2000, U.S. Minerals Management Service, G-WIS Environmental Sensitivity Index Dataset

BUCHART HORN, INC.

N W E S

1 inch equals 5,953 feet

- Airport
- Cemetery
- Church
- Hospital
- Park
- Populated Place
- School
- Public Heliport
- Listed on the National Register of Historic Places
- Structures 50+ yrs old - eligibility undetermined
- Major Road
- Local Road
- Railroad
- Stream/Bayou/Canal
- Parish
- Water Body
- Urban Area
- Rare Lizard
- Rare Plant
- Threatened Raptor
- Colony forming Waterbird
- Rare Small Mammal
- Archeological Site Eligible
- Archeological Site Listed
- Archeological High Probability Area
- Archeological Site Undetermined
- Historic District
- Developed Land
- Prime Farmland
- Bottomland Hardwood Forest
- Cypress Forest
- Fresh Marsh
- NWI Wetland
- Wetland Mitigation Bank

3127 90

State Project No. 700-99-0302
F.A.P. No. 9902(518)

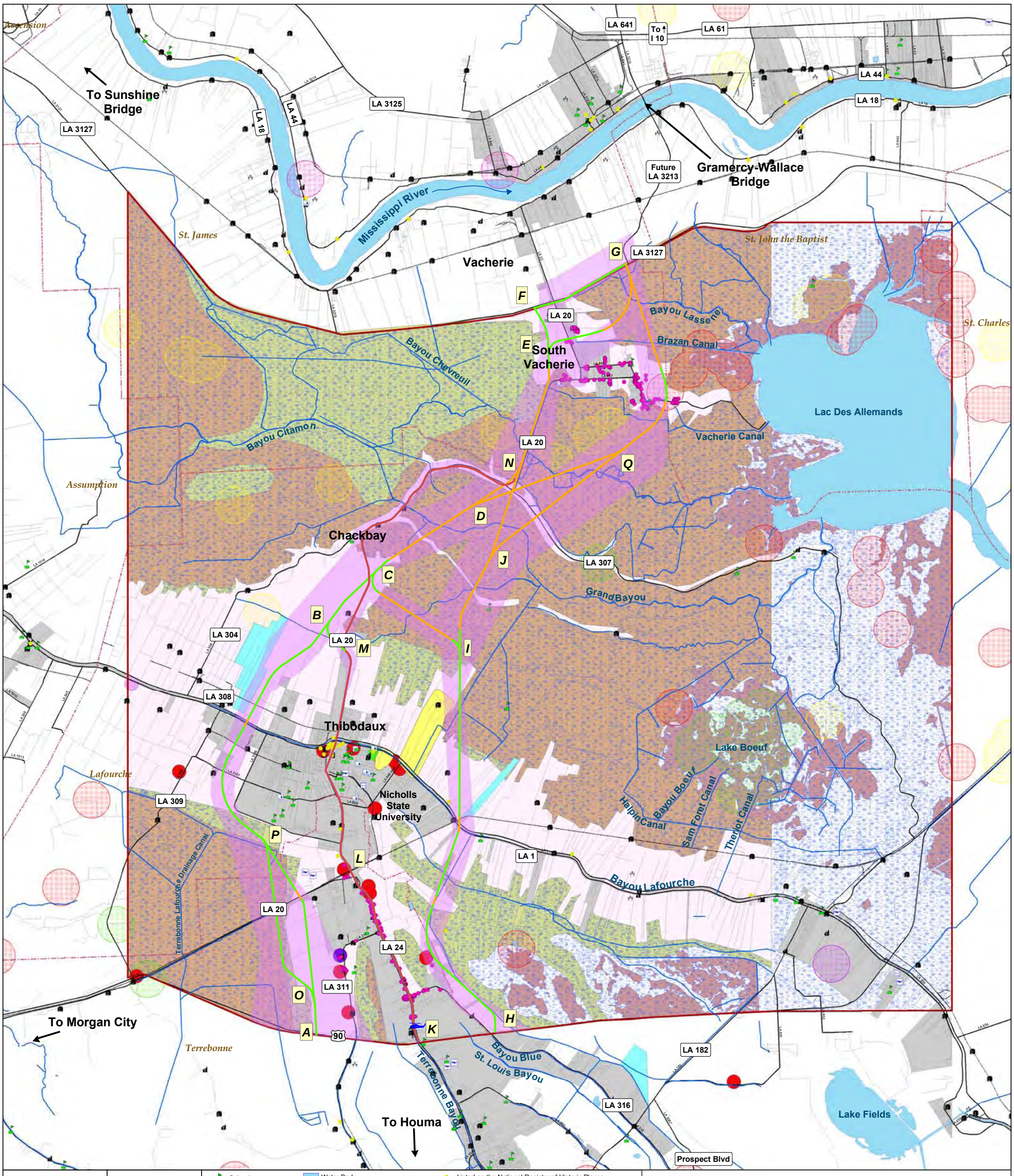
Preliminary Alternatives Screening Study
Houma - Thibodaux to the Sunshine Bridge (LA 3127)

(Supplement to Houma - Thibodaux to LA 3127 Connection EIS)

Constraints Map

LADOTD

U.S. Department of Transportation
Federal Highway Administration



Study Area

Source:
Louisiana Oil Spill Coordinator's Office, Louisiana Department of Transportation, U. S. Census Bureau, Tigerline 2000, U.S. Minerals Management Service, G-WIS Environmental Sensitivity Index Dataset

BUCHART HORN, INC.

N W E S

1 inch equals 4,500 feet

School
Airport
Cemetery
Church
Hospital
Park
Populated Place
Public Heliport
Stream/Bayou/Canal
Railroad
Major Road
Local Road
Urban Area

Water Body
Project Boundary
Parish
Rare Lizard
Rare Plant
Threatened Raptor
Colony forming Waterbird
Rare Small Mammal
Archeological Site Eligible
Archeological Site Listed
Archeological High Probability Area
Archeological Site Undetermined
Historic District
Wetland Mitigation Bank

Listed on the National Register of Historic Places
Structures 50+ yrs old - eligibility undetermined
NWI Wetland
Prime Farmland
Bottomland Hardwood Forest
Cypress Forest
Developed Land
Fresh Marsh
Trends/Corridors

Segment Type
LA 20
At Grade
On Structure

3127 90

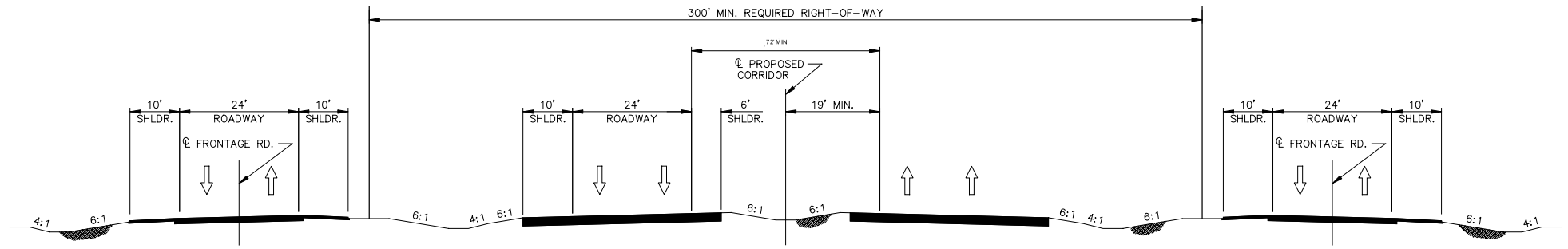
State Project No. 700-99-0302
F.A.P. No. 9902(518)

Houma - Thibodaux to LA 3127 Connection EIS

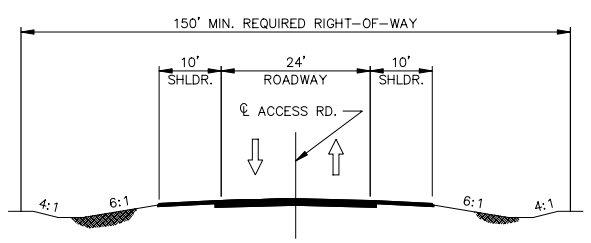
Constraints Map

LADOTD

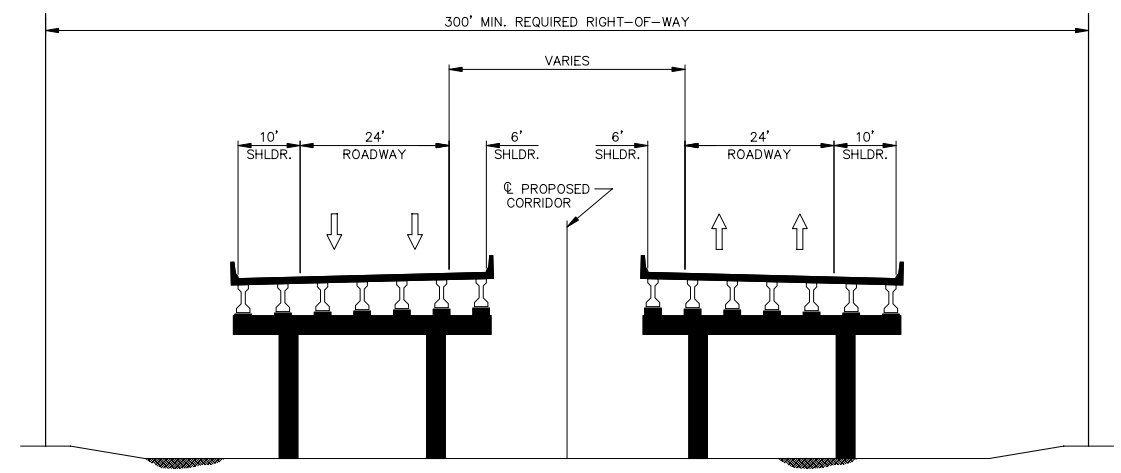
U.S. Department of Transportation
Federal Highway Administration



PROPOSED CORRIDOR TYPICAL SECTION



ACCESS ROAD TYPICAL SECTION



ELEVATED STRUCTURE TYPICAL SECTION

Source:
Louisiana Oil Spill Coordinator's Office,
Louisiana Department of Transportation,
U. S. Census Bureau, Tigerline 2000,
U. S. Minerals Management Service,
G-WIS Environmental Sensitivity Index
Dataset

BUCHART HORN, INC.

Houma - Thibodaux to LA 3127 Connection EIS

Typical Sections

State Project No. 700-99-0302
F.A.P. No. 9902(518)

LADOTD

U.S. Department of Transportation
Federal Highway Administration

Appendix B

Impact Spreadsheets

BUCHART HORN, INC.

Preliminary Alternatives Screening Study
Houma - Thibodaux to the Sunshine Bridge (LA 3127)
(Supplement to Houma - Thibodaux to LA 3127 Connection EIS)

	SEGMENT INFORMATION					CONSTRAINTS (OTHER)									ENDANGERED SPECIES					ENVIRONMENTAL CONSTRAINTS						HUMAN ENVIRONMENT		ROW		COST									
Segment	ROW Width of Segments at Grade	ROW Width of Segments on Structure	Length at Grade (linear feet)	Length on Structure (linear feet)	Number of Interchanges	Airport/Heliport	School	Developed Land (acres)	Cemetery	Church	Hospital	Park	Populated Place	Railroad (linear feet)	Rare Lizard (acres)	Rare Plant (acres)	Threatened Raptor (acres)	Colony forming Waterbird (acres)	Rare Small Animal (area in acres)	NWI Wetland (acres)	Prime Farmland (acres)	Bottomland Hardwood (acres)	Cypress Forest (acres)	Stream/Bayou/Canal (linear feet)	Fresh Marsh (acres)	Total Residential Structures	Total Comercial Structures	Total at grade ROW (acres)	Total on Structure ROW (acres)	Wetland Mitigation Cost	Total Value of Residential Structures	Total Value of Comercial Structures	Total Frontage Road Cost	Total Interchange Cost	Total Phase 1 Roadway Cost	Total Phase 2 Roadway Cost	Total Phase 1 Cost with 30% Engineering Cost plus Contingency Cost	Total Phase 2 Cost including 30% Engineering Cost plus Contingency Cost	Total Project Cost
AB	540	300	8,938	17,173	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150	12	101	0	0	0	0	111	118	1,130,000	0	0	9,876,490	20,000,000	47,024,900	45,281,990	62,262,370	97,706,024	159,968,394
BC	540	300	4,834	22,332	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	128	22	0	0	0	0	60	154	1,500,000	0	0	5,341,570	0	56,738,900	55,796,270	75,260,570	79,479,192	154,739,762
BG	540	300	29,330	9,845	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	350	18	16	0	0	0	0	364	68	340,000	0	0	32,409,650	20,000,000	42,692,500	36,973,150	55,840,250	116,197,640	172,037,890
CD	540	300	80,645	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,043	11	0	0	0	0	0	1,000	0	110,000	0	0	89,112,725	60,000,000	52,419,250	36,693,475	68,255,025	241,548,060	309,803,085
CG	540	300	16,709	2,000	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	207	0	0	0	0	0	0	207	14	0	0	0	18,463,445	20,000,000	15,660,850	12,402,595	20,359,105	66,125,852	86,484,957
DE	540	300	18,501	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	259	0	0	0	0	0	0	229	0	0	0	0	20,443,605	20,000,000	12,025,650	8,417,955	15,633,345	63,520,028	79,153,373
DF	540	300	14,316	2,000	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	175	0	0	0	0	0	0	177	14	0	0	0	15,819,180	20,000,000	14,105,400	11,313,780	18,337,020	61,272,848	79,609,868
GFA1	300	300	84,728	0	1	0	6	0	0	7	0	0	0	0	0	0	0	0	0	0	137	0	0	0	0	369	48	584	0	0	46,125,000	14,400,000		20,000,000	55,073,200	38,551,240	132,120,160	76,116,612	208,236,772
GFB1	300	300	84,475	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	235	0	0	0	0	345	17	582	0	0	43,125,000	5,100,000		20,000,000	54,908,750	38,436,125	119,606,375	75,966,963	195,573,338
GFA2	540	300	84,728	0	1	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	316	0	0	0	0	558	70	1,050	0	0	69,750,000	21,000,000	93,624,440	20,000,000	55,073,200	38,551,240	162,345,160	197,828,384	360,173,544
GFB2	540	300	84,475	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	531	0	0	0	0	480	22	1,047	0	0	60,000,000	6,600,000	93,344,875	20,000,000	54,908,750	38,436,125	137,981,375	197,315,300	335,296,675
EH	540	300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FH	540	300	8,381	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104	0	0	0	0	9,261,005	20,000,000	5,447,650	3,813,355	7,081,945	42,996,668	50,078,613
GH	540	300	30,324	43,569	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	478	0	227	0	9	1	0	376	300	2,430,000	125,000	0	33,508,020	80,000,000	124,276,200	118,363,020	164,114,060	301,432,352	465,546,412
																														0	0	0	0	0	0	0	0	0	0
																														0	0	0	0	0	0	0	0	0	0
																														0	0	0	0	0	0	0	0	0	0
																														0	0	0	0	0	0	0	0	0	0
																														0	0	0	0	0	0	0	0	0	0
																														0	0	0	0	0	0	0	0	0	0
																														0	0	0	0	0	0	0	0	0	0
																														0	0	0	0	0	0	0	0	0	0
																														0	0	0	0	0	0	0	0	0	0
ALIGNMENTS																																							
SOUTHERN																																							
S1	(AB,BC,CD,DE,EF)		112,918	39,505	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,515	151	123	0	0	0	0	1,400	272	2,740,000	0	0	124,774,390	120,000,000	168,208,700	146,189,690	221,411,310	482,253,304	703,664,614
S2	(AB,BC,CD,DF,FH)		117,114	41,505	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,431	151	123	0	0	0	0	1,452	286	2,740,000	0	0	129,410,970	120,000,000	175,736,100	152,898,870	231,196,930	523,002,792	754,199,722
CENTRAL																																							
C1	(AB,BC,CG,GFA1,FH)		123,590	41,505	4	0	6	0	0	7	0	0	0	0	0	0	0	0	0	0	557	140	123	0	0	369	48	1,065	286	2,630,000	46,125,000	14,400,000	42,942,510	80,000,000	179,945,500	155,845,450	297,084,150	362,424,348	659,508,498
C2	(AB,BG,GFA1,FH)		131,377	27,018	4	0	6	0	0	7	0	0	0	0	0	0	0	0	0	0	637	30	117	0	0	369	48	1,162	186	1,470,000	46,125,000	14,400,000	51,547,145	80,000,000	150,238,250	124,619,735	257,304,725	333,016,944	590,321,669
C3	(AB,BC,CG,GFB1,FH)		123,337	41,505	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	655	140	123	0	0	345	17	1,064	286	2,630,000	43,125,000	5,100,000	42,942,510	80,000,000	179,781,050	155,730,335	284,570,365	362,274,699	646,845,064
C4	(AB,BG,GFB1,FH)		131,124	27,018	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	735	30	117	0	0	345	17	1,160	186	1,470,000	43,125,000	5,100,000	51,547,145	80,000,000	150,073,800	124,504,620	244,790,940	332,867,295	577,658,235
C5	(AB,BC,CG,GFA2,FH)		123,590	41,505	4	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	736	140	123	0	0	558	70	1,532	286	2,630,000	69,750,000	21,000,000	136,566,950	80,000,000	179,945,500	155,845,450	327,309,150	484,136,120	811,445,270
C6	(AB,BG,GFA2,FH)		131,377	27,018	4	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	816	30	117	0	0	558	70	1,629	186	1,470,000	69,750,000	21,000,000	145,171,585	80,000,000	150,238,250	124,619,735	287,529,725	454,728,716	742,258,441
C7	(AB,BC,CG,GFB2,FH)		123,337	41,505	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	951	140	123	0	0	480	22	1,529	286	2,630,000	60,000,000	6,600,000	136,287,385	80,000,000	179,781,050	155,730,335	302,945,365	483,623,036	786,568,401
C8	(AB,BG,GFB2,FH)		131,124	27,018	4	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1,031	30	117	0	0	480	22	1,626	186	1,470,000	60,000,000	6,600,000	144,892,020	80,000,000	150,073,800	124,504,620	263,165,940	454,215,632	717,381,572
NORTHERN																																							
N1	(AB,BC,CG,GH)		60,805	85,074	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	898	140	350	0	9	1	0	754	586	5,060,000	125,000	0	67,189,525	120,000,000	243,700,850	231,843,875	321,996,105	544,743,420	866,739,525
N2	(AB,BG,GH)		68,592	70,587	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	978	30	344	0	9	1	0	850	486	3,900,000	125,000	0	75,794,160	120,000,000	213,993,600	200,618,160	282,216,680	515,336,016	797,552,696

North South Alternative Corridor Impacts

CATEGORIES	CONSTRAINTS (OTHER)									ARCHEOLOGICAL & HISTORICAL							ENDANGERED SPECIES					ENVIRONMENTAL CONSTRAINTS						HUMAN ENVIRON MENT	ROW		COST		
Segment	Airport/Heliport	School	Developed Land (acres)	Cemetery	Church	Hospital	Park	Populated Place	Railroad (linear feet)	Historic District (acres)	Structures 50+ yrs old - eligibility undetermined	Listed on the Nat'l Register of Historic Places	Archeological Site Eligible (acres)	Archeological Site Listed (acres)	Archeological High Probability (acres)	Archeological Site Undetermined (acres)	Rare Lizard (acres)	Rare Plant (acres)	Threatened Raptor (acres)	Colony forming Waterbird (acres)	Rare Small Animal (area in acres)	Wetland Mitigation Bank (acres)	Prime Farmland (acres)	Bottomland Hardwood (acres)	Cypress Forest (acres)	Stream/Bayou/Canal (linear feet)	Fresh Marsh (acres)	Total Structures	Total at grade ROW (acres)	Total on Structure ROW (acres)	Wetland Mitigation Cost	Total Alignment Cost	Total Project Cost
AO (Structure)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0		15			
BC (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	0	2	0	0	0	53				
BC (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0		7			
CD (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	1	0	0	2	17				
CD (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	42	433	0	0		50			
DN (Grade)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	59	414	0	1	71				
DQ (Grade)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	10	0	155	2875	0	34	166				
EF (Structure)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	0	0	0		27			
EG (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	0	0	0	0	0	62				
EG (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	36	681	0	0		42			
FG (Structure)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	0		54			
HI (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	261	67	53	7806	11	67	381				
HI (S)	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	763	0	9		13			
IC (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	41				
IC (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	44	289	0	0		45			
IJ (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	21				
IJ (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	34	207	0	4		36			
JN (Grade)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	99	939	0	23	111				
JQ (Grade)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	175	1859	0	7	184				
KL (Structure)	0	0	10	0	0	0	0	0	0	0	1	0	0	0	0	7	0	0	0	0	0	0	95	0	0	2353	0	81		95			
LM (Structure)	0	0	36	0	0	0	0	0	320	0	0	2	0	0	0	5	0	0	0	0	0	0	125	0	0	164	0	88		125			
MB (Structure)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	342	0	0		20			
MN (Structure)	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	0	44	876	0	96		172			
NE (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	13				
NE (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	47	164	0	0		52			
OP (E) (G)	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109	18	36	829	3	12	163				
OP (E) (S)	0	0	2	0	0	0	0	0	161	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6		6			
OP (W) (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	16	113	337	3	0	165				
OP (W) (S)	0	0	0	0	0	0	0	0	169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	169	0	0		6			
PB (G)	0	0	0	0	0	0	0	0	601	0	0	0	0	0	0	0	0	0	0	0	0	0	218	45	0	324	0	0	263				
PB (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	160	0	0		5			
QG (G)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	34	0	0	137	0	1	34				
QG (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	7	0	84	1121	0	1		91			
Alignments																																	
Western (East side)																																	
AOPBCDQG	0	0	5	0	0	0	0	0	762	0	0	0	0	0	0	0	0	0	33	25	0	0	489	63	319	5880	3	56	696	174	$3,851,941	$669,140,038	$672,991,979
AOPBCDNEG	0	0	5	0	0	0	0	0	762	0	0	0	0	0	0	0	0	0	0	0	0	0	536	63	221	3004	3	21	642	177	$2,870,988	$562,739,184	$565,610,172
AOPBCDNEFG	0	0	5	0	0	0	0	0	762	0	0	0	0	0	0	0	0	0	0	0	0	0	516	64	185	2323	3	21	581	216	$2,516,036	$506,101,714	$508,617,749
Western (West side)																																	
AOPBCDQG	0	0	0	0	0	0	0	0	770	0	0	0	0	0	0	0	0	0	33	25	0	0	410	61	403	5557	3	38	698	174	$4,667,790	$668,553,810	$673,221,600
AOPBCDNEG	0	0	0	0	0	0	0	0	770	0	0	0	0	0	0	0	0	0	0	0	62	0	396	61	305	2681	3	3	645	177	$3,686,837	$535,852,956	$539,539,793
AOPBCDNEFG	0	0	0	0	0	0	0	0	770	0	0	0	0	0	0	0	0	0	0	0	0	0	437	61	269	2001	3	3	583	217	$3,331,884	$505,215,485	$508,547,370
La 20																																	
KLMNEFG	0	0	46	1	0	0	0	0	320	0	1	2	0	0	0	12	0	0	0	0	0	0	414	0	90	3557	0	265	13	525	$908,284	$558,137,879	$559,046,163
KLMNEG	0	0	46	1	0	0	0	0	320	0	1	2	0	0	0	12	0	0	0	0	0	0	434	0	126	4238	0	265	75	486	$1,263,237	$515,158,409	$516,421,646
KLMBCDQG	0	0	46	0	0	0	0	0	320	0	1	2	0	0	0	12	0	0	33	25	0	0	376	0	284	7426	0	207	270	388	$2,837,796	$704,006,626	$706,844,422
KLMBCDNEG	0	0	46	0	0	0	0	0	320	0	1	2	0	0	0	12	0	0	0	0	0	0	423	0	186	4550	0	172	216	391	$1,856,843	$571,105,772	$572,962,615
KLMBCDNEFG	0	0	46	0	0	0	0	0	320	0	1	2	0	0	0	12	0	0	0	0	0	0	403	0	150	3870	0	172	154	431	$1,501,890	$566,468,302	$567,970,192
Eastern																																	
HIJQG	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	2	0	0	33	0	0	0	325	67	367	11893	11	89	621	139	$4,459,192	$594,483,264	$598,942,455
HIJNEFG	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	2	0	0	0	0	0	0	353	68	254	9878	11	103	527	182	$3,330,900	$487,054,165	$490,385,065
HIJNEG	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	2	0	0	0	0	0	0	373	67	290	10559	11	103	589	142	$3,685,853	$517,691,635	$521,377,488
HICDNEFG	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	2	0	0	0	0	0	0	401	68	245	9868	11	79	523	241	$3,236,389	$594,281,633	$597,518,021
HICDNEG	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	2	0	0	0	0	0	0	422	67	281	10549	11	79	585	202	$3,591,342	$572,919,103	$576,510,444

Appendix C

Evaluation Matrices

ALIGNMENTS	Level 1 Screening Criteria: EAST-WEST ALTERNATIVES																Recommendation for Alternative
	Purpose and Need							Environmental Criteria									
	Sytem Linkage				Hurricane Evacuation			Human				Natural					
	Improves North-South Connectivity	Provides North-South System Redundancy	Improves North-South Capacity	Improves access to I-10 & future I-49	Improves Hurricane Evacuation from Project Study Area	Uniformly distributes traffic between Sunshine and Gramercy Wallace bridges	Maximizes efficient use and operation of Hurricane Evacuation Routes and the Transportation Network	Minimizes Disruption of Communities	Minimizes Disruption of Farm Operations	Minimizes Disruption of Economic/Commercial activities	Optimizes User Benefits	Minimizes impacts on NWI Wetlands	Minimizes impacts on Bottomland Hardwoods	Minimizes impacts on Endangered Species Habitat	Minimizes impacts on Cypress Forests	Minimizes impacts on Freshwater Marshes	
SOUTHERN																	
S1	LOW	LOW	LOW	LOW	LOW	LOW	LOW	HIGH	LOW	LOW	LOW	HIGH	LOW	high	MEDIUM	HIGH	
S2	LOW	LOW	LOW	LOW	LOW	LOW	LOW	HIGH	LOW	LOW	LOW	HIGH	LOW	High	MEDIUM	HIGH	
CENTRAL																	
C1	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	LOW	High	MEDIUM	HIGH	
C2	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	HIGH	HIGH	MEDIUM	HIGH	
C3	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	LOW	HIGH	MEDIUM	HIGH	
C4	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	HIGH	High	MEDIUM	HIGH	
C5	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	LOW	HIGH	MEDIUM	HIGH	
C6	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	HIGH	HIGH	MEDIUM	HIGH	
C7	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	MEDIUM	LOW	LOW	HIGH	LOW	HIGH	MEDIUM	HIGH	
C8	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	LOW	HIGH	HIGH	HIGH	MEDIUM	HIGH	
NORTHERN																	
N1	Medium	LOW	LOW	MEDIUM	MEDIUM	LOW	LOW	HIGH	MEDIUM	Medium	MEDIUM	MEDIUM	LOW	HIGH	LOW	MEDIUM	
N2	Medium	LOW	LOW	MEDIUM	MEDIUM	LOW	LOW	HIGH	MEDIUM	Medium	MEDIUM	MEDIUM	HIGH	HIGH	LOW	MEDIUM	

ALIGNMENTS	Level 1 Screening Criteria: NORTH-SOUTH ALTERNATIVES																Recommendation for Alternative
	Purpose and Need							Environmental Criteria									
	Sytem Linkage				Hurricane Evacuation			Human				Natural					
	Improves North-South Connectivity	Provides North-South System Redundancy	Improves North-South Capacity	Improves access to I-10 & future I-49	Improves Hurricane Evacuation from Project Study Area	Uniformly distributes traffic between Sunshine and Gramercy Wallace bridges	Maximizes efficient use and operation of Hurricane Evacuation Routes and the Transportation Network	Minimizes Disruption of Communities	Minimizes Disruption of Farm Operations	Minimizes Disruption of Economic/Commercial activities	Optimizes User Benefits	Minimizes impacts on NWI Wetlands	Minimizes impacts on Bottomland Hardwoods	Minimizes impacts on Endangered Species Habitat	Minimizes impacts on Cypress Forests	Minimizes impacts on Freshwater Marshes	
Western (East side)																	
AOPBCDQG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	HIGH	MEDIUM	LOW	LOW	MEDIUM	
AOPBCDNEG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	LOW	MEDIUM	
AOPBCDNEFG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	MEDIUM	MEDIUM	
Western (West side)																	
AOPBCDQG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	MEDIUM	LOW	LOW	MEDIUM	
AOPBCDNEG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	MEDIUM	MEDIUM	LOW	MEDIUM	
AOPBCDNEFG	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	MEDIUM	HIGH	LOW	MEDIUM	
La 20																	
KLMNEFG	HIGH	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	LOW	HIGH	LOW	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	
KLMNEG	HIGH	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	LOW	HIGH	LOW	HIGH	HIGH	HIGH	HIGH	MEDIUM	HIGH	
KLMBCDQG	HIGH	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	LOW	HIGH	LOW	HIGH	HIGH	HIGH	LOW	LOW	HIGH	
KLMBCDNEG	HIGH	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	LOW	HIGH	LOW	HIGH	HIGH	HIGH	HIGH	MEDIUM	HIGH	
KLMBCDNEFG	HIGH	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	LOW	HIGH	LOW	HIGH	HIGH	HIGH	HIGH	MEDIUM	HIGH	
Eastern																	
HIJQG	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	MEDIUM	MEDIUM	LOW	LOW	
HIJNEFG	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	MEDIUM	HIGH	LOW	LOW	
HIJNEG	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	MEDIUM	HIGH	LOW	LOW	
HICDNEFG	MEDIUM	HIGH	MEDIUM	MEDIUM	HIGH	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	MEDIUM	HIGH	LOW	LOW	
HICDNEG	MEDIUM	HIGH	MEDIUM	HIGH	HIGH	HIGH	MEDIUM	HIGH	HIGH	MEDIUM	MEDIUM	HIGH	MEDIUM	HIGH	LOW	LOW	

Appendix D

Traffic Modeling Study

(Wilbur Smith Associates, January 2009)

Context

Two alternative routes have been defined for analysis in the Thibodaux – Houma region of southwest Louisiana, both running generally north – south from US 90 to I 10. Each crosses the Mississippi River just south of I 10. The two alternatives are shown in their context in Figure 1.

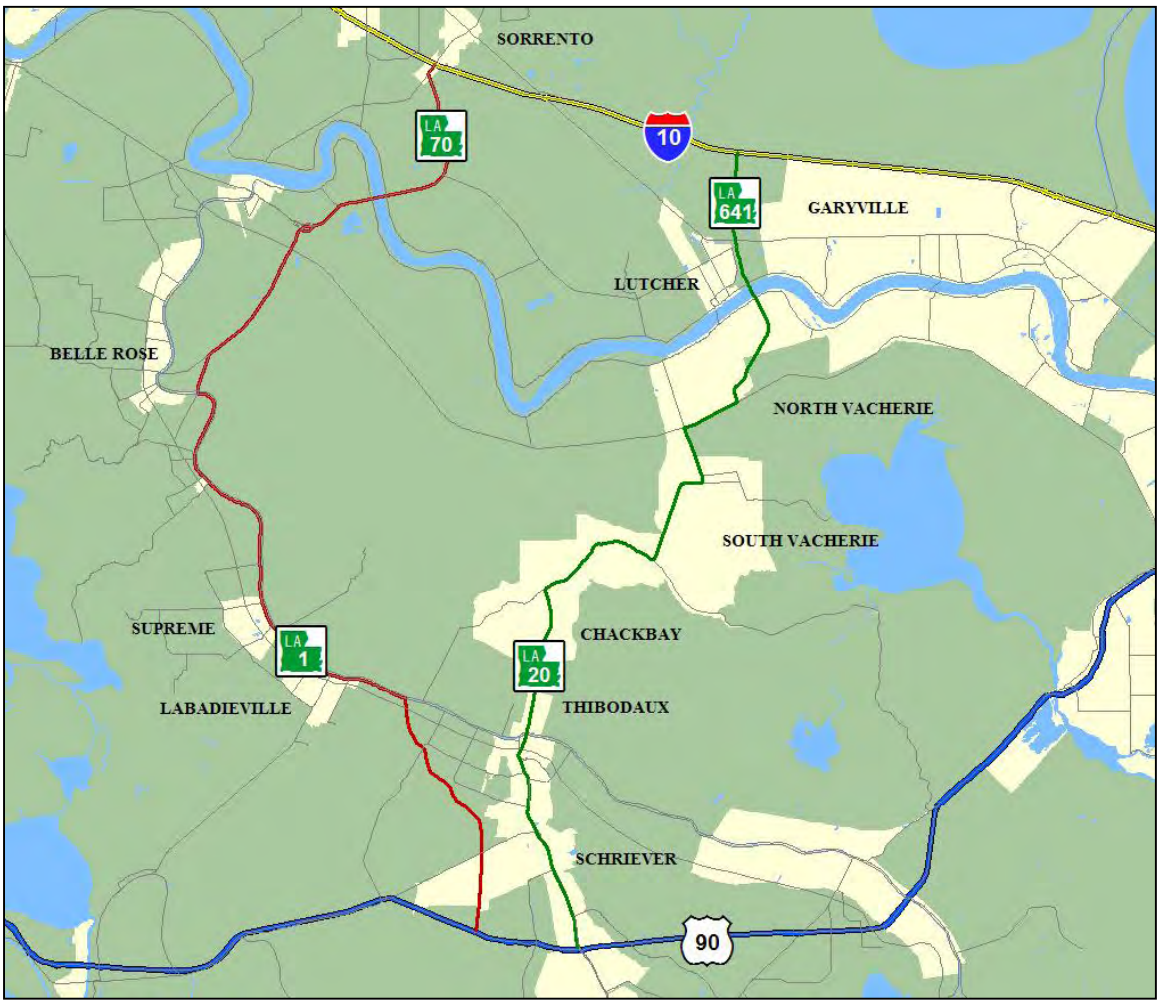


Figure 1: Thibodaux - Houma Defined Alternatives

The East – West alternative is shown here in red. It has a section of new construction from US 90 to LA 1, and then follows the existing alignment of LA 1 as far as Spur 70. Continuing north on LA 70, it crosses the Sunshine Bridge and intersects LA 22 just before reaching I 10. It should be noted that LA 1 is paralleled by LA 308 for its entire length in this alternative; the two roads are similar two-way facilities on either side of Bayou Lafourche, with periodic connecting bridges. While only LA 1 is included as an

alternative for expansion to a four-lane arterial, the two roads function as a single unit. Volumes for the study are therefore reported for LA 1 and LA 308 combined.

The North – South alternative, shown in green, follows the alignment of existing roads. Starting at US 90, it follows LA 24 and LA 20 to LA 3127, following it to LA 3213 and crossing the Mississippi River at the Gramercy Wallace Bridge. It then follows LA 641 to I 10.

The two alternatives are defined as four-lane arterials with free flow speeds of 55 mph and an hourly capacity of 990 in rural areas. Following the logic and standards of the Louisiana Statewide Model, a distinction was made between rural and urban sections. The urban sections have a free flow speed of 45 mph and an hourly capacity of 650.

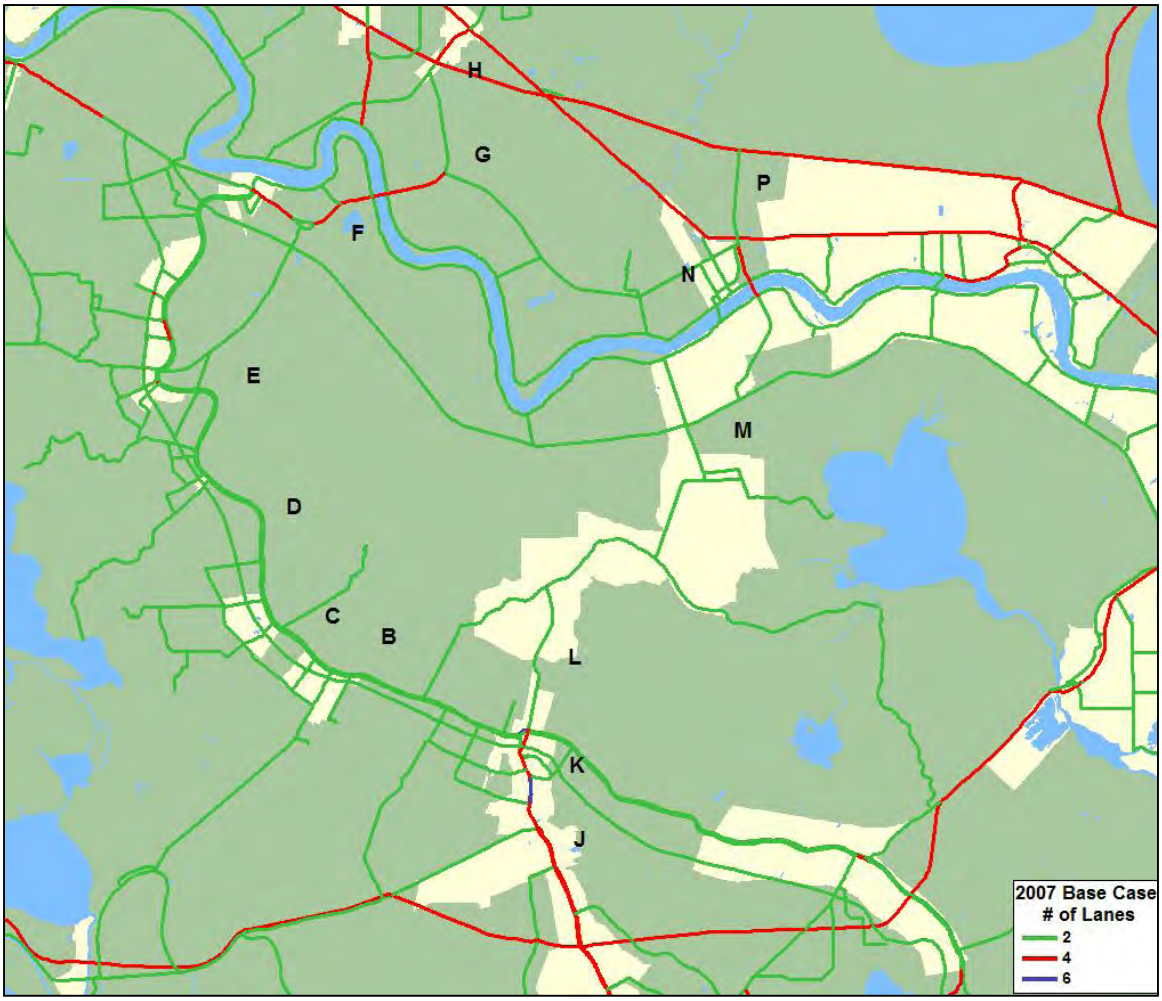


Figure 2: Base Case Number of Lanes

The base case number of lanes are shown in Figure 2. In the East – West corridor, segment A is new construction, and segments B through E and segment G are currently two lanes. For the North – South corridor, segments L, M, and P are currently two lanes.

Minor corrections were made to the base Louisiana Statewide Model to accommodate small errors and new highway construction. Specifically, changes were made to the number of lanes on the ramps at the LA 70 / LA 3089 intersection, the alignment of LA 20 in Thibodaux was adjusted, and the new extension of LA 3213 from LA 18 just south of the Mississippi River to LA 3127 was added.

Model Setup

The alternatives were coded into the Louisiana Statewide Model for analysis for the years 2007 and 2030. For each year, data is reported for the base case (Do-Nothing alternative), for the E-W corridor, and for the N-S corridor.

Based on groupings of similar modeled volumes, fourteen segments were defined for aggregating model results. The E – W corridor was divided into eight segments A through H. The N – S corridor's six segments are labeled J through P.

Except for segment A, which is the new construction portion of the E – W alternative, all segments exist for both corridors. Data is reported for the segments for all runs with the appropriate configuration based on the year and the alternative. For example, for the 2007 base run all segments are coded with their existing speeds and capacities. For the 2007 E – W alternative, segments A through H are coded with their improvements; while segments J through P, in the other corridor, retain their base characteristics. Thus, all data for all built segments is shown for each run for comparison. The corridor configuration for each run is shown in Table 1.

Configuration of Segments for Each Model Alternative Run						
	2007 Base	2030 Base	2007 EW	2030 EW	2007 NS	2030 NS
EW Alternative Segments A - H	Base	Base	Alternative	Alternative	Base	Base
NS Alternative Segments J - P	Base	Base	Base	Base	Alternative	Alternative

Table 1: Configuration of the Two Corridors Under Each Model Run

An interesting feature of the Louisiana Statewide Model is that it calculates optimistic and pessimistic truck volume scenarios, in effect presenting a range of volumes for this volatile measure. Both truck scenarios were run, but the resulting volumes had only minimal differences. Only the optimistic truck scenario, with the larger number of trucks, is presented in this summary. The model also reports raw modeled and adjusted volumes. The adjusted volumes were used throughout this analysis.

Model Analysis

To present different aspects of performance of the alternatives, model results are reported in three ways: weighted average volume per segment, worst-case LOS per segment, and overall VMT per segment.

The weighted average volumes for each segment present the typical volumes assigned along the extent of each corridor. The volumes are weighted by the length of the segment to compensate for differences in the lengths of the model links.

The worst-case LOS presents the most severe Level Of Service that is reported on any model link for a particular segment.

The overall VMT for each segment is calculated as the weighted average volume times the total length. The measure presents a more global comparison of the assigned traffic between segments, alternatives, and runs.

In the base case, the model shows existing congestion in segments C through E, on the alignment of the E – W alternative. Widening the E – W alternative to four lanes alleviates this congestion in the base and forecast years.

The N – S alternative is interesting in that its existing configuration is four lanes from US 90 to LA 308 and from LA 18 to LA 3125, and that it is at LOS A – C in all alternatives and scenarios. As a result, the alternative's improvement to four lanes throughout has no effect on its traffic or performance; there is no congestion to be relieved and therefore no change in modeled results.

The weighted average volume per segment for each year, base, and alternative are shown in Table 2. Note again that segment A only exists for the E – W alternative; it is the new construction segment from US 90 to LA 1.

Table 2: Weighted Average Volume by Segment

Weighted Average Volume by Segment							
EW Corridor							
Segment	Description	2007 Base	2030 Base	2007 EW	2030 EW	2007 NS	2030 NS
A	New section from US 90 to LA 1			7,650	8,940		
B	LA 1 / LA 308 from new section to LA 398	52,120	58,810	59,770	67,750	52,120	58,810
C	LA 1 / LA 308 from LA 398 to LA 400	34,100	37,050	39,215	42,608	34,100	37,050
D	LA 1 / LA 308 from LA 400 to LA 401	14,040	21,190	16,470	21,680	14,040	21,190
E	LA 1 / LA 308 / LA 70 from LA 401 to LA 3089	13,700	18,160	14,490	19,210	13,700	18,160
F	LA 70 from LA 3089 to LA 44	19,490	27,400	19,540	27,460	19,490	27,400
G	LA 70 from LA 44 to LA 22	32,930	46,160	32,830	46,030	32,930	46,160
H	LA 22 from LA 70 to I 10	37,800	52,980	37,710	52,870	37,800	52,980
NS Corridor							
Segment	Description						
J	LA 24 from US 90 to LA 648	26,770	29,940	20,990	22,700	26,770	29,940
K	LA 20 from LA 648 to LA 648	20,820	24,090	17,310	19,660	20,820	24,090
L	LA 20 from LA 648 to west of LA 307	5,960	6,630	5,190	5,510	5,960	6,630
M	LA 20 west of LA 307 to LA 3213 bridge	7,660	9,720	7,520	9,590	7,660	9,720
N	LA 3213 bridge to LA 3125	13,520	18,030	13,280	17,810	13,520	18,030
P	LA 641 from LA 3125 to I 10	3,970	5,440	3,970	5,440	3,970	5,440

Level of Service (LOS) is shown below in Table 3. Again, the reported LOS is the worst case reported for any link along a particular segment.

Level of Service by Segment							
EW Corridor							
Segment	Description	2007 Base	2030 Base	2007 EW	2030 EW	2007 NS	2030 NS
A	New section from US 90 to LA 1			A - C	A - C		
B	LA 1 from new section to LA 398	A - C	A - C	A - C	A - C	A - C	A - C
C	LA 1 from LA 398 to LA 400	A - C	A - C	A - C	A - C	A - C	A - C
D	LA 1 from LA 400 to LA 401	E	E	A - C	A - C	E	E
E	LA 70 from LA 401 to LA 3089	D	D	A - C	A - C	D	D
F	LA 70 from LA 3089 to LA 44	A - C	A - C	A - C	A - C	A - C	A - C
G	LA 70 from LA 44 to LA 22	A - C	A - C	A - C	A - C	A - C	A - C
H	LA 22 from LA 70 to I 10	A - C	A - C	A - C	A - C	A - C	A - C
NS Corridor							
Segment	Description						
J	LA 24 from US 90 to LA 648	A - C	A - C	A - C	A - C	A - C	A - C
K	LA 20 from LA 648 to LA 648	A - C	A - C	A - C	A - C	A - C	A - C
L	LA 20 from LA 648 to west of LA 307	A - C	A - C	A - C	A - C	A - C	A - C
M	LA 20 west of LA 307 to LA 3213 bridge	A - C	A - C	A - C	A - C	A - C	A - C
N	LA 3213 bridge to LA 3125	A - C	A - C	A - C	A - C	A - C	A - C
P	LA 641 from LA 3125 to I 10	A - C	A - C	A - C	A - C	A - C	A - C

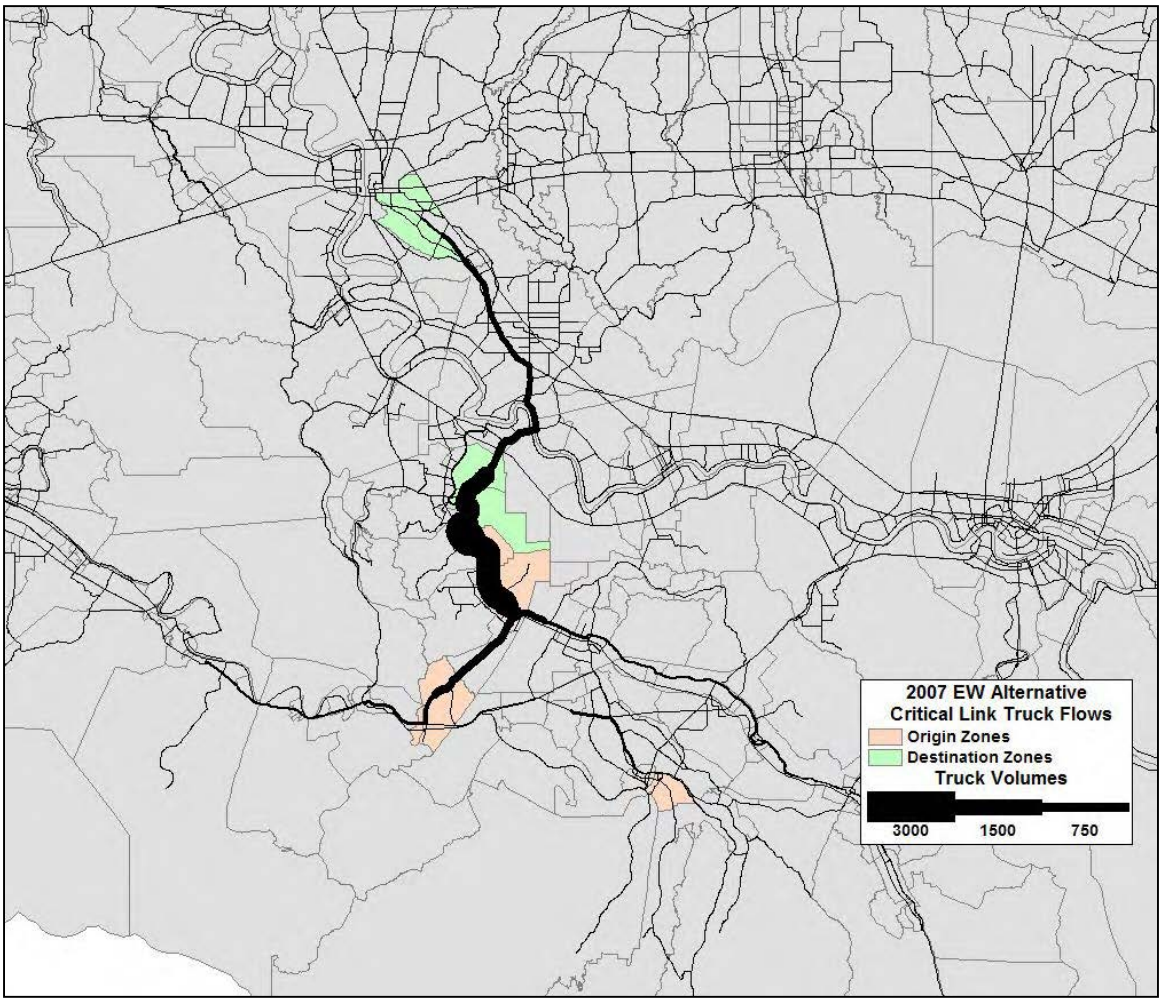
Table 4: Worst-Case LOS by Segment

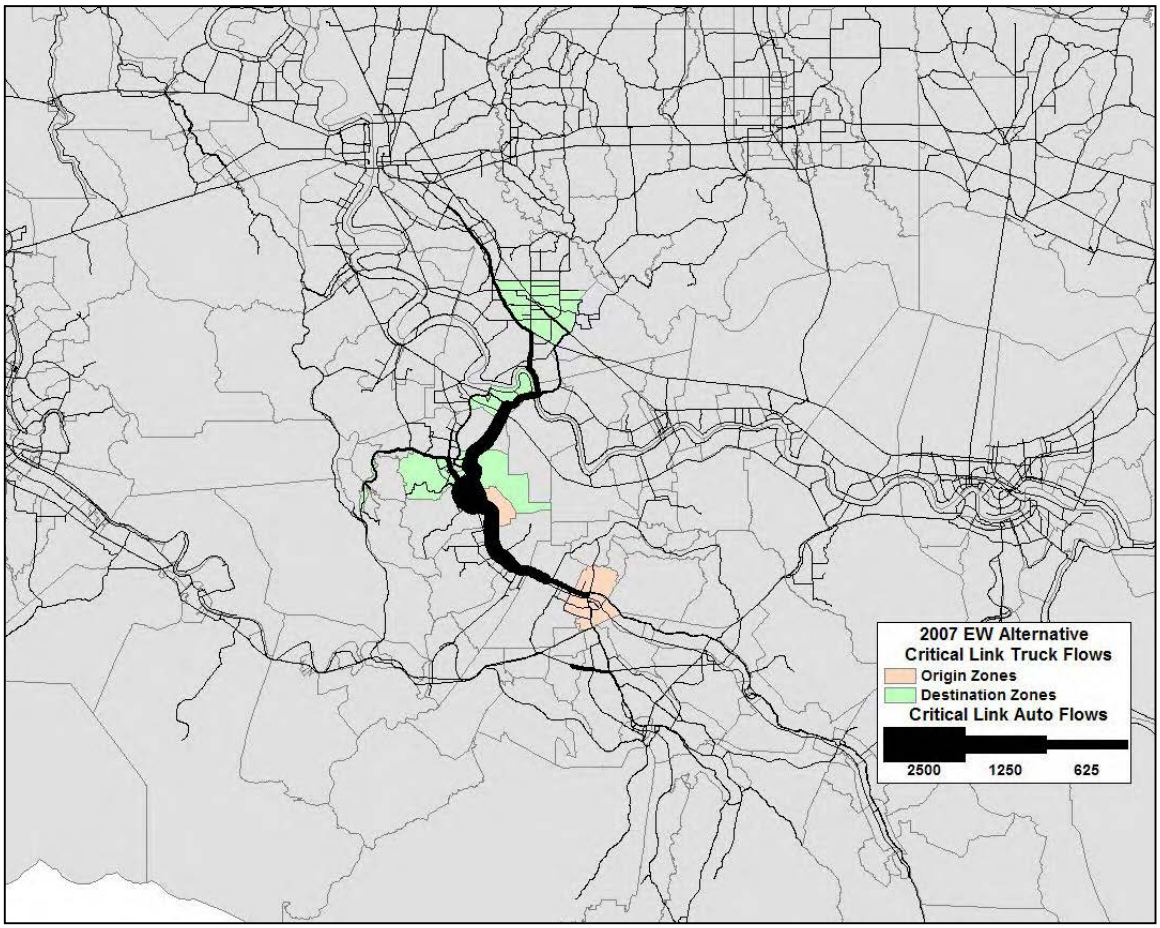
Overall VMT for each segment for each alternative is shown below. In general, the N – S alternative showed no difference from the base year. This is partly due to the lack of congestion on the route, but also partly due to the relatively low growth along the route. The growth from the 2007 base to the 2030 base VMT along the N – S alternative was also minimal. The E – W alternative showed a stronger increase in VMT from 2007 to 2030 and for the alternative over the base case.

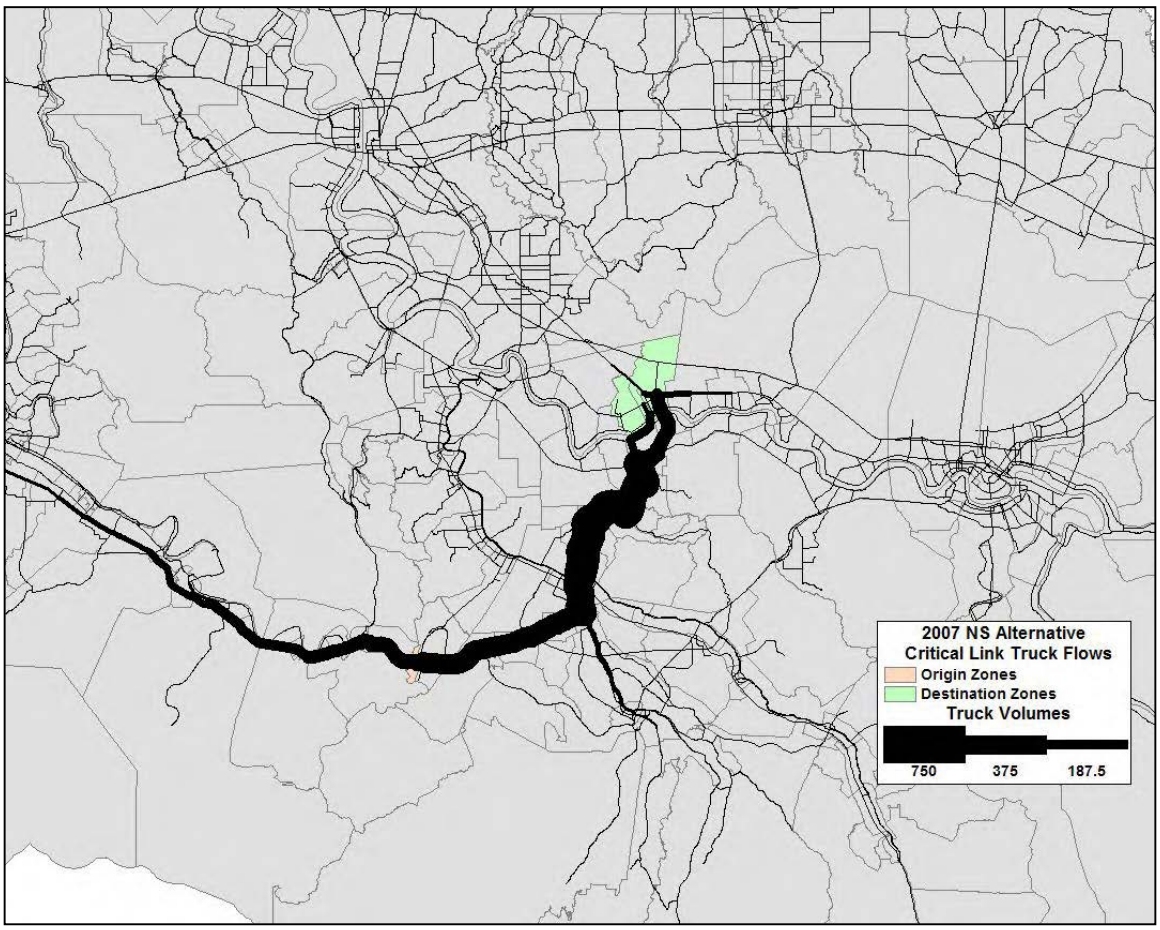
Total VMT for Each Full Corridor and Model Run						
	2007 Base	2030 Base	2007 EW	2030 EW	2007 NS	2030 NS
Full E-W Corridor	830,538	1,074,256	974,480	1,229,029	830,538	1,074,256
Full N - S Corridor	419,761	423,382	366,236	428,910	419,759	496,533
Total	1,250,299	1,497,638	1,340,716	1,657,939	1,250,297	1,570,790

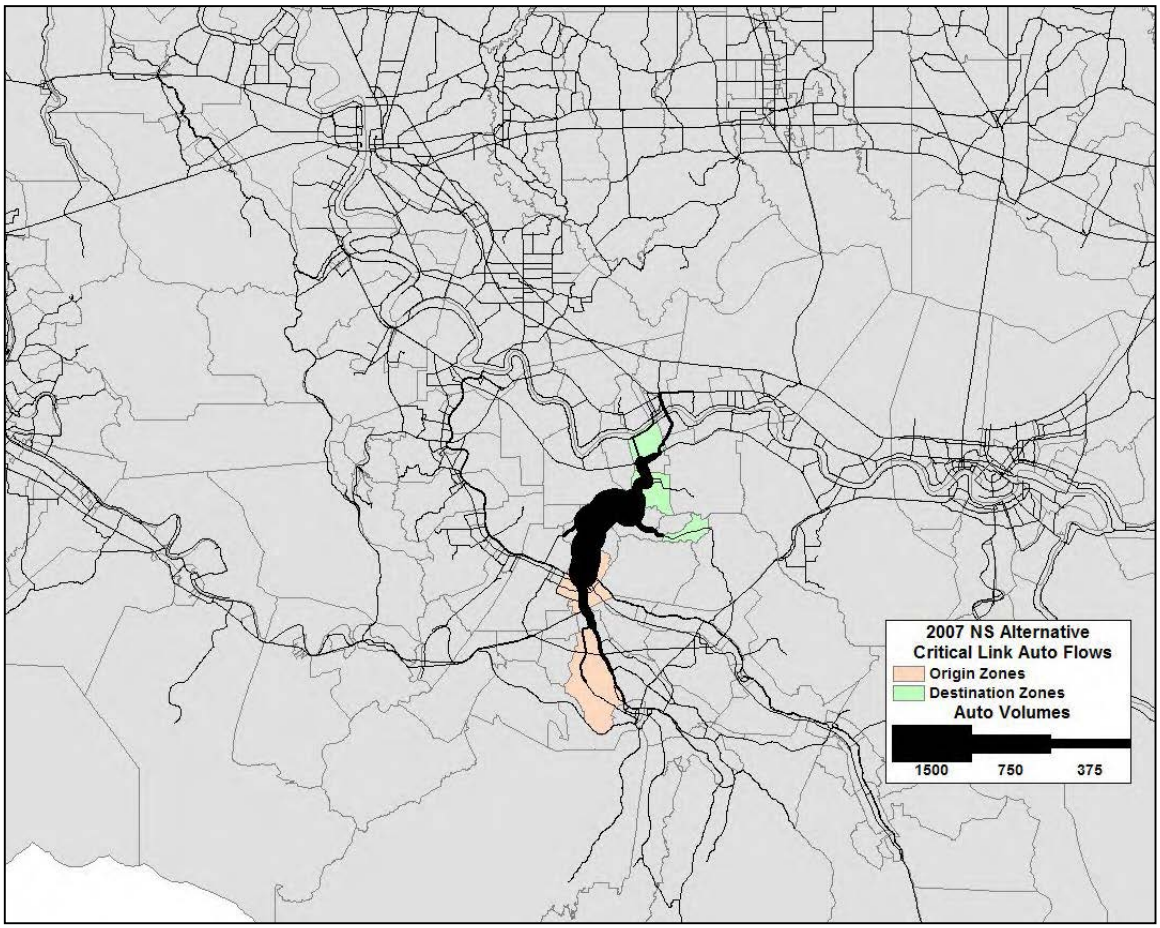
Critical Link Analysis

Critical link analysis was performed on the alternatives to verify the results of the model's traffic assignment paths. The trips that travelled on each alternative were extracted and re-assigned to the network in order to visualize their origins, destinations, and volumes. Figures 3 through 6 show the results, with origin and destination zones with at least 100 trips highlighted. Generally, both alternatives are shown to serve primarily local traffic; there is minimal diversion from other routes. Truck traffic for the N – S alternative does in fact show a pattern of coming up US 90 from the west; but the volumes of this movement are small.


2007 EW Alternative
Critical Link Truck Flows
Origin Zones
Destination Zones
Truck Volumes
3000
1500
750


2007 EW Alternative
Critical Link Truck Flows
Origin Zones
Destination Zones
Critical Link Auto Flows
2500
1250
625


2007 NS Alternative
Critical Link Truck Flows
Origin Zones
Destination Zones
Truck Volumes
750
375
187.5



Results by Alternative

Individual maps follow as Figures 7 through 12, which show the weighted average volumes and LOS by segment for each of the six defined alternatives and scenarios for the optimistic truck scenario.

The two alternative routes are distinguished by heaver line weights. Segments are delineated by dashed purple lines.

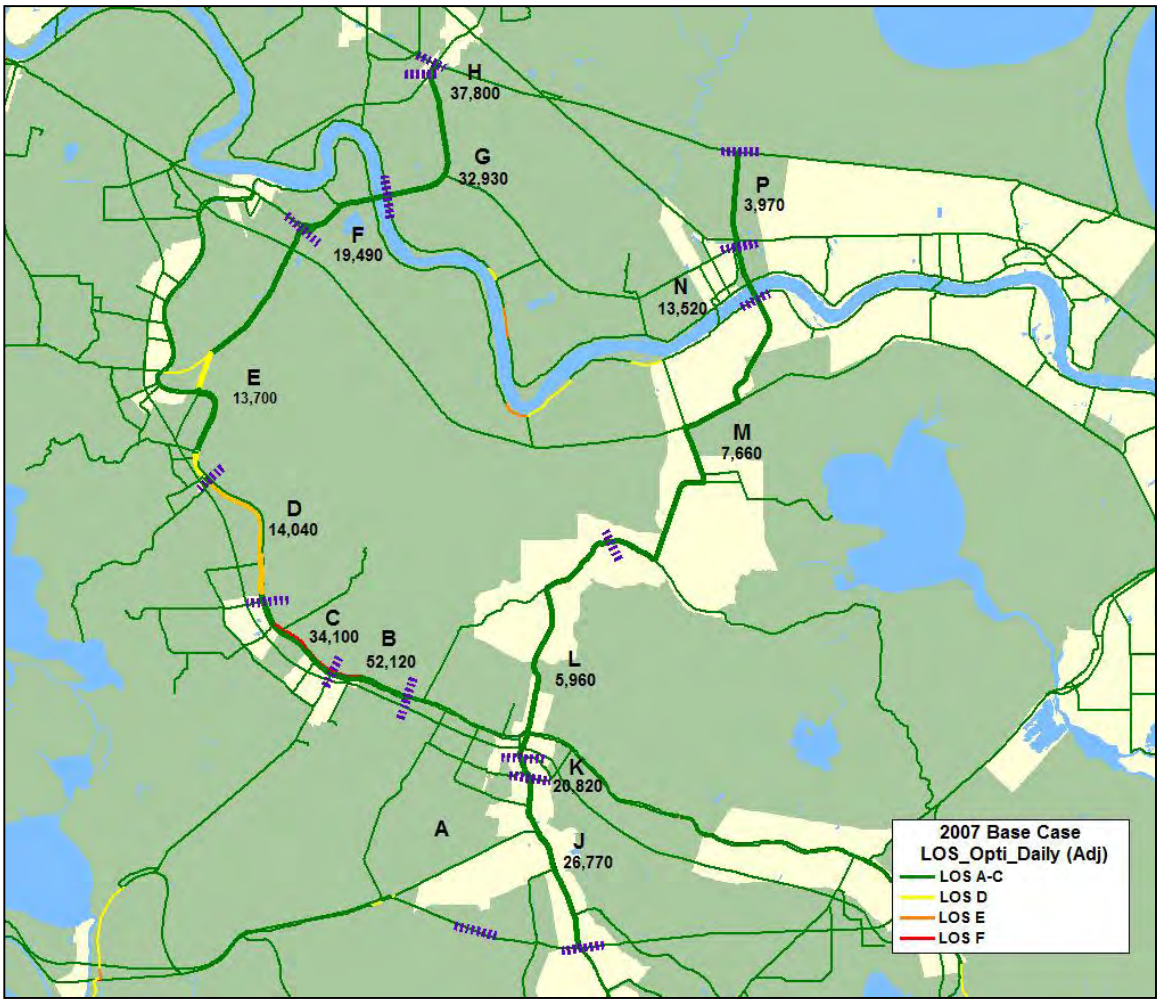
The range of volumes on the two corridors across the various model runs was reasonably consistent. Throughout the full length of the E – W corridor, the 2007 volumes in the base case ranged from 13,400 to 52,120, with the minimum in segment E and the maximum in segment B. With the E – W alternative in place, the minimum increased to 14,490 and the maximum increased to 59,770. For the year 2030, the respective ranges are 18,160 to 58,810 for the base and 19,210 to 67,750 with the alternative in place. The increase is about 5% in segment E, which is a rural area just outside Belle Rose, and about 15% in segment B, in Labadieville at the junction of LA 1 and the newly constructed segment connecting to US 90.

For the N-W corridor, the minimum volumes were found in segment P, just south of the connection with I-10. The maximum volumes were at segment J, in Gray and Schriever at the connection with US 90. Volumes were 3,970 to 26,770 for the 2007 base, and were unchanged with the construction of the N-S alternative. Construction of the E – W alternative diverted traffic off this corridor, and reduced volumes in segments J through N, with the maximum volume dropping to 20,900. The diversion in traffic ranged from a high of 22% in segment J to 2% in segments M and N. In the year 2030 the range of volumes in the base was 5,440 to 29,940. Again, construction of the N –S alternative resulted in no change in volumes. Construction of the E – W alternative again diverted some traffic from the N – S corridor, with the maximum volume in segment J dropping 24% from the base case. Diversion in the more northern segments M and N was slightly over 1%.

Overall, the model results show that both the E-W and the N – S alternatives serve primarily local traffic.

The E-W alternative has the greater impact both because it diverts some traffic from the N – S corridor and because the area around the corridor has a higher growth rate to the year 2030. Also, the E-W corridor seems to have some regional trips that travel as far north as Baton Rouge. The existing congestion in the corridor is alleviated by the construction of the alternative.

The N – S corridor has relatively minimal impact, partly because large portions of it are already constructed with four lanes, and partly due to its existing level of service at LOS A – C and lack of congestion in the base case and in all scenarios and years. Construction of the N – S alternative does not divert traffic from the E – W corridor.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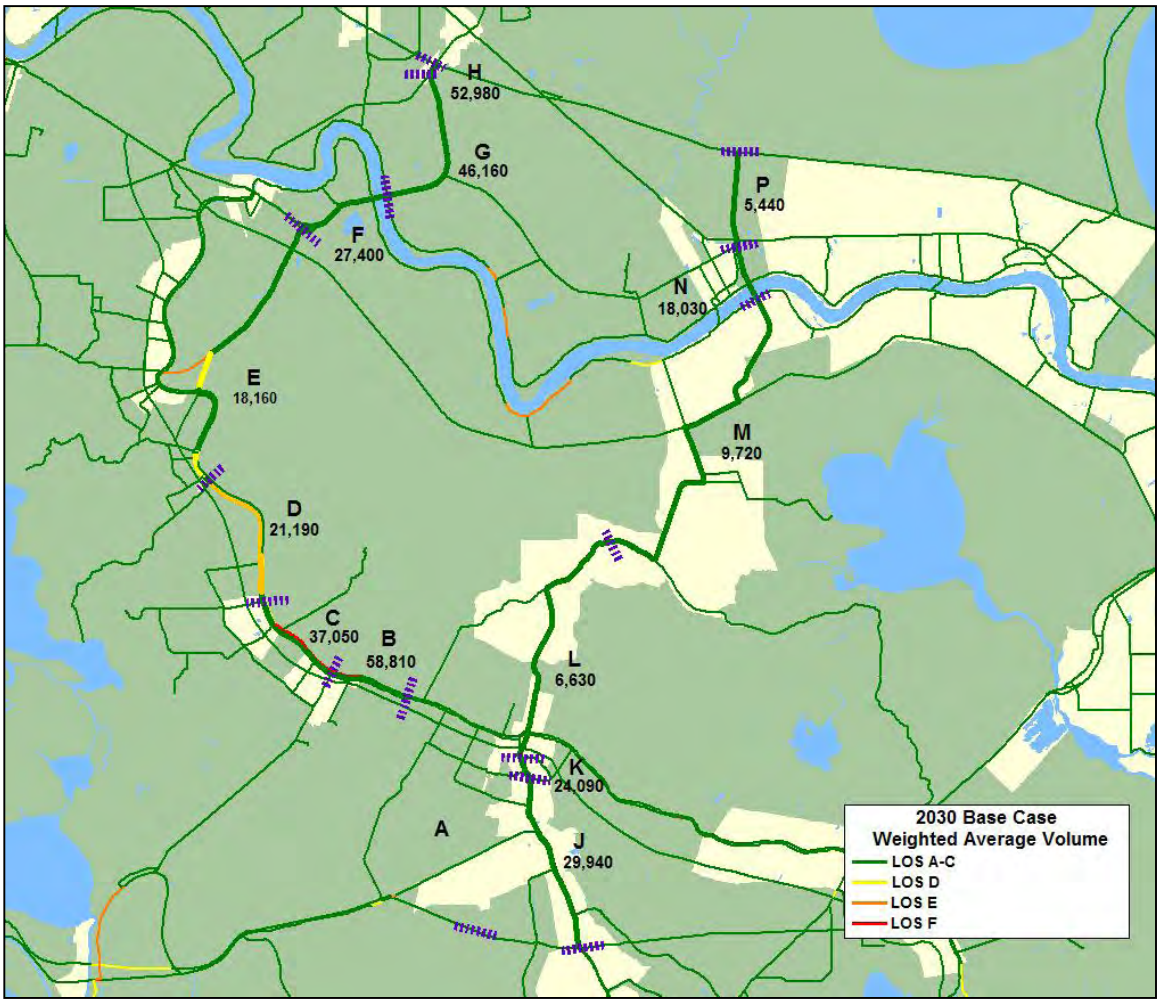
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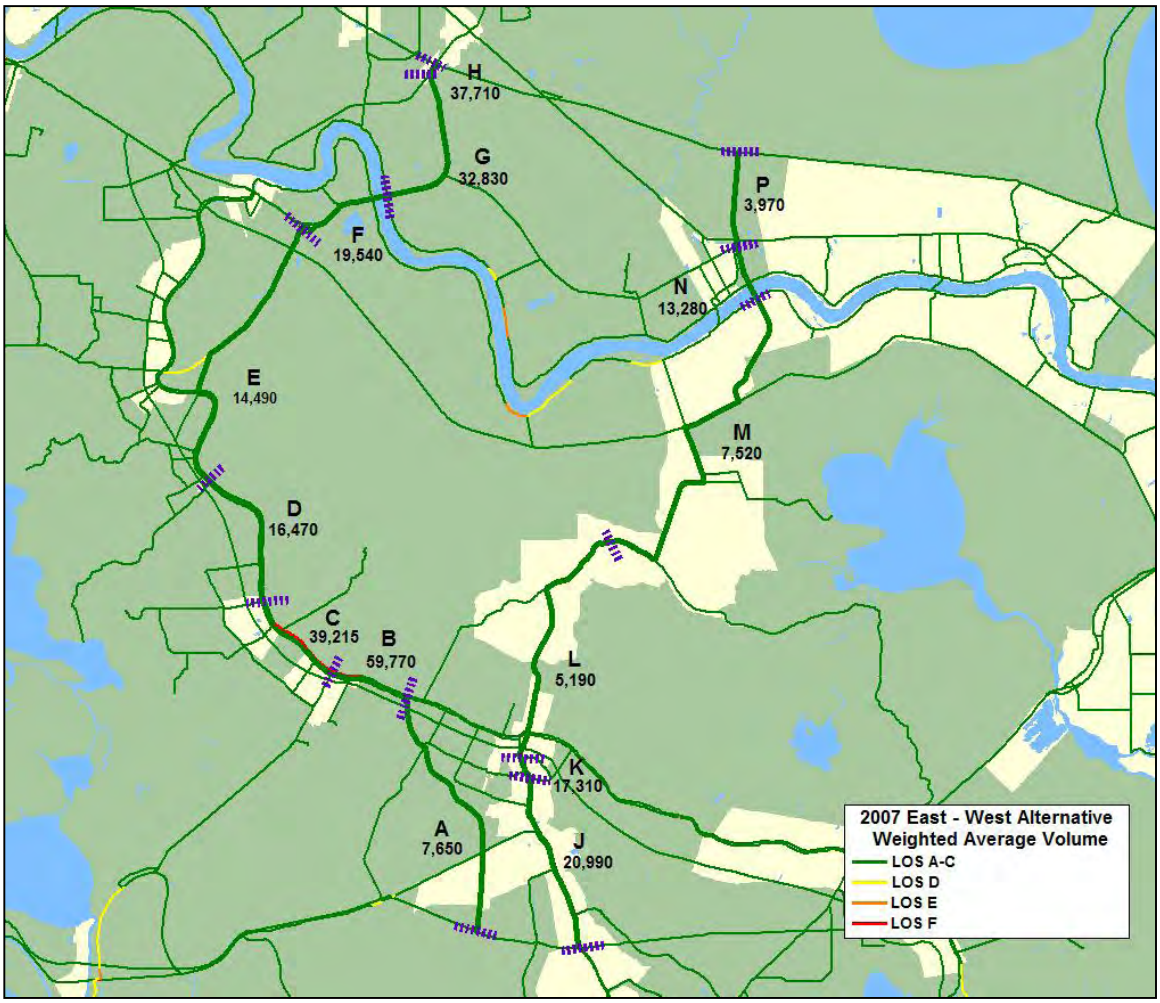
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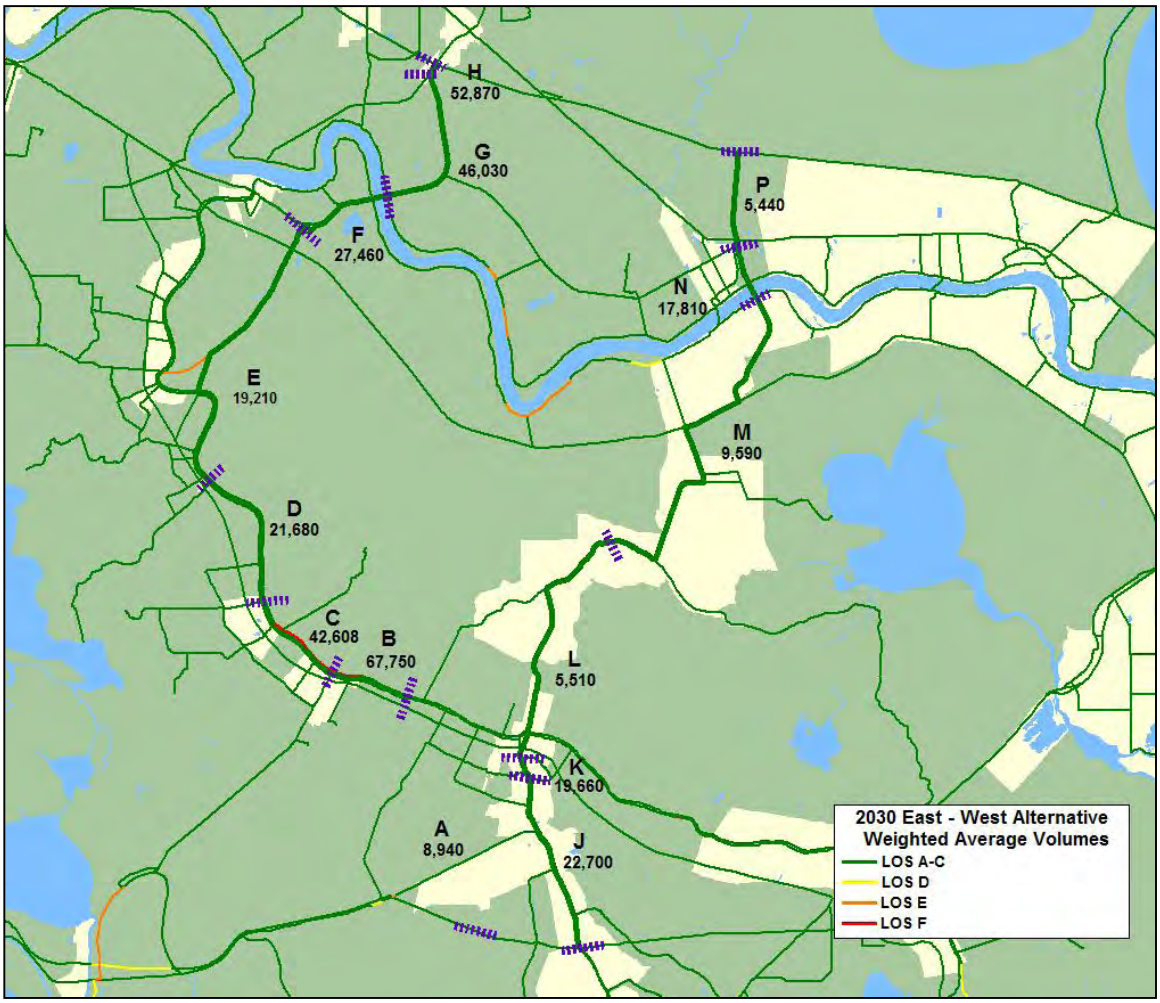
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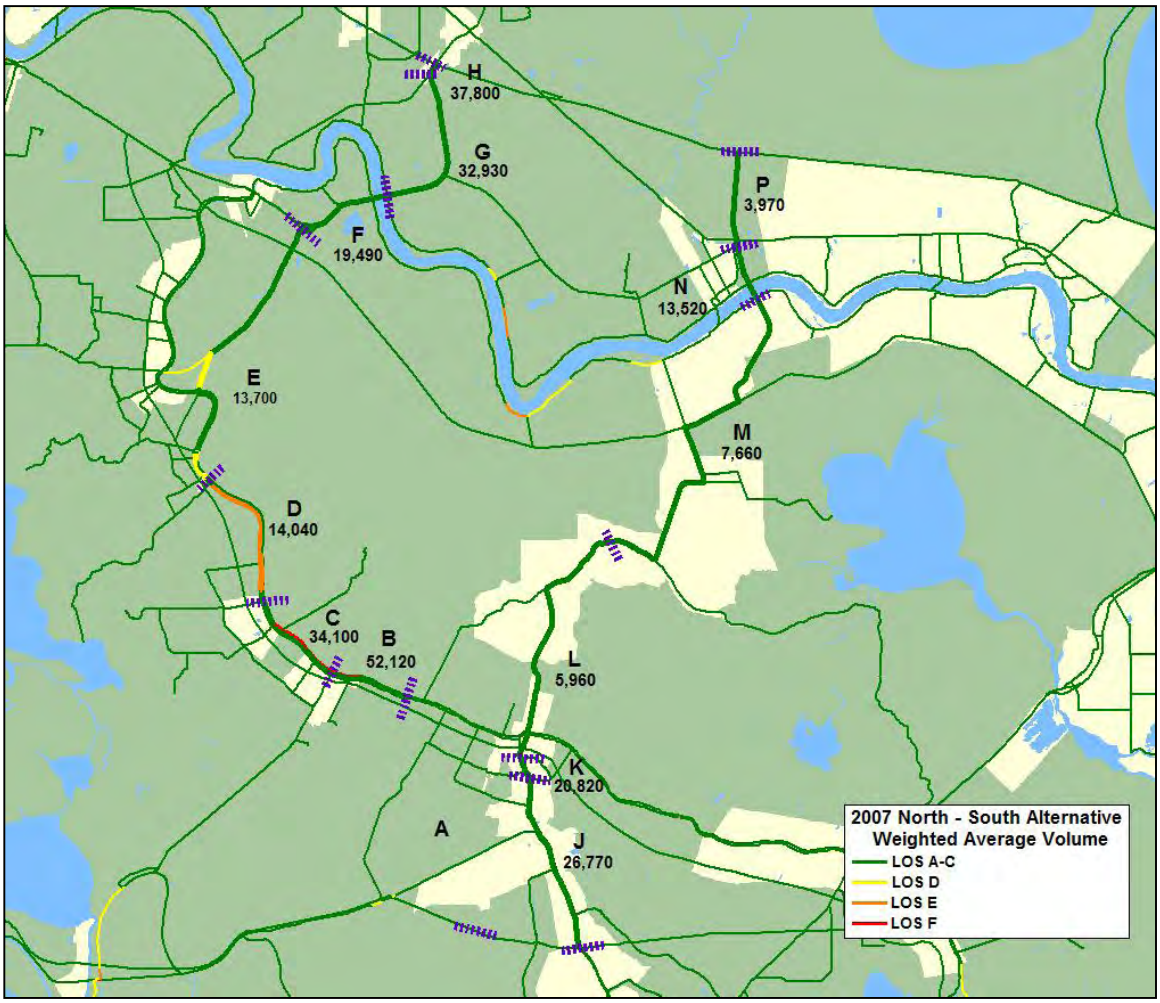
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2007 North - South Alternative
Weighted Average Volume
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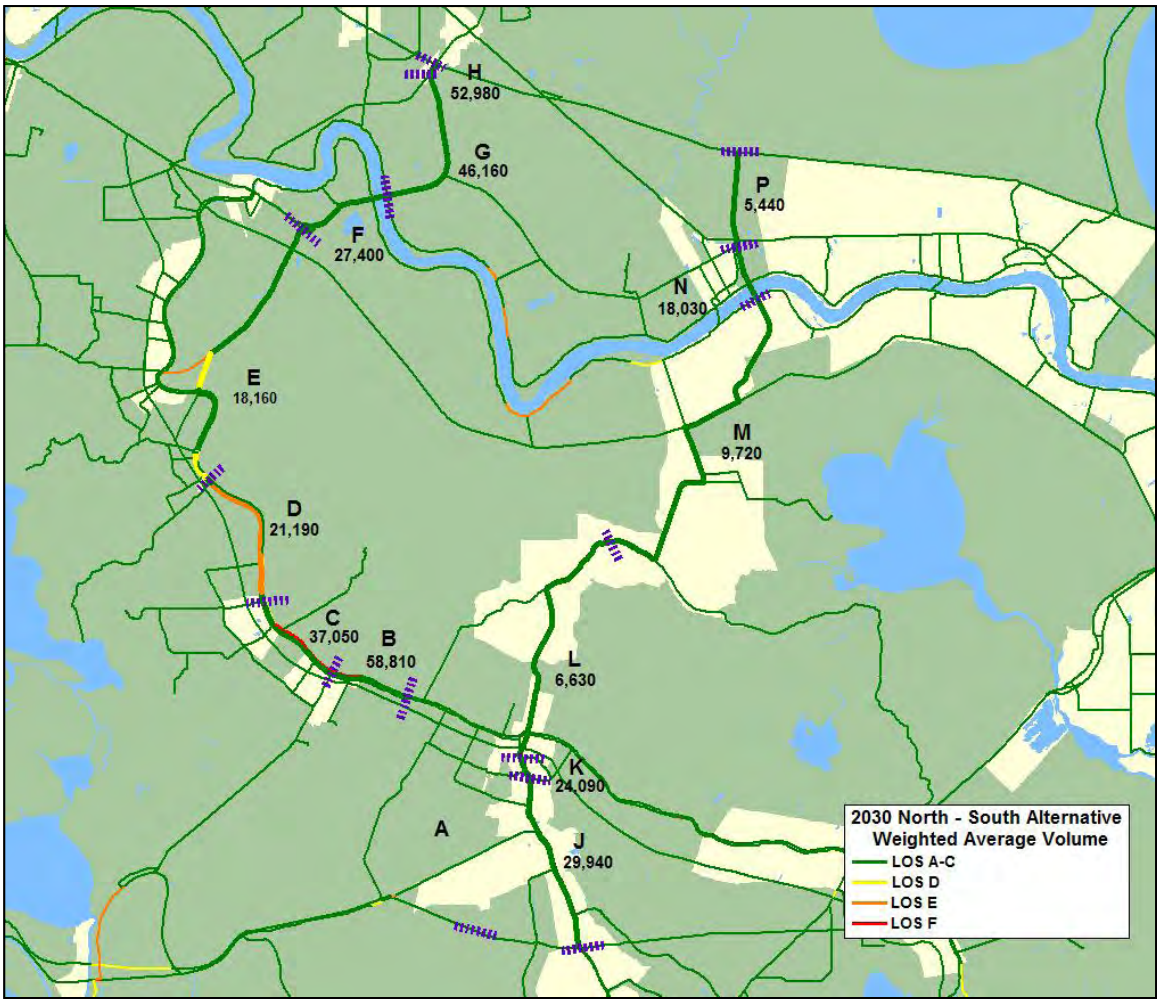
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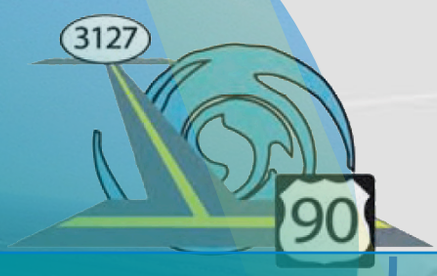
2030 North - South Alternative
Weighted Average Volume
LOS A-C
LOS D
LOS E
LOS F

Appendix F.
Traffic Study



Houma - Thibodaux to I-10 Connection
North-South Corridor
Hurricane Evacuation
Technical Appendix: Traffic Analysis

DRAFT

State Project No. 700-99-0302
F.A.P. No. HP-9902 (518)

Prepared by

URBAN SYSTEMS inc.

In Association With

Buchart Horn, Inc.
9100 Bluebonnet Centre Blvd
Suite 502
Baton Rouge, LA 70809

October 2013

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The purpose of the Houma-Thibodaux to LA 3127 Connection is to establish a north-south functional transportation link to the existing roadway network including the interstate system to the north as well as the future I-49 south, in the South Central Planning and Development District serving the parishes of Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles and St. Mary.

As a part of the Environmental Impact Statement (EIS) for the proposed Houma-Thibodaux to LA 3127 Connection (north-south corridor), this technical appendix is an updated traffic study that provides a summary of the existing and projected non-hurricane evacuation traffic conditions and an assessment of hurricane evacuation routes for the identified primary and secondary access roadways and potential corridor alignments. This technical appendix is a revision to the Houma-Thibodaux to LA 3127 Connection Traffic Analysis technical appendix dated December 2005. This revision includes three major components:

1. An update of the analysis to the year 2010 for existing traffic conditions and the 2032 projected design year conditions
2. The addition of a fourth east-west alternative alignment
3. Consideration of hurricane evacuation routes and the impact of the proposed alignments
4. Addition of northern segments for the Western and Central alignments.

This appendix expands on the traffic studies conducted in the 1999 feasibility study which preceded this EIS by identifying and describing existing key transportation links within the study area (Section 1), providing an inventory of existing traffic data and roadway segment Levels of Service conditions (Section 2), listing planned roadway improvements within the area (Section 3), providing projected conditions traffic volumes (Section 4), summarizing projected non-hurricane evacuation traffic data for the 'No-Build' conditions (Section 5), outlining methodology to establish the corridor alignments (Section 6), summarizing projected non-hurricane evacuation 'Build' traffic conditions (Section 7) hurricane evacuation conditions (Section 8) and alternative reductions and northern segment options (Section 9).

As the identified purpose of the proposed corridor is to provide system linkage and not to address existing congestion, the focus of this traffic analysis was comparing the estimated volumes that would be serviced by each alternative alignment. This level of analysis was sufficient in assessing how the traffic volumes would be serviced by the proposed alignments and the corresponding impacts on the adjacent routes. Once a Record of Decision is issued, further study of the environmentally preferred alternative should include intersection and/or interchange analysis to determine the required lane configurations, storage lengths for turn lanes and type of traffic control. LADOTD Access Connections Policies and EDSMs that have been issued since the origination of this study must be considered in these analyses, alternative refinement and design.

Section 1: Key Transportation Links

The existing transportation network within the boundaries of the Houma-Thibodaux to LA 3127 Connection EIS study area is comprised of limited traffic facilities. This is primarily a result of the region's low topography, numerous bayous and coastal wetland areas. Land development is mainly concentrated along the higher elevated natural ridges which have resulted in circuitous routes for travel within the area. All of this greatly influences network traffic patterns.

Presently, the existing study area corridors provide better east-west connectivity than north-south connectivity. As described in this section, there are several east-west main corridors and only one main north-south corridor that traverses the study area (LA 20). The lack of available corridors that provide north-south movement through the area is one of the primary needs for a new corridor.

Based on the existing network, key transportation links expected to support either primary or secondary access to the proposed corridors were identified. Figure 1 graphically depicts the existing primary and secondary access roadways and intersections identified within the study area.

Section 1.1 provides a description of the physical characteristics of the primary access corridors while Section 1.2 provides the same for secondary access corridors. Section 1.3 summarizes crash rates for selected corridors and Section 1.4 describes the various access intersections.

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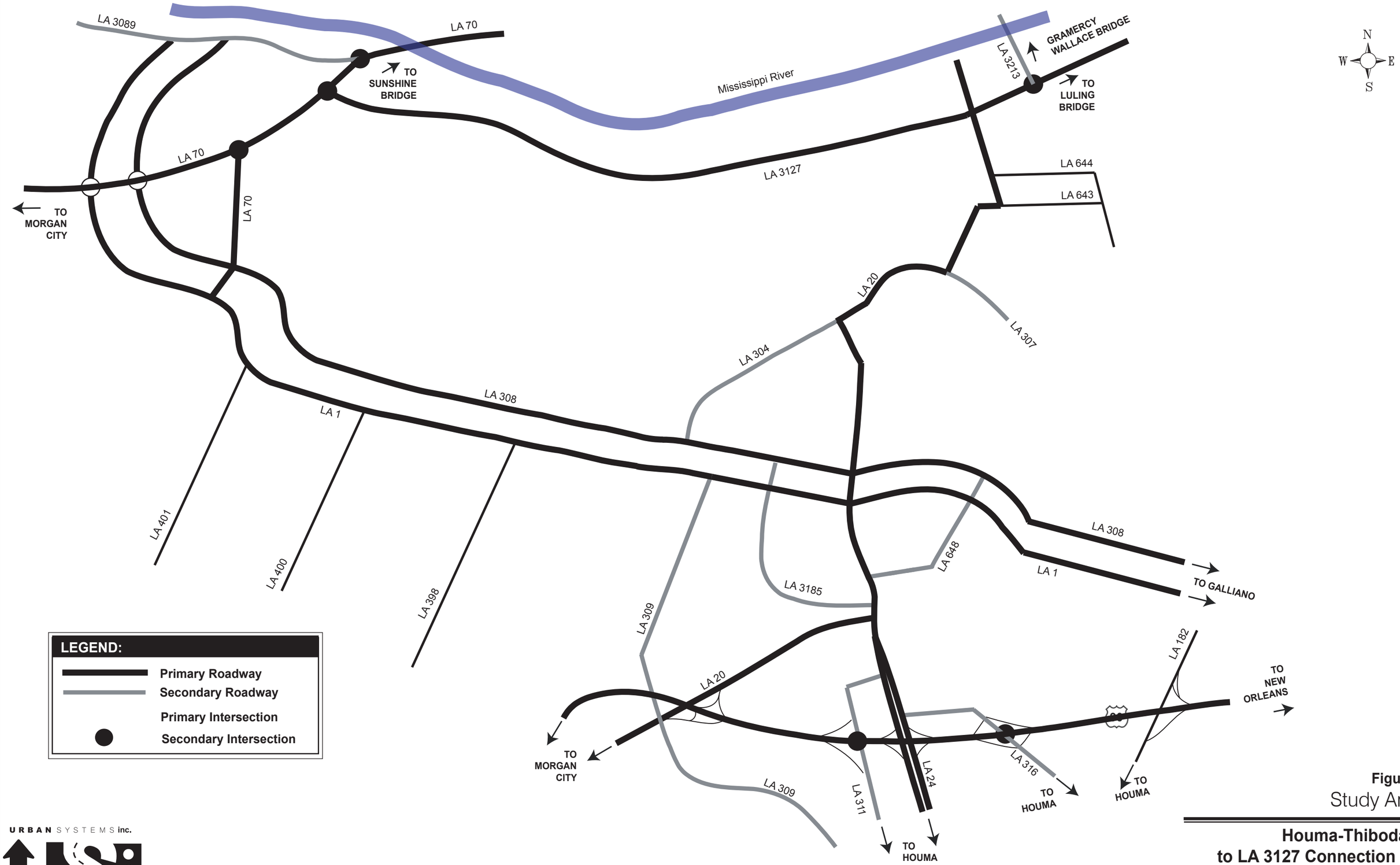

URBAN SYSTEMS inc.

Figure 1
Study Area

Houma-Thibodaux to LA 3127 Connection EIS

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Project # 09-075

1.1: Primary Access Roadways

Primary access roadways were identified as high volume roadways that traverse the study area and would likely support main access to a new corridor. The existing primary access roadways that have been identified within the study area are shown in Table 1. These include a combination of corridors running generally east/west and north/south.

Table 1
Potential North-South Corridor
Primary Access Roadways

East/West Corridors	*North/South Corridors*
LA 3127	LA 24
US 90	LA 20
LA 1/LA 308	LA 70

The above listed corridors contain various capacities and functional classifications including two-lane highways, four-lane highways, and controlled access expressways as described below.

<u>LA 20</u>

LA 20 runs in a general north-south direction for most of its length through the center of the study area. This roadway is the only continuous north-south corridor that runs from the Thibodaux area to LA 3127. However, the circuitous alignment of the roadway includes portions that align in an east-west direction as well.

This roadway is defined as a minor arterial north of LA 308 and a principal arterial south of LA 308 according to the LADOTD functional classification system. LA 20 operates as a two-lane, three-lane and four-lane highway within the study area.

On the southern edge of the study area, LA 20 forms a full-access interchange with US 90. North of this interchange, the roadway operates as a two-lane facility until the LA 20/LA 24 intersection. The roadway then transitions to a four-lane facility through the city of Thibodaux. Before intersecting with LA 304, LA 20 operates with three-lanes transitioning back to four-lanes then finally two-lanes. To the northern edge of the study area, LA 20 then operates as a two-lane facility through the cities of Chackbay and South Vacherie.

A windshield survey of LA 20 found that most sections have two-lanes and no shoulders. Speed limits varied from 40 mph to 55 mph depending on the density of development along this corridor. As the corridor mainly follows natural ridges, there are numerous horizontal curves along its length along with several small bridges. These bridges operate without shoulders.

LA 24

LA 24 is a four-lane roadway that forms an interchange with US 90 on the southern edge of the study area. North of this interchange, the roadway aligns in a north-south direction within the center of the study area. LA 24 terminates at the LA 20 intersection, approximately five miles north of US 90.

South of the LA 20 intersection, this principal arterial is divided by Bayou Terrebonne and operates as a one-way couplet with bridge crossings and traffic signals along its length. LA 24 continues south of the study area and serves as one of the primary north-south connections to the cities of Houma and Thibodaux.

LA 3127

LA 3127 runs east-west through the northern limit of the study area and operates as a two-lane roadway. This minor arterial terminates to the west at its intersection with LA 70 and terminates to the east at its intersection with US 90/I-310. LA 3127 provides access to three bridge crossings of the Mississippi River. From east to west, these are the Luling Bridge in St. Charles Parish, the Gramercy-Wallace Bridge in St. John Parish and the Sunshine Bridge in Ascension Parish.

LA 1 & LA 308

LA 1 and LA 308 are two-lane arterials that are parallel with the east and west banks of Bayou Lafourche through the city of Thibodaux. Each arterial operates as two-way with numerous driveways serving the commercial and residential development along the length of these arterials. Although LA 1 transverses the entire State of Louisiana in a north-south direction, the LA 1 and LA 308 corridors run generally east-west through the study area. The LA 1 corridor to the southeast of the study area provides primary access to lower Lafourche Parish and the commercial activities located at Port Fourchon. According to the LADOTD functional classification system, the LA 1 corridor is defined as a principal arterial whereas the LA 308 corridor is defined as rural major collector through the study area except between LA 3185 and LA 648 Spur where it is defined as a minor arterial.

US Hwy 90

US Hwy 90 is a heavily traveled major east-west corridor within the study area and operates as a four-lane divided roadway between Lafayette and New Orleans. Although Houma-Thibodaux remains the only urbanized area in the state of Louisiana with no interstate highway, this portion of relocated US 90 has been identified as part of the future I-49 corridor and is the only fully controlled access roadway within the study area. Three key grade separated interchanges with US Hwy 90 relevant to this study are US Hwy 90/LA 316, US Hwy 90/LA 24 and US Hwy 90/LA 311.

LA 70

According to the LADOTD functional classification system, LA 70 is defined as a minor arterial. LA 70 runs north-south through the western portion of the study area and operates as a two-lane highway. To the north, LA 70 crosses the Mississippi River at the Sunshine Bridge then intersects with LA 3089 and terminates to the south at LA 1.

A summary of the generalized capacities of the seven identified primary access roadways are listed in Table 2. These capacity estimates are based on the number of travel lanes and functional classification of each roadway.

Table 2
Generalized Capacities
Primary Access Roadways

Roadway	Alignment	Facility Type	24-Hour Capacity (vehicles per day)
US 90	East-West	Expressway, 4-lane	32,000
LA 24	North-South	Principal Arterial, 4-lane	27,000
LA 20	North-South	Minor Arterial, 2-lane	11,000
LA 20	North-South	Principal Arterial, 2-Lane	15,000
LA 308	East-West	Minor Arterial, 2-lane	11,000
LA 308	East-West	Major Collector, 2-lane	8,000
LA 1	East-West	Principal Arterial, 2-lane	15,000
LA 3127	East-West	Minor Arterial, 2-lane	11,000
LA 70	North-South	Minor Arterial, 2-lane	11,000

Source: Houma-Thibodeaux Metropolitan Area Transportation Plan Update and LADOTD Summary Logs

As shown in the above table, the primary access corridors within the study area provide mainly east-west capacity. This existing east-west capacity is distributed throughout the study area with US 90 on the south, the LA 1 and LA 308 corridors in the middle, and the LA 3127 corridor on the north (See Figure 1). In contrast, existing north-south capacity within the study area is limited mainly to the LA 24 corridor in the south, LA 20 corridor in both the middle and northern portions and LA 70 in the west.

1.2: Secondary Access Roadways

Secondary access roadways were also identified and include lower volume corridors that provide linkage between the primary access corridors. The secondary access roadways that have been identified within the study area are shown in Table 3. These also include a combination of corridors running generally east/west and north/south.

Table 3
Potential North-South Corridor
Secondary Access Roadways

East/West Corridors	*North/South Corridors*	
LA 307	LA 311	LA 316
LA 3089	LA 309	LA 648
	LA 304	LA 3213
	LA 3185	

Each of the identified secondary access roadways are two-lane minor arterials, with the exception of LA 3089, with is a four-lane minor arterial.

As shown in Figure 1, the LA 311, LA 316, LA 309, LA 304, LA 648 and LA 3185 corridors provide limited north-south capacity. In the southern portion of the study area, the LA 311 and LA 316 corridors provide north-south capacity between the US 90 and LA 24 corridors. The LA 309 corridor also provides north-south capacity between US 90 and LA 1/LA 308 in the central portion of the study area. This area also includes the LA 304 corridor which provides north-south capacity between LA 308/LA 1 and LA 20. The LA 648 and LA 3185 corridors are situated in the eastern portion of the study area linking LA 20 to LA 1/LA 308 and are used as by-pass roads around Thibodaux. LA 3213, in the northern portion of the study area provides direct access to the Grammercy Wallace Bridge.

LA 307 provides limited east-west capacity within the eastern portion of the study area and services the Town of Kraemer. LA 3089 provides limited east-west capacity within the western portion of the study area and connects LA 70 to LA 308/LA 1.

1.3: Crash Rates

Safety conditions within the study area were assessed for selected primary and secondary access corridors within the study area. The updated methods and findings are presented below.

Crash rates were obtained from the LADOTD during the years 2006-2007. The selected corridors include LA 20, LA 1, LA 308, US 90, LA 307, LA 3127, and LA 24. The crash rate data presented herein is exempt from discovery or admission under 23 U.S.C. 409.

Crash rates (# of accidents per million vehicle miles) are a function of the number of accidents, time period, volume of traffic, and length of roadway. The information is broken down by sections for each corridor. The sections have various lengths which depend on roadway characteristics (cross-section, horizontal alignment, functional classification, etc) and are measured by mileposts. Sections with short lengths (< 1 mile) do not accurately represent crash rates since the length parameter in the equation is so small. Therefore, only those sections with lengths > 1 mile were considered.

The ratio of crash rates for each section of roadway versus the statewide average was also provided by the LADOTD. A section is defined as abnormal if the section's ratio is at least twice the statewide average for an equivalent type of roadway. For the two years of data provided (2006-2007), those sections which were determined to be both abnormal and recurring, two or more years, were identified.

A summary of findings is presented below for each corridor. It should be noted that the information provided did not include a crash summary by type (head-on, right angle, rear end, sideswipe, etc) or contributing environmental condition (rain, fog, darkness, construction, etc). The information also did not identify the number of fatalities.

LA 20

For the approximately 30 mile stretch of LA 20 in the study area, two sections were found to have above average crash rates. The remaining sections of the LA 20 corridor were found to have an average or better crash rate for equivalent roadways.

LA 1

For the approximately 20 mile stretch of LA 1 in the study area, two sections were found to have above average expected crash rates. The remaining sections of the LA 1 corridor were found to have an average or better crash rate for equivalent roadways.

LA 308

For the approximately 20 mile stretch of LA 308 in the study area, four sections were found to have above average expected crash rates. The remaining sections of the LA 308 corridor were found to have an average or better crash rate for equivalent roadways.

US 90, LA 307, LA 3127, LA 70 and LA 24

The US 90, LA 307, LA 2137, LA 70 or LA 24 corridors were found to have no abnormal sections.

Crash Rate Summary

The crash rate data provided by the LADOTD identifies a repeated crash pattern along three of the study area corridors. These three corridors are: LA 20, LA 1 and LA 308. As described in Section 2.3, these corridors serve high traffic volumes. Intersections on these corridors also have documented traffic congestion which is primarily a result of limited transportation corridors within the area. The implementation of a new north-south corridor that meets current design standards would relieve some of this traffic congestion and provide safer traffic flow.

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1.4: Access Intersections

Based on the potential north-south corridor alignments, primary and secondary access intersections were also identified. The primary access intersections are defined as those most likely to support major access to the north-south corridor via the identified primary access roadways. Each location operates with traffic signal control and is presented graphically in Figure 1.

The identified secondary access intersections which would support minor access to the corridor are also presented in Figure 1. Each of these locations presently operates as a stop controlled intersection.

Section 2: Existing Traffic Conditions (Non-Hurricane Evacuation)

The existing baseline conditions (Year 2010) for this study were determined by collecting new twenty-four hour count data along key roadways within the study area and from count data obtained from South Central Planning (Section 2.1). The collected count data was used to evaluate the existing conditions Levels of Service for the various roadways (Section 2.2).

2.1: Traffic Count Data Collection

Existing daily traffic volumes were obtained for the existing conditions for selected roadways from South Central Planning. The daily volumes were annualized and are summarized in Table 4 below.

As a supplement to the secondary traffic count data obtained from South Central Planning, additional traffic count data was collected. New twenty-four hour counts were collected along various corridors within the study area. The twenty four hour count volumes were annualized using seasonal daily adjustment factors based on a memorandum dated October 2, 2009 by Dan Broussard. Table 5 provides a summary of the annualized traffic count data collected in this study. The resulting baseline 2010 existing conditions traffic volumes are presented in Figure 2.

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Table 4
South Central Planning-Field-Annualized
Existing Daily Traffic Volumes 2008-2009

	Daily *			AM Peak			PM Peak		
US 90 (west of LA 311)	EB	WB	Total	EB	WB	Total	EB	WB	Total
volume	7,429	7,383	14,812	535	551	1,086	720	619	1,339
directional split	50%	50%		49%	51%		54%	46%	

LA 1 (east of LA 70)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	3,921	3,924	7,845	252	284	536	313	382	695
directional split	50%	50%		47%	53%		45%	55%	

LA 1 (west of LA 398)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	2,802	2,691	5,493	222	212	434	238	241	479
directional split	51%	49%		51%	49%		50%	50%	

LA 20 (north of LA 308)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	8,927	10,662	19,589	835	921	1,756	886	969	1,855
directional split	46%	54%		48%	52%		48%	52%	

LA 20 (LA 643 to LA 307)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	3,251	3,251	6,502	466	291	757	257	575	832
directional split	50%	50%		62%	38%		31%	69%	

LA 20 (south of LA 304)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	5,793	5,723	11,516	373	700	1,073	671	504	1,175
directional split	50%	50%		35%	65%		57%	43%	

LA 24 (south of LA 311)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	11,102	11,328	22,430	906	1,030	1,936	1,160	947	2,107
directional split	49%	51%		47%	53%		55%	45%	

LA 24 (north of LA 311)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	10,911	11,693	22,604	1,004	1,065	2,069	1,099	1,010	2,109
directional split	48%	52%		49%	51%		52%	48%	

LA 308 (east of LA 70)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	2,779	2,883	5,662	385	225	610	248	318	566
directional split	49%	51%		63%	37%		44%	56%	

LA 308 (west of LA 398)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	1,950	1,833	3,783	223	180	403	196	206	402
directional split	52%	48%		55%	45%		49%	51%	

LA 311 (US 90 to LA 24)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	4,394	4,345	8,739	374	599	973	604	393	997
directional split	50%	50%		38%	62%		61%	39%	

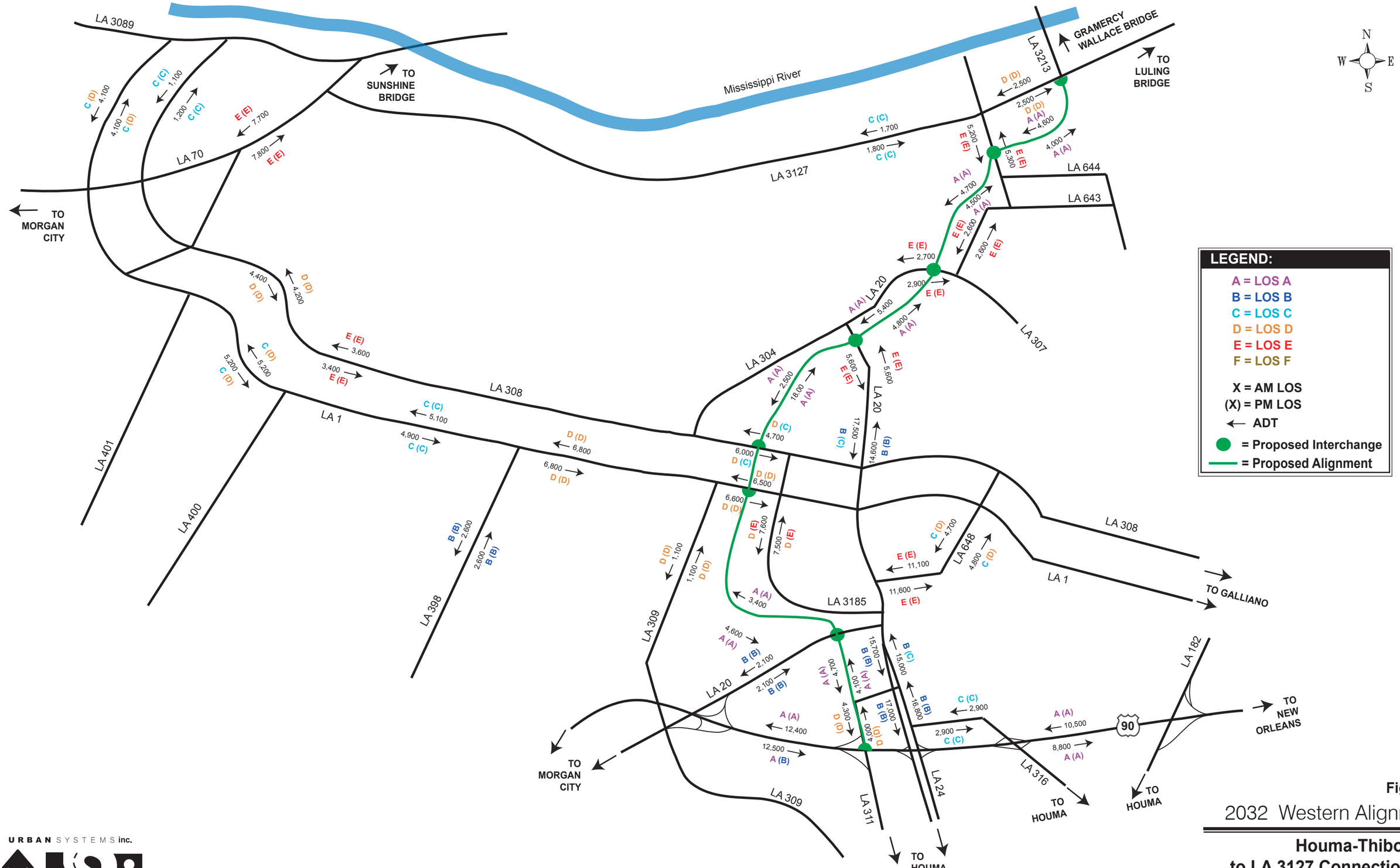
LA 648 (east of LA 20)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	6,725	6,413	13,138	809	553	1,362	618	622	1,240
directional split	51%	49%		59%	41%		50%	50%	

LA 3127 (east of LA 20)	EB	WB	Total	EB	WB	Total	EB	WB	Total
volume	2,031	2,123	4,154	532	80	612	103	510	613
directional split	49%	51%		85%	15%		16%	84%	

LA 648 (south of LA 1)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	2,814	2,761	5,575	193	312	505	374	239	613
directional split	50%	50%		38%	62%		61%	39%	

LA 3185 (south of LA 1)	NB	SB	Total	NB	SB	Total	NB	SB	Total
volume	3,724	3,583	7,307	365	263	628	316	405	607
directional split	51%	49%		58%	42%		44%	56%	721

*ADT data was annualized using DOTD provided adjustment factors



ADT Source: Wilbur Smith

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Figure 5

2032 Western Alignment

Houma-Thibodaux to LA 3127 Connection EIS

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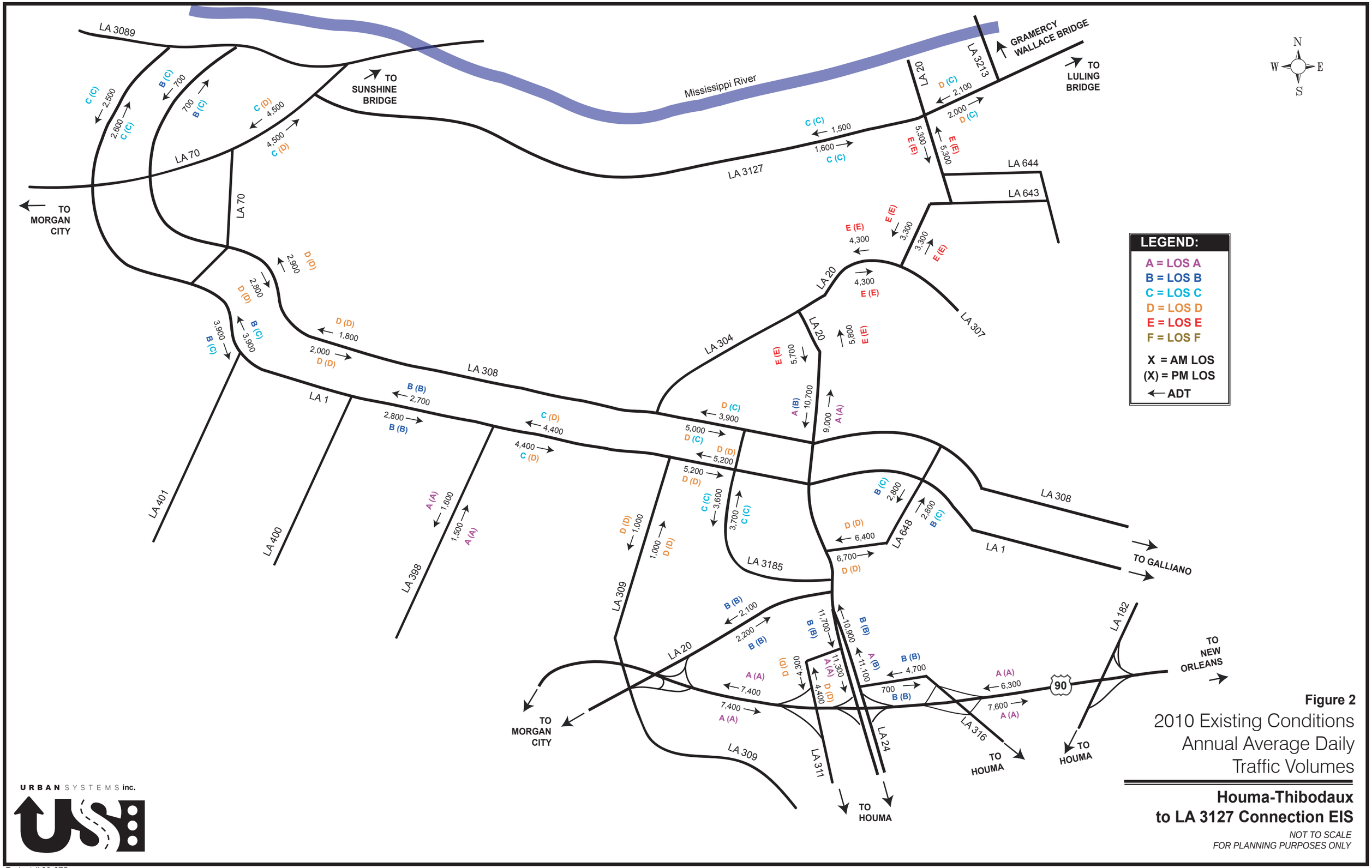

Figure 2
2010 Existing Conditions
Annual Average Daily
Traffic Volumes

Houma-Thibodaux to LA 3127 Connection EIS

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As shown in Figure 2, the existing traffic volume demand is highest within the southern and middle portions of the study area. Traffic volumes were lowest in the northern portion of the study area which has less development and a limited number of transportation corridors that provide good access from the Houma-Thibodaux area to locations north of the project boundary.

2.2: Existing Level of Service Conditions

Levels of Service (LOS) represent a qualitative and quantitative evaluation of the traffic operation of a given highway using procedures developed by the Transportation Research Board and contained in the Highway Capacity Manual, Special Report 209. The Highway Capacity Manual (HCM) procedures have been adapted to computer based analysis packages.

Levels of Service range from LOS A, a condition of little or no delay to LOS F, a condition of capacity breakdown represented by heavy delay and congestion. Level of Service B is characterized as stable flow. Level of Service C is considered to have a stable traffic flow, but is becoming susceptible to congestion with general levels of comfort and convenience declining noticeably. Level of Service D approaches unstable flow as speed and freedom to maneuver are severely restricted and LOS E represents unstable flow at or near capacity levels with poor levels of comfort and convenience.

Peak hour volumes were determined and input into Highway Capacity Software Version 5.2 (HCS+) with roadway geometry for the two lane and multilane highways to generate Level of Service and delay estimates for the roadways included in the study. The results of the analysis for existing conditions AM and PM peaks can also be seen in Figure 2. The analysis documentation is attached.

A review of Figure 2 indicates acceptable Levels of Service throughout much of the study area. US 90 in the existing conditions analysis indicates LOS A for both peak periods. However, for the two lane section of LA 20, in the northern portion of the study area, analysis results indicate LOS E during both peak periods. Field observations corresponded with the analysis results. In the two-lane segment of LA 20 turning movements into and out of cross streets and driveways caused frequent breaking along the highway. Additionally, the demand for north-south travel is likely greater than the traffic volumes collected on LA 20. This demand is represented by motorists on US 90 who elect to travel this corridor to access the area's interstate system (I-10/I-55) via the US 90/I-310 interchange rather than accessing the system via the circuitous, two-lane corridor.

Section 3: Planned Roadway and Intersection Improvements

Existing Transportation studies were reviewed to identify any planned projects within the study area (Section 3.1) Improvements are segregated into those that are within the project study area (Section 3.2), those outside the study area that may have some impact on the proposed corridor (Section 3.3) and those that are operational improvements (Section 3.4).

3.1: Review of Existing Transportation Studies

Various agencies including LADOTD, Assumption Parish and South Central Planning were contacted to determine if any large scale capacity projects and/or large scale developments that could potentially impact the projected conditions were in the planning phases. Various projects are currently planned for roadway repairs, drainage and intersection upgrades. Several additional projects to increase capacity were identified, but no large scale developments were identified within the study area.

Previously completed traffic studies and/or documents were requested and reviewed to identify relevant non-evacuation traffic data and conclusions. These studies were reviewed to identify proposed roadway projects or operational improvements where deficiencies in the system have been documented. The reviewed reports and findings are presented below:

The key studies that were reviewed are as follows:

- *Hurricane Evacuation Corridor Study, LA Department of Transportation and Development,* June 1999
- The Draft for approval *Houma–Thibodaux Metropolitan Area Transportation Plan Update MTP 2035, South Central Planning and Development Commission,* May 2010
- *Houma ITS Development Plan,* June 2003

Other documents that were reviewed include:

- Louisiana Traffic Volume Monitoring Manual Station, LA Department of Transportation and Development – Planning Division
- LA Department of Transportation and Development Summary Log, District 61, 62 and 02

On-going Transportation Studies

In addition to the above listed previously completed transportation studies, a preliminary toll study for the north-south corridor is also presently being prepared. Both the toll

study and this study are considering the same north-south corridor alignments and consistent toll-free (baseline) traffic projections.

3.2: Capacity Improvements within the Study Area

The draft *Houma-Thibodaux Metropolitan Area Transportation Plan Update MTP 2035* was reviewed for projects within the study area. This long range planning document addresses transportation needs in the Metropolitan area that includes both the Houma and Thibodaux area. The limits of the study area begin just south of Houma and extend just north of Thibodaux. The common area of this study area and the north-south corridor study area includes the US 90 corridor to north of the LA 1/LA 308 corridors. Capacity improvements identified are listed below:

- LA 311 – Widen to four lanes between Main Project Rd. and Barataria Blvd. (2026-2035)
- LA 3185 – Widen to four lanes between LA 308 and LA 20 (2026-2035)
- LA 648 – Widen to four lanes from LA 20 to LA 308 (2026-2035)
- US 90 – Upgrade to –I-49 (2026-2035)

The Draft *Houma-Thibodaux Metropolitan Area Transportation Plan Update MTP 2035* also identified other projects within the study area defined as unfunded needs with no current implementation program. These include:

- LA 20 – Widen to four lanes between Reinzi Dr. and LA 304
- Thibodaux Loop SE – New four lanes from LA 20 to LA 308
- Main Project Rd – Widen to four lanes from LA 311 to LA 3185
- Thibodaux Loop NW – New four lanes from LA 308 to LA 20
- Laurel Valley Rd – New 2-four lane highway between LA 308 and LA 20
- LA1/LA 308 – One way couplet between LA 3185 and LA 648
- LA 648 – Widen to four lanes between LA 20 and Cardinal Dr.
- I-49 – New two lane service road between LA 24 and LA 316

The planned projects within the study area have various time frames for implementation as listed above. However, some do not have identified funding sources and thus their ultimate feasibility is uncertain. The projects, however, do represent the result of a comprehensive planning process for the region and as such are improvements that have been identified as necessary to address both the short and long-range needs of the area.

3.3: Capacity Improvements Outside the Study Area

In the December 2005 Traffic Analysis technical appendix capacity improvements outside the study area were reviewed. The identified projects are listed below:

- Prospect St. (LA 3087) – Bayou Terrebonne Bridge Replacement to six lane bridge

- LA 70 – Sunshine Bridge to I-10 widen to four lanes
- Extension of LA 3235 from Larose to US 90
- LA 182 (South of US 90) – Widen to four lanes
- Extension of Bayou Gardens Blvd to Proposed Prospect Blvd Extension

Similar to projects that are within the study area, some of these projects are scheduled for construction while the implementation timeframe for others is uncertain. All the projects improve access to the study area and particularly to the north-south corridor.

3.4: Operational Improvements

- Upgrade the US 90 Corridor to I-49
- Develop an ITS System in the Houma/Thibodaux area

The local MPO previously indicated that access management would be considered with all new corridor projects and that access management retrofits of existing corridors is not planned.

Section 4: Projected Conditions Traffic Volumes

Wilbur Smith Associates (WSA) provided preliminary toll-free traffic volumes with and without the four potential alignments of the proposed Houma-Thibodaux connecters for the 2032 'Build' year. All findings are based on modeling conducted using a modified version of the Louisiana Statewide Traffic Model and calibrated with the existing conditions volumes. The volumes provided were preliminary, toll-free volumes only. Additional model calibration, network review and review of socioeconomic inputs will be necessary prior to the application of the Wilbur Smith Associates tolling algorithm and the development of traffic and revenue forecasts.

Section 4.1 provides details for model development and refinement and Section 4.2 provides details of the modeling process.

4.1: Model Development and Refinement

The Louisiana Statewide Traffic Model (LaSTM) is focused on auto and truck traffic for intercity and other rural, non-urban highways. It is a two-stage travel demand modeling process using a nationwide macro model covering the 48 states outside Louisiana for forecasting long distance interstate and intrastate trips and a Louisiana-only micro model for short distance trips within Louisiana.

Since the LaSTM was designed and calibrated for forecasting statewide auto and truck travel, it does not have the zone level and network detail necessary for accurately forecasting traffic in smaller areas. To better represent the settlement and traffic patterns of the major highways, it was necessary to refine the study area's highway networks and zonal structure. In order to achieve this goal, WSA developed a smaller, sub-area

network focusing on the project corridor. This included zonal disaggregation, refinement of the highway networks, and the development and extraction of a sub-area trip table. Once the sub-area extraction process was completed, model assignments were compared to the full LaSTM model to ensure that travel patterns and volumes were properly reproduced.

4.2: Modeling Process

Sub-area model runs were performed for a base, 'No-Build' scenario for the model base year of 2010 and the analysis year of 2032. Corridor growth was then analyzed for five subzones, developed by WSA, to gauge localized growth in total volume and shifting travel patterns. These growth factors were then applied to the corresponding existing condition volumes counts to develop future-year traffic levels at the count sites.

The four proposed project alignments were introduced and run for all model years between 2010 and 2032. For each scenario, WSA recorded the impact of the study alignment at each count location. These impacts were then applied to the projected traffic volumes to develop the revised traffic volumes corresponding to each traffic alignment. Projected volumes for the 2032 'No-Build' scenario are shown in Figure 3. The redistribution of traffic resulting from four proposed alignments is shown in Figures 5-8.

Section 5: Projected Traffic Conditions (Non-Hurricane Evacuation)

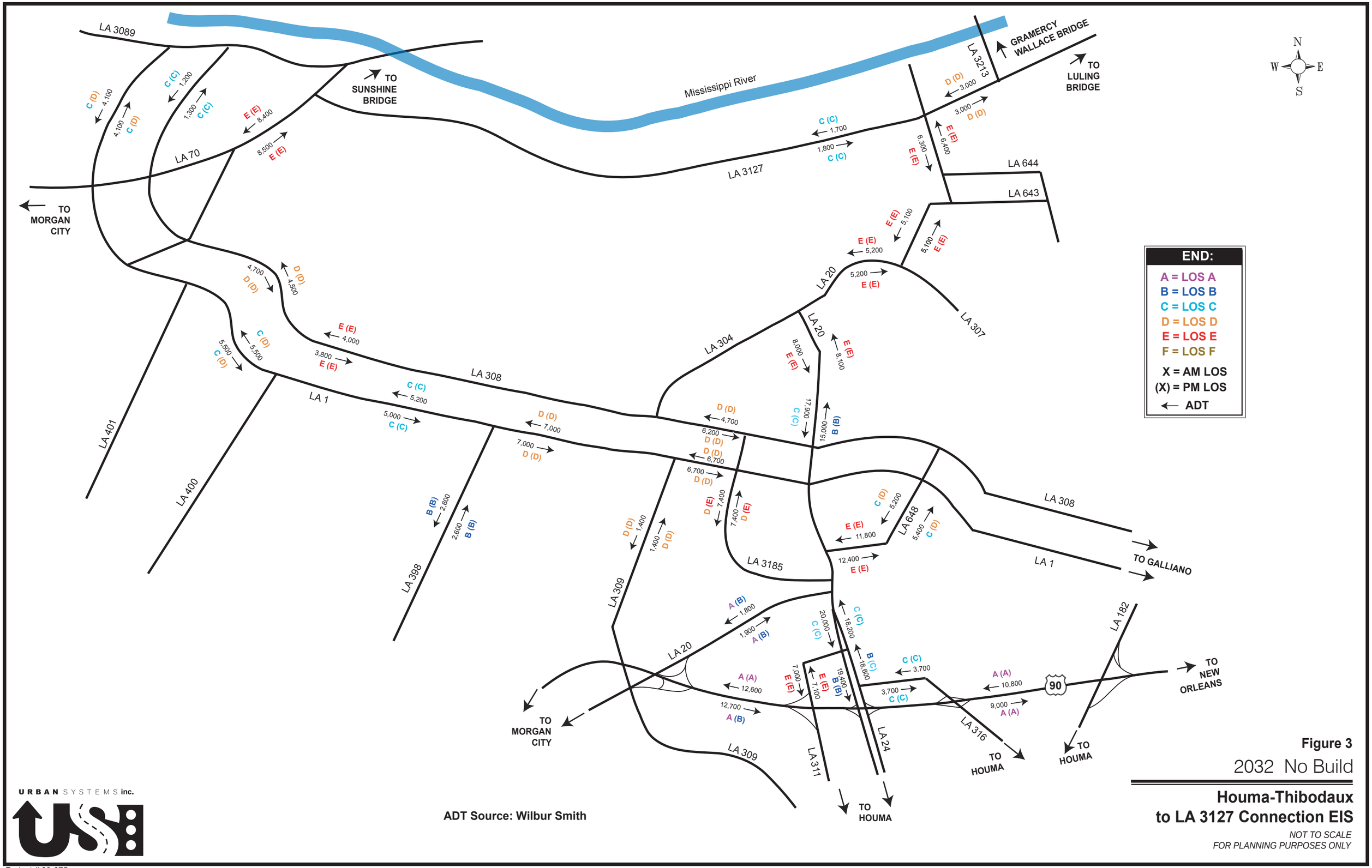
Section 5.1 provides projected traffic volume estimates on the primary access corridors for the long-term 2032 'No-Build' planning horizons and Section 5.2 projected Level of Service conditions as estimated under future 'No-Build' traffic demand projections.

5.1: Projected 'No-Build' Traffic Volume Demand Estimates

Wilbur Smith Associates modeled the growth between 2010 and 2032 using the existing condition volumes shown in Tables 4 and 5. The resulting 'No-Build' volumes are presented in Figure 3.

5.2: Projected 'No-Build' Level of Service Conditions

The projected traffic volumes provided by Wilbur Smith Associates were used to determine Level of Service conditions for the year 2032. AM and PM peak hour volumes were estimated by applying the ratio of the existing conditions AM and PM peaks to the Average Daily Traffic volumes. Peak hour estimates and roadway geometry were input into the *Highway Capacity Software Version 5.2 (HCS+)* for the 'No-Build' projected conditions. The results of the analysis for AM and PM peaks are presented in Figure 3. The analysis documentation is attached.



ADT Source: Wilbur Smith

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Figure 3

2032 No Build

Houma-Thibodaux to LA 3127 Connection EIS

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A review of Figure 3 indicates that the expected Levels of Service at each location either remained the same or worsened as expected with the projected growth from 2010 to 2032. Again, the best LOS can be expected on US 90. The two lane section of LA 20, in the northern portion of the study area is expected to experience LOS E.

Section 6: December 2005 Study: Reduced Range of Alternatives

In the original December 2005 Traffic Analysis technical appendix, the three north-south alternatives were evaluated to establish a proposed north-south transportation link to the existing roadway network. The methods and procedures that were used to establish the three north-south alignments are outlined below.

A reduced range of north-south corridor alignment alternatives were developed by the project team using a combination of route optimization software (QUANTM), knowledge of the project area, and agency/public input for each of the three proposed North-South alignments. This also included attempts to minimize impacts while meeting purpose and need.

The resulting reduced range of the north-south alignment alternatives are illustrated on the Constraints Map. This map was presented to the participating agencies for review and comment.

As shown on the Constraints Map, there were three general alignments for the corridor which included a Western Alignment (Section 6.1), a Central Alignment (Section 6.2), and an Eastern Alignment (Section 6.3). Each of the three general corridor alignments contained several alternative corridor options comprised of various 'segments'. These segments were labeled by letter on the Constraints Map with some alignments sharing common segments.

Potential access points were also labeled by number. In total, there were fifteen possible alternative corridor options illustrated on the map with four western alignments, ten central alignments and one eastern alignment. Each alternative corridor option is summarized below:

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Table 6
Alternative Corridor Options

Western Alignment Segments	Central Alignment Segments	Eastern Alignment Segments
ACJ	DFGIJ	LM
BCJ	DFGIJK	
ACJKM	EFGIJ	
BCJKM	EFGIJKM	
	DFHIJ	
	DFHIJKM	
	EFHIJ	
	EFHIJKM	
	LNHIJ	
	LNHIJKM	

A brief description of each alignment's southern and northern termini points and associated segments is provided in Sections 6.1 to 6.3 as originally presented in the December 2005 study. This also includes an inventory of other existing north-south capacity within the alignment's vicinity, potential access locations within the existing/planned roadway network, and potential linkage to the existing/planned roadway network outside of the project boundary.

The reduced range of alternatives was further reduced to three north-south corridor alignments based on transportation-only related screening criteria. The surviving three alignments include one of each of the three general corridor alignments (Western, Central, Eastern) and the fourth East-West Alignment presented in Section 6.4. The capacities (i.e. Level of Service) of all alignments under projected traffic conditions are evaluated in Section 7.

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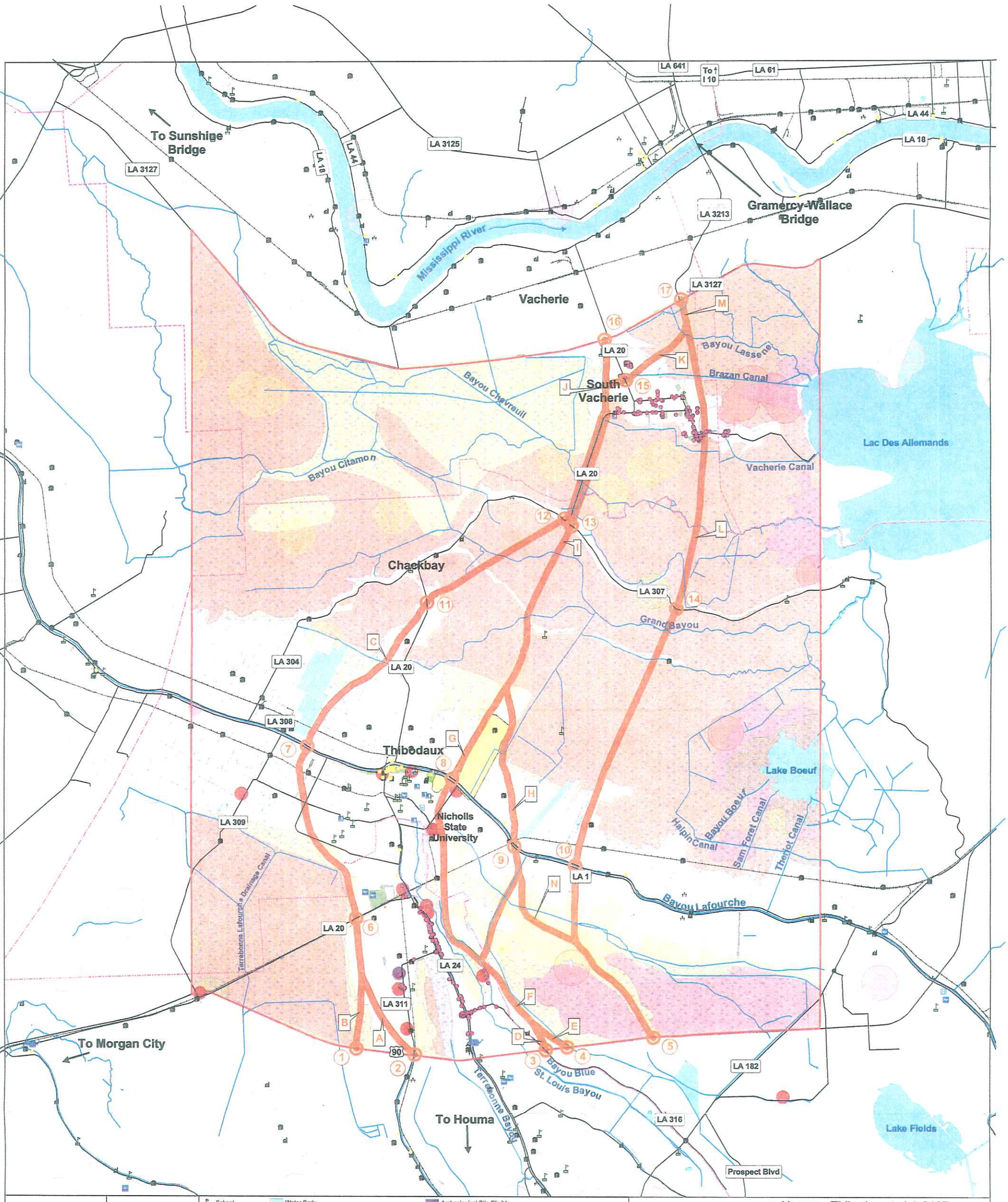

Houma - Thibodaux to LA 3127 Connection EIS

Constraints Map With Reduced Range of Alternative Corridors

6.1: Western Alignments and Corridor Segments

Southern Termini

The southern end of the western alignments included two options. The first option (Segment A) begins at the US 90/LA 311 interchange (Potential Access Point #2) and would require a reconfiguration of the interchange. The other option (Segment B) begins west of this interchange, requiring a new interchange (Potential Access Point #1).

The distinguishing traffic characteristics of these two options related to linkage outside the study area. Segment A provides linkage to the south including the Houma area via LA 311. Segment B is a terminal point of the north-south corridor and therefore would not provide linkage to the south. However, linkage could be achieved by extending this segment to the south and intersecting it with LA 311.

General Alignment Characteristics

The alignment runs through the western portion of the study area, an area which presently contains four limited north-south roadways: LA 309, LA 304, LA 311, and LA 20. The LA 309 and LA 304 corridors provide the westernmost north-south movement; however, neither corridor provides these movements to the northern limit of the study area, LA 3127. Likewise, the LA 311 corridor provides north-south movement for only a small segment of the overall study area. Although LA 311 has been identified in the Houma-Thibodaux Metropolitan Plan Update as a corridor that will be improved from two to four lanes, this planned increase in north-south capacity would not directly benefit north-south movement north of the LA 311 corridor's terminus at LA 24.

In contrast, the LA 20 corridor provides north-south movement to LA 3127, the northern limit of the study area. However, LA 20 is a circuitous route which runs directly through the city of Thibodaux, an area of high traffic volumes and documented traffic congestion.

From the LA 20/LA 307 intersection to the curve in South Vacherie, the alignment runs parallel and adjacent to the existing LA 20 corridor.

New potential access points would be created at the following locations:

- Potential Access Point #6 - LA 20 (between LA 24 and US 90)
- Potential Access Point #7 -LA 1/LA 308
- Potential Access Point #11 -LA 20 (south of the LA 20/LA 304 intersection)
- Potential Access Point #12 -LA 20 (at the LA 20/LA 307 intersection)

Through the described portion of the study area, the new alignment would provide additional north-south capacity and would provide a by-pass for traffic not destined to

Thibodaux. However, it should be noted that the present alignment clips a portion of the urbanized area of Thibodaux in the vicinity of LA 3185.

Northern Termini

The northern end of this alignment includes two options. The first option (Segment J) runs north on the west side of South Vacherie tying into and terminating at the LA 3127/LA 20 intersection (Potential Access Point #16). This option would require a reconfiguration of the intersection.

The second option (Segments K and M) runs north then turns east through a less developed area of South Vacherie and intersects with LA 20 (Potential Access Point #15). This option then terminates where LA 3213 intersects with LA 3127 (Potential Access Point #17).

Therefore, each northern termini option plans to provide linkage to/from the north outside of the project boundary with the second option providing the highest level of access to the Gramercy-Wallace Bridge.

The selected Western Alignment begins at the LA 311 interchange with US 90. Heading north, the Western Alignment runs west of LA 3185 then east of LA 304. This alternative then runs parallel to LA 20 and terminates at the LA 3213 intersection with LA 3127. The Western Alignment selected can be seen in Figure 4.

6.2: Central Alignments and Corridor Segments

Southern Termini

The southern end of the central alignments included three options. The first option (Segment D) begins generally in the center of the study area at the US 90/LA 316 interchange (Potential Access Point #3). The two other options (Segment E and L) begin east of this interchange, each requiring a new interchange, Potential Access Point #4 and Potential Access Point #5, respectively.

The distinguishing traffic characteristics of these options related to linkage outside the study area. Segment D would provide linkage to the south including the Houma area via LA 316. Segments E and L would be terminal points of the corridor and therefore not provide linkage to the south. However, Segment L is located in the general vicinity of a planned northern extension of Prospect Blvd which, once complete, would provide linkage to Houma.

General Alignment Characteristics

The center of this alignment included two options, one through the city of Thibodaux (Segment G) and the other to the east of this urbanized area (Segment H). Traffic movements along the north-south corridor were considered with each.

In the Segment G option, through traffic not destined to Thibodaux would be routed in the center of the city where there is dense land development and documented traffic congestion. This alignment would also be in close proximity to and parallel with the existing LA 20 corridor.

In contrast, through traffic would by-pass the city in Segment H while still maintaining local access to Thibodaux via LA 1 or LA 308. Additionally, Segment H would provide north-south capacity east of Thibodaux, an area within the project boundary without an existing north-south roadway.

North of Thibodaux, the two optional alignments merge together into a common alignment, providing new north-south capacity within the center of the study area.

New potential access points would be at the following locations:

- Potential Access Point #8 (Segment G) - LA 1 and LA 308
- Potential Access Point #9 (Segment H) - LA 1 and LA 308
- Potential Access Point #13- LA 20 (at the LA 20/LA 307 intersection)

Northern Termini

The northern end of the central alignments shared three of the same segments described for the western alignment. These include segments J, K, and M.

The selected Central Alignment begins at the LA 316 interchange with US 90. Heading north, the Central Alignment runs east of LA 648. This alternative then runs along LA 20 from intersection of LA 20 at LA 307 to just north of LA 20 at LA 644. This alternative also terminates at the LA 3213 intersection with LA 3127. The Central Alignment selected can be seen in Figure 4.

6.3: Eastern Alignment and Corridor Segments

Southern Termini

The southern end of the eastern alignment includes a common segment (Segment L) with the previously described central alignment. This segment begins at a new interchange east of the existing LA 316 interchange at a location that is in the general vicinity of a planned northern extension of Prospect Blvd.

General Alignment Characteristics

The mid-section of this alignment runs through vast stretches of undeveloped coastal wetlands with only two possible interruptions in traffic flow, the LA 1/LA 308 intersection (Potential Access Point #10) and the LA 307 intersection (Potential Access Point #14).

Northern Termini

The northern end of the eastern alignment share the same Segment M described previously for the western alignment.

The selected Eastern Alignment begins at a new interchange on US 90 between LA 316 and LA 182. The mid-section of this alignment runs through the vast stretches of undeveloped coastal wetlands with access points at LA 1/LA 308 and at LA 307. This alternative then runs along east of LA 643 and LA 644 and terminates at the LA 3213 intersection with LA 3127. The Eastern Alignment selected can be seen in Figure 4.

6.4: East-West Alignment

Subsequent to the December 2005 study, it was decided by DOTD to expand the study area and include a potential east-west corridor that would connect the Houma-Thibodaux area to the Sunshine Bridge in Ascension Parish. The March 2009 Final Screening Report outlines the methodology used to establish the fourth alignment. In this report, four potential alignments were developed and screened by two principle elements: system linkage criteria and hurricane evaluation criteria to establish the fourth East-West Alignment.

The selected East-West Alignment begins to the west of the LA 311 interchange with US 90. This alignment runs in a general east-west direction north of LA 308 and intersects with LA 70 north of LA 70 Spur before changing to a north-south direction towards Ascension Parish. The northern end of this alignment intersects with the intersection of LA 3089 at LA 70 then provides a direct link the Sunshine Bridge. The East-West Alignment can be seen in Figure 4.

Section 7: Projected 'Build' Traffic Conditions (Non-Hurricane Evacuation)

Section 7.1 provides projected traffic volume estimates on the primary access corridors for the 'Build' planning horizons under non-hurricane evacuation conditions. Levels of Service conditions were also estimated under future 'Build' traffic demand projections (Section 7.2).

7.1: Projected 'Build' Traffic Volume Demand Estimates

Wilbur Smith Associates modeled the growth between 2010 and 2032 and provided the 2032 'Build' Condition volumes for each of the four alignments. With the introduction of the four alignments, the traffic volumes on the existing roadway network were generally reduced from the 'Build' Condition as traffic was redistributed to the proposed corridor. With the three North-South alignments, the heavily traveled LA 20 corridor is expected to experience the largest reduction in volumes. However, for the East-West alignment, the largest reduction in volumes is expected on LA 1 and LA 308. The alignments and resulting volumes are shown in Figures 5-8.

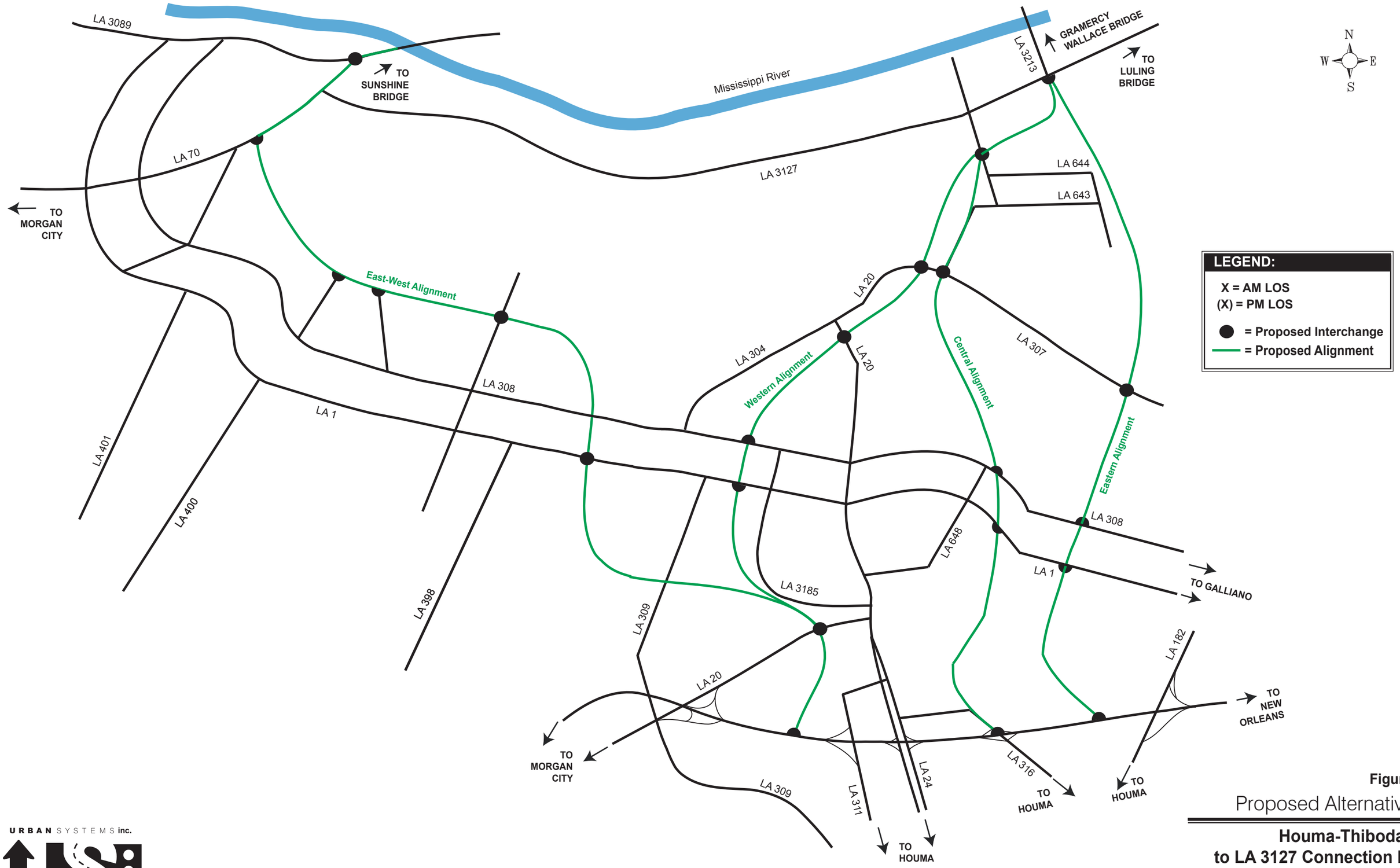

Figure 4

Proposed Alternatives

Houma-Thibodaux to LA 3127 Connection EIS

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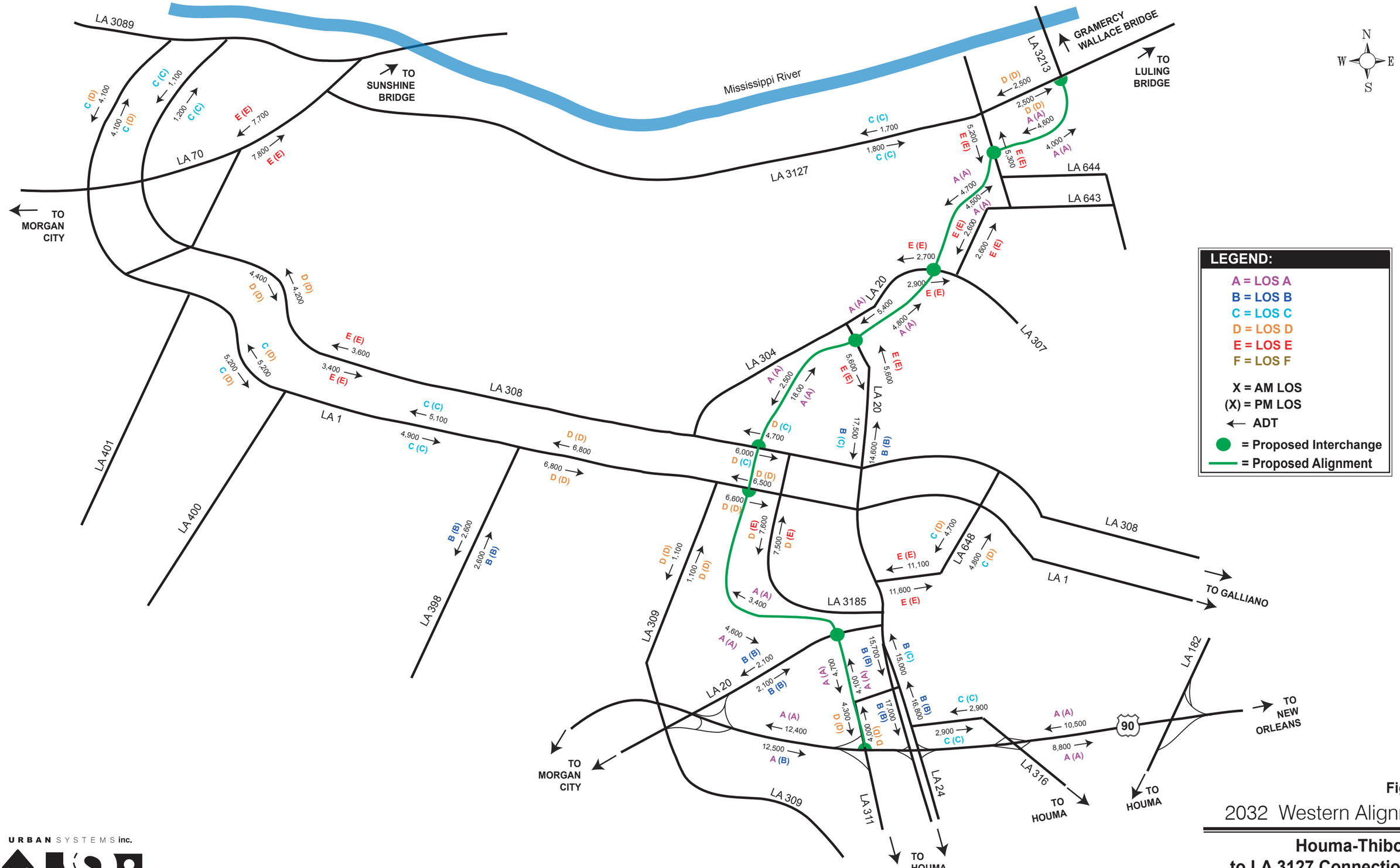

ADT Source: Wilbur Smith

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Figure 5

2032 Western Alignment

Houma-Thibodaux to LA 3127 Connection EIS

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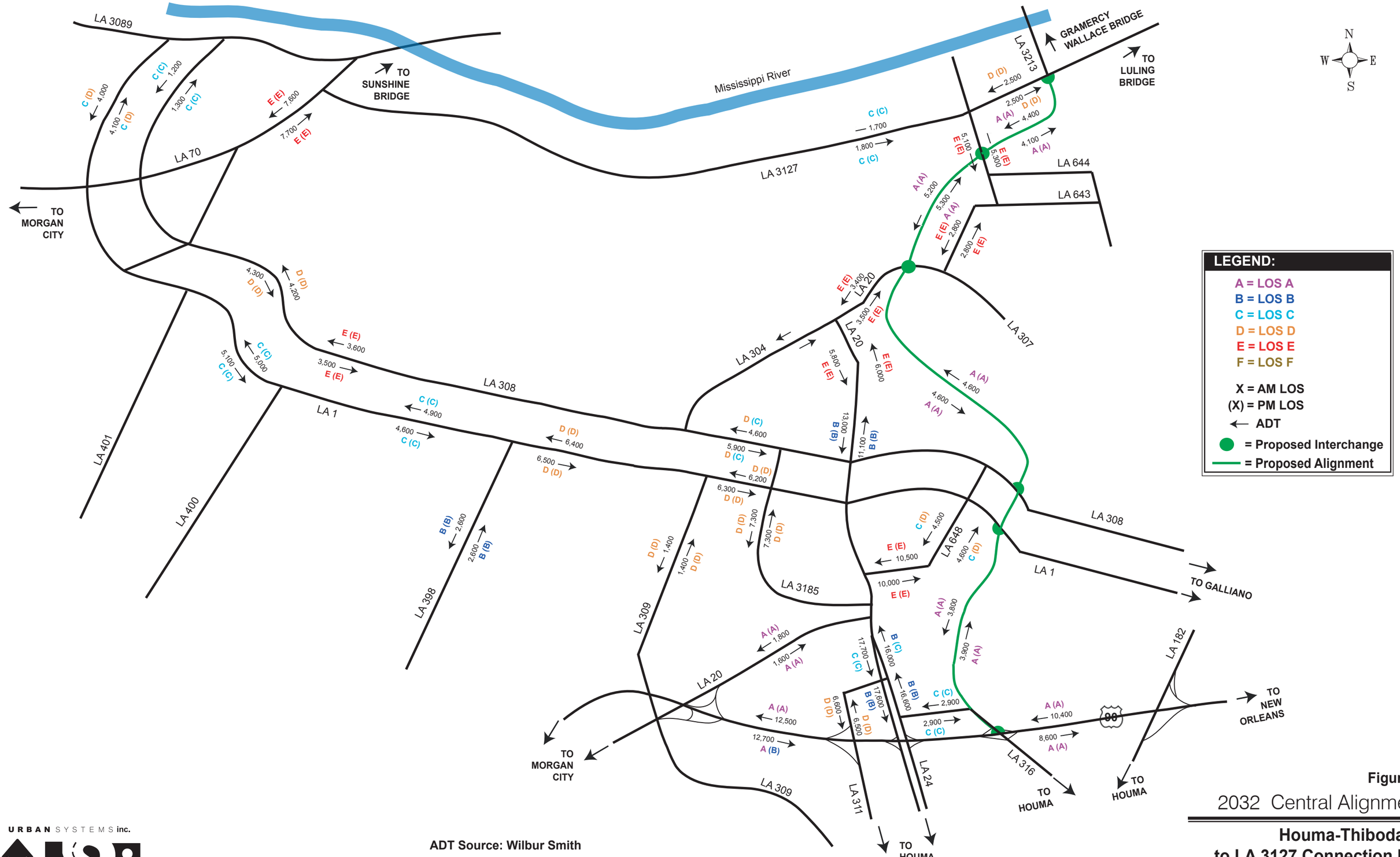

ADT Source: Wilbur Smith

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Figure 6

2032 Central Alignment

Houma-Thibodaux to LA 3127 Connection EIS

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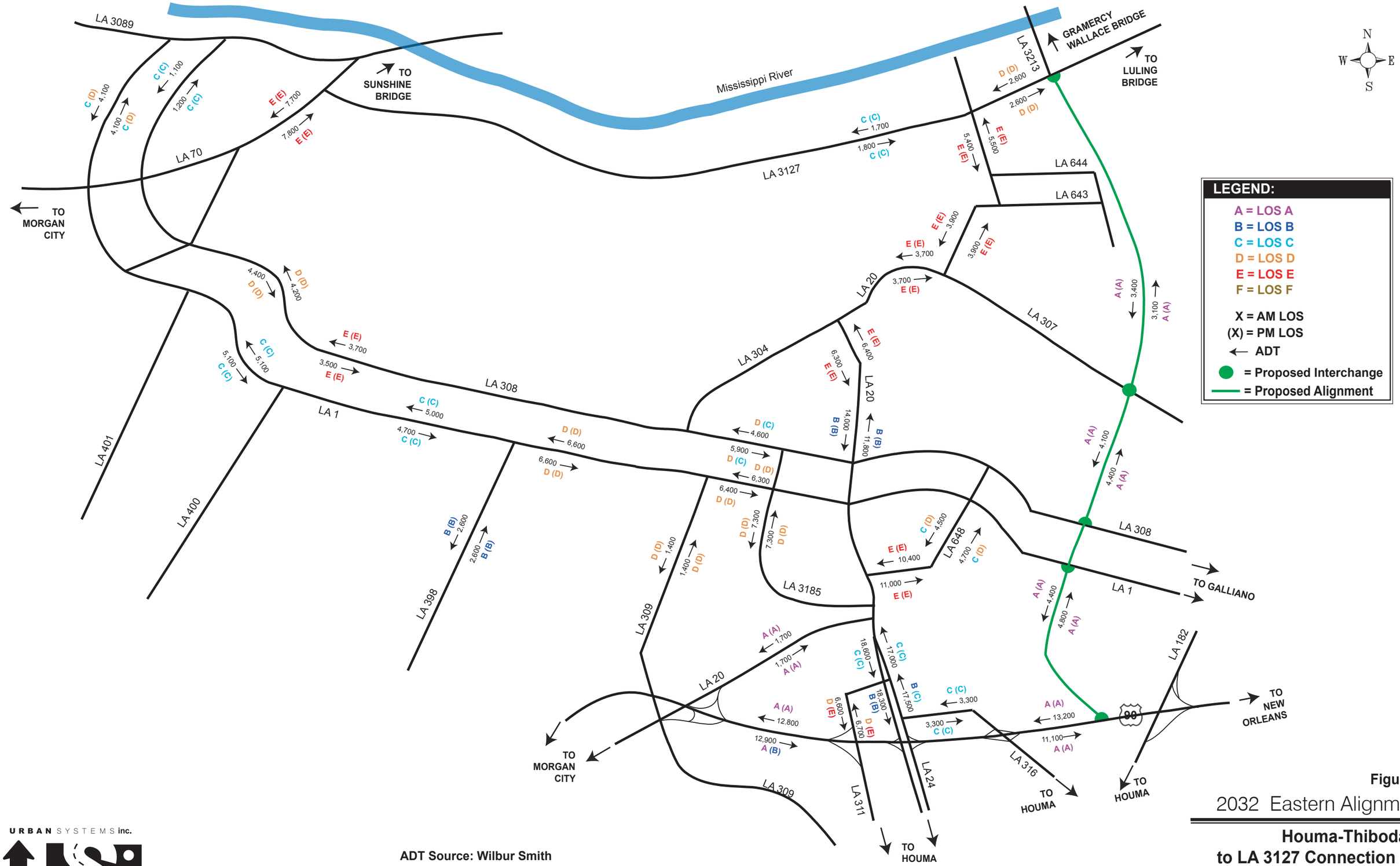

ADT Source: Wilbur Smith

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Figure 7

2032 Eastern Alignment

Houma-Thibodaux to LA 3127 Connection EIS

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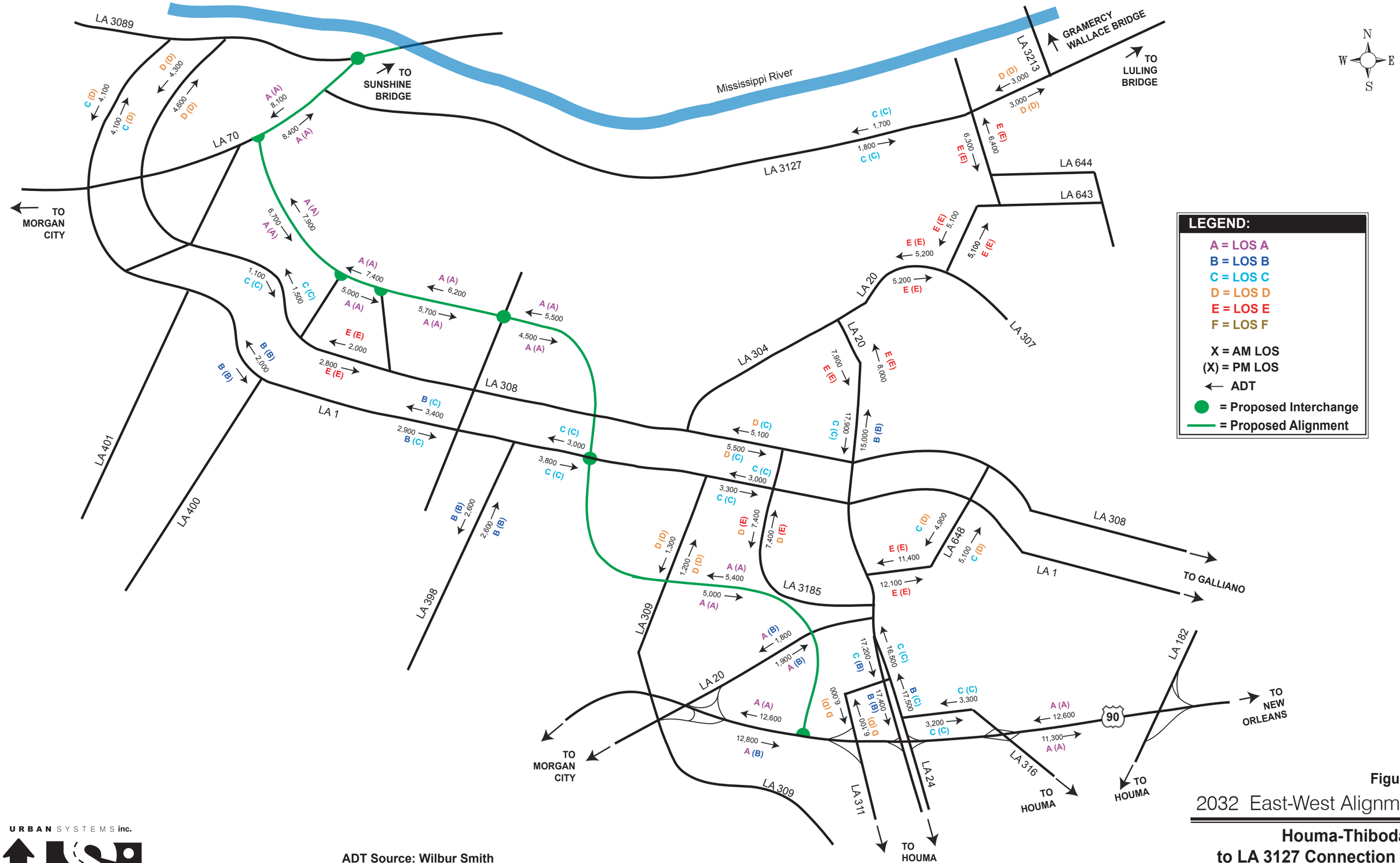

ADT Source: Wilbur Smith

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Figure 8

2032 East-West Alignment

Houma-Thibodaux to LA 3127 Connection EIS

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7.2: Projected 'Build' Level of Service Conditions

Projected 'Build' conditions volumes were provided by Wilbur Smith Associates for each of the four alignment alternatives. AM and PM peak hour volumes were estimated by applying the ratio of the existing conditions AM and PM peaks to the Average Daily Traffic volumes to the projected conditions volumes.

Based on the projected traffic volume demand estimates and roadway geometry, Levels of Service were estimated for the primary access corridors and alignment alternatives under the 2032 'Build' Conditions. The year 2032 conditions assumed the alignments to be a four-lane rural highway, controlled access facility. An analysis was conducted using the highest volume along the proposed alignment as the roadway section did not change between analyses. For each scenario, the largest volume resulted in LOS A, thus the entire alignment would also be expected to operate at LOS A. Figures 5-8 present the 'Build' peak hour LOS conditions for the study area's access corridors and alignment alternatives.

A review of the figures indicates that the addition of a new corridor should improve the expected Level of Service on the surrounding roadway network. As previously noted, each of the four alternatives is expected to operate at LOS A.

With the 2032 Western Alignment, an improved LOS can be expected on LA 311 from the projected 'No-Build' conditions. LA 20 is still expected to operate at LOS E in the northern portion of the study area. However, a reduction in the delay is expected as the volumes were reduced along the corridor with the addition of the Western Alignment.

With the 2032 Central Alignment, improvements in LOS can be expected along LA 20 southbound north of LA 308. Although LA 20 in the northern portion of the study area is expected to operate at LOS E for both peaks, reductions in delay can be expected as the traffic volumes in this section were reduced with the introduction of this alignment. LA 316 and LA 648 are still expected to operate at the same LOS as the No Build condition. However, a reduction in the delay is expected as the volumes were reduced along the corridor with the addition of the Central Alignment.

With the 2032 Eastern Alignment, like the central alignment, improvements are expected on LA 20 near LA 308. LA 3127 between LA 3213 and LA 20 is still expected to operate at LOS D during both peaks.

The 2032 East-West Alignment, unlike the three north-south alignments, is expected to improve the operating conditions along LA 308 and LA 1, the two existing east-west corridors in the study area. With this alignment, LA 308 and LA 1, east of LA 70 are expected to improve a Level of Service during both peaks. Along LA 20, the major north-south corridor, operating conditions are expected to be unaffected as the East-West Alignment is not expected to divert traffic from LA 20.

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Section 8: Hurricane Evacuation Conditions

Use of the proposed new alignment during hurricane evacuation has been identified as a secondary need for the project. Therefore research was conducted to document available evacuation traffic volumes (Section 8.1), to determine the existing hurricane evacuation plans, routes and obtain input from local governments (Section 8.2) to assess the potential impacts of the proposed Houma-Thibodaux to LA 3127 Connector on hurricane evacuation (Section 8.3).

8.1: Evacuation Traffic Volumes

The South Central Planning and Development Commission (SCPDC) conducted traffic counts during Hurricanes Gustav and Ike. The count data is attached and summarized in Figure 9. The Louisiana State Police was also contacted for any available evacuation statistics. Sgt. Chris Eskew indicated that evacuation traffic data is maintained by LADOTD. LADOTD District 02 was contacted regarding traffic data and indicated that the data provided by SCPCD was the only known traffic counts for an evacuation of this area.

8.2: Existing Hurricane Evacuation Plans/Local Government Input

Each of the parish emergency operation departments was contacted to determine the existing hurricane evacuation plans and to obtain local input regarding past evacuation experiences. In general, the evacuations follow Phased Evacuations described in the "Louisiana Citizen Awareness and Disaster Evacuation Guide." This plan defines recommended evacuation times based on a three phased evacuation. Phase 1 is south of the study area which is recommended for evacuation 50 hours prior to the onset of tropical storm force winds. The majority of the study area is in Phase 2 which is recommended for evacuation 40 hours prior to the onset of tropical storm force winds. The area north of LA 3127 in the study area is in Phase 3 which is recommended for evacuation 30 hours prior to the onset of tropical storm force winds.

At the time of this report, none of the roadway network within the study area was used for contraflow during a hurricane evacuation. The following details information obtained from local government regarding hurricane evacuations:

Assumption Parish Emergency Operations Manager, John Boudreaux, indicated that designated evacuation routes for his parish include US 90, LA 1, LA 308 and LA 70 for the Morgan City area. All routes remain two-way/no contraflow. He reported the population of Assumption Parish as approximately 23,500 people with an estimated 9,000 households.

Lafourche Parish Emergency Operation Manager, Chris Boudreaux, indicated that the designated evacuation routes for his parish include US 90, LA 1, LA 308, LA 24 and LA 20 and that all routes maintain two-way/no contraflow. He reported that for Gustav it was estimated that approximately 60% of the parish population evacuated. Of the 40%

that remained, most were thought to be in the Thibodaux area. He reported the population of Lafourche Parish to be approximately 93,000 with an estimated number of 33,000 households.

Terrebonne Parish Emergency Operations Manager, Earl Eues, indicated that the designated evacuation routes for his parish include US 90, LA 311, and LA 24 and that all routes maintain two-way/no contraflow. The reported population of the parish is approximately 108,000 with 37,000 estimated households.

The estimated behavioral tendencies for evacuations (consistent for Assumption, Terrebonne and Lafourche Parishes) were as follows:

For Category 1 storm – approximately 40% of parish evacuates
For Category 2 storm – 45 - 50%
For Category 3 storm – 50 - 55%
For Category 4 storm – 55 – 60%
For Category 5 storm – 60 – 70%

8.3: Existing Hurricane Evacuation Routes

According to local government, hurricane evacuation routes are not signed throughout their parishes. Almost all of the state highways in the study area, which correspond with the subject corridors, service hurricane evacuation traffic in some way. Both the magnitude and directional distribution of hurricane evacuation traffic is expected to vary widely based on numerous factors: the most significant being the direction of the approaching storm, its projected path and the day/time that the evacuations are called. Although the east-west direction of the evacuation is storm path dependant, the need to evacuate northward is constant.

The existing available routes, however, mainly provide east-west access versus travel directly northward. Highway 90, the evacuation route with the most capacity, extends due east to New Orleans intersecting I-310 and I-10 which provides access to northern routes such as I-55 and I-59. In the westward direction, Highway 90 extends due west before turning northward towards New Iberia and eventually to I-10 in Lafayette. The future I-49 corridor will increase the capacity for hurricane evacuation traffic in this direction.

Although the section of Highway 90 in the study area for this project is controlled access, most of Highway 90 east and west of the study area is not and none of the other routes in the study area are controlled access. The corridors are lined with numerous driveways, signalized intersections and a wide range of industrial, commercial and residential developments that hinder evacuations. This is the converse of what is desired for an evacuation route where minimal friction on roadways is needed to attain maximum capacities. The addition of a controlled access route to service northward travel for evacuations could greatly increase the number of residents who can/will evacuate and reduce their travel times, getting them to safety quicker. This is significantly dependant,

however, on the ability of the downstream roadways to accept the increased traffic without creating a new bottleneck.

8.4: Potential Impacts of Houma-Thibodaux to LA 3127 Connector on Hurricane Evacuation

All three of the original alignments (Eastern, Central and Western) considered in the December 2005 study are proposed to provide access to LA 3213 and the river crossing at the Grammercy Wallace Bridge. In the current contraflow plan, traffic on I-10 westbound is back into the normal lanes. Should either of the proposed alternatives that extend to the Grammercy Wallace Bridge be constructed, consideration should be given to modifying the contraflow plan to allow the evacuation traffic from the new roadway to access the I-10 eastbound lanes in contraflow to avoid a merge which would be expected to cause significant traffic delays similar to those experienced during the Hurricane Ivan evacuation in the fall of 2004. Each of these three alignments would potentially alleviate congestion on LA 20, LA 308, LA 1 and US 90 westbound during an evacuation by providing a more direct route to I-10.

The East-West alignment is proposed to provide access to LA 70 and the Sunshine Bridge crossing of the Mississippi River. LA 70 extends to LA 22 where it currently terminates in a T-intersection. LA 22 provides access to I-10. As with the other alternatives, modifications to the contraflow plan as well as improvements to the LA 22 at LA 70 intersection would need to be implemented to avoid severe congestion during an evacuation. This alignment would potentially alleviate congestion on LA 308, LA 1 and US 90 westbound during an evacuation by providing an alternative.

Section 9: Alternative Reduction and Northern Segment Options

All four alternatives were modeled and analyzed to determine the impacts on system linkage for the region as well as how they meet the purpose and need. Two Alternatives were removed from consideration: Eastern Alignment and East-West Alignment. The Eastern alignment was removed due to its poor traffic performance. The East-West alignment was removed as it ranked poorly in meeting the purpose and need.

9.1: Northern Segment Alignments

With the two alternatives moving forward, two versions of the northern sections for the Central and Western Alignments were considered. The two potential northern alignments for the LA 3213 corridor are as follows:

North Option A: Incorporation of LA 20 from LA 3127 to LA 307 into the LA 3213 corridor.

North Option B: Connect with the future corridor to LA 3127 at the original proposed junction of LA 3127 and the LA 3213 corridor

9.2: Northern Segment Analysis

Projected conditions model output information was provided by CDM Smith for the modifications of the northern portions of the Central and Western alignments. This information was used to estimate the projected traffic volumes. Analysis was conducted for the two northern sections for both the Central and Western alignments. For each scenario, the largest volume resulted in LOS A, thus either of the northern segments would also be expected to operate acceptably. Figures 9 and 10 present the two northern segments for the Western and Central alignments.

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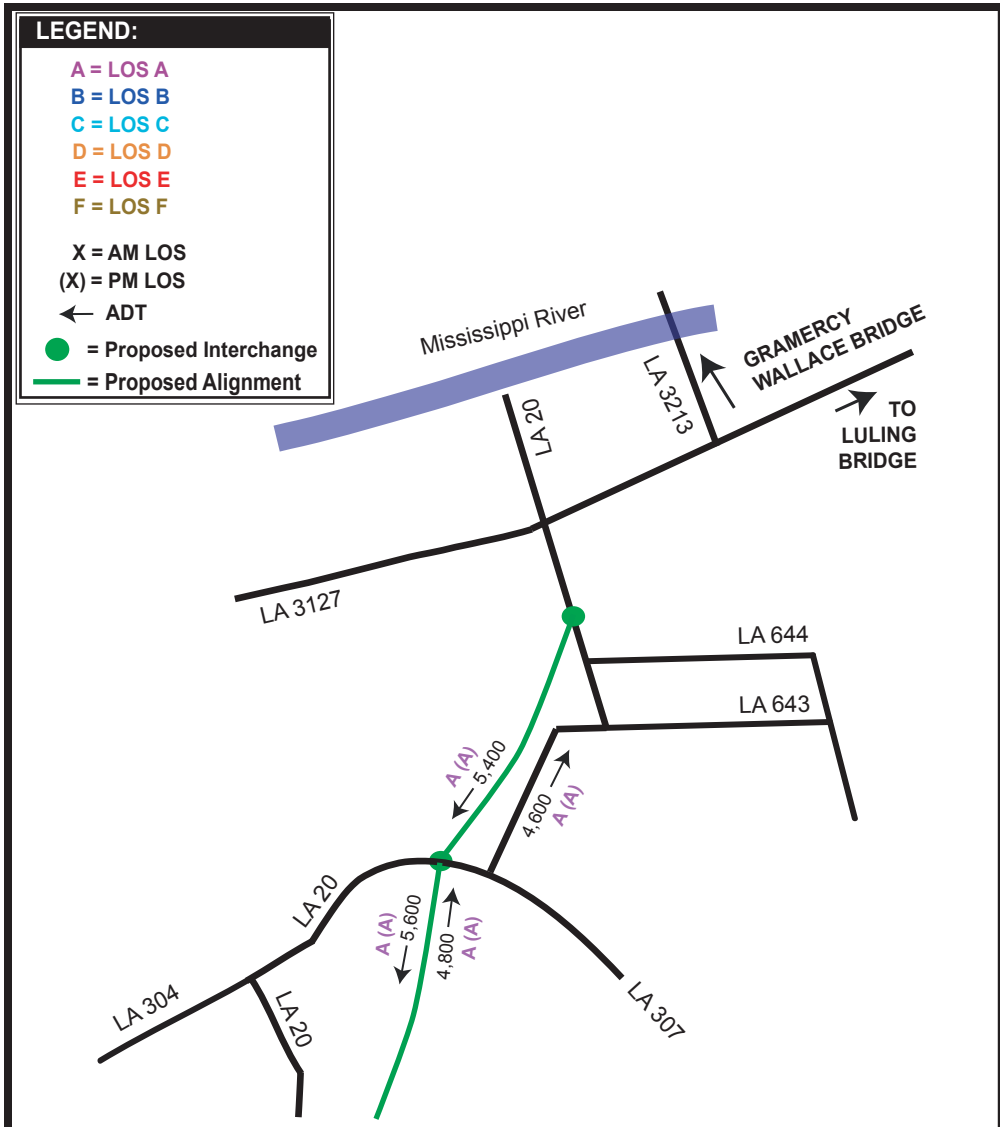
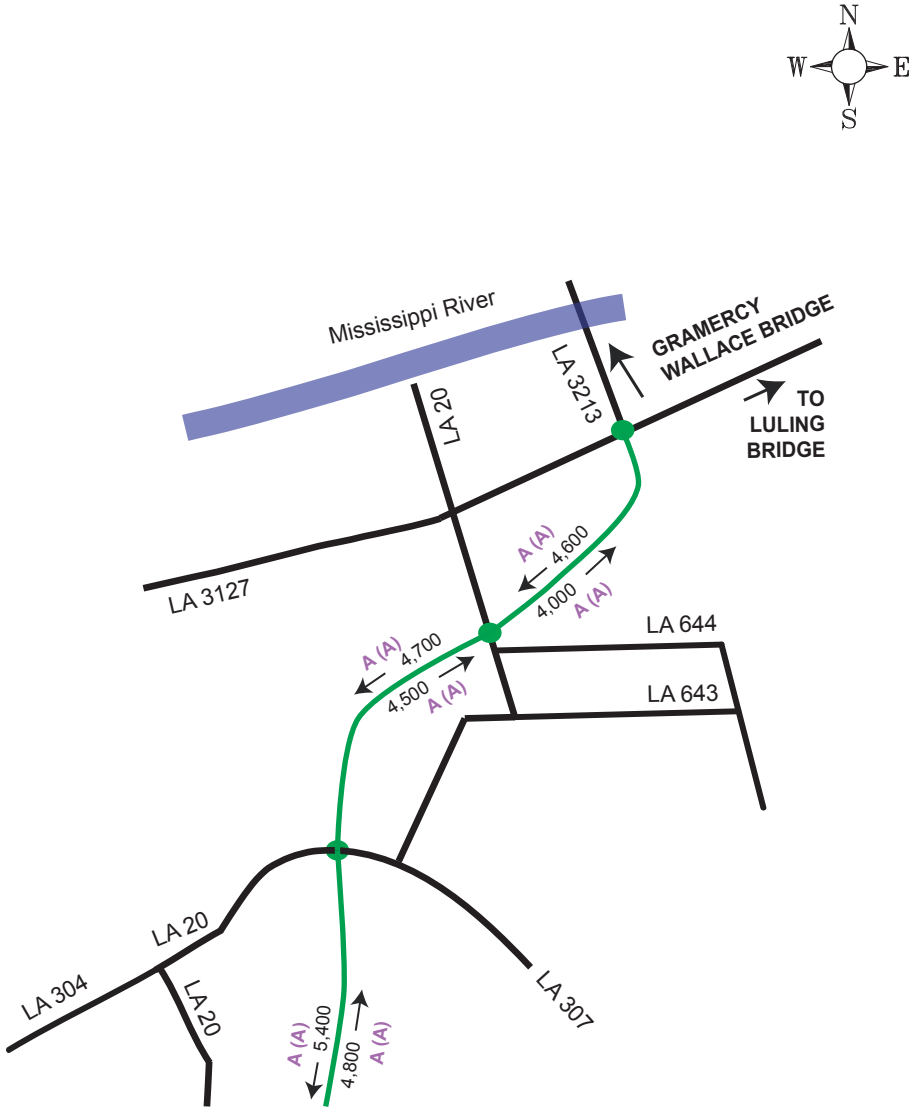


Northern A Alignment



Northern B Alignment

Figure 9

Western Alignment

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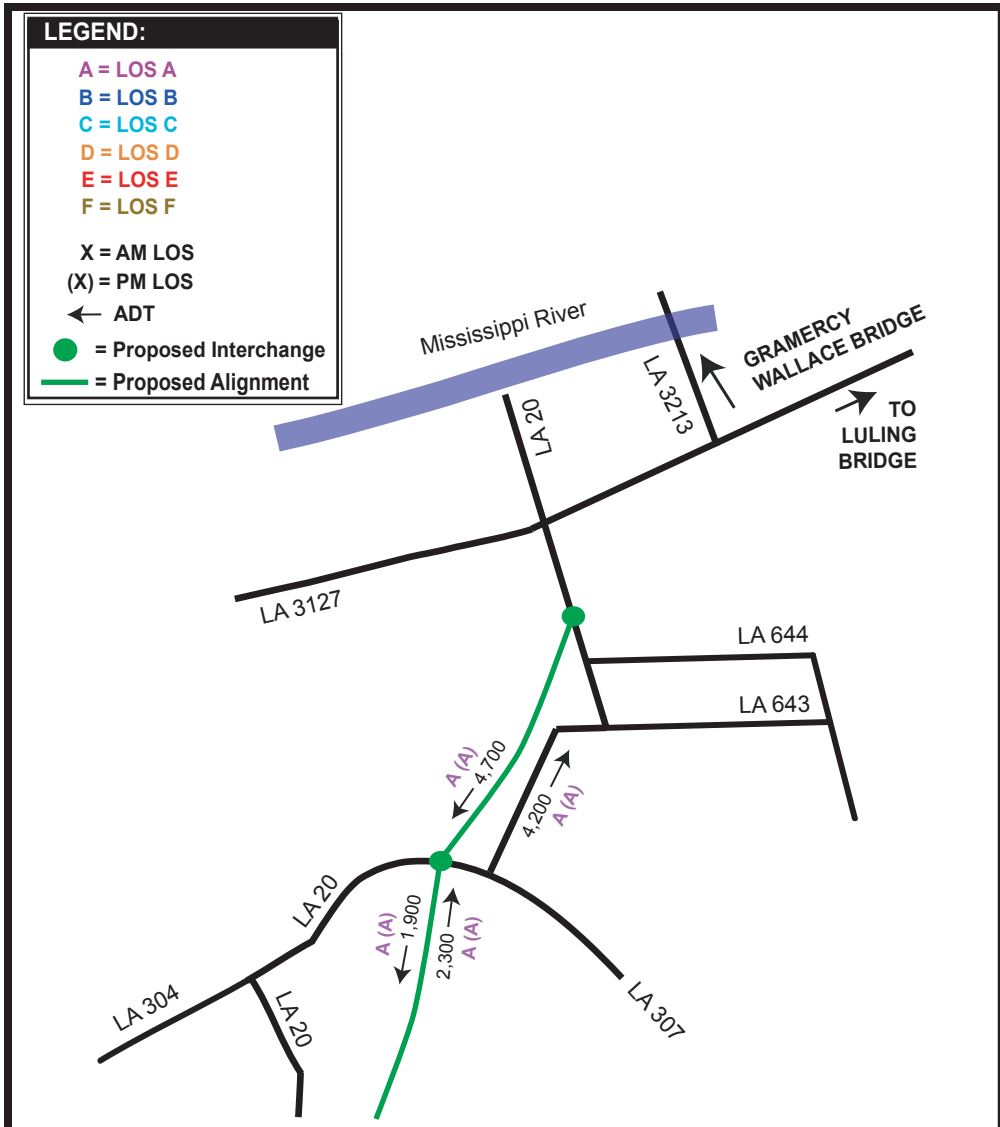
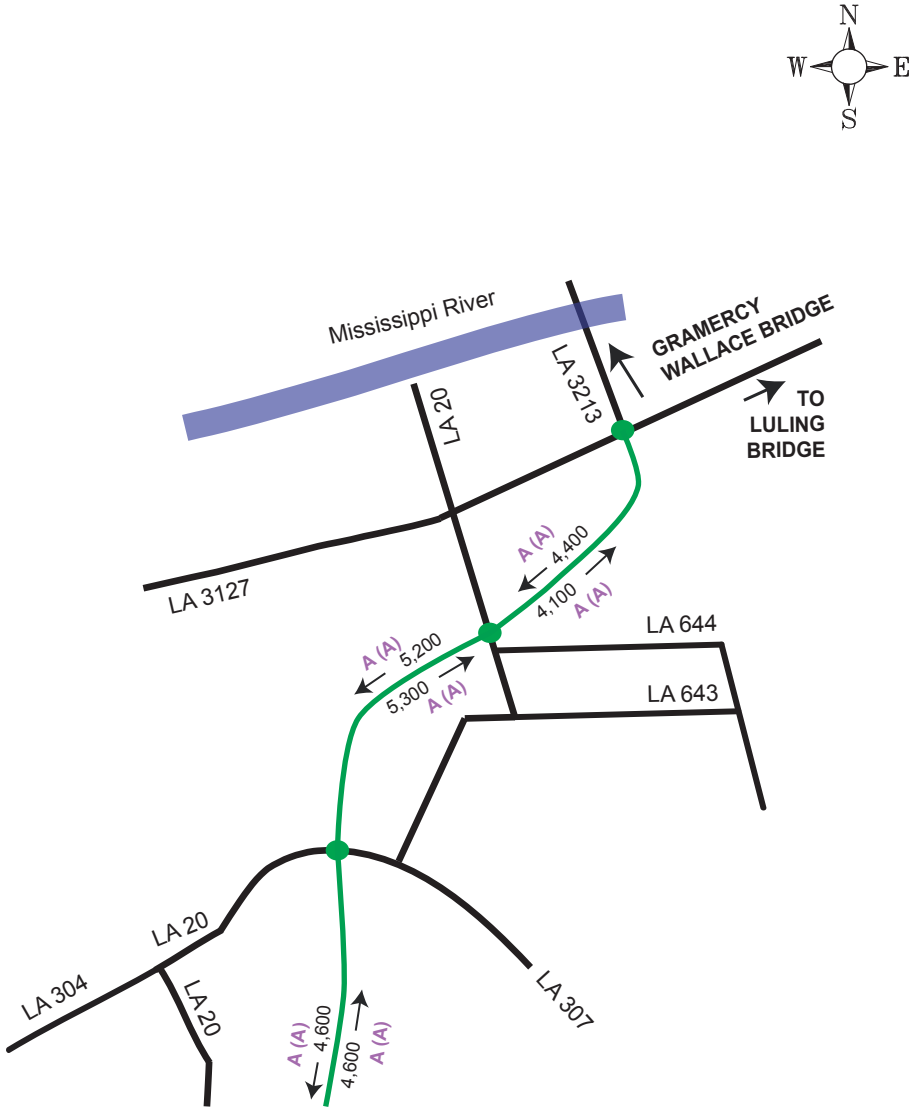


Northern A Alignment



Northern B Alignment

Figure 10

Central Alignment

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Conclusions

This revised Traffic Analysis technical appendix to the EIS for the proposed Houma-Thibodaux to LA 3127 Connection (north-south corridor) is an updated traffic study that has provided a summary of existing non-hurricane evacuation conditions within the study area's current transportation network and hurricane evacuation conditions within the study area's planned transportation network for the proposed alternative alignments. Based on the present level of information gathered in this appendix, the following has been concluded:

Existing Transportation Network

- The existing transportation network is comprised of limited traffic facilities as a result of the region's low topography, numerous bayous, and coastal wetland areas.
- Land development is mainly concentrated along the higher elevated natural ridges which have resulted in circuitous routes for travel within the area which greatly influences network traffic patterns.
- Existing routes provide generally good capacity for east-west traffic movements via the US 90, LA 1, LA 308, and LA 3127 corridors.
- The need for additional capacity within the study area is greatest in the north-south direction which is only presently served by the LA 20 corridor. Other existing north-south corridors (LA 24, LA 70, LA 311, LA 316, LA 309, LA 304, LA 648 and LA 3213) support north-south movement but only for limited lengths within the study area.

Access to the North-South Corridor

- Primary access to the potential north-south corridor alignments is likely to be supported by several key roadways within the study area. These primary access roadways include US 90, LA 24, LA 20, LA 1, LA 308, LA 70 and LA 3127.
- Several roadways that are likely to support secondary access to the north-south corridor include LA 304, LA 648, LA 311, LA 316, LA 309 and LA 3213.
- Primary and secondary access intersections have also been identified within the study area and include several locations along the access roadways.

Existing Traffic Conditions

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- Current traffic volume levels were determined for the study area's transportation network based on newly collected data and data previously collected from South Central Planning and LADOTD. This information indicates that the highest traffic volumes are within the developed southern and middle portions of the study area along the US 90, LA 24/LA 20, LA 1, and LA 308 corridors.
- The less developed northern portion of the study area has a limited number of transportation corridors and does not facilitate good access from the Houma-

Thibodaux area to locations north of the project boundary such as across the Mississippi River. This is reflected in the lower traffic volumes recorded on LA 3127.

- The daily distribution of traffic was determined to be approximately evenly split in most cases for both north-south and east-west roadways within the study area. However, peak hour volumes were determined to have more uneven directional distributions.
- The existing AM and PM peak hour analysis results indicate acceptable Levels of Service throughout the study area with the exception of the two lane section of LA 20.

Planned Roadway and Intersection Improvements

- Planned improvements both within and near the study area have been identified in other documents and include various implementation stages ranging primarily from 2016-2025 and 2026-2035. Other unfunded needs have also been identified.
- The improvements represent the result of a comprehensive planning process for the region and are necessary to address both the short and long-range needs of the area.
- With the exception of the proposed north-south corridor, there are no presently planned improvements that have been identified within the northern portion of the study area to aid either local or regional trips.

December 2005 Study: Reduced Range of Alternatives

- The potential north-south corridors were developed by the project team using a combination of route optimization software (QUANTM), knowledge of the project area, and agency/public input.
- The alternatives were divided into western, central, and eastern alignments for the corridor. Each of the three general corridor alignments contained several alternative corridor options.
- The possible north-south alternatives were reduced to three alignments using transportation-only related pre-screening criteria (linkage to outside the project boundary, introduction of new north-south capacity in a needed area, avoidance of areas with existing traffic congestion, and access to/from other major corridors within the project boundary). The resulting three surviving alternatives were advanced forward for additional and more detailed traffic analysis. These alternatives included one of each general alignment (Western, Central, and Eastern).
- The pre-screening of the reduced range of alternatives that was done did not consider other required NEPA screening criteria (endangered species, historic properties, Section 4(f), etc) which will be done as part of the on-going full EIS process.

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Projected Traffic Conditions

- 2032 Projected Conditions 'Build' and 'No-Build' volumes were provided by Wilbur Smith Associates. AM and PM peak hour volumes were estimated by applying the ratio of the existing conditions AM and PM peaks to the Average Daily Traffic volumes to the projected conditions volumes.
- In the 2032 'No-Build,' the expected level of service at each location either remained the same or worsened as expected with the projected growth from 2010 to 2032.
- In each of the 2032 'Build' North-South alignments, operations conditions are expected to improve along the LA 20 corridor due to the reduced volumes with the addition of the new corridor alignments.
- With the 2032 Western Alignment, an improved LOS can be expected on LA 311 and LA 316.
- With the 2032 Central Alignment, improvements in LOS can be expected along LA 20 north of LA 308. Improvements in the PM peak can also be expected on LA 316 and LA 648 with the introduction of the Central Alignment.
- With the 2032 Eastern Alignment, improvements are expected on LA 20 near the interchange with US 90. However, LA 3127, between LA 3213 and LA 20 is expected to operate at LOS E during both peaks with the addition of the Eastern Alignment.
- With the 2032 East-West Alignment, unlike the three north alignments, operating conditions are expected to improve along LA 308 and LA 1. Along LA 20, the major north-south corridor, operating conditions are expected to be unaffected as the East-West Alignment is not expected to divert traffic from LA 20.

Hurricane Evacuation Conditions

- Traffic counts along selected corridors within the study area were collected during evacuations for Hurricanes Gustav and Ike by South Central Planning and Development.
- Parish emergency operation departments were contacted to determine existing hurricane evacuation plans. It was determined that evacuations follow phased evacuation described in the "Louisiana Citizen Awareness and Disaster Evacuation Guide.
- Area populations, households and estimated behavioral evacuation tendencies were identified for Assumption, Terrebonne and Lafourche Parishes.
- All of the state highways within the study area service hurricane evacuation. The existing routes mainly provide east-west access.
- Each of the three north alignments would provide access to the Grammercy Wallace Bridge. The alignments would potentially alleviate some congestion on LA 20, LA 308, LA 1 and US 90 westbound during an evacuation by providing a more direct route to I-10.

- The East-West Alignment would provide access to the Sunshine Bridge. This alignment would alleviate congestion on LA 308, LA 1 and US 90 westbound during an evacuation by providing an additional east-west alternative.

Projected Traffic Conditions for Northern Section

- Projected conditions model output information was provided by CDM Smith for two potential northern alignments for the LA 3213 corridor. This information was used to estimate the projected traffic volumes.
- Analysis results indicated that either of the northern segments is expected to operate acceptably with either the Central or Western alignments.

Recommendations

The north-south alternatives all share a common northern terminus at the intersection of LA 3127 at LA 3213. The East-West alternative has a northern terminus further west at the Sunshine Bridge in Ascension Parish. Each of the four alternative southern ends would be accessed in the southern portion of the study area through an interchange on US 90.

The Eastern Alignment does not provide the same level of transportation linkage throughout the populated region. The transportation link that is missing is the portion from US 90 south to Houma. This connection could be achieved with the future extension of Prospect Blvd. The Eastern Alignment would still provide access to LA 641, LA 3213 and to a new US 90 interchange between LA 182 and LA 316. This alignment would also be an appropriate selection as a hurricane evacuation route as it would be a controlled access roadway with limited access points.

Implementation of the east-west corridor would improve the existing east-west corridors, LA 308 and LA 1, but does not offer improvements to LA 20, the most congested corridor within the study area.

In contrast, the implementation of either the Western or Central Alignment would effectively result in the extension of either LA 311 (Western Alignment) or LA 316 (Central Alignment) to the north. Either of these improved transportation links would not only better connect both the Houma and Thibodaux areas to LA 3127 but would also better connect the Houma-Thibodaux area to the interstate system via LA 3213. These connections would provide improved flexibility between critical points in the developed portions of the study area between US 90 and LA 3213. Thus, the Houma-Thibodaux area and the interstate system would ultimately become linked by the following series of corridors: LA 641, LA 3213 and either LA 311 (Western alignment) or LA 316 (Central alignment).

Any of the three north-south alignments would help alleviate current congestion experienced on LA 20. The Central Alignment, however, provides the best combination

of connectivity between Houma and Thibodaux while providing a direct connection to the interstate system to the north for evacuation purposes.

Once the final alignment is selected and a Record of Decision is issued, further study of the environmentally preferred alternative should include intersection and/or interchange analysis to determine the required lane configurations, storage lengths for turn lanes and type of traffic control. LADOTD Access Connections Policies and EDSMs that have been issued since the origination of this study must be considered in these analyses, alternative refinement and design.

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Houma - Thibodaux to I-10 Connection

North - South Corridor
Hurricane Evacuation
Technical Appendix: Traffic Analysis
Addendum I

State Project No. 700-99-0302
F.A.P. No. HP-9902 (518)

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Image Source: Google Earth

Prepared for

Louisiana Department of
Transportation and Development

USI Project #: 09-075
December 2013

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Section 1: Introduction

The purpose of the Houma-Thibodaux to LA 3127 Connection is to establish a north-south functional transportation link to the existing roadway network including the interstate system to the north as well as the future I-49 south, in the South Central Planning and Development District serving the parishes of Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles and St. Mary.

In the December 2010 Traffic Analysis Technical Appendix, three north-south corridors and one east-west corridor were evaluated by comparing the estimated traffic volumes that would be serviced by each alignment. The findings of that report indicated that any of the three north-south alignments would help to alleviate congestion on the existing roadway network, specifically the northern section of LA 20. Of the three north-south alignments, the Central Alignment was found to have the best combination of connectivity between Houma and Thibodaux while providing a direct connection to the interstate system to the north which is expected to improve hurricane evacuation.

Following the December 2010 Traffic Analysis, additional environmental screenings were conducted to reduce the number of alignments that moved forward in the evaluation process. Each of the four alternatives was screened against the purpose and need statement and the environmental impact of each was assessed. During this process, two alternatives were removed from consideration: the Eastern Alignment and the East-West Alignment. The Eastern Alignment was removed due to its traffic performance in comparison to the Central and Western Alignments. The East-West Alignment was removed as it ranked poorly in providing north-south system redundancy within the study area.

The Western and Central Alignments moved forward for further evaluation as they were found to improve system linkage and would provide an effective north-south connection to the existing roadway network. This Addendum evaluates the intersection operations at the proposed corridor tie in points to US 90 and LA 3127 for the Western and Central Alignments. Two versions of the northern sections for the Central and Western Alignments were developed as follows:

North Option A: Tie into LA 3127 at the intersection of LA 3127 at LA 3213. With this option, the new corridor is proposed to replace a portion of LA 20 south of LA 3127 as the new corridor will run parallel to this route.

North Option B: Tie into LA 20 north of LA 644. LA 20 would be incorporated into the new alignment from the tie in point to the existing intersection of LA 20 at LA 3127.

The western and Central Alignments with the North Options A and B are shown in Figure 1.

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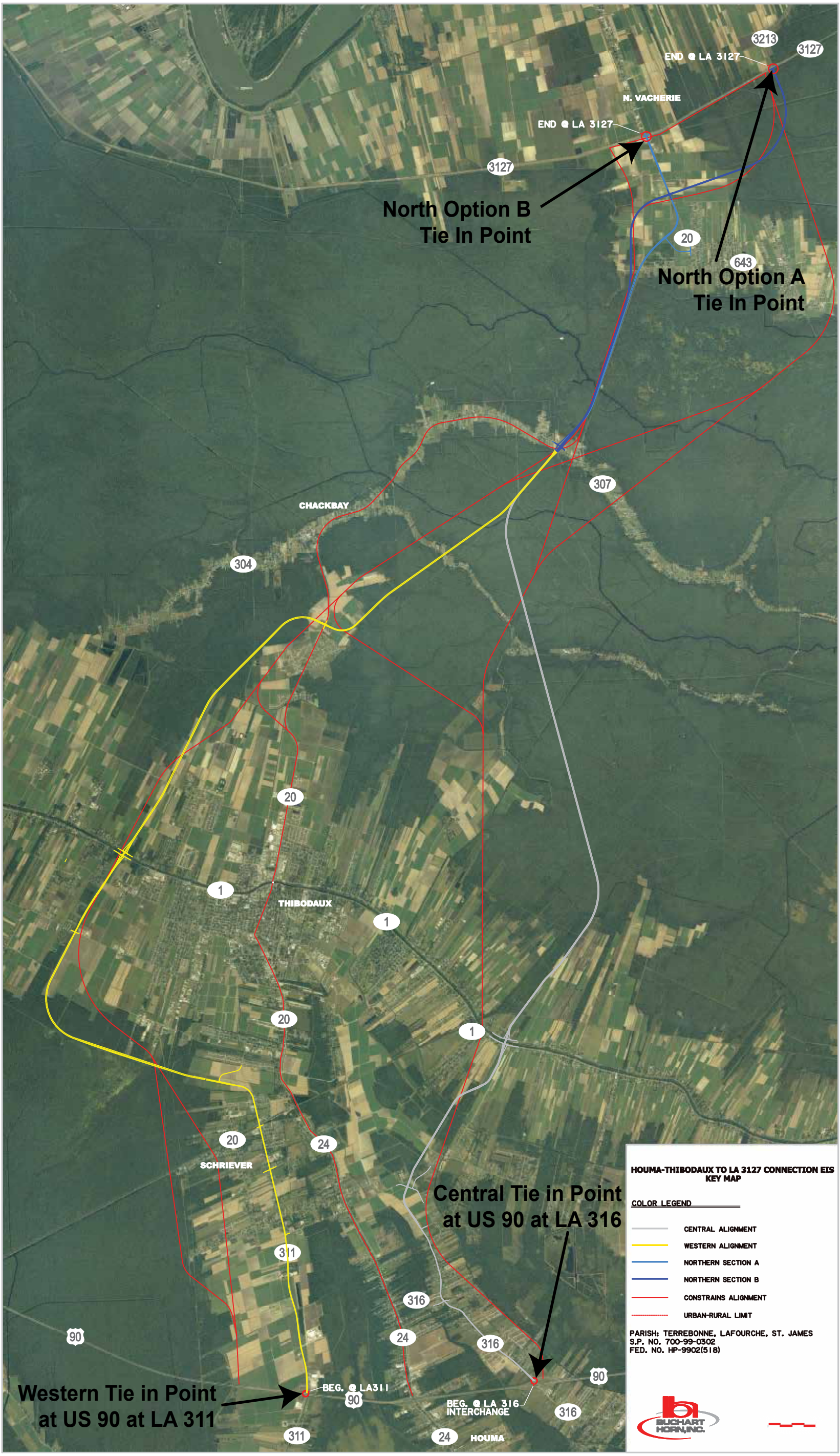

Source: Buchart Horn, Inc.

Figure 1

Corridor Alignments

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Section 2: Traffic Count Data Collection

As a supplement to the data collected in the December 2010 Technical Appendix, additional intersection turning movements were collected in December 2013 at the proposed corridor tie in points to US 90 and LA 3127. Data was collected at the following locations:

- US 90 ramps at LA 311
- US 90 ramps at LA 316
- LA 3127 at LA 20
- LA 3127 at LA 3213

The resulting AM peak and PM peak existing volumes are presented in Figure 2.

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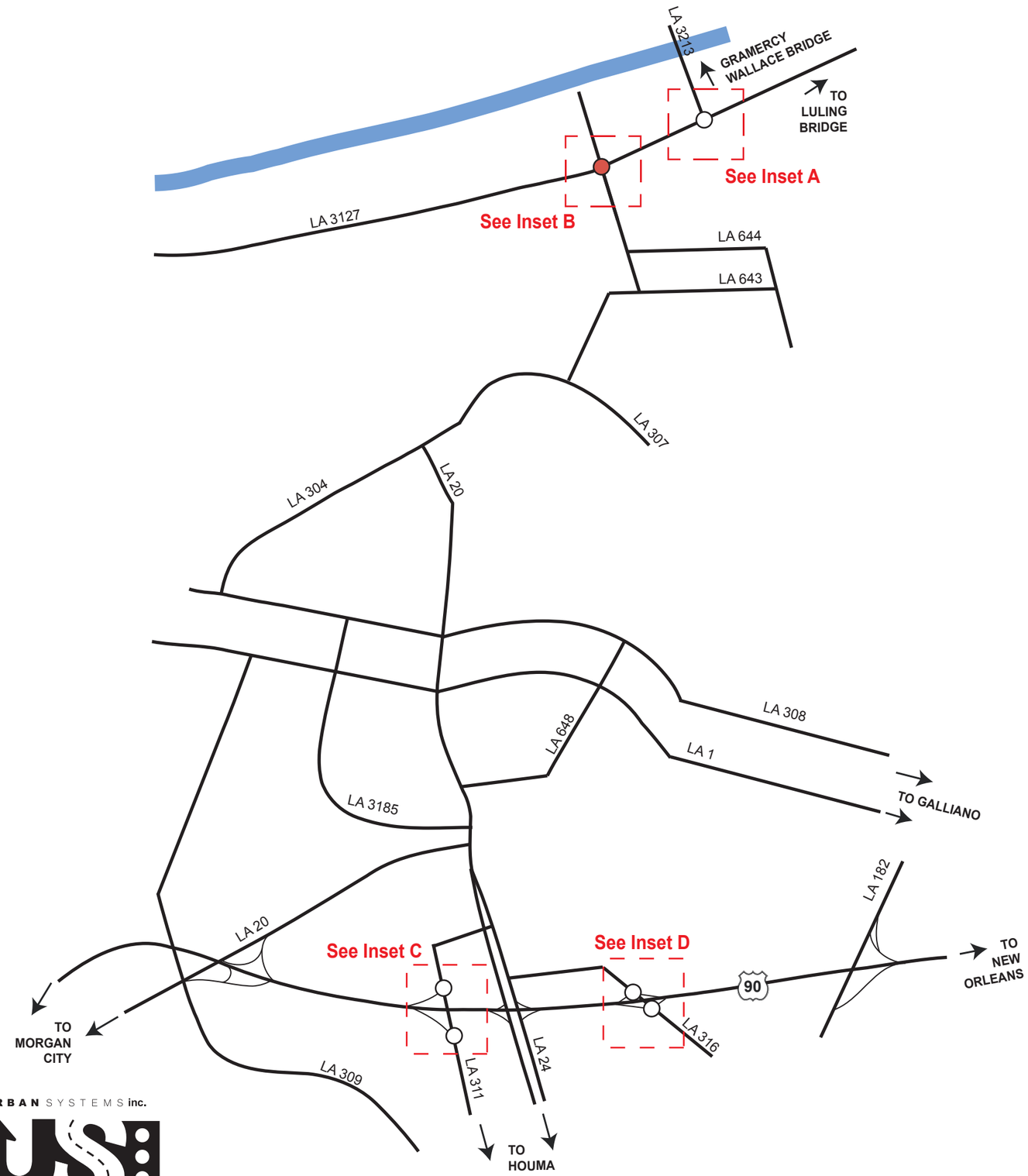

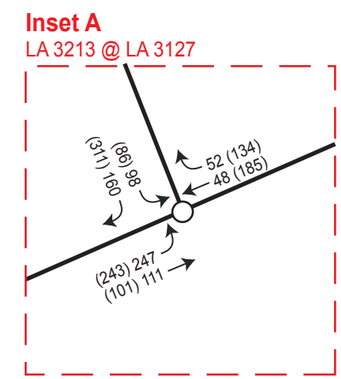

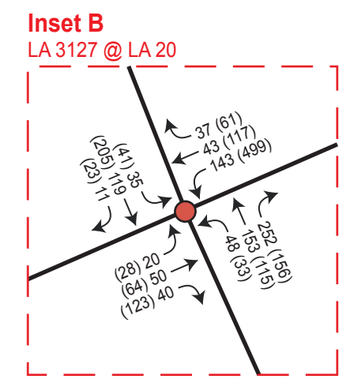

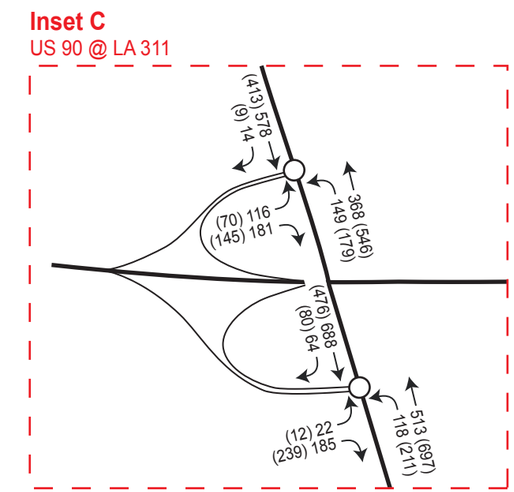

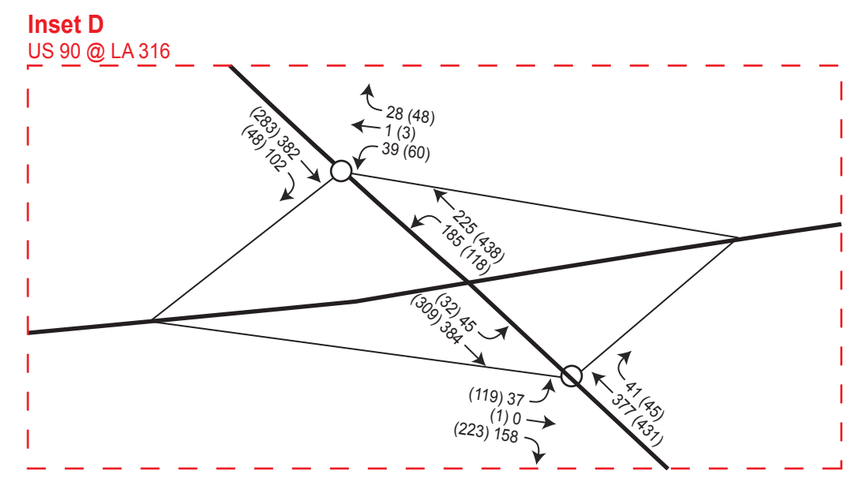

Figure 2

Existing Turning Movement Counts

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Section 3: Capacity Analysis

Capacity analysis was performed to estimate operational conditions in the AM and PM peaks at the proposed corridor tie in points to US 90 and LA 3127 into the 2032 build Year. Intersection geometry, turning movement volumes and traffic control parameters were entered into Highway Capacity Software to determine expected Level of Service and delay conditions.

Levels of Service (LOS) represent a qualitative and quantitative evaluation of the traffic operation of a given intersection using procedures developed by the Transportation Research Board and contained in the Highway Capacity Manual, Special Report 209. The Highway Capacity Manual (HCM) procedures have been adapted to computer based analysis packages, which include signalized and un-signalized intersection modules.

Levels of Service range from LOS A, a condition of little or no delay to LOS F, a condition of capacity breakdown represented by heavy delay and congestion. Level of Service B is characterized as stable flow. Level of Service C is considered to have a stable traffic flow, but is becoming susceptible to congestion with general levels of comfort and convenience declining noticeably. Level of Service D approaches unstable flow as speed and freedom to maneuver are severely restricted and LOS E represents unstable flow at or near capacity levels with poor levels of comfort and convenience. Tables 1 and 2 present the Level of Service criteria for signalized and un-signalized intersections, respectively.

Table 1
Level of Service Criteria
Signalized Intersections

Level of Service	Stopped Delay (Sec/Veh)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

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Table 2
Level of Service Criteria
Unsignalized Intersections

Level of Service	Average Total Delay (Sec/Veh)
A	< 10
B	> 10 and < 15
C	> 15 and < 25
D	> 25 and < 35
E	> 35 and < 50
F	> 50

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3.1: Existing Conditions Analysis

Existing volume and intersection control data were input into Highway Capacity Software Version 5.4 to generate Level of Service and delay estimates for each intersection. Table 3 presents the results of the analysis for the existing conditions.

Table 3
Intersection Operations
Corridor Tie In Points to US 90 and LA 3127
Existing Conditions Level of Service

Intersection	Approach	AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
US 90 Westbound Ramps at LA 311	**Overall**	*	*	*	*
	US 90 EB	B	14.7	B	12.9
	LA 311 NB	A	9.6	A	8.9
US 90 Eastbound Ramps at LA 311	**Overall**	*	*	*	*
	US 90 EB	B	13.1	B	12.3
	LA 311 NB	A	10	A	9.4
US 90 Westbound Ramps at LA 316	**Overall**	*	*	*	*
	US 90 WB	C	16.5	C	17.4
	LA 316 NB	A	8.8	A	8.2
US 90 Eastbound Ramps at LA 316	**Overall**	*	*	*	*
	US 90 EB	B	13.1	B	13.7
	LA 316 SB	A	8.3	A	8.4
LA 3127 at LA 20	**Overall**	**C**	**33.7**	**D**	**37.5**
	LA 3127 EB	D	40.2	D	43.6
	LA 3127 WB	C	23.4	D	36.1
	LA 20 NB	D	39.4	D	38.1
	LA 20 SB	C	28.8	D	36
LA 3127 at LA 3213	**Overall**	*	*	*	*
	LA 3127 EB	A	8	A	8.8
	LA 3213 SB	B	12.3	B	12.4

*Overall LOS not available for two-way stop controlled intersections.

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A review of Table 3 indicates that the tie in intersections generally operate acceptably during the existing condition. Field observations indicated the intersection of LA 3127 at LA 20 does however experience congestion during the PM peak due to the significant number of westbound motorists turning left onto LA 20.

3.2: Projected Conditions Analysis

Turning movement traffic volumes were developed for the 2032 Build Year at the proposed corridor tie in points to US 90 and LA 3127 for the Western and Central Alignments. The projected conditions traffic volumes were estimated using growth rates based on model data and engineering judgment. For the north Option A, volumes were rerouted from the intersection of LA 3127 at LA 20 as LA 20 will no longer be a option for continuous travel south of LA 3127. The 2032 Build volumes are presented for Western and Central Alignment alternatives tie in intersections in Figures 3 and 4, respectively.

The 2032 projected conditions at each of the tie in intersections to US 90 and LA 3127 were also evaluated for the AM and PM peaks. Proposed intersection geometry, turning movement volumes and traffic control parameters were entered into Highway Capacity Software to determine expected Level of Service and delay conditions. The results of the analysis are presented in Tables 4 and 5 for the AM and PM peaks, respectively.

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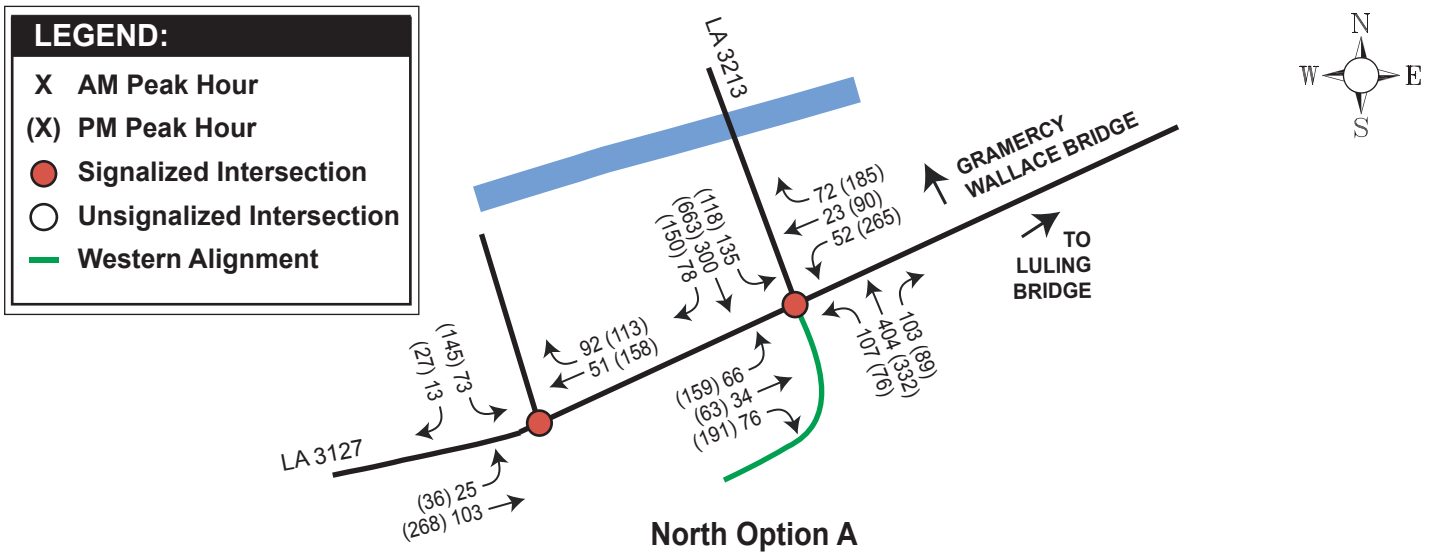
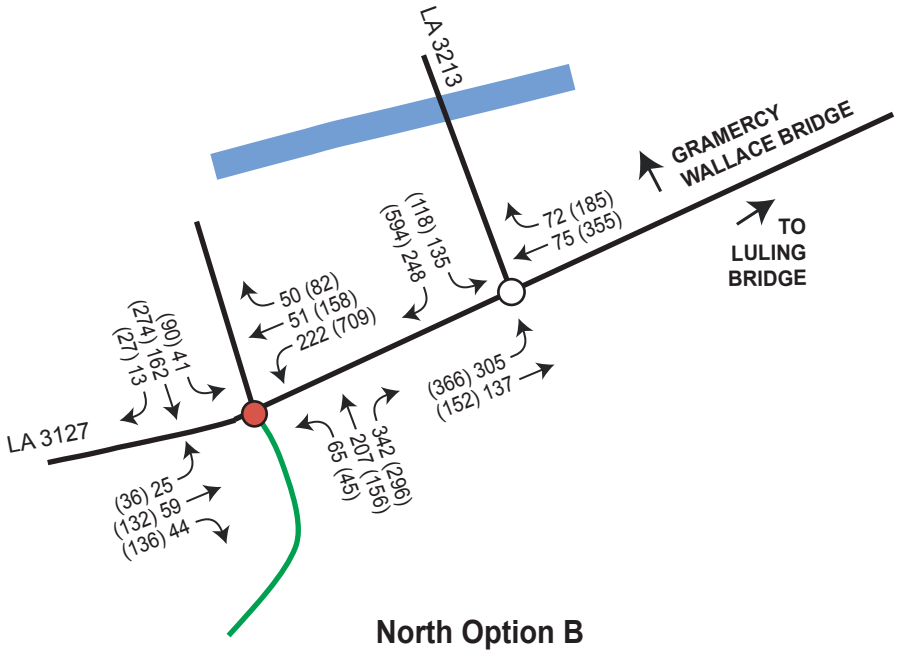


North Option A



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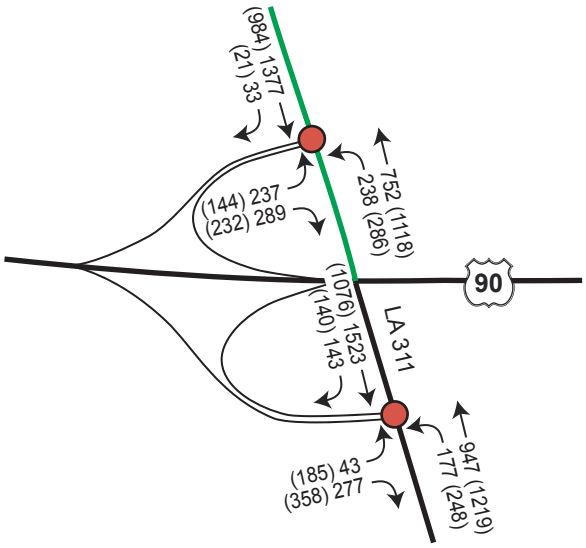

US 90 @ LA 311

Figure 3

Western Alignment
Tie In Intersections

URBAN SYSTEMS inc.

Houma-Thibodaux
to LA 3127 Connection EIS

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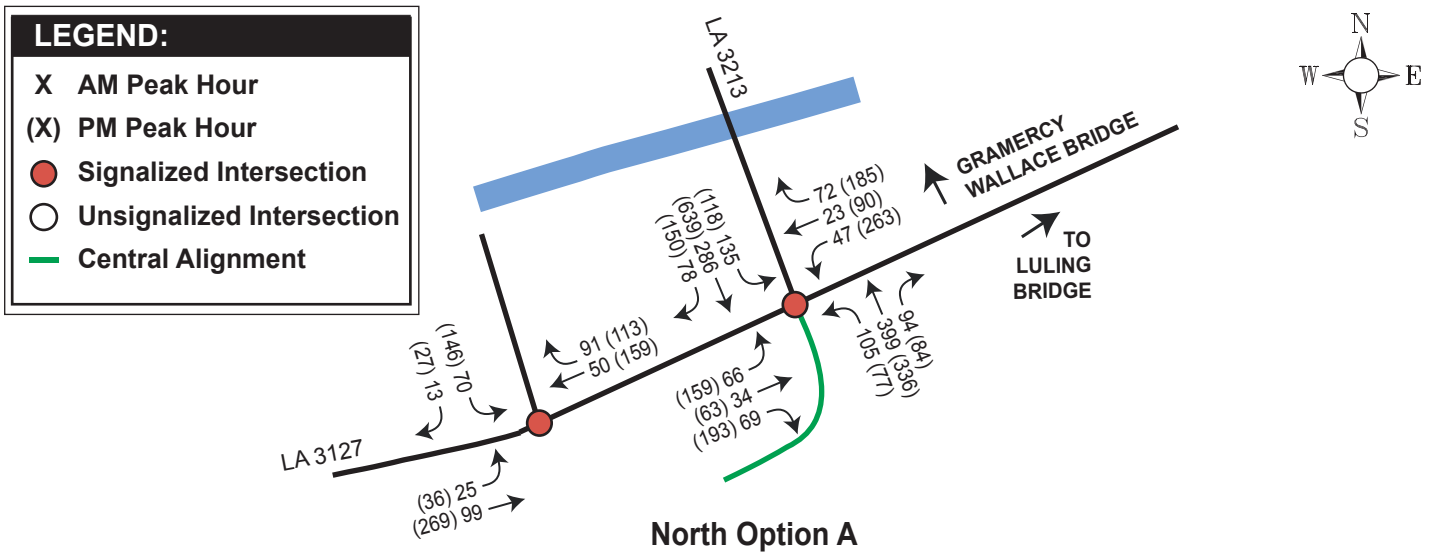
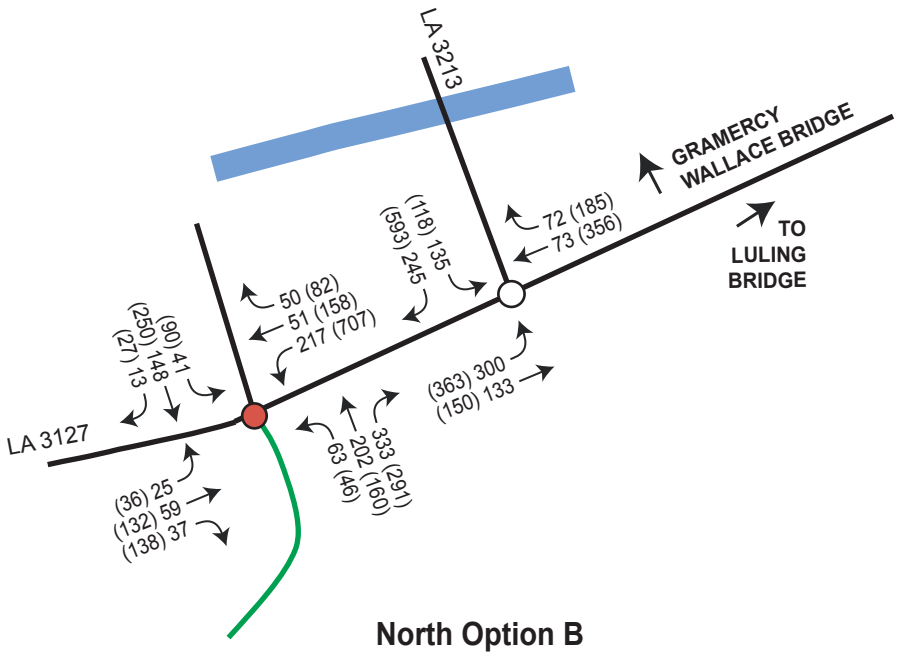


North Option A



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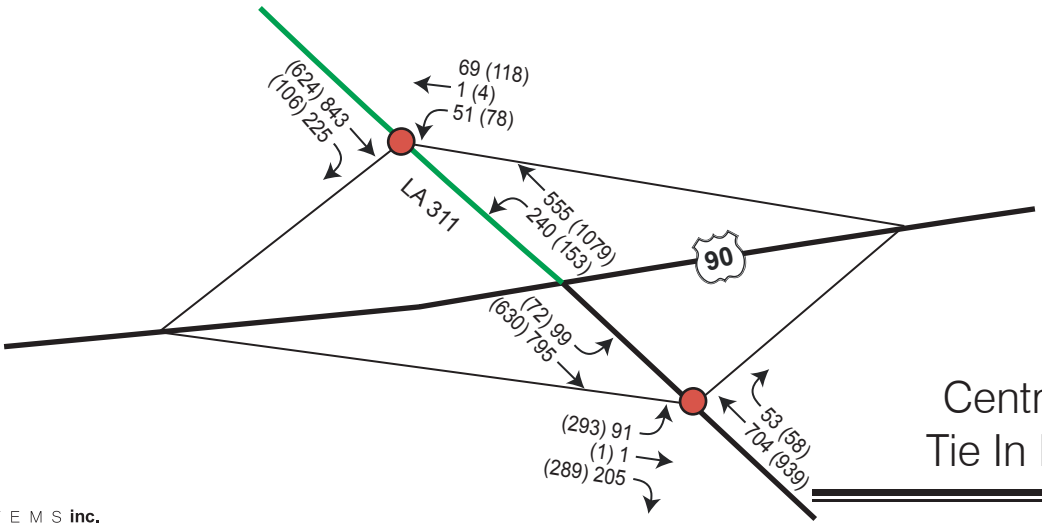

Figure 4
Central Alignment
Tie In Intersections

URBAN SYSTEMS inc.

US 90 @ LA 311

Houma-Thibodaux
to LA 3127 Connection EIS

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Table 4
Intersection Operations
Corridor Tie In Points to US 90 and LA 3127
AM Peak Projected Conditions Level of Service

Intersection	Approach	Western				Central			
		North Option A		North Option B		North Option A		North Option B	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
US 90 Westbound Ramps at LA 311	**Overall**	**C**	**32.8**	**C**	**32.8**				
	US 90 EB	C	32.4	C	32.4				
	LA 311 NB	C	30	C	30				
	LA 311 SB	C	34.9	C	34.9				
US 90 Eastbound Ramps at LA 311	**Overall**	**C**	**24.5**	**C**	**24.5**				
	US 90 EB	C	32.3	C	32.3				
	LA 311 NB	B	16.4	B	16.4				
	LA 311 SB	C	30.2	C	30.2				
US 90 Westbound Ramps at LA 316	**Overall**					**B**	**16.7**	**B**	**16.7**
	US 90 WB					C	26.9	C	26.9
	LA 316 NB					C	22.1	C	22.1
	LA 316 SB					B	11	B	11
US 90 Eastbound Ramps at LA 316	**Overall**					**B**	**16.8**	**B**	**16.8**
	US 90 EB					C	20.5	C	20.5
	LA 316 NB					B	16.2	B	16.2
	LA 316 SB					B	16.8	B	16.8
LA 3127 at LA 20	**Overall**	**A**	**9.2**	**C**	**23.9**	**B**	**9.1**	**C**	**23.8**
	LA 3127 EB	A	6.5	C	34.2	A	6.4	C	34.1
	LA 3127 WB	A	6.4	C	30.4	A	6.4	C	30.2
	LA 20 NB	-	-	C	21.4	-	-	C	21.3
	LA 20 SB	B	17.8	B	14.5	B	17.7	B	14.7
LA 3127 at LA 3213	**Overall**	**B**	**17.4**	*****	*****	**B**	**17.2**	*****	*****
	LA 3127 EB	C	21.5	A	8.3	C	21.4	A	8.3
	LA 3127 WB	C	21.4	-	-	C	21.3	-	-
	LA 3213 NB	B	16.9	-	-	B	16.6	-	-
	LA 3213 SB	B	15.6	C	15.7	B	15.4	C	15.4

*Overall LOS not available for two-way stop controlled intersections.

Table 5
Intersection Operations
Corridor Tie In Points to US 90 and LA 3127
PM Peak Projected Conditions Level of Service

Intersection	Approach	Western				Central			
		North Option A		North Option B		North Option A		North Option B	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
US 90 Westbound Ramps at LA 311	**Overall**	**C**	**21.8**	**C**	**21.8**				
	US 90 EB	C	32.4	C	32.4				
	LA 311 NB	B	19.8	B	19.8				
	LA 311 SB	C	23	C	23				
US 90 Eastbound Ramps at LA 311	**Overall**	**C**	**21.7**	**C**	**21.7**				
	US 90 EB	C	33.5	C	33.5				
	LA 311 NB	C	20.1	C	20.1				
	LA 311 SB	C	21.8	C	21.8				
US 90 Westbound Ramps at LA 316	**Overall**					**B**	**12.2**	**B**	**12.2**
	US 90 WB					C	27.5	C	27.5
	LA 316 NB					B	12.3	B	12.3
	LA 316 SB					B	10	B	10
US 90 Eastbound Ramps at LA 316	**Overall**					**B**	**18.3**	**B**	**18.3**
	US 90 EB					C	24.1	C	24.1
	LA 316 NB					B	18.2	B	18.2
	LA 316 SB					B	16	B	16
LA 3127 at LA 20	**Overall**	**A**	**9.7**	**C**	**31.8**	**A**	**9.7**	**C**	**31.7**
	LA 3127 EB	A	7.3	D	38.5	A	7.3	D	38.6
	LA 3127 WB	A	6.7	C	29.5	A	6.7	C	29.5
	LA 20 NB	-	-	D	35.4	-	-	D	35.1
	LA 20 SB	B	18.8	C	27.9	B	18.8	C	27.5
LA 3127 at LA 3213	**Overall**	**C**	**24**	*****	*****	**C**	**22.4**	*****	*****
	LA 3127 EB	C	22.5	B	11.3	C	22.6	B	11.3
	LA 3127 WB	C	25.3	-	-	C	25.2	-	-
	LA 3213 NB	B	18.7	-	-	B	15.9	-	-
	LA 3213 SB	C	26.7	D	27.5	C	24.3	D	27.2

*Overall LOS not available for two-way stop controlled intersections.

A review of the analysis indicates that with signalization, the interchanges with US 90 are expected to have acceptable operations with either alignment. For North Option A the intersection of LA 3213 at LA 3127 is expected to have acceptable operations with signalization. For the North Option B, analysis results indicate that acceptable operations can be obtained with the implementation of dual left turn lanes on LA 3127 westbound at its intersection with LA 20.

While acceptable intersection operations is expected at the tie ins to LA 3127 and US 90 with either alternatives, North Option A provides a direct connection to the Grammercy Wallace Bridge to cross the Mississippi River that Option B does not.

Section 4: Conclusions

In the December 2010 Traffic Analysis Technical Appendix, three north-south corridors and one east-west corridor were evaluated by comparing the estimated traffic volumes that would be serviced by each alignment. Following the December 2010 Traffic Analysis, additional environmental screening was conducted to reduce the number of alignments that moved forward in the evaluation process. The Western and Central Alignments moved forward for further evaluation with second versions of the northern sections. This addendum to the 2010 study that evaluated the intersection tie in points to US 90 and LA 3127 for the two remaining alignments. Analysis results indicated the following:

- The intersection of LA 3127 at LA 20 does experience congestion during the PM peak due to the significant number of motorists turning left onto LA 20 during the existing condition.
- With signalization, the intersections along US 90 are expected to have acceptable operations with either alignment.
- For the North Option A, acceptable operations can be expected with signalization of LA 3213 at LA 3127.
- For North Option B, the implementation of dual westbound left turn lanes on LA 2313 at its intersection with LA 20 is expected to result in acceptable operations.

Section 5: Recommendations

In the December 2010 Traffic Analysis Technical Appendix, the Central Alignment was found to have the best combination of connectivity between Houma and Thibodaux while providing a direct connection to the interstate system to the north which is expected to improve hurricane evacuation.

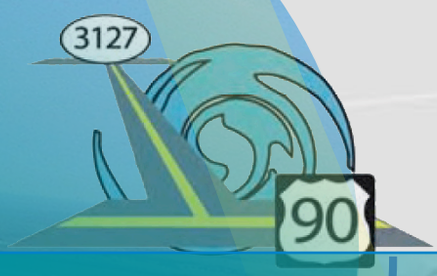
Although acceptable operations can be achieved with either alternative, Option A, the proposed tie in with the existing intersection of LA 3127 at LA 3213 provides a direct connection to the Grammercy Wallace Bride over the Mississippi River that Option B does not for either the Western or Central Alignments. With Option A, traffic is rerouted

from the intersection of LA 3127 at LA 20 to proposed alignment tie in at LA 3127 at LA 3213 which is also expected to result in an improved level of service from the existing condition at the LA 20 intersection.

Once the final alignment is selected and a Record of Decision is issued, further evaluation of the environmentally preferred alternative analysis to determine the required lane configurations, storage lengths for turn lanes and type of traffic control for each access point along the selected corridor. LADOTD Access Connections Policies and EDSMs that have been issued since the origination of this study must be considered in these analyses, alternative refinement and design.

DRAFT

Appendix G.
Toll Study



NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Toll Study

August 2010

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

August 31, 2010

Darius Bonton, P.E.
Project Manager
Buchart Horn, Inc
9100 Bluebonnet Centre Blvd
Suite 502
Baton Rouge, LA70809

Re: **Update to 2005 Houma-Thibodaux LA3127 Connection Preliminary Toll Study**

Dear Mr. Bonton:

Wilbur Smith Associates (WSA) is pleased to submit the following update to the Houma-Thibodaux LA 3127 Connection Preliminary Toll Study dated November, 2006. The primary function of this study is to review, revise, update and refine the assumptions, inputs, and techniques used in the development of the 2006 traffic and toll revenue forecasts. Wherever possible, methodologies, inputs, and base assumptions have been retained to allow for a direct comparison to, and continuity with, the 2006 report. Principal changes, in the intervening five years since the original study, are socioeconomic in nature, resulting from the combined impacts of Hurricane Katrina and the national economic recession. Additional updates have been made to account for changes in toll technology capital costs, ongoing maintenance, and operations. In addition to these refinements and revisions, a fourth alignment of the proposed 3127 Connection has been added - an east-west alignment providing access to the Sunshine Bridge via Ascension Parish.

Please note that the following document is intended as an amendment/update to the 2006 study, and focuses on the changes that have occurred since then. This letter report does not summarize or take the place of the original study document, and will only repeat information when it is necessary to the understanding of the project or the material presented herein. For greater detail regarding background, methodology, and overall study documentation please refer to the original 2006 study document, attached as Appendix A.

FACILITY DESCRIPTION AND CHARACTERISTICS

As described in the 2006 preliminary toll study, the proposed Houma-Thibodaux to LA3127 Connector is intended to enhance north-south connectivity and access to the Interstate system for the Houma-Thibodaux metropolitan region, shown in Figure 1. In addition to enhanced regional connectivity, the proposed facility is also expected to serve as a hurricane evacuation route. The three potential alignments initially studied provided a north-south connection between US 90, south

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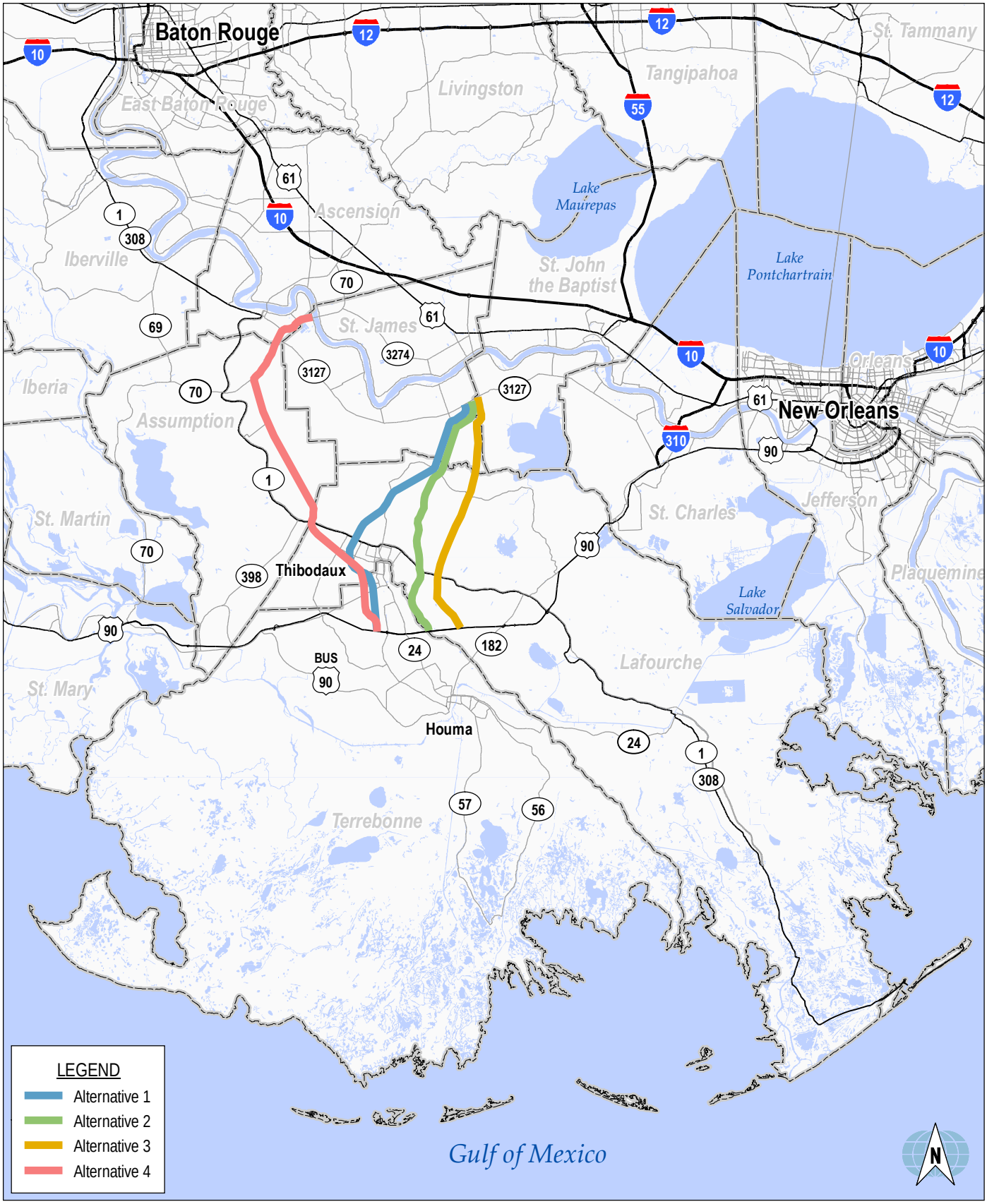

WilburSmith ASSOCIATES

STUDY AREA AND PROJECT ALIGNMENTS

FIGURE 1

of Thibodaux, to LA3127, just south of the Gramercy Wallace Bridge. Following the recommendations of a March 2009 alternatives analysis and screening report, a fourth alignment was added. This fourth alternative runs further to the west than the previous three alignments, running parallel to the LA1/308 corridor and provides access to the Sunshine Bridge, approximately 25 miles west-northwest of the Wallace Gramercy Bridge. All four study alignments are illustrated in Figure 1 and will be presented in greater detail in the Tolling Concept portion of this document. Attributes, such as the number of lanes, placement of tolling locations, and overall alternative alignments, have not been otherwise revised.

CURRENT TRAVEL CONDITIONS

Prior to refining and updating the travel demand model—a key input into the traffic and toll revenue forecasting process—WSA undertook a data collection effort aimed at identifying any changes in regional travel patterns and characteristics. The data collection effort included route reconnaissance, travel time and delay measurements, historical traffic growth, traffic variations by day of week, and vehicle class distribution. Data collected in this process either confirmed existing assumptions or provided a basis on which to update modeled travel demand characteristics. The following section describes the data collection effort and presents a summary of the data gathered, with specific attention paid to direct comparison between the data gathered in 2005 and the current findings. Note that it was not always possible to precisely reproduce the conditions under which the 2005 data was gathered. The location and availability of traffic counts may change over the years, and measurements such as travel time and delay are highly volatile. Great care was taken to collect and compare similar, if not identical, data points whenever possible. However, due to that volatility, the review and comparison of data, in the following section, focuses on large changes in data points that would indicate a fundamental shift in travel conditions.

TRAVEL TIME AND ROUTE RECONNAISSANCE

A series of route reconnaissance and travel time and delay (TTD) runs were conducted between January 18th and 19th, 2010. These TTD runs followed routes identical to those performed in 2005 and were intended to measure any change in travel speeds, under specified peaking characteristics. At the same time, route reconnaissance data collection confirmed posted speed limits, number of travel lanes and facility type. TTD runs employed a “floating car” technique whereby the field technician drove a predetermined route, driving under normal traffic conditions, maintaining speeds consistent with the prevailing traffic flow. All time and distance measurements were recorded by a synchronized GPS device and provided a complete record of travel speeds, total distance, and average travel times between two predetermined points.

As indicated, the vast majority of the routes were selected to provide a direct comparison between data collected in 2005 and current conditions. Additional TTD runs were included to gather data on the fourth, western alignment along LA1/308. All routes selected carry a significant amount of local or regional trips and potentially contribute to or compete with one or more of the four proposed alignments of the Connector. All TTD and route reconnaissance paths are illustrated in Figure 2.

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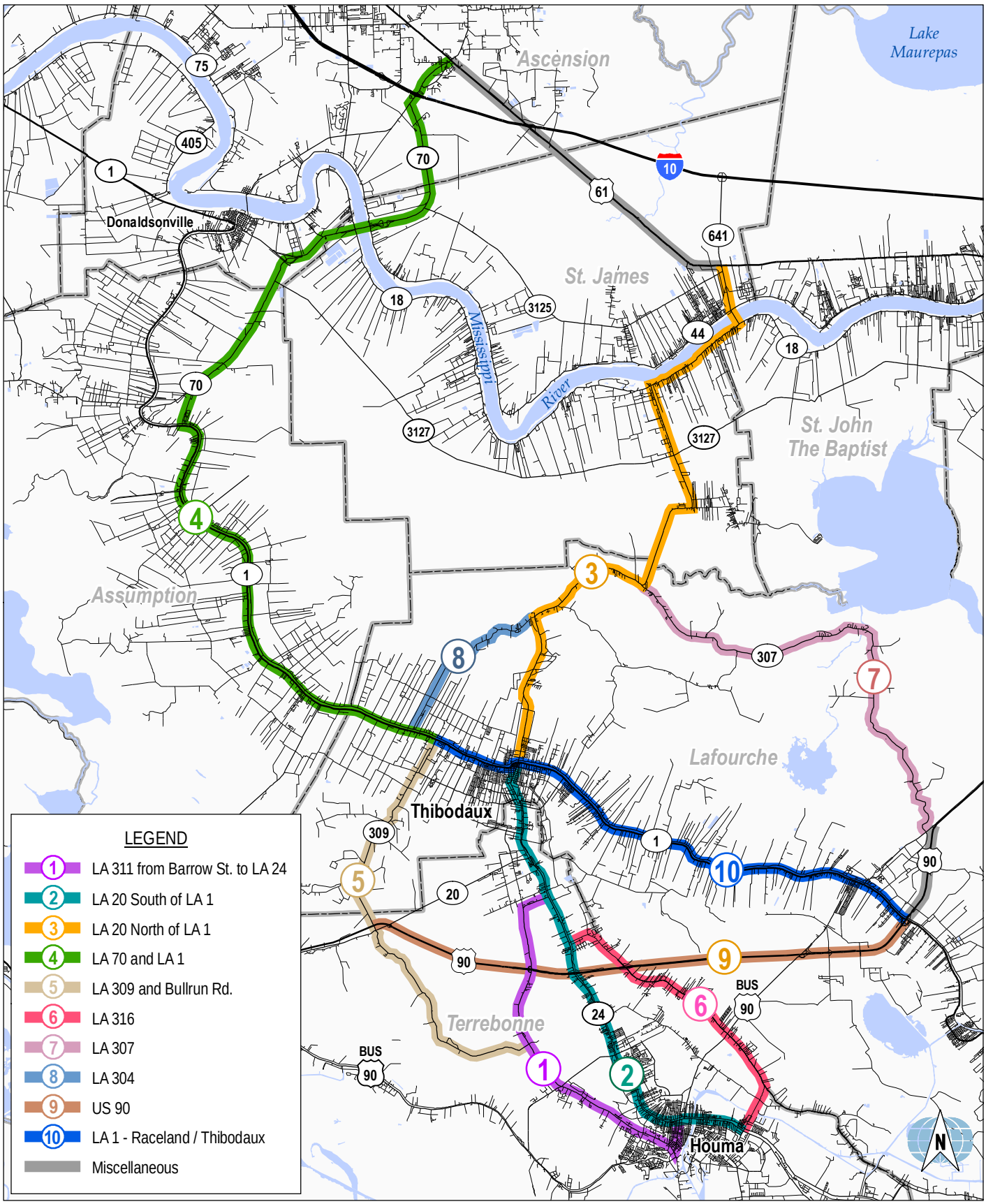


WilburSmith ASSOCIATES

TRAVEL TIME AND DELAY ROUTES

FIGURE 2

The proposed Houma-Thibodaux to LA3127 Connection project would provide a new high-capacity connection to I-10 to the north currently served by the following major facilities:

- LA24 extends north-south through the center of the southern portion of the study area. Data was collected on LA24 between LA3087\Prospect Boulevard in Houma until LA20, immediately south of Thibodaux. Its cross section varies between two and four lanes with signalized and unsignalized intersections throughout its length. Posted speed limits fluctuate from 25 mph in downtown Houma to 55 mph approaching LA20 south of Thibodaux.
- LA20 runs north-south through the northern portion of the study area. Data collection on LA20 extended from LA24 south of Thibodaux to LA18 near the Gramercy-Wallace Bridge. Beginning at LA24, LA20 continues northbound as a four lane divided facility, until north of Thibodaux, with many signalized and unsignalized intersections. Posted speeds range from 40 mph to 55 mph through this section. North of Thibodaux, LA20 is two lanes, with unsignalized intersections and residential driveways along its length.
- Within the bounds of the study area, LA1 provides east-west access between US 90 near Raceland, in the east, to Thibodaux, and then continues north and west to Baton Rouge. Route reconnaissance on LA1 included sections from US 90, near Raceland, to the LA70 Spur in Paincourtville. LA1 is a two-lane facility with signalized and unsignalized intersections. Posted speed limits range from 45 mph to 55 mph. Over most of the surveyed distance commercial, retail, and light industrial development is considerably denser along LA1 than the parallel LA308. LA308, which runs along the opposite side of Bayou Lafourche is similar to LA1 in general characteristics but has considerably less land use density.
- US 90 is the major east-west route in the Houma-Thibodaux area. Route reconnaissance was accomplished on US 90 between LA20 in Chacahoula, to the west, and US 1 near Raceland, to the east. This portion of US 90 is a limited access freeway consisting of two lanes in either direction with a posted speed limit of 70 miles per hour (mph).
- LA311 is a two lane, divided arterial carrying north-south traffic from US 90 Business to LA24 south of LA20. LA311 widens to two lanes in each direction, with a median divider in the vicinity of the ramps to and from US 90. LA311 has mostly unsignalized intersections and has posted speeds ranging from 45 mph to 55 mph.
- LA316 (Bayou Blue Road) is a north-south two-lane arterial extending from LA24, south east of Houma, in Bourg, returning to LA24, approximately 1.2 miles north of US 90. Like LA311, LA316 has mostly unsignalized intersections. Posted speed limits, on LA316, range from 25 mph for school zones to 45 mph.
- LA309 is a combination of Brule Guillot Road and Bullrun Road making a connection between LA1 in Thibodaux to LA311 northwest of Houma. Both are two-lane roadways with occasional unsignalized intersections and a posted speed limit of 45 mph.

- LA307 extends from LA183, north of LA1, to LA20, approximately 10 miles north of LA1, in Thibodaux. LA307 is a winding rural two-lane arterial bordered by forest and residential development. It has a posted speed limit of 45 mph with frequent curve warnings and corresponding speed reductions.

- LA304 connects LA308, west of Thibodaux, to LA20, six miles north of LA1. LA304 is a two lane arterial with a posted speed limit of 45 mph.

OBSERVED TRAVEL TIMES

Table 1 provides a summary and comparison of travel times, route distance, and average speeds observed, during the January 2010 TTD runs, versus those observed in 2005. Time of day and traffic directionality was not considered to be factors in travel speed, as all facilities were observed to operate free of congestion and service degradation. While every effort was made to precisely replicate the TTD runs, performed in 2005, the volatility of travel conditions, the sequence in which runs were conducted, and any number of other external factors could introduce some measure of difference into the TTD data. As such, only large changes in travel time and distances are considered noteworthy. Please refer back to Figure 2 for an illustration of the routes listed in Table 1.

Table 1
Summary of Selected Route Reconnaissance and TTD Attributes

Route	Start Time	Distance (miles)	Duration (minutes)	2009 Average Speed (mph)	2005 Average Speed (mph)	Difference (mph)
1: LA311 from Barrow Street to LA 24	6:49 AM	13.7	18.5	44.3		
2: LA 20 from LA 3087 to LA 1	7:39 AM	18.9	36.8	30.7	27.5	3.2
3: LA 20 from LA 1 to Gramercy-Wallace Bridge	8:16 AM	28.2	39.1	43.2	48.3	(5.1)
4: LA70 & LA1 from LA 61 \ Airline Highway to LA 304	9:12 AM	37.4	43.3	51.8		
5: LA 309 & Bullrun Road from LA 1 to LA 311(1)	10:00 AM	17.4	22.7	45.9	55.5	(9.6)
6: LA 316 from Prospect Boulevard to LA 24	12:41 PM	10.2	14.0	43.7	40.4	3.3
7: LA 307 from US 90 to LA 20	1:12 PM	19.3	25.3	45.8	45.5	0.3
8: LA 304 from LA 20 to LA 1	1:44 PM	7.0	9.3	45.7	46.7	(1.0)
9: US90 from LA20 to LA1	2:20 PM	20.4	17.9	68.5		
10: LA 1 from US 90 to LA 304(2)	2:39 PM	21.3	34.9	36.6	39.0	(2.4)

(1) 2005 average speed for LA 309 was measured using a segment which ended at LA 24 and included 7.6 miles of US 90.
(2) 2005 average speed for LA 1 was measured from US 90 to LA 309.

Overall, travel speeds recorded in 2009 were similar to speeds measured in 2005. The observed differences in average speeds between 2009 and 2005 are minor and do not reveal any broader trend of improving or degrading travel conditions, within the study area. Most differences in travel times were attributable to signal timing, inexact replication of route choice, and non-recurring events. As such, there was no need to adjust or refine the speed attributes of the travel demand model.

HISTORICAL TRAFFIC COUNT INFORMATION

The purpose of reviewing historical traffic counts in the context of this update was twofold; to ensure that previously-observed growth trends had not changed dramatically, since the issuance of 2006 Preliminary Toll Study report; and that growth rates represented in the travel demand model were reasonable, given recent trends. Data was obtained using the South Central Planning Development Commission (SCPDC) online Traffic Count Database System (TCDS), the same source as used in the previous study. Wherever possible, data was collected for locations identical to those reported in the 2006.

A summary of selected recent historical count data from 2000 to 2009 is presented in Table 2. Available count years differed by station, so average annual percent change (AAPC) was calculated using the difference between the earliest and most recent counts available for each station. Counts for intermediate years are displayed to demonstrate short term variations within the larger growth trends exhibited over the range of available counts at each station.

Table 2
Summary of Selected Historical Counts

Station ID	Location	2002	2003	2004	2005	2006	2007	2008	2009	2010	AAPC
264	LA 20 S of LA 3185					25,913				29,102	2.9
608/609	LA 24 S of LA 20			21,967	24,434	25,185			25,021		2.6
477	LA 311 W of LA 24		2,718		2,475			2,830			0.8
390	LA 316 E of LA 24		5,324						8,124		7.3
777/778	LA 24 N of Houma				28,697				25,193		(3.2)
280	LA 660 SE of LA 24	9,936		9,664					11,106		1.6
619	LA 311 fr US 90 to Houma			14,260	14,144				15,217		1.3
372	US 90 E of LA 24	14,890		14,711					18,692		3.3
312	LA 309 N of LA 20	1,565								2,110	3.8

Source: South Central Planning Development Commission online Traffic Count Database System

In general, facilities with low or negative growth rates between 1999 and 2002, as reported in the 2005 Preliminary Toll Study, experienced low growth rates between 2002 and 2010. While there were some notable shifts in growth patterns at individual count sites, overall regional growth trends continue to be in line with forecast volumes. None of the fluctuations in growth rates were found to warrant a revision of the travel demand model growth assumptions.

TRAFFIC VARIATIONS BY DAY OF WEEK

The Louisiana Statewide Travel Demand Model (LaSTM), on which all modeling for this study is based, is an average weekday traffic (AWDT) model. In order to annualize results and provide annual traffic and toll revenue numbers, an annualization factor is applied in the revenue modeling process. This factor is based on weekly traffic counts indicating the proportion of weekend and weekday traffic obtained using SCPDC TCDS counts. Again, for purposes of comparison traffic count locations, matching those reported in the 2006 Preliminary Toll Study, were selected where current data was available. Where current data was unavailable, for previously reported stations, the nearest comparable station was selected.

Traffic volume, by day of the week, is shown in Table 3. It is shown as an indexed value to facilitate direct comparison between data reported in the 2006 study and current data. A value of 100 or greater indicates an average volume for that day of the week in excess of the weekly average, while a value of less than 100 indicates lower than average traffic. For instance, the index value for Thursdays at count station 440 (LA24 near Thibodaux) is 114. This indicates that for that location, Thursdays experience approximately 14 percent more traffic than the average day.

Table 3
Distribution of Traffic by Day of Week

Station ID	Location	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Weekday	Weekend
294	LA 308	100	101	102	98	-	-	100	100	100
630	LA 308	111	114	105	95	88	-	93	103	93
330	US 90 West of LA 24	-	119	118	117	85	76	-	110	76
372	US 90 East of LA 24(1)	102	108	110	107	97	-	88	105	88
606	LA 24 North of US 90(2)	107	110	-	-	93	77	107	103	92
440	LA 24 Near Thibodaux	104	103	101	114	99	77	103	104	90

(1) Westbound only count includes Good Friday and Easter Sunday
(2) Southbound only
Source: South Central Planning Development Commission online Traffic Count Database System

As shown in Table 3, weekday volumes range from 100 to 105 percent of average daily volumes. This is a substantial change from the previous study where weekday volumes as a percent of the daily average ranged from 106 to 117. This is in part due to a notable reduction in Friday traffic volumes. Calculations, based on the most recent data sources, indicate Friday volumes range from 85 to 99 of average weekly traffic. This is in comparison to the findings under the previous study which indicated index values of between 109 and 118. Note that, due to the limited availability of data, and the desire to use identical or very similar count stations, several stations are limited to a single direction, and one set of count data was taken from a week that includes both Good Friday and Easter Sunday. However, those stations actually displayed higher than average index values for Friday and would not have contributed to an overall reduction in total Friday traffic share. Additional stations were also added in close proximity to these count locations, in order to provide a wider array of data. Moreover, the changes that were noted are not likely attributable to individual stations. The reduction in Friday a volume is consistent across all count stations and can be observed at count stations 330, 372 and 606; the only stations to provide Friday volumes in the previous report.

Sunday volumes, as a percent of average daily volumes, increased from a range of 71 to 82, in the previous study, to a range of 88 to 107, based on current, revised data currently. This increase, combined with the decrease in Friday traffic share, contributed to an overall increase in the ratio of weekday to weekend traffic. Whereas the average weekend traffic index had previously ranged from 72 to 85 (excluding an outlier of 58 percent observed at station 293), updated data reveals a range of between 76 and 100. The weighted index for all stations, combined under the previous study, resulted in a weekday index of 108 and a weekend index of 80. The revised data results in a weighted weekday index of 105 and a weekend index of 88. Ultimately, this higher weekend index

results in an increase in the factor used to annualize the modeled average weekday traffic by approximately 10 days or 3.0 percent. Traffic and revenue values were increased accordingly and will be discussed in the section covering traffic and revenue calculations.

TRAFFIC DISTRIBUTION BY VEHICLE CLASS

Distribution of traffic by vehicle class is an important statistic, used in model calibration, and in developing an average toll rate used in revenue calculations. The purpose of this data collection and analysis effort was to determine whether or not there had been a fundamental shift in traffic composition and to verify or refine previous assumptions. Vehicle classification counts were obtained for stations previously reported, where available, using the SCPDC TCDS. Where current data was unavailable, for previously reported stations, the nearest comparable station was selected. Selected data are summarized as shown in Table 4, including values directly comparable to the 2006 study count locations on top, and an expanded study area below.

Generally speaking, the highest percentage of vehicles having more than two axles (commercial vehicles) was observed on US 90 and the lowest on LA1 and LA20 near Thibodaux. This corresponds to the findings of the 2006 study, though total truck volumes are slightly lower at these locations. Stations 330 and 372, on US 90, showed a decline in vehicles having more than two axles from between 11.8 and 12.9 percent to 9.6 and 9.5 percent, respectively. Conversely, count stations, on LA308 and LA24, showed an increase in the percent of vehicles having more than two axles. Overall, the average percent of commercial vehicles, across the study area, remained the same as was presented in 2006, at approximately 4.8 percent. Expanding the study area to include portions of the network, covered by the fourth alignment, brings that number down slightly, to 4.5 percent. This is not a significant enough shift to warrant altering travel demand or revenue modeling assumptions. In all cases, the average number of axles across the region is between 2.10 and 2.11.

The largest shift, among the vehicle classifications, is a marked decrease in vehicle designated as “Cars and Trailers”, and an increase in those classed as “Two Axle Long,” and “Two Axle, Six Tire.” On average, vehicles classified as Cars and Trailers fell by approximately 13.0 percent, while the Two Axle Long and Two Axle, Six Tire categories increased by 5.5 and 3.9 percent, respectively. The remaining reductions, in the standard passenger car categories, appear to be accounted for by an average increase of 3.8 percent in unclassified vehicles. However, with the exception of the unclassified vehicles, all changes were shifts within the two-axle vehicle category and therefore no changes were required. With respect to the travel demand model, no distinction is made between these classes. From a tolling perspective, vehicles would be tolled based on the number of axles and not the length of the vehicle or the number of tires. As such, while interesting, these findings did not result in a need for changes in travel demand or revenue modeling assumptions. Moreover, these shifts in vehicle classification are more likely the result of a refined or otherwise altered monitoring process, and are not likely representative of a regional shift in vehicle mix.

Table 4
Axle Count and Vehicle Classification by Location

Station ID	Location	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	< 5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classed	Percent >2 Axles	Average Axles
294	LA 308	1.4	48.8	30.9	0.5	5.5	1.0	0.1	0.9	2.0	0.1	-	-	-	8.8	4.0	2.10
713	LA 1 West of Thibodaux	0.3	9.7	55.3	1.4	27.5	0.4	-	2.0	0.5	0.1	-	-	-	2.7	3.0	2.06
330	US90 W of LA 311	0.8	38.5	30.7	2.7	14.8	0.6	0.1	3.9	4.3	0.4	0.1	0.1	0.2	3.0	9.6	2.25
372	US90 E of LA 24	0.7	39.4	30.7	2.4	12.1	0.9	0.1	3.6	4.2	0.4	0.2	0.1	0.1	5.1	9.5	2.25
606	LA 24 North of US 90	0.8	60.1	26.7	0.9	5.0	0.7	0.1	2.0	0.6	0.1	0.1	-	-	2.9	3.6	2.08
609	LA 24 North S of LA 20	1.8	59.4	23.1	0.3	2.8	1.6	0.1	2.4	0.2	0.2	0.1	-	0.1	7.8	4.7	2.09
440	LA 20 S of LA 1	1.8	59.4	23.1	0.3	2.8	1.6	0.1	2.4	0.2	0.2	0.1	-	0.1	7.8	4.7	2.09
629	LA 1 East of Thibodaux	1.0	53.8	30.8	0.8	8.7	0.7	0.1	0.8	0.4	-	-	-	-	2.8	2.0	2.04
681	LA 20 North of Thibodaux	1.9	54.6	29.8	0.4	4.2	1.0	0.1	0.8	0.3	-	-	-	-	6.9	2.1	2.04
774	LA 24 North S of US90	1.2	52.6	28.7	0.3	4.3	1.3	0.4	3.7	0.2	0.3	-	0.1	-	6.9	6.0	2.12
608	LA 24 South S of LA 20	0.8	56.6	28.2	0.8	4.7	0.7	0.1	2.9	0.7	0.4	0.1	-	0.1	3.8	5.0	2.11
428	LA 316 N of LA 3087	1.0	45.6	37.7	1.0	8.6	0.7	0.1	1.6	1.4	0.2	-	-	-	2.1	4.0	2.09
343	LA 311 fr US 90 to Houma	1.5	48.1	35.5	0.5	7.2	0.6	0.1	1.5	0.5	-	-	-	-	4.4	2.7	2.06
391	US90 W of LA182	0.8	39.7	32.1	2.6	13.3	0.6	0.1	3.5	4.2	0.4	0.1	0.1	0.1	2.4	9.1	2.24
312	LA 309 N of LA 20	0.8	57.2	31.9	0.9	6.4	0.3	-	1.2	0.3	-	-	-	-	1.0	1.8	2.04
62	LA 20 N of LA 307	1.0	49.7	32.3	0.6	11.1	0.5	-	1.5	1.2	0.2	-	-	-	2.0	3.3	2.08
145	LA 308 W of LA 304	0.6	50.9	29.0	0.9	10.6	0.9	0.1	1.6	1.6	0.2	-	-	-	3.6	4.4	2.10
288	LA 1 E of LA 20	0.9	54.9	33.0	0.5	6.8	0.5	-	0.9	0.5	-	-	-	-	2.0	1.9	2.04

Source: South Central Planning Development Commission online Traffic Count Database System

CORRIDOR GROWTH ANALYSIS

As discussed in the 2006 report, socioeconomic characteristics and projected growth are the primary determinants of future travel demand. Specifically, population and employment are used to estimate future travel demand and dictate the manner in which the travel demand model assigns traffic to the regional network. If significant differences are found, among the 2006 forecasts, actual performance, and/or long-term growth estimates, these assumptions would need to be revised and incorporated into the modeling process. The following section presents an overview of the comparative analysis between socioeconomic data used in the 2006 Preliminary Toll Study and current trends and forecasts.

Two types of comparisons are performed here. The first compares data, that was forecast under the 2006 study, to actual performance observed since then. Whereas the 2006 study only had actual data through 2003, this current study has the benefit of an additional six years of observed data. A review of trends and performance, versus projected data, provides insight into whether or not near-term socioeconomic growth forecasts were accurate. The second set of comparisons presented is between the long-term growth projections, used in the 2006 study, to the most current forecasts. The intent of this comparison is to determine whether or not regional trends have shifted sufficiently to warrant an update of the assumptions being used in the current traffic and toll revenue forecast. Historical data and forecasts, presented in this section, are based on population and employment projections provided by the U.S. Census Bureau, the U.S. Department of Commerce, Louisiana State University and Woods and Poole Economics, Inc.

While the following section will present historical data, it is presented to establish long-term growth trends and to provide a context for projected growth. For a more in-depth discussion of the historical growth, the composition of the regional economy, and possible factors effecting historical and future growth trends, please see pages 3-1 through 3-7 of the 2006 Preliminary report. This section will focus primarily on the changes which have occurred between 2005 and present day.

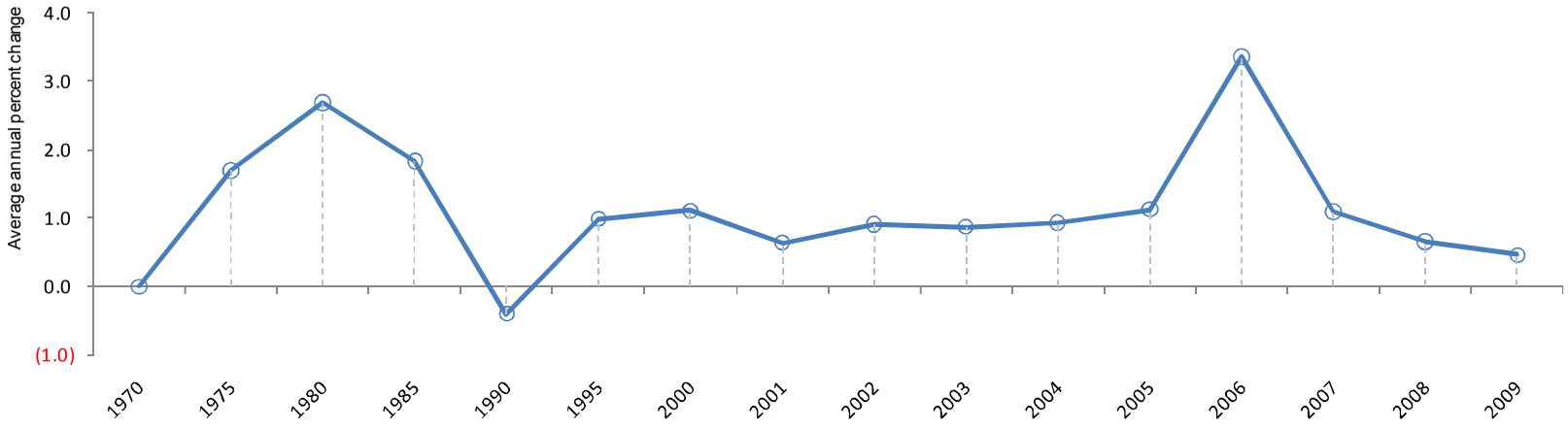
POPULATION TRENDS BY PARISH

Population trends from 1970 to 2009, by parish, are shown in Table 5. Between 1970 and 2009, the population of the State of Louisiana grew by roughly 835,000 people, or approximately 22.8 percent. In that same period of time, the population of the study area grew by roughly 175,000 people, or just under 63 percent. The greatest increases in population occurred in and around the Houma area in Terrebonne Parish, Luling in St. Charles Parish, La Place in St. John the Baptist Parish, and southern Baton Rouge in Ascension Parish. Population in rural parishes such as Assumption, Lafourche, and St. James experienced declining or negative rates. In all cases, average annual percentage growth rates declined by an average of 0.6 percent between 1985 and 1990, coinciding with the oil bust of 1986.

Table 5
Historical Population by Parish
(thousands)

	Ascension		Assumption		Lafourche		St. Charles		St. James		St. John		Terrebonne		Study Area	
Year	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC
1970	37.3	N/A	19.7	N/A	69.3	N/A	29.7	N/A	19.6	N/A	23.8	N/A	76.3	N/A	275.6	N/A
1975	41.4	2.1	20.6	0.9	74.5	1.5	33.0	2.1	20.3	0.7	25.4	1.2	84.6	2.1	299.8	1.7
1980	50.4	4.0	22.2	1.5	83.4	2.3	37.5	2.6	21.5	1.2	32.3	4.9	95.0	2.3	342.2	2.7
1985	58.0	2.8	23.6	1.2	88.6	1.2	41.6	2.1	22.0	0.4	39.8	4.3	101.1	1.3	374.7	1.8
1990	58.4	0.1	22.7	(0.8)	85.8	(0.6)	42.5	0.4	20.8	(1.1)	40.1	0.1	97.0	(0.8)	367.3	(0.4)
1995	66.1	2.5	22.9	0.1	87.6	0.4	45.9	1.6	20.9	0.0	42.0	1.0	100.4	0.7	385.8	1.0
2000	77.3	3.2	23.4	0.4	90.0	0.5	48.2	1.0	21.2	0.3	43.2	0.5	104.5	0.8	407.6	1.1
2001	79.2	2.4	23.2	(0.9)	90.1	0.1	48.4	0.5	21.1	(0.2)	43.6	1.0	104.7	0.3	410.3	0.6
2002	81.3	2.7	23.1	(0.3)	90.7	0.7	49.0	1.1	21.1	(0.2)	44.0	0.9	104.9	0.2	414.0	0.9
2003	83.8	3.1	23.1	(0.2)	91.2	0.6	49.0	0.2	20.9	(1.1)	44.5	1.1	105.2	0.2	417.6	0.9
2004	86.1	2.8	23.1	(0.1)	91.6	0.4	49.5	1.0	20.7	(0.8)	45.0	1.3	105.5	0.3	421.5	0.9
2005	89.4	3.8	22.9	(0.9)	91.4	(0.3)	50.1	1.2	20.7	0.2	45.6	1.2	106.2	0.7	426.3	1.1
2006	96.0	7.4	23.1	0.9	92.8	1.6	51.8	3.3	21.2	2.0	47.7	4.6	108.1	1.8	440.6	3.4
2007	99.7	3.9	23.1	0.1	92.9	0.1	51.9	0.4	21.2	0.4	47.9	0.4	108.6	0.5	445.4	1.1
2008	102.5	2.8	23.0	(0.3)	93.6	0.7	51.6	(0.6)	21.1	(0.8)	47.4	(1.0)	109.2	0.5	448.3	0.7
2009	104.8	2.3	22.9	(0.7)	93.7	0.1	51.6	(0.0)	21.1	(0.1)	47.1	(0.7)	109.3	0.1	450.4	0.5

Note: Where indicated, AAPC denotes average annual percent change.
Source: U.S. Census Bureau



Two significant events affected population levels in the study area. Locally, the 2005 hurricane season had a tremendous impact on population distribution. Following Hurricanes Katrina and Rita, the region experienced a surge in population. Following nearly a decade of declining or negative growth, all seven parishes in the study area experienced population growth between 1.1 and 3.4 percent in excess of the previous year. Overall, population in the study area grew by 3.4 percent versus just 1.1 percent the year before. Had the region continued to develop at the same pace as it had throughout the previous decade, it would likely have taken until 2009 to reach population levels achieved in 2006. The second major event was the national and global recession. The 2008 housing market bust, and the resulting economic recession, coincided with population growth rates falling to just 0.5 percent in 2009. While Ascension Parish continued to experience relatively robust growth, most other parishes in the study area saw a substantial reduction in population growth rates. While most remained slightly positive, Assumption, St. Charles, St. James, and St. John the Baptist Parishes all lost population in 2008 and 2009.

While the impact of both events can clearly be seen in Table 5 and the accompanying graph, each event had an opposing effect. While the recession resulted in a decline in population, healthy overall population levels, resulting from displaced hurricane victims, left most parishes relatively and historically populous. Despite both of these events occurring after the development of the official forecasts presented in the 2006 study, population projections actually remained on track. Actual performance versus forecast performance will be discussed later in this document.

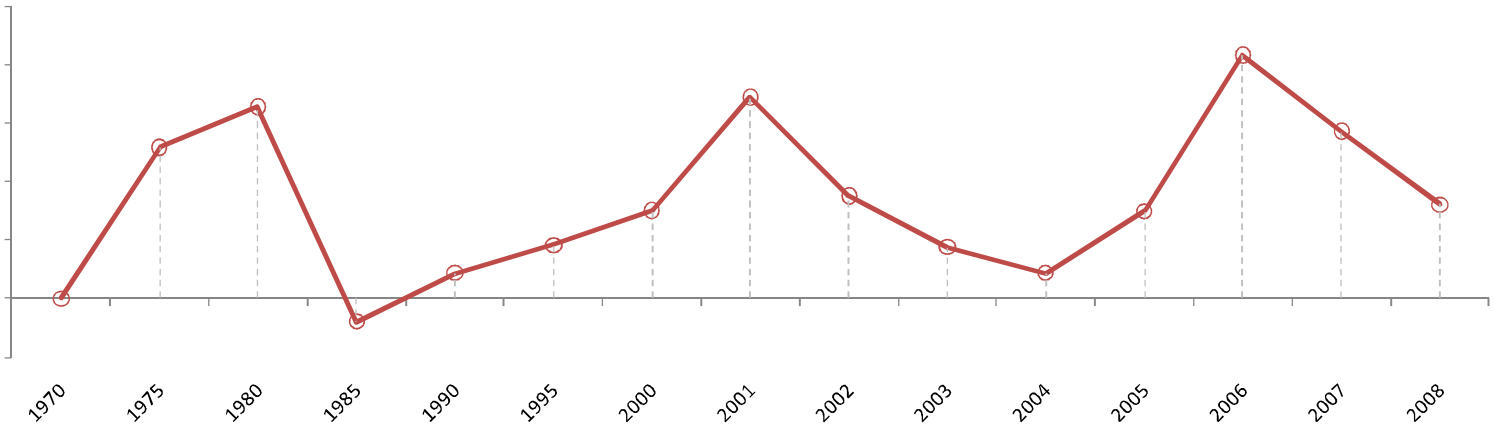
EMPLOYMENT TRENDS BY PARISH

Like population, regional employment is a principal driver to total travel demand and potential growth. The purpose of this review is to determine whether or not recent and short-term events warrant any adjustments in the travel demand model growth assumptions. We begin by looking at historical trends to provide some context, particularly with respect to the relative volatility of employment trends, in the study area. As shown in Table 6, and the accompanying graph, there have been three major "boom" cycles and two major "bust" cycles, with respect to national employment. Regional employment experienced accelerated growth, throughout the mid-1970s and early 1980s, primarily as a result of oil exploration and production. At the height of the jobs boom—between 1975 and 1980—the study area was adding jobs at an average annual rate of approximately 6.6 percent per year. Gains in employment were lead by St. Charles Parish at 11.1 percent growth per year, followed by St. John, St. James, Terrebonne Lafourche, Ascension, and Assumption Parishes. This was followed by the collapse of oil prices in the mid-1980s and a precipitous decline in jobs. All Parishes with the exception of St. John Parish stagnated or lost jobs at an average rate of between -0.5 and -4.9 percent per year. St. Charles Parish was hit particularly hard, declining from an average annual employment growth rate of 11.1 percent per year between 1975 and 1980 to an average annual loss of 4.9 percent between 1980 and 1985. Between 1985 and 2001 employment grew once again, at an accelerating pace, reaching a regional average growth rate of 6.9 percent in 2001.

Table 6
Historical Employment by Parish
(thousands)

	Ascension		Assumption		Lafourche		St. Charles		St. James		St. John		Terrebonne		Study Area	
Year	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC
1970	10.8	N/A	5.4	N/A	21.9	N/A	9.7	N/A	6.1	N/A	5.1	N/A	28.5	N/A	87.6	N/A
1975	16.2	8.5	7.2	5.8	25.8	3.3	13.4	6.6	6.8	2.1	6.6	5.2	36.8	5.3	112.8	5.2
1980	20.4	4.7	8.1	2.5	32.9	5.0	22.6	11.1	9.7	7.3	9.8	8.3	51.4	6.9	154.9	6.6
1985	23.7	3.0	6.9	(3.1)	32.2	(0.5)	17.6	(4.9)	9.7	(0.0)	11.7	3.6	47.2	(1.7)	148.9	(0.8)
1990	28.5	3.8	6.4	(1.5)	31.5	(0.4)	22.0	4.6	9.3	(0.7)	14.0	3.7	43.7	(1.5)	155.5	0.9
1995	34.0	3.6	6.6	0.6	35.3	2.3	24.1	1.9	8.6	(1.5)	14.4	0.6	47.3	1.6	170.4	1.8
2000	42.8	4.7	6.9	0.8	44.7	4.9	24.0	(0.1)	8.5	(0.3)	16.6	2.8	54.1	2.7	197.6	3.0
2001	54.0	26.1	7.6	10.5	48.0	7.3	24.1	0.6	8.4	(1.9)	16.4	(0.9)	52.7	(2.6)	211.2	6.9
2002	56.3	4.2	7.7	1.8	50.1	4.5	25.6	6.0	8.6	2.7	16.9	3.1	53.4	1.3	218.6	3.5
2003	57.3	1.8	7.8	1.0	52.2	4.2	26.3	3.0	8.5	(1.2)	16.8	(0.9)	53.5	0.3	222.4	1.8
2004	57.9	1.0	7.4	(4.9)	52.0	(0.4)	27.4	4.2	8.7	2.7	17.1	2.2	53.8	0.5	224.4	0.9
2005	61.5	6.3	6.6	(11.7)	53.0	1.8	27.8	1.4	8.8	1.2	17.6	2.9	55.8	3.7	231.1	3.0
2006	69.2	12.5	7.0	7.3	56.6	7.0	28.6	3.0	8.8	(0.5)	19.6	11.2	60.4	8.3	250.3	8.3
2007	74.2	7.1	7.5	5.9	59.9	5.7	30.2	5.3	9.0	2.9	20.5	4.4	63.5	5.2	264.7	5.7
2008	76.9	3.8	7.6	1.2	62.8	4.9	31.0	2.7	9.7	7.6	21.3	3.8	64.0	0.6	273.2	3.2

Note: Where indicated, AAPC denotes average annual percent change.
Source: U.S. Department of Commerce



In 2006, most parishes showed significant increases in employment, following Hurricanes Katrina and Rita. Ascension and St. John the Baptist Parishes led the study area, at this time, with employment growth of 12.5 and 11.2 percent, respectively, over 2005. After a significant decline in employment of 11.7 percent in 2005, most likely due to the closure of some oil refineries as a result of the hurricane damage, Assumption Parish also showed significant employment growth of 7.3 percent in 2006. Only employment in St. James Parish decreased after the 2005 hurricane season. Study-area employment grew 8.3 percent. This may be due to the absorption of the population displaced by hurricanes Katrina and Rita, into the local economy, and a boost in government spending at a regional level. As was observed with respect to population growth, this short-term boost resulted in greater-than-anticipated levels of total regional employment. Had employment continued to grow at rates prior to the 2005 hurricane season, it is likely that total employment would not have reached the levels observed in 2006 until 2009.

Current parish-level employment data is available only through 2008. However, the impact of the recent recession on employment growth is still evident. With the exception of St. James Parish, all parishes saw declines in growth rates of between 0.3 and 8.7 percent. That being said, all parishes continued to add jobs in 2008, with a regional average growth rate of 3.2 percent over 2007. As is the case with earlier population forecasts, employment projections remained on track through 2008. While forecasts certainly did not foresee the 2005 hurricane season and the subsequent recession, the two events served to cancel one another out, resulting in an average annual growth rate of approximately 5.0 percent, for the study area, between 2004 and 2008.

PROJECTED SOCIOECONOMIC GROWTH

The following section presents forecast population and employment data for the seven parishes in the study area. The intent of this review is to determine how long-term growth forecasts have been adjusted, in the intervening years, between the previous and current study. These forecasts are a critical input into long-term growth assumptions regarding overall regional travel demand and the ability and willingness of motorists to pay to use a tolled facility. Two principal sources of population and employment forecasts were reviewed: Woods and Poole Economics, Inc. and the Louisiana Population Data Center at Louisiana State University. Woods and Poole data was used as a primary source, in the 2006 report, for both population and employment and has been updated to provide a direct comparison between the assumptions that were used in the previous and the current forecast. The change between the previous and current W&P forecasts will be used to adjust travel demand growth assumptions on a parish-by-parish basis should such changes be material and warranted. Due to the important nature of the future growth forecasts and the significant impact that growth has on overall traffic and toll revenue forecasts, population forecasts from the Louisiana State University population data center were reviewed, as a supplement to the W&P data. This data set was chosen due to the more localized nature of LSU's forecast and knowledge of the region. However, this is included as an additional source of data only, and is not considered to be any more or less authoritative than the Woods and Poole data. LSU does not offer employment forecasts beyond 2018, and Woods and Poole is currently the most credible resource providing employment data at this level of specificity, for the timeframe required.

A summary of forecast socioeconomic data is presented in Table 7. An analysis of the forecast data indicates strong near-term growth, following the recession, in line with or in excess of pre-recession growth rates. The most rapid growth is anticipated in Ascension, St. Charles, and St. Jon Parishes. As indicated, the LSU forecasts are considerably more aggressive, with respect to these parishes, and range from between 1.1 to 5.1 percent in excess of the Woods and Pole forecasts with the notable exception of Terrebonne Parish, where LSU is forecasting an 8.8 percent increase in population as opposed to the Woods and Poole forecast of 0.0 percent for 2010. In light of the economic performance, at a national and regional level, for the first half of 2010, growth is unlikely to reach the levels anticipated by LSU forecasters this year. Conversely, LSU is projecting a steady loss of population in Assumption Parish and St. James Parish (beginning in 2015) while Woods and Poole is projecting flat to slightly-positive growth. Overall, the LSU forecast is projecting a 4.2 percent increase in population, for the study area in 2010, in contrast to the more conservative 0.9 percent forecast by Woods and Poole. However, both forecasts are in close agreement, beginning in 2015 and ending in 2030 (the last year for which LSU provides data) with growth rates of close to 1.0 percent annually, for the remainder of the forecast. Another notable point, upon which both forecast agree, is the substantial and sustained population growth estimates for Ascension Parish.

Employment forecasts by Woods and Poole Economics, Inc. indicate that employment growth will continue to lag any recovery from the recent recession, with an estimated decrease in total study area employment for 2010 of -0.3 percent. The largest decreases are forecast for Ascension, Assumption, and St. James Parishes while employment in St. Charles and Terrebonne Parishes are expected to be slightly positive. After 2010, employment trends observed prior to Hurricanes Katrina and Rita and the housing market bubble are expected to resume, with an increase in study area employment of roughly 1.4 percent per year until 2030. This is slightly greater than the Woods and Poole forecast for statewide employment growth of 1.2 percent and less than the Louisiana State University forecast of 2.1 percent growth in statewide employment through 2018. LSU does not offer longer-term or localized employment statistics. Woods and Poole estimates relatively stable and sustained employment growth beginning in 2015 and continuing through 2040 with Ascension Parish leading the region at between 2.1 and 2.3 percent per year. Total study-area employment growth is expected to proceed at between 1.4 and 1.5 percent per year, for the remainder of the 30-year forecast period. Note that none of these forecasts include the potential environmental and economic impacts of the April 20, 2010 Deepwater Horizon oil spill. The long-term effects of the oil spill, on the study area, and Gulf Coast region in general, are still uncertain and have not been included in this report.

Table 7
Projected Population and Employment by Parish
(thousands)

Population (LSU Forecast)

	Ascension		Assumption		Lafourche		St. Charles		St. James		St. John		Terrebonne		Study Area	
Year	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC
2009 (1)	104.8		22.9		93.7		51.6		21.1		47.1		109.3		450.4	
2010	109.0	4.0	22.9	(0.1)	93.7	0.1	53.8	4.2	21.4	1.7	49.8	5.8	118.9	8.8	469.5	4.2
2015	127.3	3.1	22.4	(0.4)	95.2	0.3	56.1	0.8	21.2	(0.2)	53.5	1.5	122.6	0.6	498.2	1.2
2020	147.7	3.0	21.8	(0.5)	96.0	0.2	57.9	0.7	20.8	(0.4)	57.4	1.4	124.4	0.3	526.2	1.1
2025	170.8	2.9	21.1	(0.6)	96.3	0.1	59.5	0.5	20.3	(0.5)	61.3	1.3	125.1	0.1	554.5	1.1
2030	196.1	2.8	20.3	(0.9)	96.0	(0.1)	60.6	0.3	19.7	(0.6)	65.1	1.2	125.2	0.0	583.0	1.0

Population (Woods and Poole Forecast)

	Ascension		Assumption		Lafourche		St. Charles		St. James		St. John		Terrebonne		Study Area	
Year	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC
2009 (1)	104.8		22.9		93.7		51.6		21.1		47.1		109.3		450.4	
2010	107.9	2.9	23.1	0.9	93.4	(0.3)	52.4	1.5	21.2	0.6	47.4	0.6	109.3	(0.0)	454.6	0.9
2015	123.3	2.7	23.6	0.4	95.5	0.5	54.6	0.8	21.1	(0.1)	48.4	0.4	111.2	0.4	477.7	1.0
2020	138.8	2.4	24.1	0.5	97.9	0.5	57.0	0.8	21.0	(0.0)	49.6	0.5	113.4	0.4	501.8	1.0
2025	154.5	2.2	24.7	0.5	100.3	0.5	59.4	0.8	21.0	0.0	50.8	0.5	115.8	0.4	526.4	1.0
2030	170.3	2.0	25.2	0.5	102.9	0.5	61.8	0.8	21.0	0.0	52.0	0.5	118.2	0.4	551.4	0.9
2040	202.0	1.7	26.4	0.4	108.2	0.5	66.7	0.8	21.1	0.0	54.6	0.5	123.3	0.4	602.2	0.9

Employment (Woods and Poole)

	Ascension		Assumption		Lafourche		St. Charles		St. James		St. John		Terrebonne		Study Area	
Year	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC
2008 (2)	76.9		7.6		62.8		31.0		9.7		21.3		64.0		273.2	
2010	74.7	(1.5)	7.4	(0.9)	62.3	(0.4)	31.6	1.0	9.4	(1.7)	21.3	0.0	65.7	1.3	272.4	(0.3)
2015	82.9	2.1	7.7	0.7	67.8	1.7	33.5	1.2	9.8	0.9	22.1	0.7	68.6	0.9	292.3	1.4
2020	92.1	2.1	7.9	0.7	73.5	1.7	35.4	1.1	10.2	0.8	22.9	0.7	71.6	0.8	313.7	1.4
2025	102.6	2.2	8.3	0.8	79.7	1.6	37.4	1.1	10.6	0.8	23.6	0.7	74.5	0.8	336.8	1.4
2030	114.6	2.2	8.7	0.9	86.2	1.6	39.5	1.1	11.1	0.8	24.4	0.6	77.4	0.8	361.8	1.4
2040	143.6	2.3	9.6	1.0	100.3	1.5	43.8	1.0	11.8	0.7	25.9	0.6	83.3	0.7	418.3	1.5

Note: Where indicated, AAPC denotes average annual percent change.
(1) 2009 population figures are actual, as provided by the U.S. Census Bureau.
(2) 2008 employment figures are actual, as provided by the U.S. Department of Commerce.
Source: Louisiana State University and Woods and Poole Economics, Inc.

CHANGES IN SOCIOECONOMIC DATA SINCE PREVIOUS STUDY

Table 8 presents a comparison of the 20-year population and employment growth rates between 2010 and 2030 (the last year for which all data sets are available). Forecast data is provided for the current and previous Woods and Poole data sets, as well as LSU population forecasts. As previously noted, the LSU employment forecasts are only provided for statewide employment and for an 8-year period and are not sufficient for use in this portion of the study. This comparison not only provides for updated growth rates, but insight into how and where projected growth has changed. This information was used to update travel demand modeling results and growth assumptions present in the financial (transaction and toll revenue) model.

As indicated, differences between the 2005 Woods and Poole forecast and the 2009 forecast are relatively minor when extended to a 20-year period. The largest changes, in forecast growth rates, occur in Ascension Parish, where growth is expected to occur at an annual rate approximately 0.6 percent in excess of the previous forecast. Growth rates for all remaining parishes have remained consistent with the 2005 forecast or have been revised slightly downward. The LSU forecast is slightly more aggressive with respect to Ascension Parish, forecasting nearly twice the annual growth projected in the 2005 Woods and Poole data and approximately 0.7 percent sooner than the current Woods and Pole forecast. Where Woods and Poole is forecasting slightly positive to flat growth in Assumption and St. James Parishes, LSU is forecasting population losses of -0.6 and -0.4 percent, respectively. The remaining parish forecasts are consistently lower than the Woods and Poole forecast annual growth rates, with the exception of St. John Parish, where growth is 0.7 percent per year higher. Overall, the regional growth forecasts are very similar. The 2009 Woods and Pool data forecasts an average annual growth rate approximately 0.2 percent greater than the previous study, while the LSU annual growth forecast for the same area is just 0.1 percent greater than the most current Woods and Poole data. While this may not seem like much, the disparity in growth rates compounds annually. The incorporation of the revised growth rates will be discussed in the methodology section of this document.

Table 8
Comparison of Average Annual Percent Growth Rates
Between 2010 and 2030

	Population Forecasts			Employment Forecasts	
Parish	**Woods and Poole (published 2005)**	**Woods and Poole (published 2009)**	**Louisiana State University**	**Woods and Poole (published 2005)**	**Woods and Poole (published 2009)**
Ascension	1.7%	2.3%	3.0%	1.7%	2.2%
Assumption	0.4	0.4	(0.6)	0.7	0.8
Lafourche	0.5	0.5	0.1	1.0	1.6
St. Charles	1.0	0.8	0.6	1.0	1.1
St. James	0.1	(0.0)	(0.4)	0.3	0.8
St. John	0.6	0.5	1.3	1.0	0.7
Terrebonne	0.5	0.4	0.3	1.0	0.8
Study Area	**0.8**	**1.0**	**1.1**	**1.2**	**1.4**

With respect to employment growth, a comparison of the 2005 Woods and Poole data to the 2009 values shows employment growth eventually outpacing population growth. As indicated in Table 7, while regional employment is expected to decline in 2010 and subsequent growth rates are lower, future growth is more consistent and sustained. By 2030, all parishes are increasing employment at rates greater then population growth. In some cases, employment growth is two to three times greater than comparable population numbers. As such, overall regional employment growth eventually exceeds population growth. However, the difference between the 2005 and 2009 published forecasts is relatively minor, with a few notable exceptions. Like the revised population growth statistics, the revised Woods and Poole employment growth forecast for Ascension Parish is approximately 0.5 percent greater than under the previous study. Where forecast population growth rates for Assumption, Lafourche, and St. Charles and St. James Parishes were reduced from the previous study, forecast annual employment growth for the same parishes are 0.1 to 0.6 percent higher, under the revised growth forecast. Only St. Johns and Terrebonne Parishes had growth rates that were revised downward. Across the seven-parish study area, the average annual percent growth rate for employment was increased by 0.2 percent. The manner in which these changes were incorporated into the revised forecast will be discussed in greater detail in the methodology section of this document.

FORECASTING METHODOLOGY AND ASSUMPTIONS

Travel demand modeling performed for the 2006 study was performed using a modified and enhanced version of the Louisiana Statewide Model (LaSTM). The overall forecasting methodology, used in this update, is essentially identical to that used in the 2006 study, with a few notable changes. The following is a brief overview of the methodology employed in both the current and previous study followed by a review of basic assumptions and changes/updates in methodology. For a detailed discussion of model development and methodology, see the original 2006 preliminary toll study pages 4-1 through 4-7 attached as Appendix A.

Major refinements of the LaSTM included the extraction of a sub-area network to allow greater focus on the study area, as well as enhancement and refinement of the zonal and network system. Since the LaSTM was developed primarily to address statewide movements, localized movements and traffic, on smaller state and parish routes, were not necessarily represented with any great detail. Following the sub-area extraction, the large-zone system developed for the LaSTM was disaggregated into a larger number of smaller zones. Because many local roads and smaller highways were not represented, this detailed was coded into the model, paying specific attention to the routes that would directly contribute to, or compete with, the proposed project alignments. Lastly, socioeconomic data sets were developed for the new zonal system. Once completed, the refined model was calibrated to 2010 traffic counts and tested to ensure an accurate representation of regional travel demand and travel patterns. With a baseline, no-build model developed and properly calibrated, the proposed project alignments were coded into the model and the WSA tolling methodology applied.

In preparation for use of the model in the study update, several refinements and revisions needed to be made. The following is a brief description of each step taken in the model refinement process as well as a record of data sources where relevant:

Calibration – The previous revision of the model had been calibrated to 2000 traffic counts. For this update, counts for key stations were updated with current SCPDC TCDS traffic data with most values being current within the last two years. Additional counts, provided by Urban Systems, were incorporated into the modeling process as well. Network attributes were adjusted, as needed, to achieve proper calibration against current counts. The focus of the network calibration was also broadened to account for the introduction of the fourth alignment in the western region of the model area.

Network Refinement – As indicated, the addition of the fourth alignment in the western region of the model area required additional refinements. Aside from the coding of the alignment itself, the location of the alignment, at such a distance from the original three, essentially opened up a second study corridor. While additional detail had been added to the model, to address the needs of the original corridor, the western area of the model was relatively sparse. New links, representing the local road network, were added, as were centroid connectors, to allow for movement between zone pairs and the refined transportation network. All other coding from the previous iteration of the model was retained.

Updated Cost Functions – Both value of time (VOT) and vehicle operating cost (VOC) are critical components in determining the cost of a trip and a deciding factor in how trips will be routed. VOT data is based on personal and household income statistics from the Economic Census. Since the 2000 Economic Census data is still the most current source, VOT was updated by inflating the value used in the 2006 study by the CPI for the South Urban area. VOC was updated to reflect AAA's 2010 edition of its driving cost estimates.

Scripting and Toll Modeling – All model scripts were rewritten to take advantage of updates in the Cube/Voyager modeling package that were made since the completion of the previous study. In addition, the latest WSA tolling methodologies were applied. To ensure results consistent with the 2006 modeling effort, toll sensitivity tests were run for all three original alignments. This also served to confirm that the toll rates selected in the preliminary T&R study were still valid.

Miscellaneous Refinements – A review of recent traffic counts found a higher proportion of weekend to weekday traffic. As a result, the annualization factor used to develop annual traffic and toll revenue, from the average weekday model output, was increased by approximately 10 days. The resulting 10 additional days of operations increases annual traffic and toll revenues by approximately 3.1 percent.

With respect to the base forecast assumptions, all assumptions made in the 2006 preliminary toll study have been retained with the following exceptions:

- Regardless of which facility is ultimately selected, the opening year is now assumed to be 2022.
- The impacts of the 2005 hurricane season have been included. This event was expressly excluded from the previous study.
- While assumptions regarding the proposed conversion of US 90 to Louisiana I-49 South were not adjusted, this was found to be immaterial from a modeling standpoint. The inclusion of the project had no significant impact on projected traffic volumes on any of the four proposed alternatives.

TRANSACTION AND TOLL REVENUE FORECAST

The following section presents the findings of the toll revenue forecasts for the four preferred toll alternatives, including a review of the general tolling concepts, configuration, toll sensitivity, and annualized traffic and gross toll revenue streams for a 30-year period.

Specific tolling locations for all three original alignments were retained from the 2006 study and are illustrated in Figure 3. An additional tolling concept was developed for the fourth, westernmost alignment based on the same fixed-barrier tolling approach. As indicated in the 2006 report, a fixed barrier system was chosen for its simplicity and to minimize potential delay for toll facility patrons. Nominal per-mile rates of $0.05, $0.10, $0.15, and $0.20 were retained from the previous study and applied as a multiple of the total distance between two tolling locations. However, because rates are rounded to the nearest $0.25 for the sake of simplifying operations and revenue collections, rates do not adhere to a strict per-mile formula. Rates and tolling locations for each alternative are illustrated in Figures 4 through 7. For a complete discussion of toll concept development, please see pages 5-3 through 5-4 in the 2006 report, attached as Appendix A.

TOLL SENSITIVITY ANALYSIS

Following the development of a tolling concept for the fourth alignment, a full toll sensitivity analysis was conducted. While toll sensitivity had been established in the 2006 report, it was important to ensure that none of the changes or enhancements implemented, in this study update, had altered toll sensitivity. All four rates, including a toll-free scenario, were run for each of the four scenarios. In the case of the original three alignments, toll sensitivity was largely unchanged. However, the change in opening year for 2015 to 2022 results in a higher traffic and revenue which is typically conducted for the first year of operations. This is purely a result of natural growth between what would have been expected in 2015 and what has been forecast for 2022 and does not affect actual forecast motorist response to various toll rates. Readers of this report may also notice a significant change in scale between the graphic representation of the toll sensitivity curves under the 2006 report and this current update. In our review of the 2006 report, WSA found that the scale applied to the toll sensitivity curve graphics was incorrect and has corrected this error. This error affects the visual representation of the curves only and did not have an effect on the traffic and toll revenue results. Revised curves are presented in Figures 8 through 11. As illustrated, the $0.10 per mile rate basis selected in the previous study was again identified as the recommended rate. While

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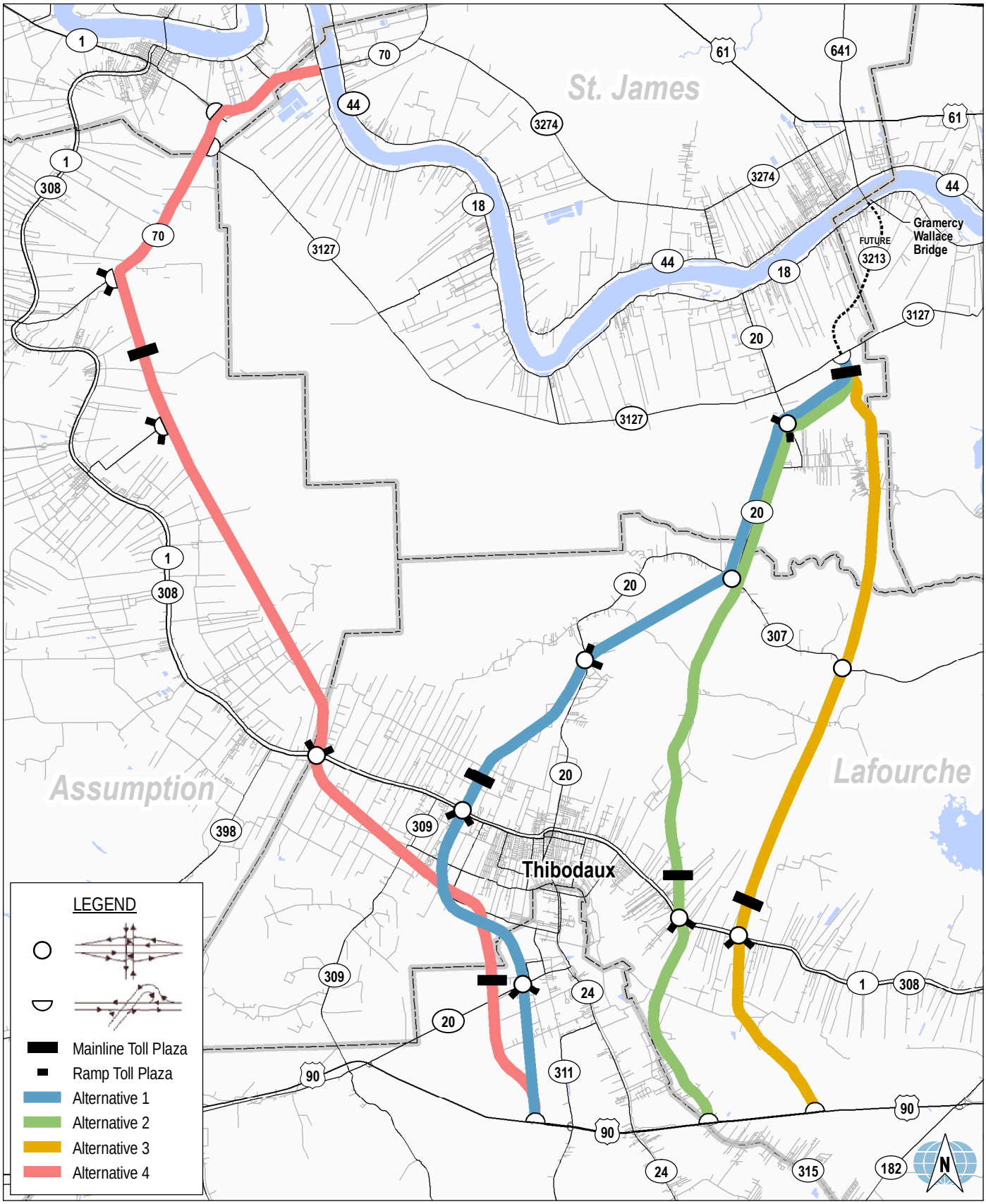
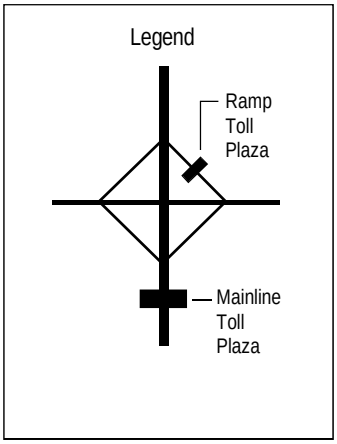
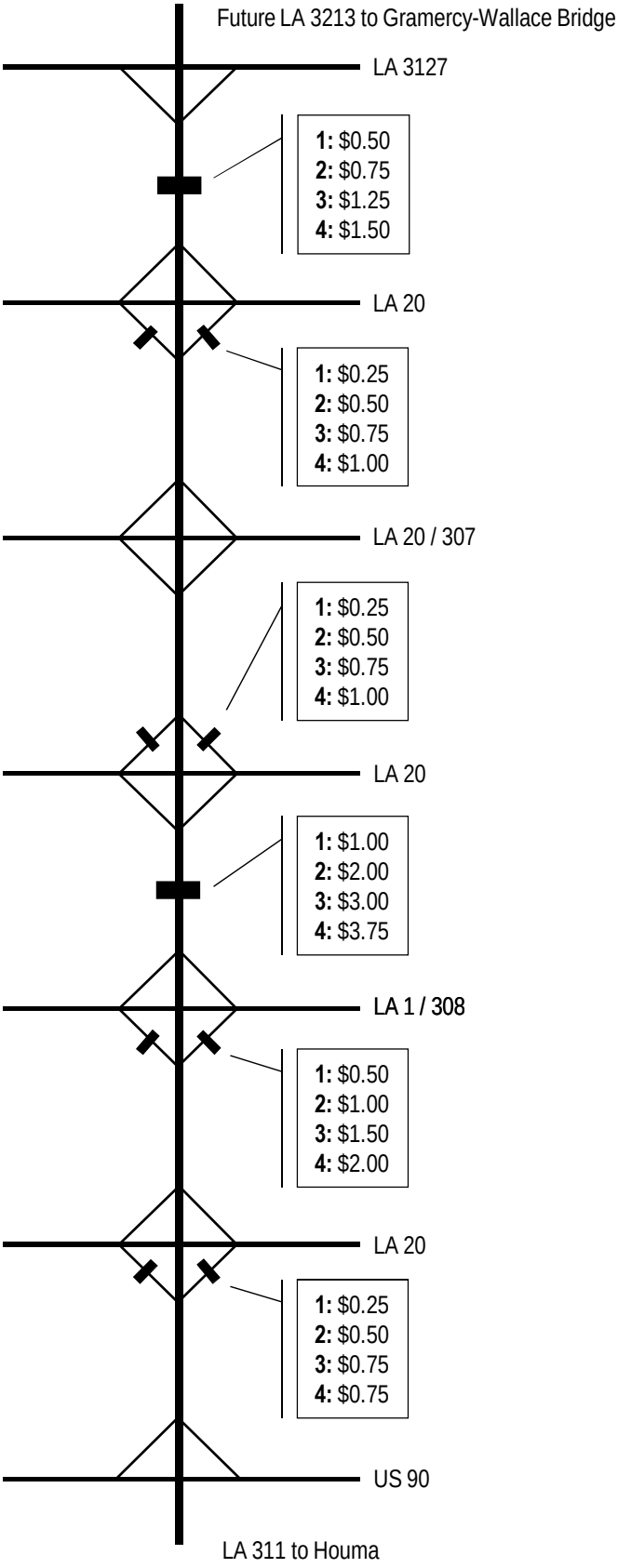


TOLLING AND ACCESS CONFIGURATION ALTERNATIVES 1-4

WilburSmith ASSOCIATES

FIGURE 3

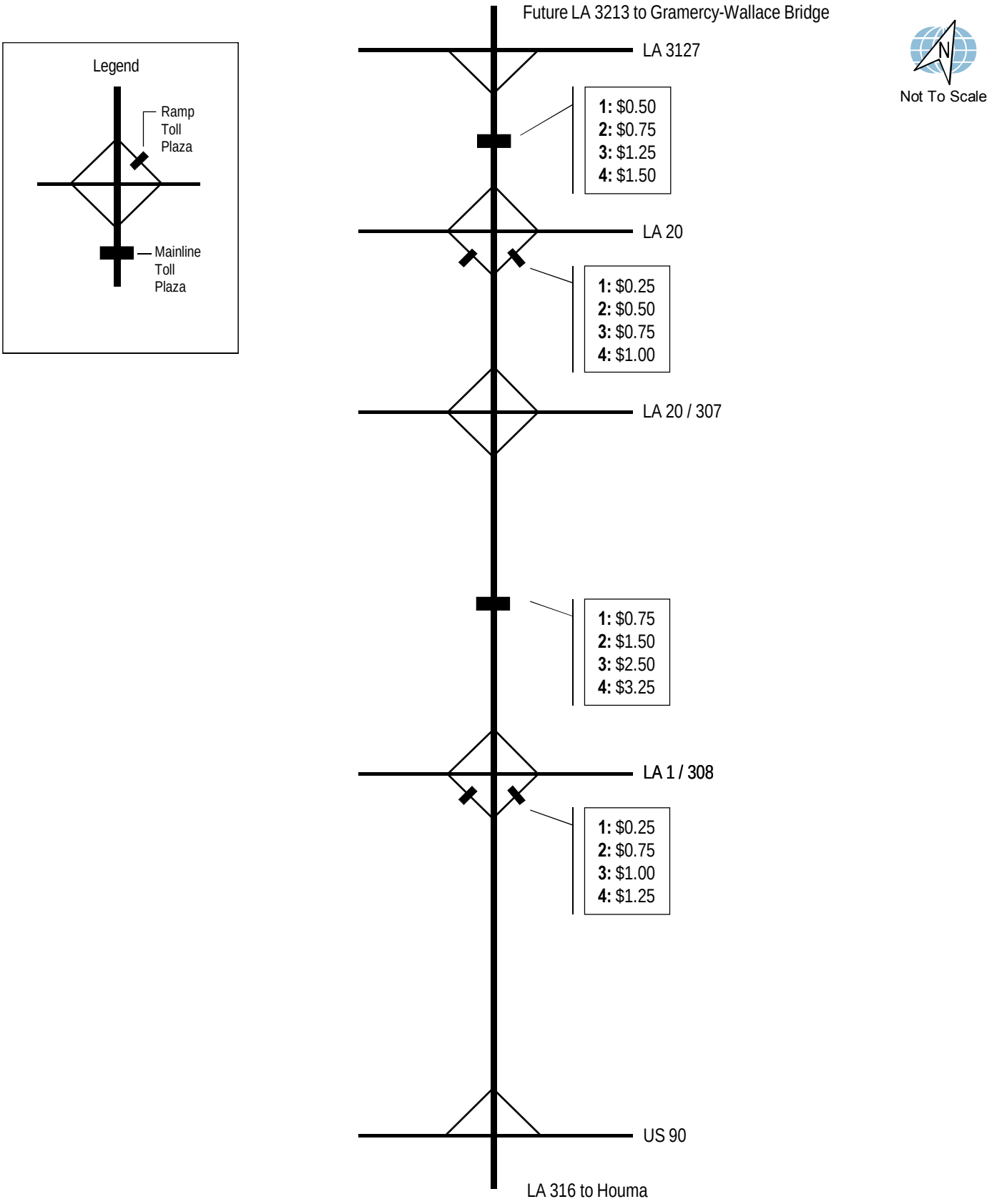




WilburSmith ASSOCIATES

TOLL RATE OPTIONS - ALTERNATIVE 1

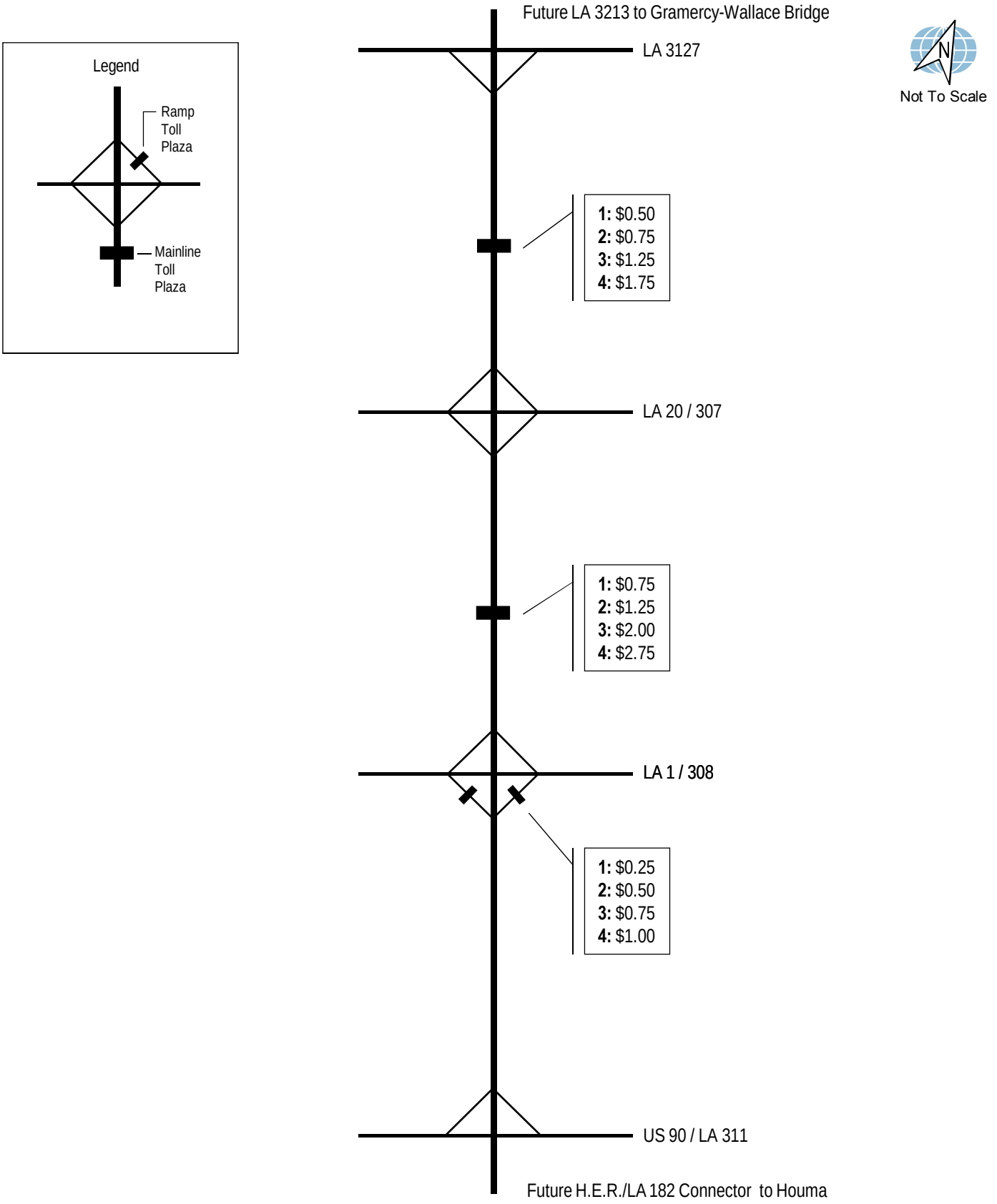
FIGURE 4



WilburSmith ASSOCIATES

TOLL RATE OPTIONS - ALTERNATIVE 2

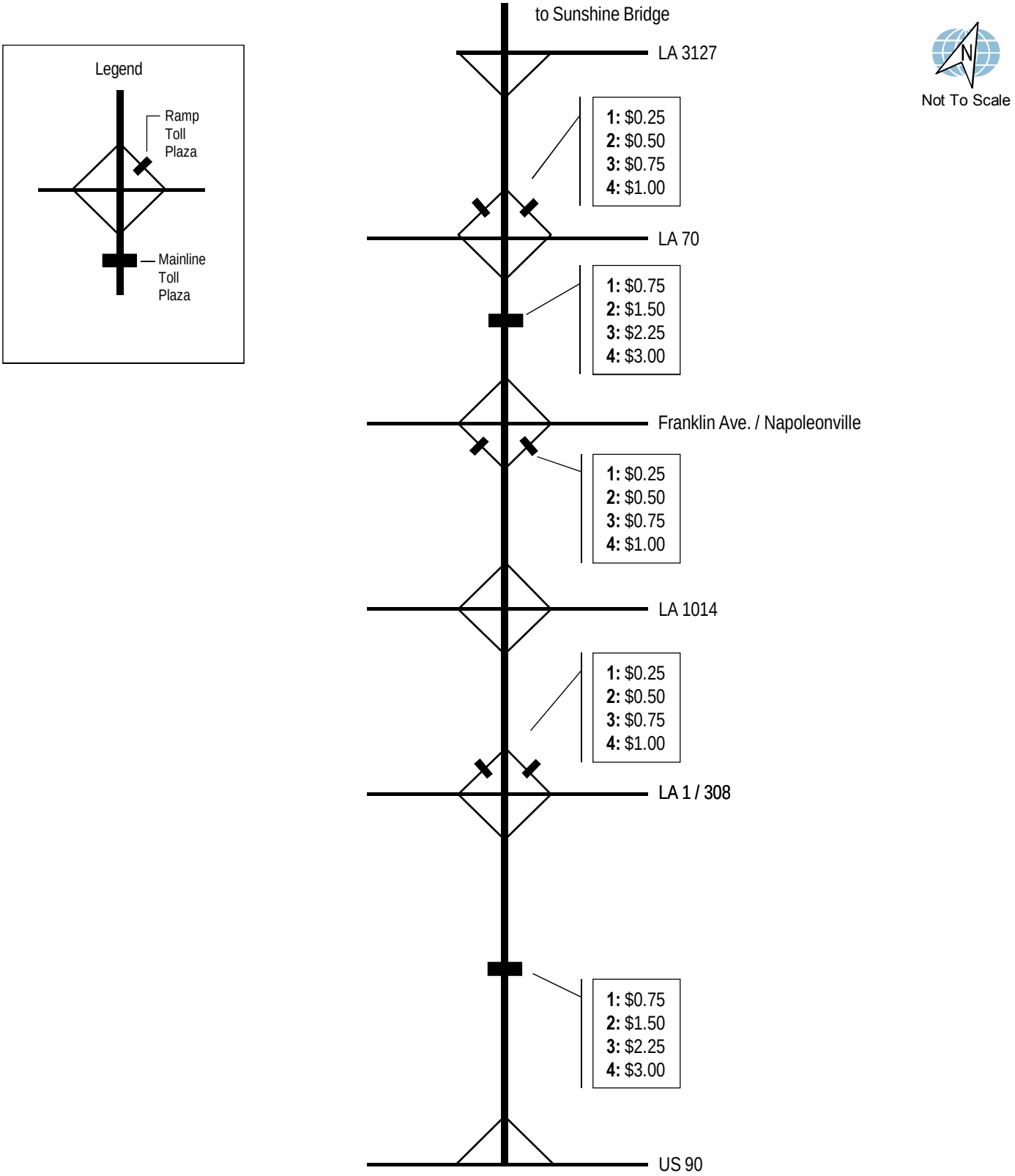
FIGURE 5



WilburSmith ASSOCIATES

TOLL RATE OPTIONS - ALTERNATIVE 3

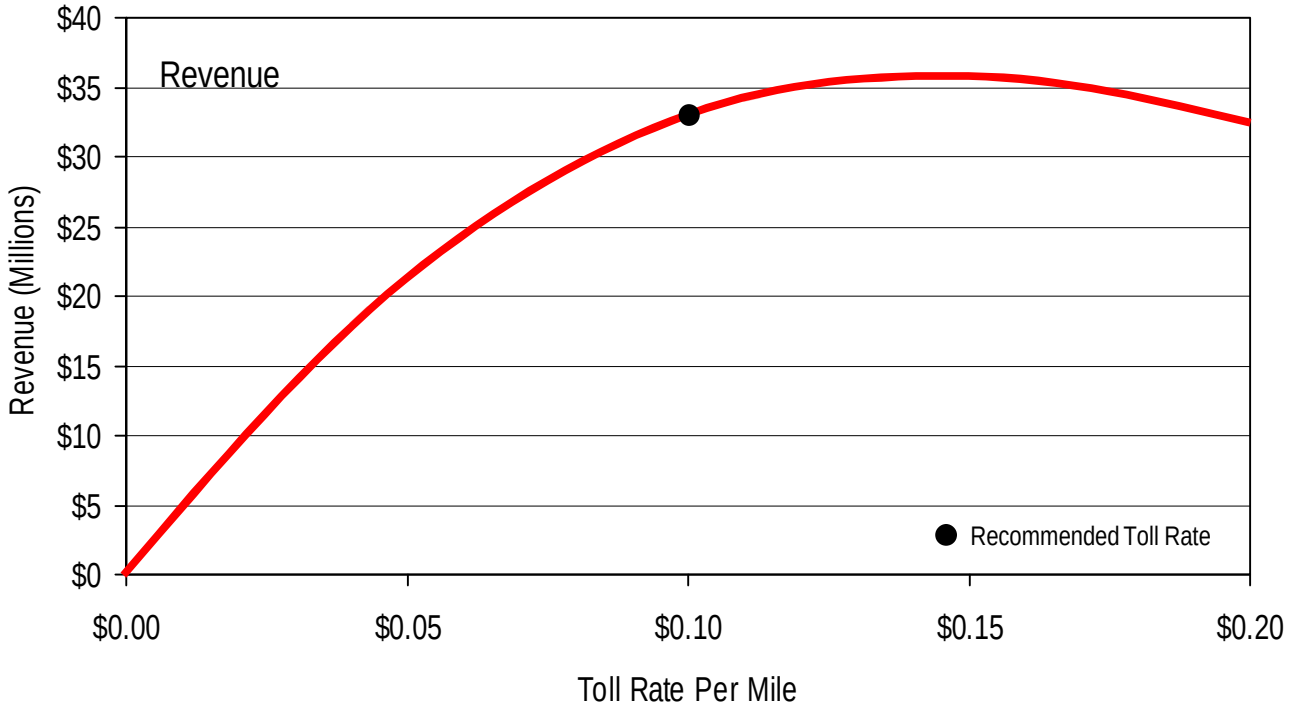
FIGURE 6

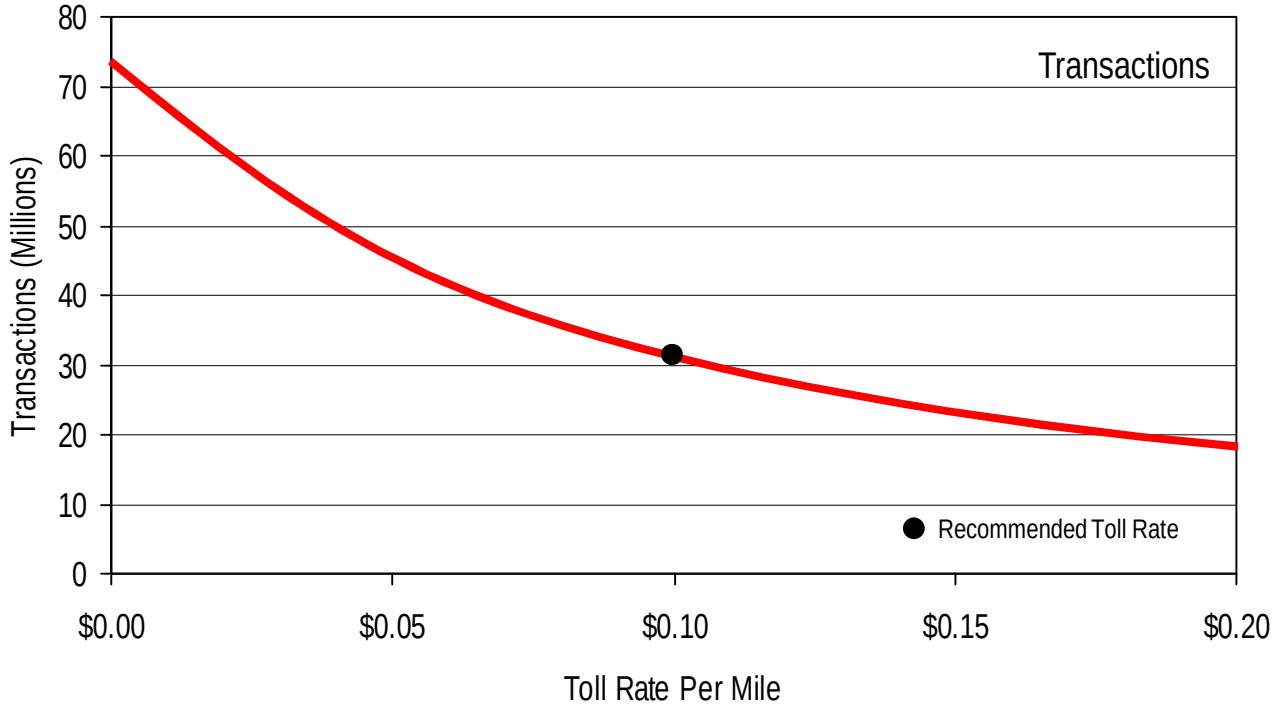


WilburSmith ASSOCIATES

TOLL RATE OPTIONS - ALTERNATIVE 4

FIGURE 7





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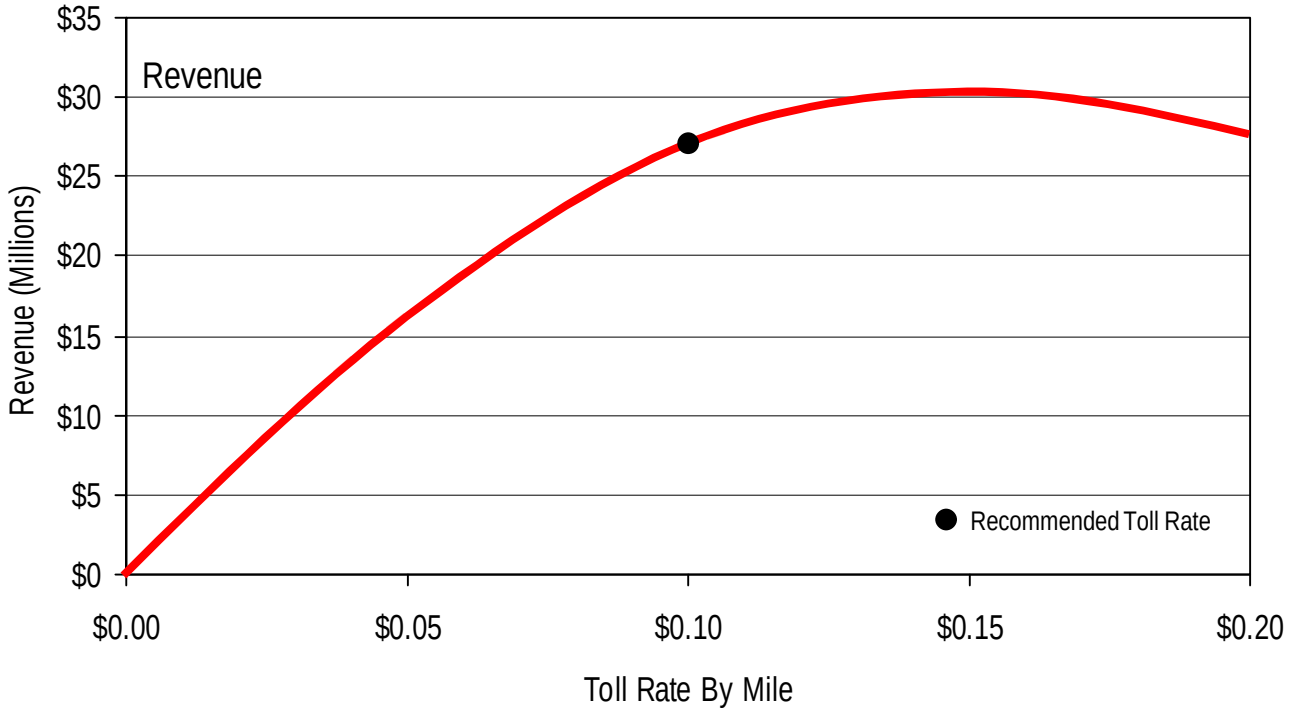
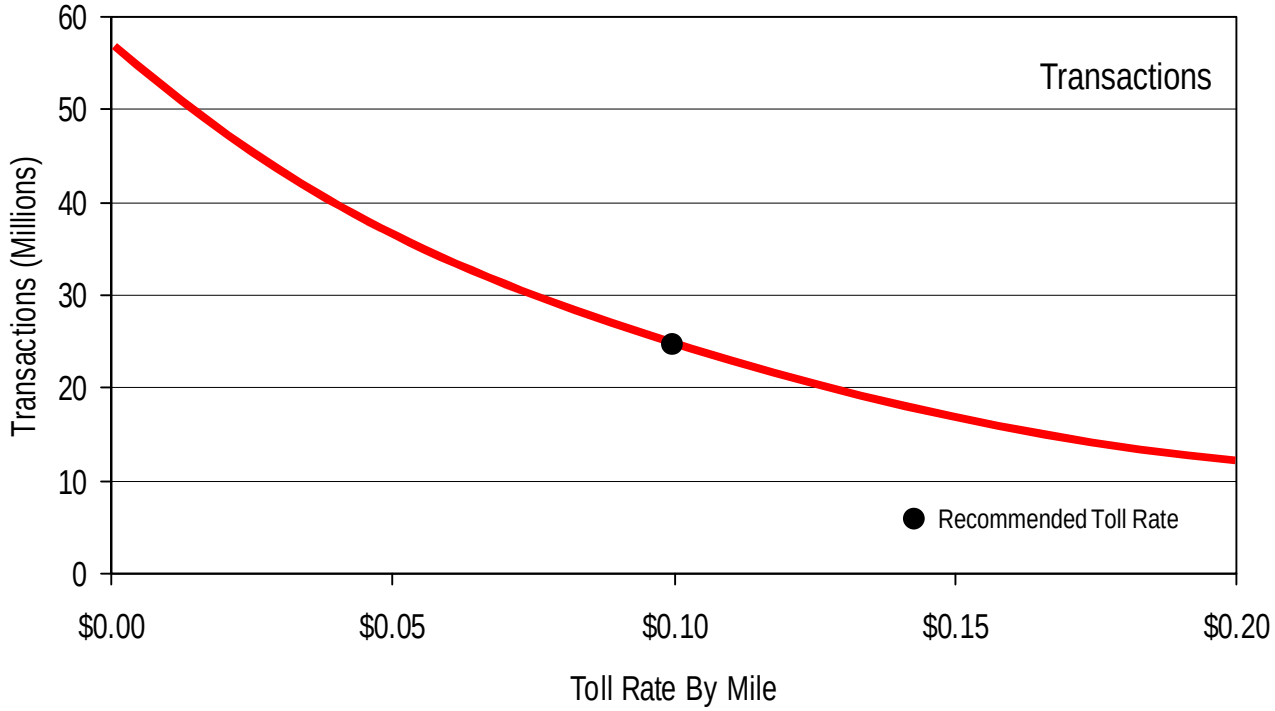
TOLL SENSITIVITY CURVES - ALTERNATIVE 1

FIGURE 8





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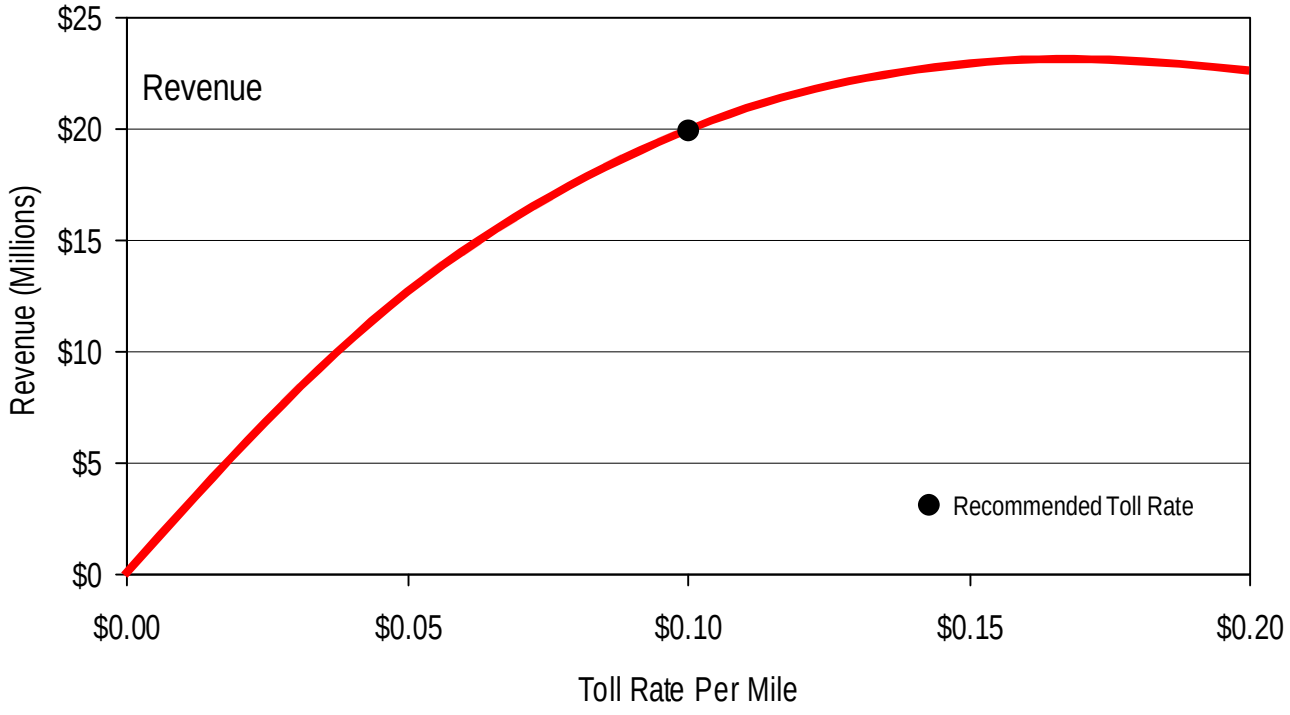
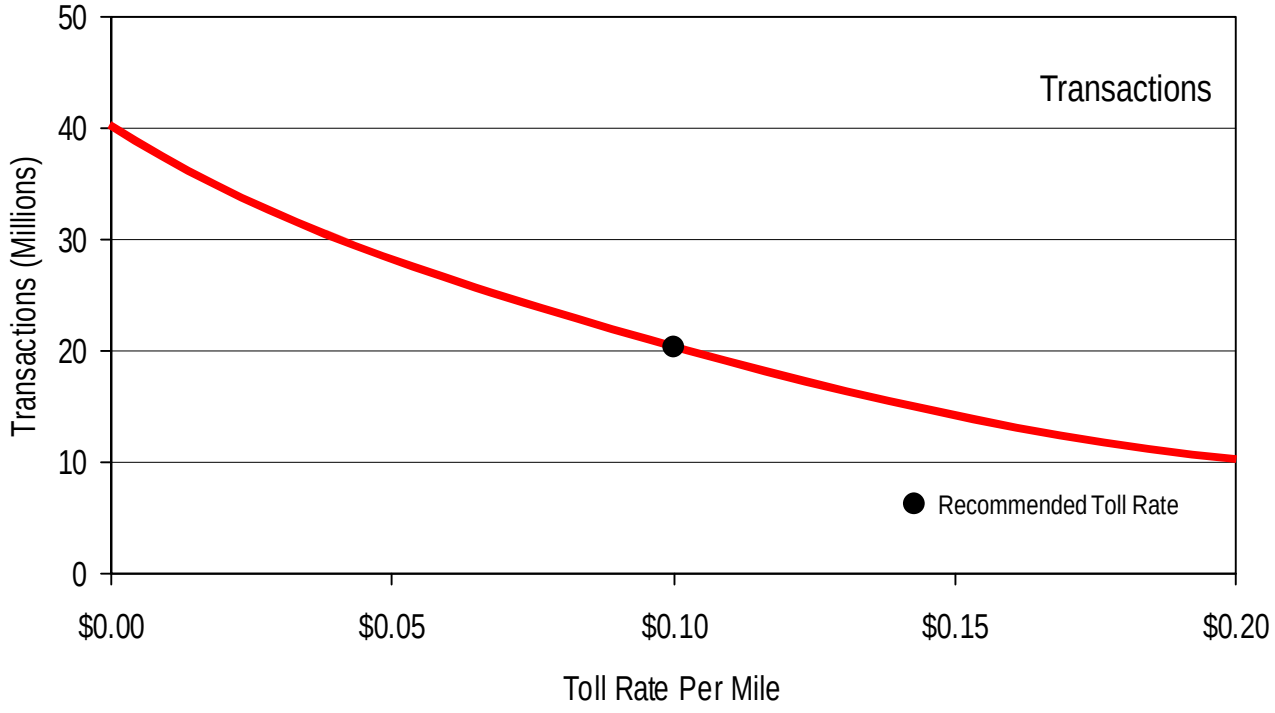
TOLL SENSITIVITY CURVES - ALTERNATIVE 2

FIGURE 9

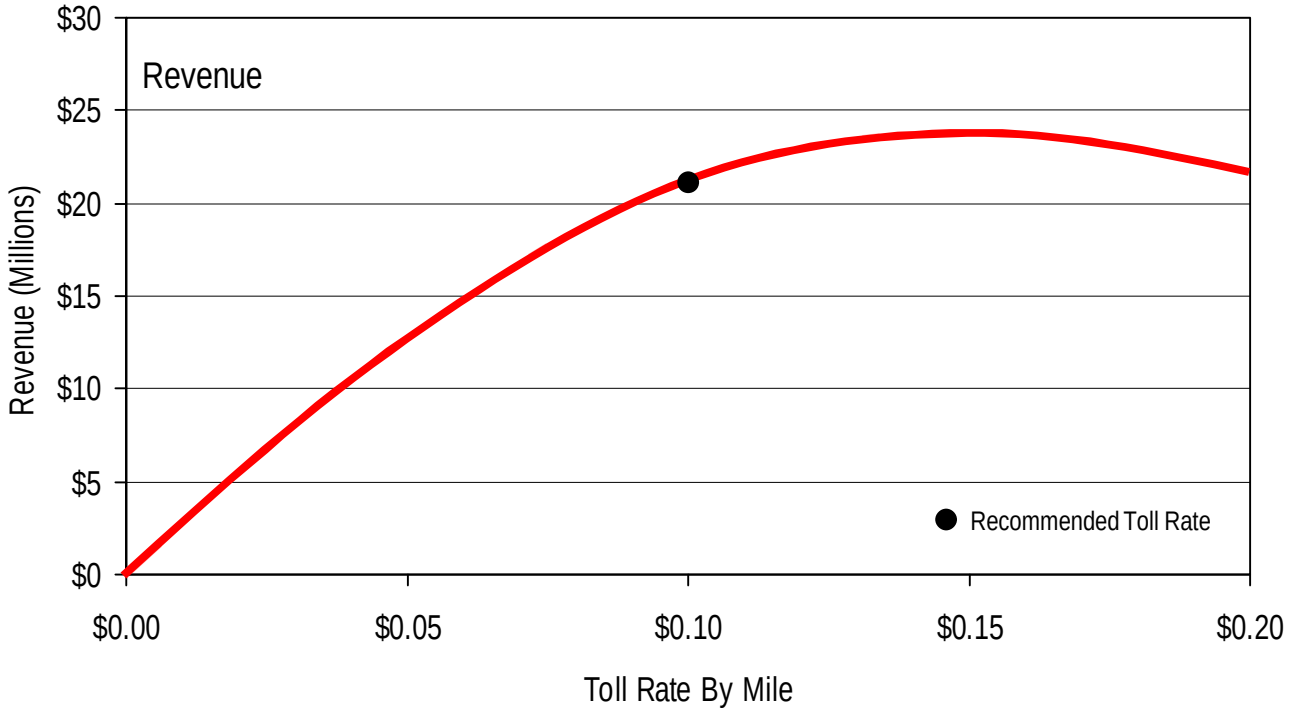


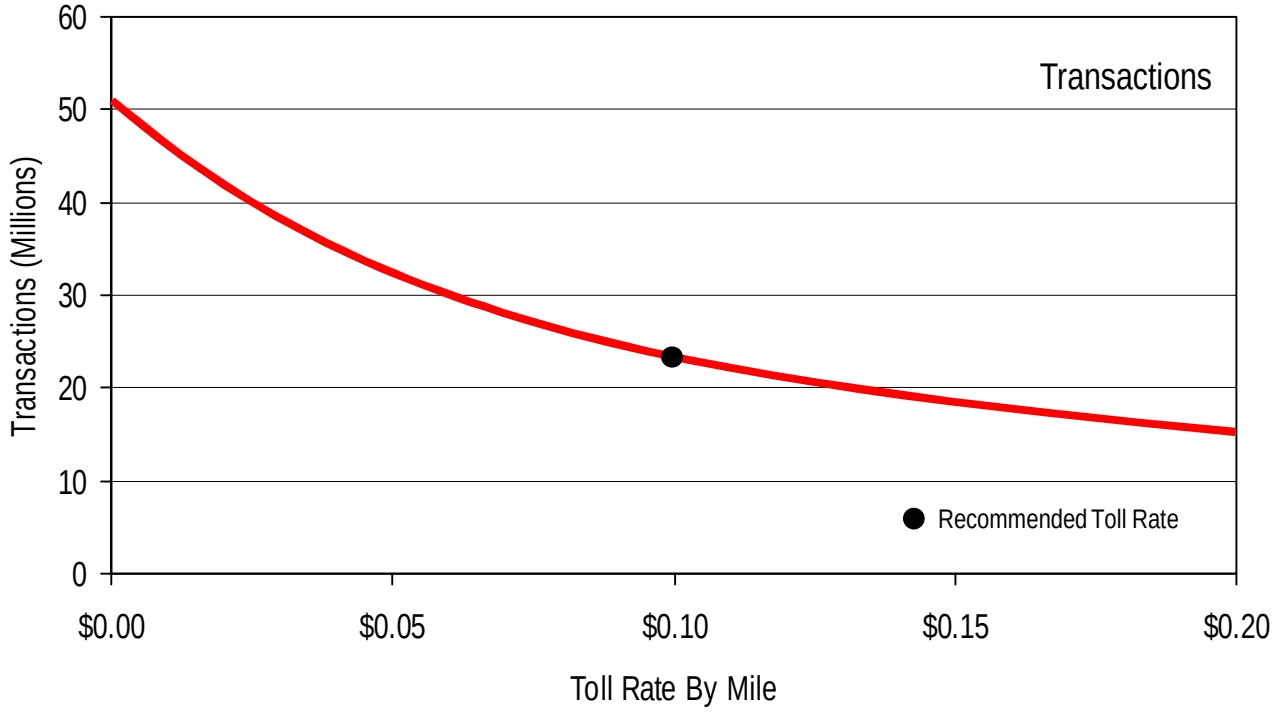


WilburSmith ASSOCIATES

TOLL SENSITIVITY CURVES - ALTERNATIVE 3

FIGURE 10





WilburSmith ASSOCIATES

TOLL SENSITIVITY CURVES - ALTERNATIVE 4

FIGURE 11

toll rates developed on a $0.15 per mile basis do generate additional revenue, the return is minimal and WSA typically recommends using rates one position lower on the curve. At $0.20 per mile and beyond, revenues begin to diminish.

TRAFFIC AND TOLL REVENUE

As indicated, all forecast assumptions were retained from the 2006 study, with the exception of the proposed facility's opening year, and the annualization factor used to adjust the average weekday model output to an annual traffic and toll revenue stream. For a complete list of assumptions, please see pages 5-6 and 5-6 of the 2006 preliminary toll study, attached as Appendix A. Traffic and toll revenue forecasts for the 2022 and 2032 model years are presented in Tables 9 through 12. Each table provides total transactions and toll revenues by mainline and ramp (interchange) plazas as well as the weekday total and annualized transactions and toll revenue. All 2022 values include an adjustment to account for initial facility ramp up. Ramp up is the term used to describe the time period during which motorist are becoming aware of, and familiar with, the benefits of the facility. During this time volumes are lower than would otherwise be predicted by the value of savings and overall travel demand. To account for ramp up, projected toll volumes are reduced by approximately 50 percent in the first year of operations, increasing exponentially to 100 percent after five years of operations—the same ramp up assumptions used in the 2006 preliminary toll study.

With respect to average daily transactions, traffic and toll revenues for Alternatives 1 through 3 are proportionally quite similar to the results published in the 2006 report. As previously discussed, while both the 2005 hurricane season and the recent economic recession have had substantial impacts on the project area, each event has had an opposing effect. Population and employment growth rates increased beyond previous projections because of deficiencies caused by businesses and persons displaced by the 2005 hurricane season. However, the recent economic recession had the opposite effect, retarding growth and eliminating some employment. The net result was a slightly positive effect on traffic and toll revenue forecasts, but the difference is not dramatic with one exception. Accelerated growth in Ascension Parish has resulted in a slightly increased demand for through trips and trips using the northern end of the project to access Ascension Parish and Baton Rouge. This has primarily benefited Alternative 4, presumably due to its more direct access to the area. The impact on other alternatives can be seen in the long-term growth rates, which are now slightly higher and sustained for a longer period of time.

Table 9
Average Weekday Transactions and Revenue
Alternative 1

	2022		2032	
Plaza	**Transactions**	**Revenue**	**Transactions**	**Revenue**
N.Mainline	4,900	$ 4,100	10,900	$ 9,000
LA 20 N of LA 643	1,100	600	2,400	1,300
LA 20 N of LA 308	2,600	1,400	5,900	3,300
S.Mainline	2,600	5,700	5,900	13,000
LA 1	3,400	3,800	7,600	8,400
LA 20 S of LA 1	1,500	800	3,500	1,900
Weekday Total	16,000	16,400	36,100	36,900
Annual Total	5,346,000	5,477,600	12,044,000	12,324,600

Table 10
Average Weekday Transactions and Revenue
Alternative 2

	2022		2032	
Plaza	**Transactions**	**Revenue**	**Transactions**	**Revenue**
N.Mainline	4,700	$ 3,900	10,500	$ 8,700
LA 20 (1)	900	500	2,200	1,200
S.Mainline	4,100	6,800	9,000	14,900
LA 1	3,000	2,500	6,500	5,400
Weekday Total	12,700	13,700	28,200	30,200
Annual Total	4,240,000	4,575,800	9,406,000	10,086,800

Table 11
Average Weekday Transactions and Revenue
Alternative 3

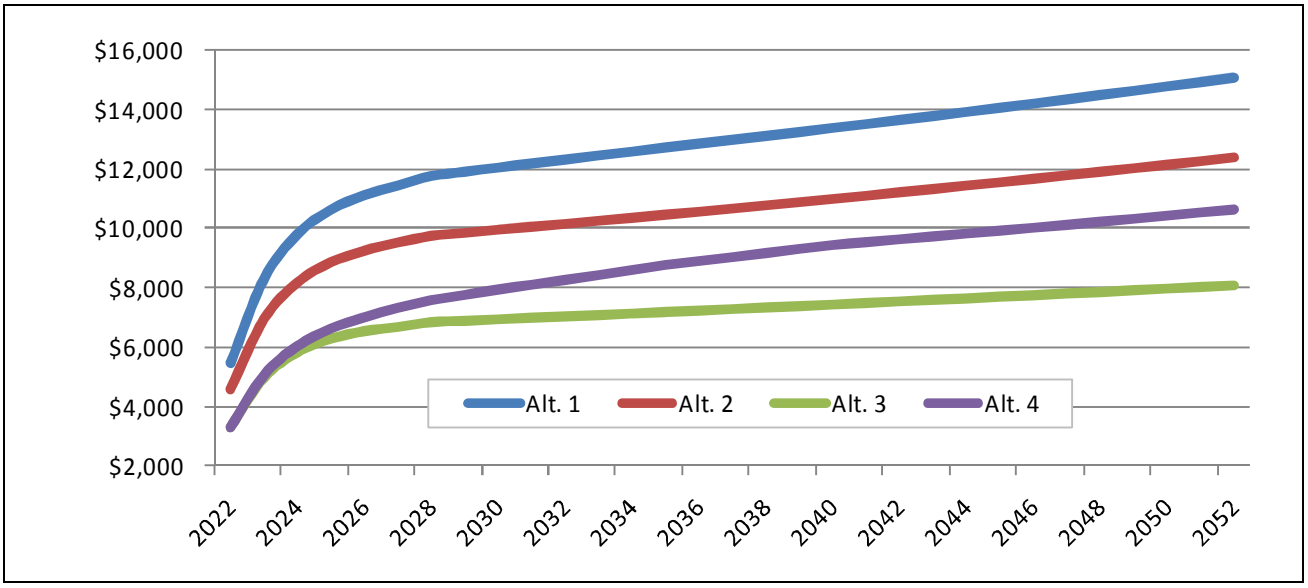
	2022		2032	
Plaza	**Transactions**	**Revenue**	**Transactions**	**Revenue**
N.Mainline	2,900	$ 2,400	6,300	$ 5,200
S.Mainline	4,100	5,700	8,800	12,100
LA 1	3,100	1,700	6,500	3,600
Weekday Total	10,100	9,800	21,600	20,900
Annual Total	3,368,000	3,273,200	7,227,000	6,980,600

Table 12
Average Weekday Transactions and Revenue
Alternative 4

	2022		2032	
Plaza	**Transactions**	**Revenue**	**Transactions**	**Revenue**
N.Mainline	1,700	$ 2,800	4,800	$ 7,952
S. Mainline	1,700	2,800	4,200	6,958
LA70	2,900	1,600	8,100	4,473
LA308	1,400	800	3,200	1,767
Franklin Ave. / Napoleonville	3,300	1,800	7,500	4,142
Weekday Total	11,000	9,800	27,800	25,291
Annual Total	3,686,000	3,273,200	9,272,000	8,447,138

Annualized traffic and toll revenue for 30 years for Alternatives 1 through 4 are illustrated in Figure 12. As indicated, Alternative 1 still produces the highest revenue for both the first year of operation and over the life of the forecast. Alternative 2 begins with revenues approximately 16.5 percent lower than Alternative 1, ending with annual revenue approximately 18.0 percent lower due to a slightly lower average annual growth rate. Alternatives 3 and 4 begin with identical revenues (a coincidence and not indicative of any shared attributes) approximately 40.2 percent lower than opening year revenues for Alterative 1. However, Alterative 4 maintains a higher growth rate than all other alignments, likely due to its more direct access to Ascension Parish and Baton Rouge. By 2052 revenues for Alterative Four are approximately 30.0 percent lower than Alternative 1.

Figure 12
30-Year Revenue Stream
(thousands)



The 30-year annualized traffic and toll revenue stream for all four alignments is presented in Table 13 and includes ramp up for the first five years of operation. Net present value of the 30-year revenue stream is presented at the bottom of each column.

Table 13
Annual Transactions and Toll Revenue
(thousands)

	Alt. 1		Alt. 2		Alt. 3		Alt. 4	
Year	**Trans.**	**Revenue**	**Trans.**	**Revenue**	**Trans.**	**Revenue**	**Trans.**	**Revenue**
2022	5,346	$ 5,478	4,240	$ 4,576	3,368	$ 3,273	3,686	$ 3,273
2023	8,117	8,317	6,427	6,936	5,088	4,945	5,662	5,028
2024	9,585	9,821	7,577	8,177	5,978	5,810	6,764	6,006
2025	10,396	10,652	8,204	8,854	6,450	6,268	7,421	6,590
2026	10,874	11,142	8,566	9,244	6,712	6,523	7,852	6,973
2027	11,197	11,473	8,818	9,516	6,865	6,672	8,218	7,298
2028	11,501	11,784	9,030	9,745	7,027	6,829	8,500	7,548
2029	11,641	11,928	9,124	9,847	7,077	6,878	8,704	7,729
2030	11,784	12,074	9,220	9,950	7,127	6,926	8,912	7,914
2031	11,913	12,206	9,312	10,049	7,177	6,975	9,091	8,073
2032	12,044	12,340	9,406	10,151	7,227	7,024	9,272	8,234
2033	12,177	12,477	9,500	10,252	7,278	7,073	9,458	8,399
2034	12,311	12,614	9,595	10,355	7,328	7,122	9,647	8,567
2035	12,446	12,752	9,691	10,459	7,380	7,172	9,840	8,738
2036	12,571	12,880	9,787	10,562	7,431	7,222	9,988	8,869
2037	12,696	13,009	9,885	10,668	7,483	7,272	10,137	9,002
2038	12,823	13,139	9,984	10,775	7,536	7,324	10,289	9,137
2039	12,952	13,271	10,084	10,883	7,589	7,375	10,444	9,274
2040	13,081	13,403	10,185	10,992	7,642	7,427	10,600	9,413
2041	13,212	13,537	10,287	11,102	7,695	7,478	10,706	9,507
2042	13,344	13,672	10,390	11,213	7,749	7,531	10,814	9,603
2043	13,477	13,809	10,493	11,324	7,803	7,583	10,922	9,699
2044	13,612	13,947	10,598	11,437	7,858	7,637	11,031	9,796
2045	13,748	14,086	10,704	11,552	7,913	7,690	11,141	9,893
2046	13,886	14,228	10,811	11,667	7,968	7,744	11,253	9,993
2047	14,025	14,370	10,920	11,785	8,024	7,798	11,365	10,092
2048	14,165	14,514	11,029	11,902	8,080	7,853	11,479	10,193
2049	14,307	14,659	11,139	12,021	8,137	7,908	11,594	10,296
2050	14,450	14,806	11,250	12,141	8,194	7,963	11,710	10,399
2051	14,594	14,953	11,363	12,263	8,251	8,019	11,827	10,502
2052	14,740	15,103	11,477	12,386	8,309	8,075	11,945	10,607
NPV(1)		**$243,542**		**$200,541**		**$137,230**		**$163,643**
CAGR(2)								
2022 -2027	15.9%	15.9%	15.8%	15.8%	15.3%	15.3%	17.4%	17.4%
2027 - 2037	1.26	1.26	1.15	1.15	0.87	0.87	2.12	2.12

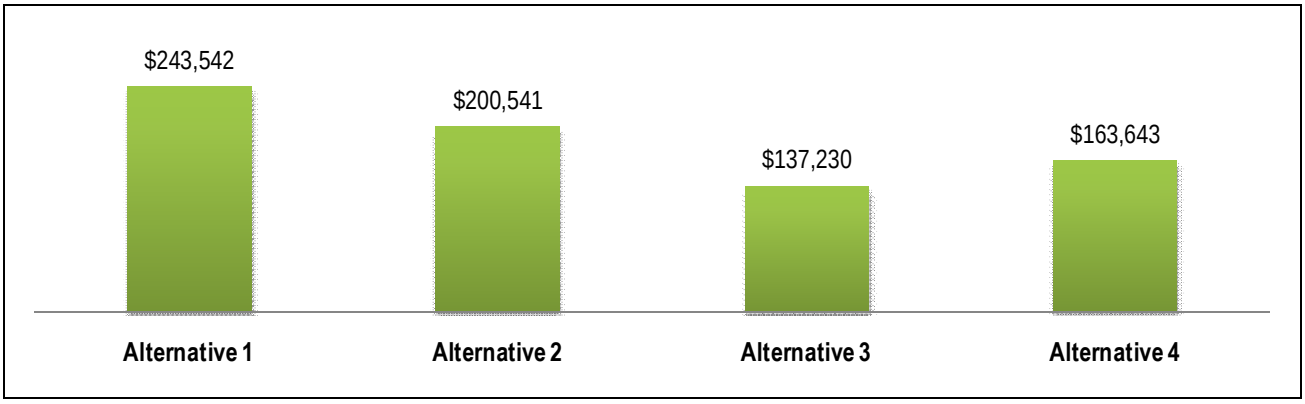
Note: All scenarios assume 5 years of ramp up, 2022 through 2026

(1) NPV - Net Present Value of 30 year revenue stream @ 3.0 percent discount rate

(2) CAGR - Compound Annual Growth Rate; or Average Annual Percent Change

Figure 13 illustrates the comparative net present value of each of the four 30-year revenue streams. As indicated, over the 30-year forecast Alterative 1 generates approximately 21.4 percent more revenue than Alternative 2, 77.5 more revenue than Alternative 3, and 48.8 percent more revenue than Alterative 4. Alternatives 3 and 4 begin with identical revenues, the more aggressive growth in travel demand for Alternative 4 results in a higher 30-year net present value.

Figure 13
Comparative 30-Year Net Present Value of Toll Revenues
(thousands)



COST OF TOLL SYSTEMS AND ONGOING OPERATIONS

ESTIMATED CAPITAL COSTS FOR ALL ELECTRONIC TOLL (AET) AND MANUAL COLLECTION SYSTEMS

A summary of estimated costs of four selected alternatives for the Houma-Thibodaux to LA-3127 Connection are presented in Table 14. All estimates are based on the following assumptions:

- All estimates are expressed in 2010 dollars.
- A 20% contingency factor is applied to all totals with the exception of Transaction Processing
- Civil engineering related costs (e.g. physical plaza structures and road design) are not part of this estimate.
- Communications costs are not included in this estimate.
- Support Staff includes administrative staff and customer service representatives (CSR).
- Staffing cost does not include mailhouse and correspondence activities. These costs are currently assumed to be passed on to the patron.
- Toll equipment maintenance (labor and parts) are estimated using general industry averages.

Equipment capital costs are included for the roadside systems, the Electronic Toll Collection subsystems, manual toll collection including automated coin machines (ACM), common equipment, and spare components. All lanes are assumed to be equipped with AET equipment, which includes a video enforcement system (VES) in each lane. The total estimated equipment capital cost ranges from $2.5 million to $4.3 million. Other capital costs that are included in Table 14 are for the various

project services that are typically required by the system integrator. These services would include, at a minimum, project management, software development of the roadside subsystem and interface to the host subsystem, procurement of a maintenance online management system (MOMS), AET equipment installation, documentation development, system integration factory and field testing, and warranty support. The estimated capital cost of these services is between $2.4 million and $2.7 million. The total estimated equipment and services capital cost for the Houma-Thibodaux to LA-3127 Connection toll collections system is between $4.8 million and $7.0 million before contingency. Civil engineering costs including but not limited to manual toll collection, construction or maintenance of buildings, toll booths structures, and civil roadway work are not included in these estimates.

Table 14
Estimate Capital Costs of
Toll Collection Systems

Equipment/Communications	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**
ORT Lane Equipment	$ 751,600	$ 578,000	$ 491,200	$ 664,800
Manual Lane Equipment	865,800	549,800	393,800	705,800
ETC Equipment	142,000	110,000	94,000	126,000
VES Equipment	314,000	234,000	194,000	274,000
CSC Equipment	-	-	-	-
Dynamic Message Signs	-	-	-	-
Common Equipment	160,000	160,000	160,000	160,000
Transponder and Tag Kits	-	-	-	-
Spare Equipment	232,000	152,000	137,000	152,000
Static Signs	-	-	-	-
Static Sign Gantries/Poles	-	-	-	-
Toll Gantries (includes installation)	1,856,000	1,296,000	1,016,000	1,576,000
DMS/CCTV Poles (includes installation)	-	-	-	-
Communications	-	-	-	-
Subtotal:	***4,321,400***	***3,079,800***	***2,486,000***	***3,658,600***
System Development/Deployment	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**
Software	$ 1,245,000	$ 1,245,000	$ 1,245,000	$ 1,245,000
Documentation	250,000	250,000	250,000	250,000
Warranty	159,960	123,400	107,620	137,680
Project Management	802,584	652,260	581,223	720,822
Training	100,000	100,000	100,000	100,000
Equipment Installation	140,000	100,000	80,000	120,000
Subtotal:	***2,697,544***	***2,470,660***	***2,363,843***	***2,573,502***
Total Capital Cost:	**$ 7,018,944**	**$ 5,550,460**	**$ 4,849,843**	**$ 6,232,102**
20% Contingency	1,403,789	1,110,092	969,969	1,246,420
Total w/ Contingency	**8,422,733**	**6,660,552**	**5,819,812**	**7,478,522**

ESTIMATE TOLL SYSTEMS MAINTENANCE AND OPERATING COSTS

Table 15 provides a summary of the estimated annual operations and system maintenance costs for the each of the four selected Houma-Thibodaux to LA-3127 Connection alternatives. The estimated operating and maintenance costs were developed based upon several assumptions, including the assumption that the Costumer Service Center (CSC) functions would be provided by a third party. The cost of electronic transaction processing and system maintenance costs are the only differences between the operating costs in each alternative. The estimated operating costs include the labor costs associated with staffing a toll data center (TDC) for the Houma-Thibodaux to LA-3127 Connection along with toll collectors for manual toll collection, at the mainline tolling locations, the cost to process electronic transactions by a third party CSC, and all required maintenance costs (both services and hardware). System enforcement and communication costs are not included in this estimate. The estimated operating cost to effectively support the Houma-Thibodaux to LA-3127 Connection TDC is $2.1 million for all four project alternatives. The estimated maintenance costs range from a maximum$1.0 million for Alternative 1 to a minimum of $656,000 for Alternative 3. A 20% contingency factor was applied to all costs with the exception of Transaction Processing. The estimated costs do not include civil construction or maintenance of buildings, manual toll booths or structures related to manual toll collection.

Table 15
Estimate Annual Toll Systems Maintenance and Operations Costs

	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Support Staff	$ 2,069,412	$ 2,069,412	$ 2,069,412	$ 2,069,412
Toll Equipment Maint. - Labor	176,000	176,000	176,000	176,000
Toll Equipment Maint. - Parts	840,000	600,000	480,000	720,000
Mailhouse and Correspondence	-	-	-	-
Communications	-	-	-	-
Base Line Subtotal	3,085,412	2,845,412	2,725,412	2,965,412
Transaction Processing (ETC)	163,863	129,969	103,257	121,527
Video Processing	-	-	-	-
Transaction Processing Subtotal	163,863	129,969	103,257	121,527
Total Operations and Maintenance:	**$ 3,249,275**	**$ 2,975,381**	**$ 2,828,669**	**$ 3,086,939**
20% Contingency	617,082	595,076	565,734	617,388
Total w/ Contingency	**3,866,357**	**3,570,457**	**3,394,403**	**3,704,327**

COST-REVENUE ANALYSIS

The following cost and toll feasibility assessment is slightly different than the analysis presented in the 2006 report. This analysis focuses solely on the revenues generated through and expenditures directly related to tolling. It is independent of construction costs which, while a significant component of any feasibility analysis, are not linked to tolling. Table 16 presents the net present value of the 30-year revenue stream

against the initial capital costs and the 30-year net present value of maintenance and operations costs. The resulting surplus or deficit represents the net present value of the net toll revenue.

Table 16
Cost-Revenue Analysis

	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Revenue	$ 243,542	$ 200,541	$ 137,230	$ 163,643
Capital Costs	(8,422.73)	(6,660.55)	(5,819.81)	(7,478.52)
Maintenance	(60,963.27)	(46,562.49)	(39,362.11)	(53,762.88)
Operations	(177,053.29)	(165,399.47)	(155,040.28)	(174,593.27)
Surplus/Deficit	(2,896.92)	(18,081.89)	(62,991.74)	(72,191.26)

Note: All values are expressed as net present value and assume an inflation rate of 3.0 percent per year. Operations costs include the cost of processing electronic toll collections.

Note that the net present value of operating costs is considerably higher than indicated in the 2006 report. This is, in part, due to a change in assumptions regarding electronic toll collection and the associated costs. In the 2006 study it was assumed that ETC transactions would increase to 65.0 percent by 2032 and remain constant thereafter. Due to the increasing use of such systems and a general trend in the industry to move towards incentivizing ETC over cash, this study has allowed ETC transactions to grow to 85.0 percent of all transactions by 2042. This is a reasonable assumption given the likelihood of a ubiquitous ETC solution or similar technology being introduced sometime in the next 30 years.

As indicated, all four alternatives have a net deficit, indicating that none can cover the basic costs of implementing and operating a tolling system. Unless costs could be reduced and/or revenue increased, tolling any of the four alternatives would result in a net loss. Based on this analysis, there is currently no clear benefit in operating the proposed Houma-Thibodaux LA3127 Connection as a tolled facility.

* * *

Wilbur Smith Associates would like to take this opportunity to thank LaDOTD Buchart Horne, and Urban Systems for their input and instrumental contributions to this report. We trust that this report will meet your needs. If it can in any way be made more responsive or any questions remain, please do not hesitate to contact us.

Respectfully submitted,
WILBUR SMITH ASSOCIATES

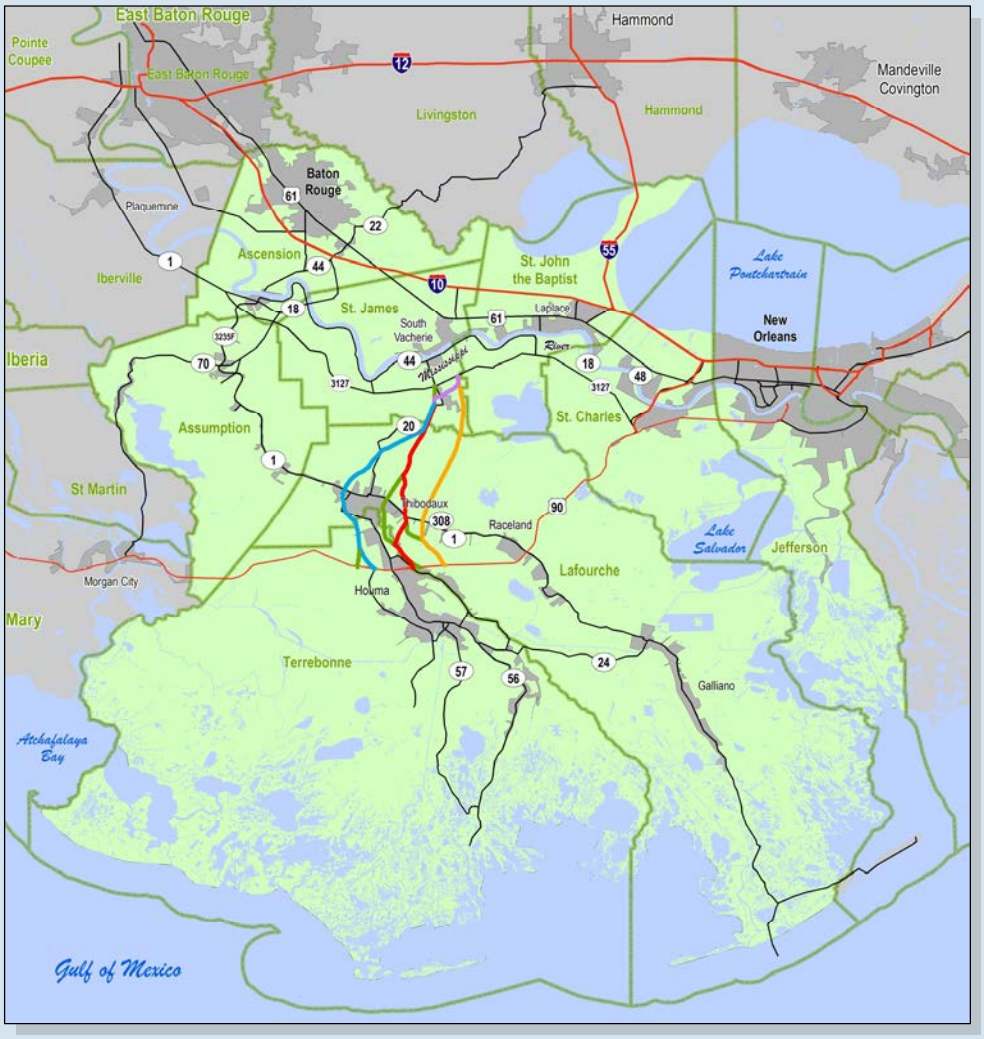
Jonathon Hart
Project Manager

APPENDIX A

Houma-Thibodaux to LA 3127 Connection Preliminary Toll Study

November 2006

Houma-Thibodaux to LA 3127 Connection Preliminary Toll Study



ENGINEERS PLANNERS ECONOMISTS
WilburSmith ASSOCIATES

In association with

BUCHART HORN, INC.

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DOTD

Department of Transportation and Development

Houma-Thibodaux to LA 3127 Connection Preliminary Toll Study

Prepared for

Department of Transportation and Development

Prepared by

ENGINEERS PLANNERS ECONOMISTS

WilburSmith ASSOCIATES

In association with

BUCHART HORN, INC.

November 2006

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CHAPTER 1

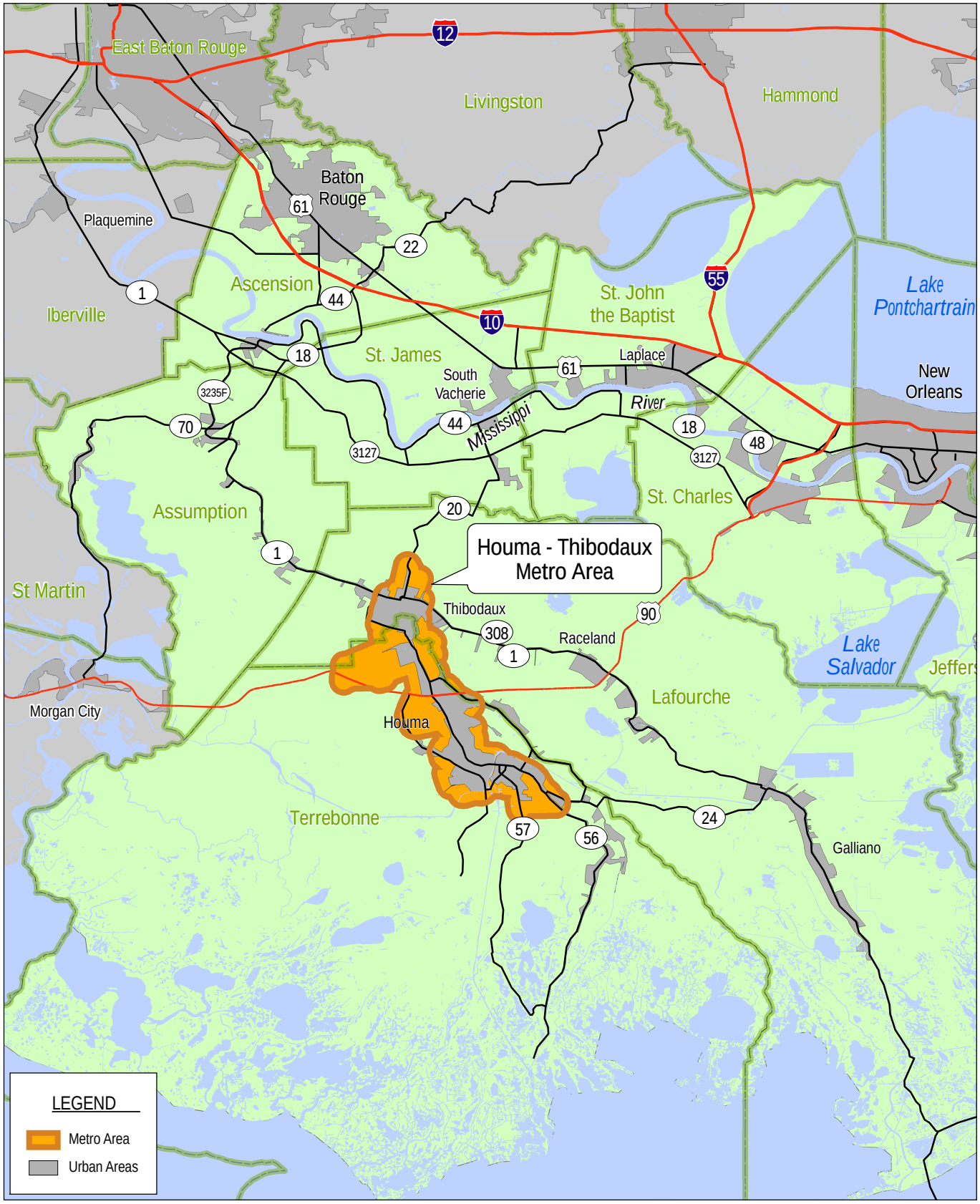
INTRODUCTION

Wilbur Smith Associates (WSA), in association with Buchart-Horn, is pleased to submit this report, presenting the findings of a Preliminary Toll study of the proposed Houma-Thibodaux to LA 3127 Connection, conducted for the Louisiana Department of Transportation and Development. This preliminary traffic and toll revenue forecast was based upon the latest available socio-economic data, travel demand model, and accepted forecasting processes.

PROJECT OVERVIEW

The Houma-Thibodaux Metropolitan Area (see Figure 1-1) is roughly 60 miles south-east of Baton Rouge and 50 miles south-west of New Orleans. At present, it is the only major metropolitan area in Louisiana which is not traversed by Interstate route. This will no longer be the case in the future, when US 90 is upgraded to I-49, connecting the area to New Orleans. Nonetheless, the area lacks an existing or planned high-capacity connection to I-10 and Baton Rouge. Movements to and from these destinations are currently served primarily by either state routes LA 1/LA 308 and the Sunshine Bridge, or LA 20/LA 24 and the recently constructed Gramercy-Wallace Bridge. There is serious concern that this absence of a high-capacity connection to the north may have negative effects not only for regional connectivity and economic development, but also for the area's preparedness for emergency evacuation during hurricane events.

The Louisiana Department of Transportation and Development (LaDOTD) is therefore considering the possible development of a new roadway to connect the Houma-Thibodaux metropolitan area with LA 3127 and points north. This new alignment roadway would have a southern terminus at the future I-49 (currently US 90), running north and providing access to the cities of Thibodaux and South Vacherie, and could directly or indirectly connect to LA 3127 or the planned extension of LA



STUDY AREA LOCATION

FIGURE 1-1

3213 to the Gramercy-Wallace Bridge, this being the region's access to I-10 and the Baton Rouge area.

PURPOSE AND SCOPE OF STUDY

The proposed Houma-Thibodaux to LA 3127 Connection highway project has been prioritized by the LaDOTD as a major needed improvement, yet it is not currently supported by any known present or future funding source. Accordingly, WSA, in association with Buchart-Horn, the prime consultant for the project's overall Environmental Impact Study (EIS), has been retained by the LaDOTD to determine what funds might be made available by tolling the proposed corridor in day-to-day (non-hurricane evacuation condition) operations.

RELATIONSHIP TO OVERALL PURPOSE AND NEED

According to an FHWA Memorandum issued October 15, 2004, there is precedent for tolling to be included in the purpose and need statement for a project, if the need for a toll road should emerge from the transportation planning process. Even if this is not the case, the specific goals and objectives of a project may be such that only toll alternatives are feasible. Specifically, the economic feasibility of a toll or non-toll alternative, considered in conjunction with other factors, could provide the basis for eliminating that alternative as unreasonable.

The current overall purpose and need statement for the Houma-Thibodaux to LA 3127 Connection primarily emphasizes regional connectivity and transportation needs, with hurricane evacuation as a sub-component, although at the present time, evaluation of these transportation needs is ongoing. The present purpose and need statement for this project does not explicitly include tolling as part of its purpose and need. Furthermore, non-toll alternatives are currently included within the range of options considered in the overall EIS. Therefore, the role of the present toll study is to examine the economic feasibility of additional toll alternatives. This toll study provides information regarding the economic feasibility of these toll alternatives, using forecasted revenues and projected costs. It is assumed that this analysis will supplement a comparable economic analysis of non-toll alternatives within the overall EIS, as no such analysis is provided herein.

SCOPE OF TOLL STUDY

The present toll study includes the following major tasks:

A. Project Mobilization and Data Collection
B. Corridor Growth Analysis

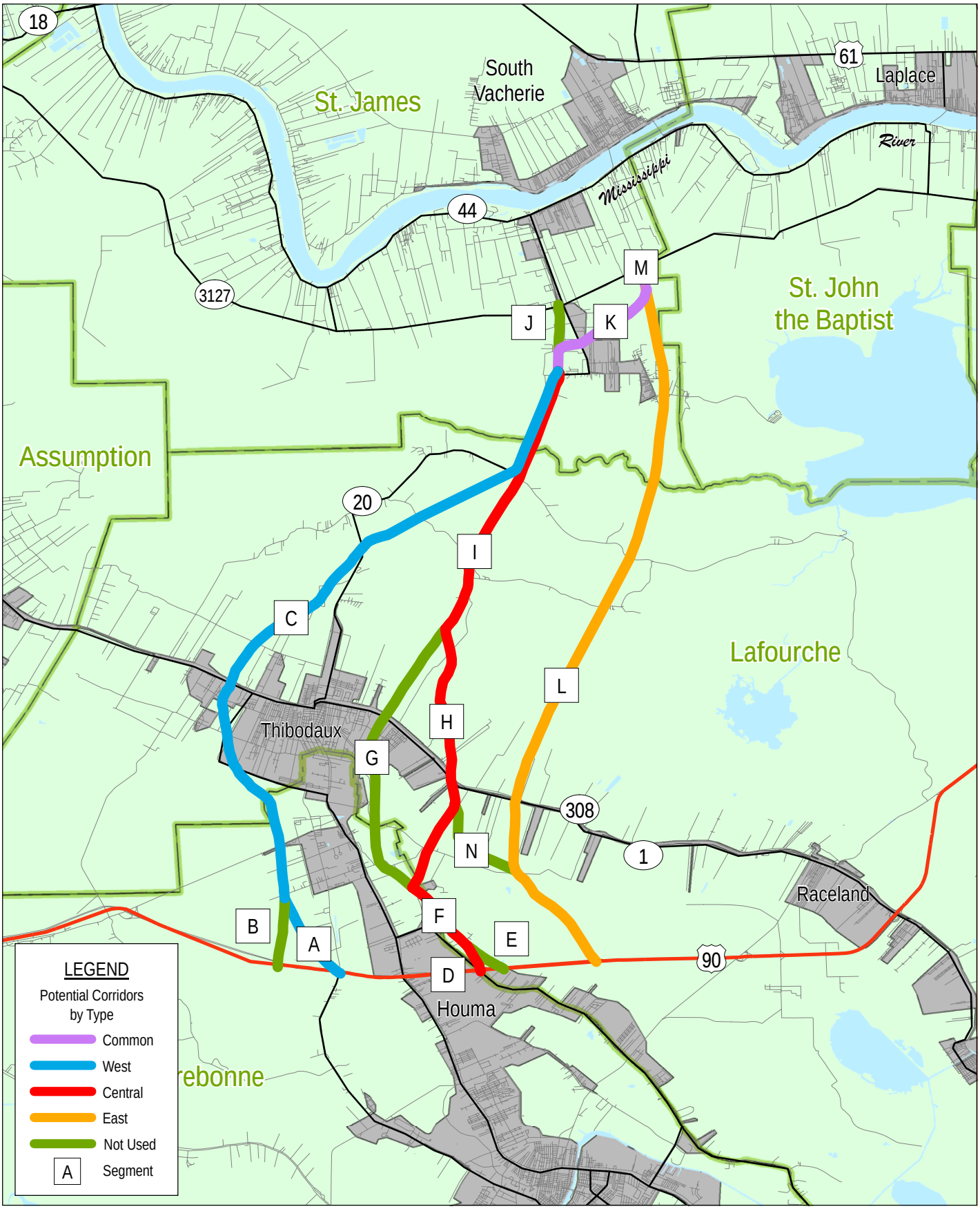
C. Tolling Concept Analysis
D. Traffic and Toll Revenue
E. Documentation and Meetings

Task A began immediately upon notice-to-proceed with a kickoff meeting held on March 27, 2005 to discuss project schedule, configuration and termini, and other relevant topics. Coordination with Urban Systems, Inc was also initiated to obtain prior study reports and draft information from their non-toll traffic analysis. The following day, WSA staff requested historical traffic count and roadway condition data from the LaDOTD for selected locations and conducted route reconnaissance (windshield survey) fieldwork in the study area to collect data on operating conditions of major area roadways.

Basic projections regarding growth of households by demographic group and employment by industry sector in the areas served by the proposed project must be thoroughly reviewed for reasonableness and documented as part of every traffic and revenue forecast. To this end WSA conducted an investigation of historical and projected socio-economic growth for those parishes lying within the toll study area in Task B, Corridor Growth Analysis. The Woods and Poole economic projections used in this preliminary study do not reflect economic impacts resulting from hurricane storm experience in 2005. The findings of this investigation are presented in Chapter 2.

In order to evaluate the traffic and revenue potential of each of these alternatives, WSA developed a unique travel demand model for the toll study area, to be used in estimating future traffic on the project. This in-depth process included a review of other available models in the study area, such as the prior Hurricane Evacuation model, the Houma-Thibodaux MPO model, and the LaDOTD statewide model. It was determined that the best approach for the present study would be to refine and extract a sub-area of the LaDOTD statewide model for purposes of evaluating the proposed corridors. In order to ensure consistency between this toll study and the traffic analysis for the overall EIS, this model was used to provide traffic estimates for non-toll as well as toll alternatives. This process is documented in Chapter 3, Forecasting Methods.

Within the broad limits of the aforementioned project termini a wide-variety of north-south alignments are possible. This range is being refined within the context of the N/S Corridor EIS to produce a reduced range of alternative corridors for the proposed roadway, as shown in Figure 1-2. WSA was scoped to analyze three toll alignments, with the understanding that these would be a representative subset of the alignments considered in the overall project EIS. Accordingly, as part of its tolling concept



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POTENTIAL PROJECT CORRIDORS

FIGURE 1-2

analysis, WSA examined the proposed reduced range of alternative corridors provided by Buchart-Horn with respect to tolling considerations and developed three alternative toll alignments comprised of subsections of the Buchart-Horn corridors, as shown in Figure 1-2. Tolling systems were developed for each corridor as well, and used to develop estimates of additional capital, operations, and maintenance costs to be associated with the toll alternatives. A review of the alternatives development process is included in Chapter 4, along with the economic feasibility analysis for each alternative, including project cost information.

Using the aforementioned sub-area travel demand model, WSA developed no-build and toll-free demand estimates for each of the project corridors. A range of toll rates were then tested to evaluate traveler sensitivity to toll levels, using WSA's modeling software. Recommended toll rates for each of the project corridors were selected based upon these tests, and forecasted traffic at these rates was then used to produce estimated future toll revenues for each scenario. These were compared to project costs, including tolling costs developed by WSA in its tolling concept analysis, as well as other costs provided by the study team, to develop estimates of toll project feasibility. These results are provided in Chapter 4.

CHAPTER 2

EXISTING TRAFFIC CONDITIONS

An effort was undertaken in this study to collect data regarding existing traffic conditions in the project corridor. This chapter describes this effort and presents the data collected in the course of developing inputs to the project's traffic and revenue forecasting process.

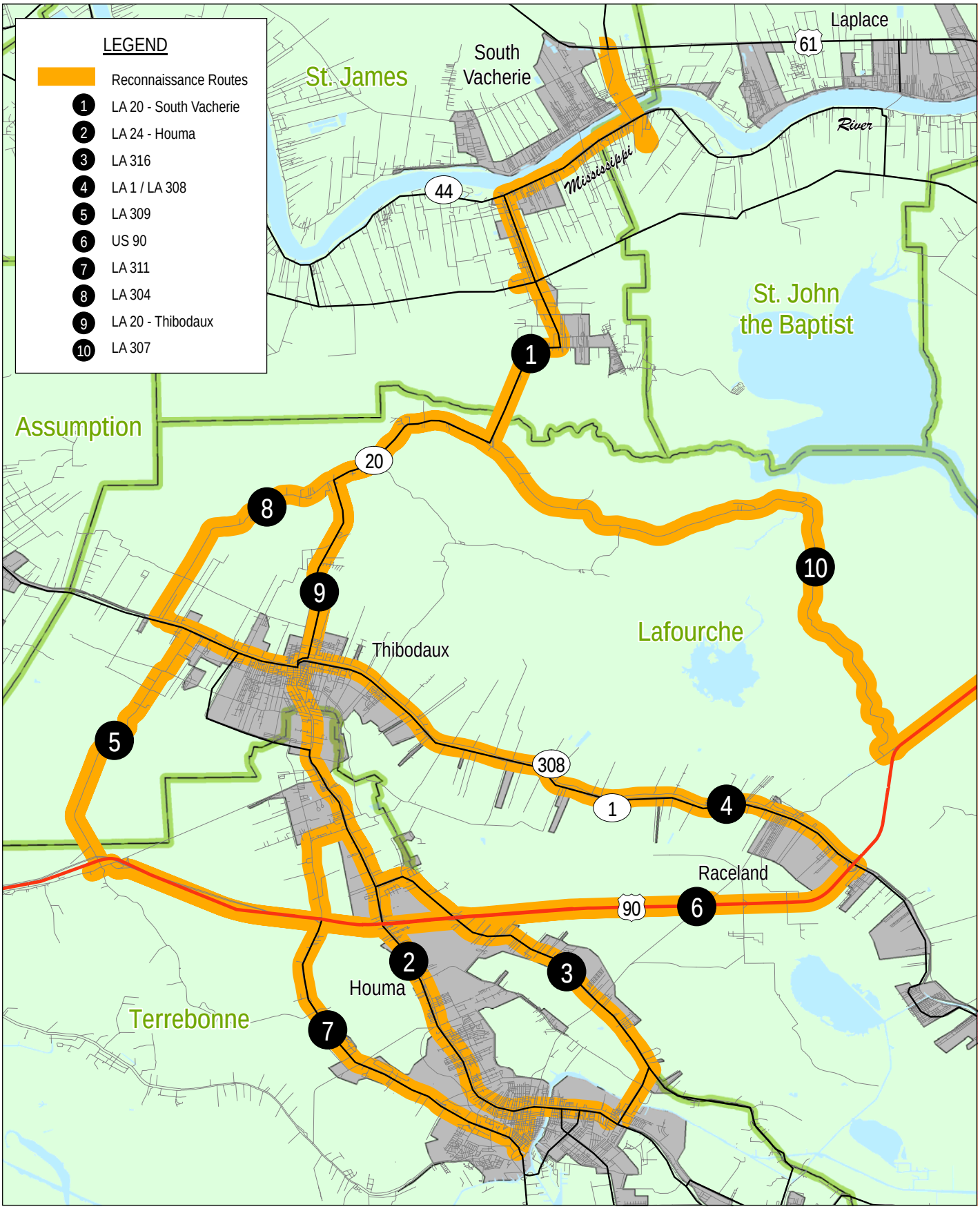
ROUTE RECONNAISSANCE

Immediately following the project kickoff meeting on March 27, 2005, WSA visited the study area and conducted fieldwork investigations consisting of reconnaissance on major routes in the project area. The routes included in this investigation are shown in Figure 2-1. The routes covered in the scope of this fieldwork are highlighted in orange, with black circles showing identifying numbers, corresponding to the numbering system used in Table 2-1. This Table summarizes some general distance, time, and speed information obtained via route reconnaissance fieldwork. Additionally, roadway characteristics such as posted speeds, lane quantities and lane and shoulder widths, access control and signalization, major cross streets and intersections, and density and character of adjacent development were noted.

Some of this information is also included in the relevant LaDOTD District Summary Logs, which were obtained, reviewed, and compared with route reconnaissance results. Additionally, Urban Systems has performed a review of roadway characteristics in its EIS Technical Appendix: Traffic Analysis. Rather than duplicate that discussion here, the reader is referred to the Urban Systems document for further details.

HISTORICAL TRAFFIC COUNT INFORMATION

Also immediately following the project kickoff meeting, WSA requested historical traffic count information regarding major area roadways from the LaDOTD. This information was received and summarized in a large



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RECONNAISSANCE ROUTES

FIGURE 2-1

Table 2-1
Summary of Selected Route Reconnaissance Information

Route	Start Time	Length (mi)	Duration (min)	Average Speed (mph)
1: LA 20 from Gramercy-Wallace Bridge to LA 1	11:55 AM	29	36	48.3
2: LA 20 from LA 1 to LA 3087	12:55 PM	19	41	27.5
3: LA 316 from Prospect Blvd. to LA 24	2:00 PM	10	15	40.4
4: LA 1 from US 90 to LA 309	2:22 PM	26	40	39.0
8: LA 304 from LA 20 to LA LA 309	5:01 PM	7	9	46.7
5: LA 309 from LA 1 to LA 24	5:12 PM	15	16	55.5
9: LA 24/LA 20 from US 90 to LA 307	5:29 PM	7	13	32.8
11: LA 307 from LA 20 to US 90	6:00 PM	20	26	45.5

database of information shared with the I-49 project also currently being undertaken by WSA. Due to the size and multi-dimensional nature of this database, Table 2-2 presents just a selection of the relevant information contained therein. The data reveal substantial variability in traffic growth rates by time period and location, and in particular show widespread declines in traffic during the late 80s. The timing of this decline suggests that traffic subsided in part due to the economic effects of the oil bust, as discussed in the next chapter.

TRAFFIC VARIATIONS BY DAY OF WEEK

Information regarding daily variations in traffic volumes was requested from the South Central Planning and Development Commission (SCPDC), the MPO for the Houma-Thibodaux region. This information is summarized for selected representative count station locations in Table 2-3. The percentage of average daily volume observed on each route on the day of the week that a particular count was taken is shown here as a measure of the variability of traffic by day of week. Weekday volumes range from 106 to 117 percent of average daily volumes, while weekend volumes range from 58 to 85 percent of average daily volumes.

TRAFFIC DISTRIBUTION BY VEHICLE CLASS

The SCPDC also provided WSA with vehicle classification count information on major routes in the project study area. Because many toll road authorities set toll prices according to the number of axles, these data are critical in estimating the average toll to be collected on the project. Selected data are summarized as shown in Table 2-4. Of key interest here is the total percentage of vehicles having more than two axles, which ranges from 1.3 to 12.9. The lowest percentage is found on LA 308, while the highest is on US 90. This suggests that, not surprisingly, trucks in the area choose major highways such as US 90, rather than state routes like LA 308.

Table 2-2
Summary of Selected Historical Counts

Location	1975	AAPC	1980	AAPC	1985	AAPC	1994	AAPC	1999	AAPC	2002
LA 20 S of LA 3185	11,084	3.9	13,416	4.7	16,915	2.9	21,865	(1.7)	20,115	11.1	27,590
LA 24 S of LA 20	12,941	(0.3)	12,764	6.5	17,524	(5.5)	10,582	15.5	21,712	NA	NA
LA 311 W of LA 24	1,549	4.0	1,884	6.6	2,590	(0.6)	2,449	4.7	3,083	(3.0)	2,811
LA 316 E of LA 24	1,842	13.7	3,500	5.1	4,492	(2.7)	3,507	2.2	3,903	8.6	5,001
LA 24 N of Houma	12,759	12.8	23,305	7.2	33,020	(4.0)	22,878	0.4	23,385	0.3	23,626
LA 660 SE of LA 24	2,869	6.3	3,900	(0.1)	3,881	2.4	4,787	16.7	10,343	2.3	11,088
LA 311 fr US 90 to Houm	NA	NA	4,140	9.5	6,523	(0.3)	6,373	16.6	13,718	1.4	14,290
US 90 E of LA 24	NA	NA	NA	NA	6,272	2.6	7,880	4.1	9,622	19.4	16,392
LA 309 N of LA 20	923	9.9	1,480	2.2	1,652	(11.2)	566	23.7	1,638	(1.5)	1,565
LA 20 E of LA 309	NA	NA	6,615	4.5	8,232	4.2	11,950	NA	NA	NA	2,780

Note: Where shown, AAPC denotes average annual percent change.

Table 2-3
Counted Traffic As Percentage of Average Daily Volume

Station ID	Location	Month	Monday	Tuesday	Wednesday	Thursday	Friday	Weekday	Saturday	Sunday	Weekend
293	LA 308	March	113	113	115	125	-	117	42	75	58
330	US 90 West of LA 24	December	105	106	108	107	109	107	89	77	83
372	US 90 East of LA 24	December	103	-	108	108	112	108	86	75	81
606a	LA 24 North of US 90	February	100	104	106	105	115	106	96	75	85
606b	LA 24 North of US 90	February	103	104	104	103	118	107	96	71	83
613a	LA 24 Near Thibodau	February	114	108	-	-	-	111	-	72	72
613b	LA 24 Near Thibodau	February	114	101	-	-	-	107	-	82	82

Table 2-4
Vehicle Class Distribution by Location

Station ID	Location	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	< 5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classed	Percent >2 Axles	Average Axles
293	LA 308	0.8	70.5	22.9	-	3.1	0.3	-	0.5	0.5	-	-	-	-	1.4	1.3	2.03
299	LA 1 West of Thibodaux	0.8	65.8	23.0	0.6	3.5	1.0	-	0.9	1.3	-	-	-	-	3.1	3.3	2.07
330	US 90 West of LA 24	0.8	40.4	32.7	3.3	10.6	0.5	-	4.3	5.6	0.7	0.2	0.2	0.2	0.5	11.8	2.31
372	US 90 East of LA 24	1.5	42.7	30.1	2.8	9.5	0.8	0.1	3.5	6.7	1.1	0.3	0.1	0.2	0.6	12.9	2.35
606a	LA 24 North of US 90	2.0	67.5	19.7	1.1	3.5	1.3	0.2	3.5	0.5	0.4	0.1	-	-	0.2	6.0	2.12
606b	LA 24 North of US 90	1.5	70.7	19.1	0.8	3.1	0.9	0.2	2.5	0.9	0.2	0.1	-	-	-	4.8	2.10
609	LA 24 South of LA 20	0.4	62.5	26.2	0.6	5.9	0.5	-	1.4	0.5	0.1	0.1	-	-	1.8	2.6	2.06
613a	LA 24 Near Thibodaux	0.3	69.1	21.5	0.5	3.4	0.7	-	1.7	0.6	0.2	0.1	-	-	1.9	3.4	2.07
613b	LA 24 Near Thibodaux	2.4	68.3	24.0	0.6	2.4	0.3	-	1.4	0.1	-	0.1	-	-	0.4	1.9	2.04
629	LA 1 East of Thibodaux	0.9	58.2	29.9	0.7	5.4	0.8	-	1.0	0.4	-	-	-	-	2.7	2.3	2.04
681	LA 20 North of Thibodaux	0.4	67.1	23.2	0.1	4.0	0.6	-	0.6	1.0	-	-	-	-	3.0	2.3	2.05

CHAPTER 3

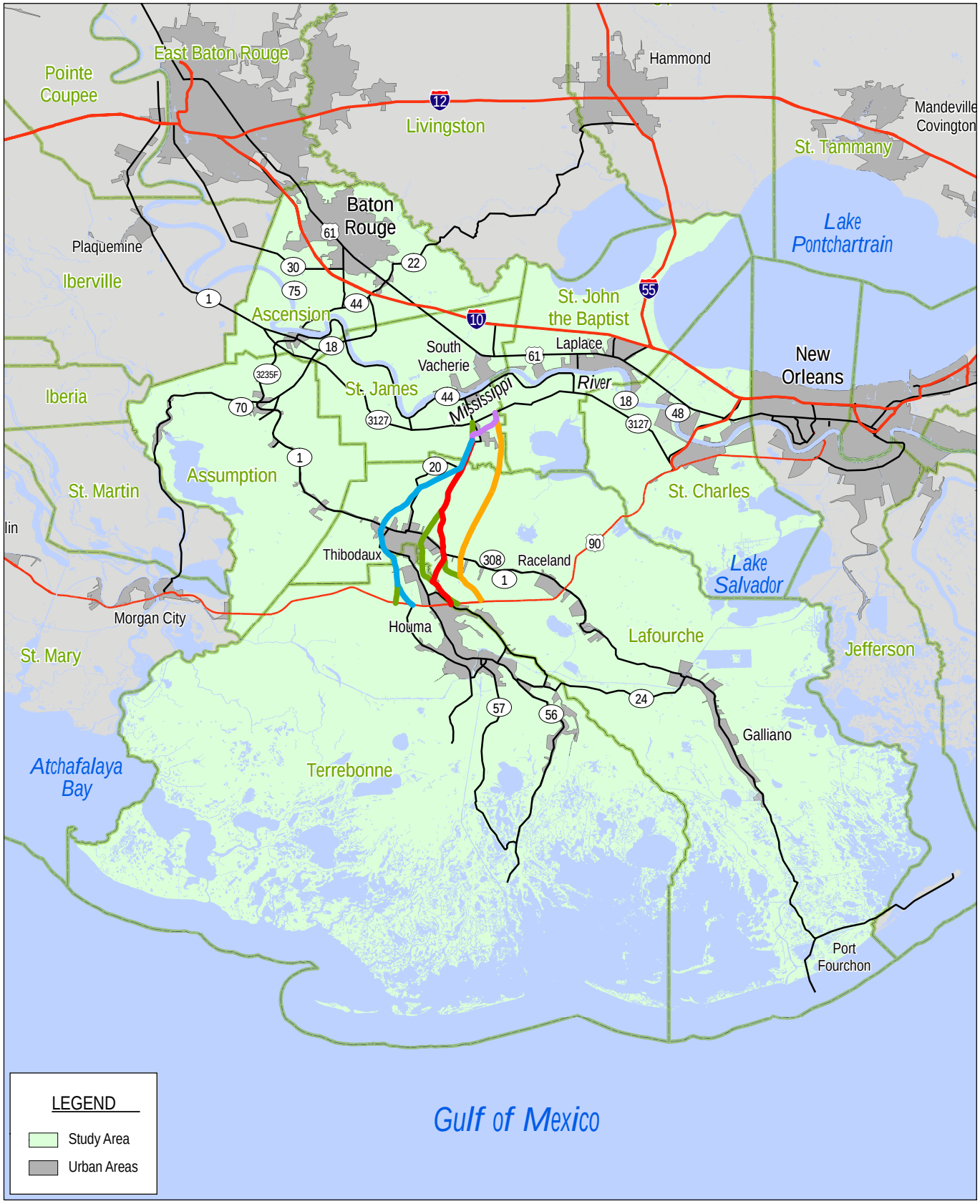
CORRIDOR GROWTH ANALYSIS

Corridor growth considerations provide the foundation for the traffic and toll revenue forecasts developed as part of the Houma-Thibodaux Connector study. Travel demand forecasting models relate future traffic on a project to expected increases in population and economic activity in and around the project area. The focus of this section is to review and evaluate the economic variables which inform the travel demand process. This includes a review of population, household, and employment projections provided by the U.S. Census Bureau, the Louisiana Population Data Center, and Woods and Poole Economics, Inc. The Woods and Poole economic projections used in this preliminary study do not reflect economic impacts associated with hurricanes experienced in 2005.

The study area, as illustrated in Figure 3-1, includes Assumption, Ascension, Lafourche, St. Charles, St. James , St. John the Baptist, and Terrebonne parishes. Contained within this area are the cities of Houma and Thibodaux as well as the rapidly expanding southeastern portion of Baton Rouge.

HISTORICAL GROWTH TRENDS

The Louisiana economy is comprised primarily of manufacturing and natural resource extraction and is home to the greatest concentration of crude oil refineries, natural gas facilities, and petrochemical processing plants in the Western Hemisphere. Early discoveries and technological advancements in both land-based and off-shore oil exploration helped catapult Louisiana to the forefront of the nation's petrochemical industry, and from 1977 to 1985 the petroleum exploration and production (E&P) industry accounted for over 30 percent of the state's gross revenue. Historically, a vibrant E&P sector has translated into strength in the construction, ship building, pipeline operation, instrumentation and machinery production, transportation, and numerous other secondary activates. Trade, services, banking, and government all benefit similarly.



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SOCIO-ECONOMIC STUDY AREA

FIGURE 3-1

Conversely, declining oil prices have a ripple effect that impacts not just those involved in the extraction process, but the economy at large. For example, in 1986 the price of crude oil collapsed, with effects which were felt throughout the Louisiana economy. The import and influence if the E&P sector can be clearly observed in the historical population and employment trends as presented in the following sections.

POPULATION TRENDS BY PARISH

Between 1970 and 2003 the population of the State of Louisiana grew by roughly 840,000 people, or approximately 23 percent. In that same period of time, the population of the study area grew by roughly 145,000 people, or just under 53 percent. The greatest increases in population occurred in and around the Houma area in Terrebonne parish, Luling in St. Charles parish, La Place in St. John the Baptist parish, and southern Baton Rouge in Ascension parish. Population in rural parishes such as Assumption, Lafourche, and St. James grew at an increasingly slower pace. In all cases, average annual percentage growth rates declined by an average of 0.6 percent between 1985 and 1990 coinciding with the oil bust of 1986. Though growth rates have yet to return to pre-bust levels, rates have remained stable (though slightly declining, as is to be expected given the area's fixed supply of developable land) since that time. The exception is Ascension parish, where population has been growing at an accelerating pace since 2000. Population trends from 1970 to 2003 by parish are shown in Table 3-1.

EMPLOYMENT TRENDS BY PARISH

Employment in the region has followed a similar but more volatile pattern. Unlike population growth, there is not a clear-cut dichotomy between strong and weak performing parishes. However, similar to the population growth patterns, employment in the region saw a considerable upsurge in jobs in the mid-1970s and early '80s. Again, Ascension, St. Charles, ST. John, and Terrebonne parishes fared particularly well in this decade, adding jobs at an average annual rate of between 6 and 8 percent in 1980. And once again, with the collapse of oil prices in the mid-1980s came a precipitous decline in jobs. Average annual growth rates were cut nearly in half in all parishes as compared to a far more muted reduction in population growth rates. St. Charles parish was hit particularly hard, declining from an average annual employment growth rate of 8.8 percent in 1980 to only 4.0 percent just five years later. Since that time employment growth has stabilized with the exception of Lafourche parish

Table 3-1
Historical Population by Parish
(In Thousands)

	Ascension		Assumption		Lafourche		St. Charles		St. James		St. John		Terrebonne	
Year	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC
1970	37.26	NA	19.70	NA	69.30	NA	29.68	NA	19.59	NA	23.85	NA	76.26	NA
1975	41.44	2.15	20.58	0.88	74.54	1.47	32.95	2.11	20.33	0.75	25.37	1.25	84.58	2.09
1980	50.42	3.07	22.22	1.21	83.36	1.86	37.47	2.36	21.54	0.96	32.26	3.07	94.97	2.22
1985	57.98	2.99	23.63	1.22	88.61	1.65	41.62	2.28	22.03	0.79	39.82	3.48	101.06	1.89
1990	58.41	2.27	22.70	0.71	85.81	1.07	42.47	1.81	20.84	0.31	40.06	2.63	97.04	1.21
1995	66.14	2.32	22.87	0.60	87.61	0.94	45.89	1.76	20.88	0.26	42.04	2.29	100.36	1.10
1996	68.09	2.35	22.81	0.57	87.81	0.91	46.43	1.74	20.93	0.26	42.26	2.23	101.48	1.10
1997	70.51	2.39	22.99	0.57	88.65	0.92	47.02	1.72	20.95	0.25	42.22	2.14	102.69	1.11
1998	72.27	2.39	23.17	0.58	89.45	0.92	47.48	1.69	21.07	0.26	42.54	2.09	104.21	1.12
1999	74.66	2.43	23.37	0.59	90.06	0.91	47.91	1.66	21.22	0.28	42.87	2.04	104.51	1.09
2000	77.36	2.46	23.39	0.57	89.96	0.87	48.20	1.63	21.19	0.26	43.14	2.00	104.52	1.06
2001	79.52	2.48	23.23	0.53	90.13	0.85	48.50	1.60	21.25	0.26	43.70	1.97	104.97	1.04
2002	81.71	2.48	23.19	0.51	90.73	0.85	49.10	1.59	21.25	0.26	44.14	1.94	105.45	1.02
2003	84.42	2.51	23.27	0.51	91.28	0.84	49.35	1.55	21.12	0.23	44.82	1.93	106.11	1.01

Note:
Where indicated, AAPC denotes average annual percent change.

which grew at an accelerating pace from 1990 to 2000 and Assumption parish, which has vacillated between accelerated and declining expansion from 1990 through 2001. A detailed table of employment growth by parish can be found in Table 3-2.

PROJECTED SOCIOECONOMIC GROWTH

Today, statewide manufacturing employment and payroll are still heavily dominated by petroleum E&P and related activities. As of 2004, approximately 24 percent of all manufacturing employment and 35.3 percent of the total statewide payroll were directly attributable to the E&P sector as compared to the national average of 6.1 and 8.1 percent, respectively. However, the economy has diversified as well, adding substantial numbers of jobs in the service and durable goods manufacturing sectors as well.

As previously discussed, population and employment are primary drivers of traffic growth and distribution. As such, projected growth plays an extremely important role in the study of future traffic conditions. In this case future population and employment data used for forecasting purposed are derived from materials produced by Woods and Poole Economics, Inc. as summarized below in Tables 3-3 and 3-4.

An analysis of the forecast data indicates no major events or developments expected to significantly alter the current pattern of continued growth. Parishes such as St. John, St. Charles, and Ascension in which growth had heretofore proceeded at a rapid pace continue to add jobs and residents at a similar though declining pace. Parishes such as St. James and Assumption in which growth has historically been sluggish begin to approach zero growth.

This pattern of growth at a diminishing rate is typical and may be the result of the saturation of local job markets and/or available developable land. However, it is important to note that any assumption of saturation is based on current knowledge of market conditions for both employment and housing. Unforeseen developments in the near future could radically alter the economic landscape. For instance, neither the oil embargo and resulting inflated market value of petroleum products nor the price collapse of the mid-’80s were likely to be predicted and considered when producing forecasts for that time period. Projections presented herein and used throughout the study are based on the best information available at the present time and are not a guarantee of future trends.

Table 3-2
Historical Employment by Parish
(In Thousands)

	Ascension		Assumption		Lafourche		St. Charles		St. James		St. John		Terrebonne	
Year	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC	Total	AAPC
1970	10.78	NA	5.41	NA	21.92	NA	9.71	NA	6.14	NA	5.13	NA	28.49	NA
1975	16.19	8.47	7.15	5.76	25.82	3.32	13.38	6.61	6.81	2.10	6.60	5.17	36.82	5.26
1980	20.41	6.59	8.11	4.14	32.90	4.14	22.62	8.82	9.68	4.65	9.81	6.71	51.39	6.08
1985	23.70	5.39	6.94	1.68	32.15	2.59	17.55	4.02	9.67	3.07	11.71	5.66	47.16	3.42
1990	28.50	4.98	6.43	0.87	31.49	1.83	22.03	4.18	9.34	2.12	14.01	5.16	43.75	2.17
1995	34.16	4.72	6.67	0.84	35.36	1.93	24.23	3.72	8.66	1.39	14.50	4.25	47.53	2.07
1996	35.80	4.72	7.13	1.07	36.77	2.01	23.68	3.49	8.92	1.45	14.75	4.15	49.74	2.17
1997	37.90	4.77	7.76	1.35	38.90	2.15	24.99	3.56	8.98	1.42	15.56	4.20	53.81	2.38
1998	40.42	4.83	7.26	1.06	41.08	2.27	26.48	3.65	8.98	1.37	15.70	4.08	56.64	2.48
1999	42.82	4.87	6.82	0.80	43.47	2.39	24.76	3.28	8.54	1.15	16.27	4.06	53.04	2.17
2000	43.06	4.72	6.90	0.82	44.84	2.41	24.07	3.07	8.57	1.12	16.67	4.01	54.48	2.18
2001	46.73	4.84	7.65	1.12	47.11	2.50	24.04	2.97	8.40	1.02	16.38	3.82	54.13	2.09
2002	47.51	4.74	7.86	1.18	48.47	2.51	25.05	3.00	8.47	1.01	16.65	3.75	55.08	2.08
2003	48.37	4.65	7.93	1.17	49.06	2.47	25.30	2.94	8.50	0.99	16.86	3.67	55.76	2.06

Note:
Where indicated, AAPC denotes average annual percent change.

Table 3-3
Projected Population by Parish
(In Thousands)

	Ascension		Assumption		Lafourche		St. Charles		St. James		St. John		Terrebonne	
Year	**Total**	**AAPC**	**Total**	**AAPC**	**Total**	**AAPC**	**Total**	**AAPC**	**Total**	**AAPC**	**Total**	**AAPC**	**Total**	**AAPC**
2004	86.13	NA	23.31	NA	91.59	NA	49.83	NA	21.09	NA	45.01	NA	106.48	NA
2005	87.91	2.48	23.38	0.49	91.97	0.81	50.38	1.52	21.09	0.21	45.22	1.85	106.84	0.97
2006	89.63	2.47	23.44	0.48	92.26	0.80	50.86	1.51	21.11	0.21	45.42	1.81	107.24	0.95
2007	91.41	2.45	23.50	0.48	92.68	0.79	51.40	1.50	21.09	0.20	45.66	1.77	107.65	0.94
2008	93.19	2.44	23.56	0.47	93.04	0.78	51.93	1.48	21.05	0.19	45.89	1.74	108.09	0.92
2009	94.97	2.43	23.63	0.47	93.41	0.77	52.43	1.47	21.03	0.18	46.12	1.71	108.49	0.91
2010	96.73	2.41	23.70	0.46	93.78	0.76	52.97	1.46	21.03	0.18	46.34	1.68	108.91	0.89
2015	105.77	2.35	24.11	0.45	95.87	0.72	55.71	1.41	21.07	0.16	47.61	1.55	111.25	0.84
2020	115.01	2.28	24.56	0.44	98.14	0.70	58.58	1.37	21.13	0.15	48.96	1.45	113.80	0.80
2025	124.52	2.22	25.06	0.44	100.62	0.68	61.56	1.34	21.25	0.15	50.38	1.37	116.58	0.77
2030	134.48	2.16	25.65	0.44	103.42	0.67	64.75	1.31	21.43	0.15	52.01	1.31	119.75	0.75

Note:
Where indicated, AAPC denotes average annual percent change.

Table 3-4
Projected Employment by Parish
(In Thousands)

	Ascension		Assumption		Lafourche		St. Charles		St. James		St. John		Terrebonne	
Year	**Total**	**AAPC**	**Total**	**AAPC**	**Total**	**AAPC**	**Total**	**AAPC**	**Total**	**AAPC**	**Total**	**AAPC**	**Total**	**AAPC**
2004	49.25	-	7.99	-	49.65	-	25.57	-	8.53	-	17.08	-	56.44	-
2005	50.13	4.49	8.06	1.15	50.24	2.40	25.82	2.83	8.55	0.95	17.30	3.54	57.11	2.01
2006	51.04	4.41	8.12	1.14	50.83	2.36	26.09	2.78	8.58	0.93	17.51	3.47	57.79	1.98
2007	51.95	4.34	8.19	1.13	51.42	2.33	26.36	2.73	8.61	0.92	17.73	3.41	58.46	1.96
2008	52.87	4.27	8.26	1.12	52.01	2.30	26.62	2.69	8.64	0.90	17.94	3.35	59.13	1.94
2009	53.81	4.21	8.32	1.11	52.60	2.27	26.89	2.65	8.67	0.89	18.16	3.30	59.81	1.92
2010	54.76	4.15	8.39	1.10	53.19	2.24	27.17	2.60	8.70	0.87	18.37	3.24	60.48	1.90
2015	59.74	3.88	8.72	1.07	56.11	2.11	28.56	2.43	8.83	0.81	19.44	3.01	63.83	1.81
2020	65.10	3.66	9.04	1.03	59.02	2.00	30.03	2.28	8.97	0.76	20.51	2.81	67.16	1.73
2025	70.90	3.48	9.36	1.00	61.92	1.91	31.55	2.17	9.10	0.72	21.56	2.65	70.47	1.66
2030	77.18	3.33	9.67	0.97	64.80	1.82	33.15	2.07	9.24	0.68	22.62	2.50	73.77	1.60

Note:
Where indicated, AAPC denotes average annual percent change.

CHAPTER 4

FORECASTING METHODS

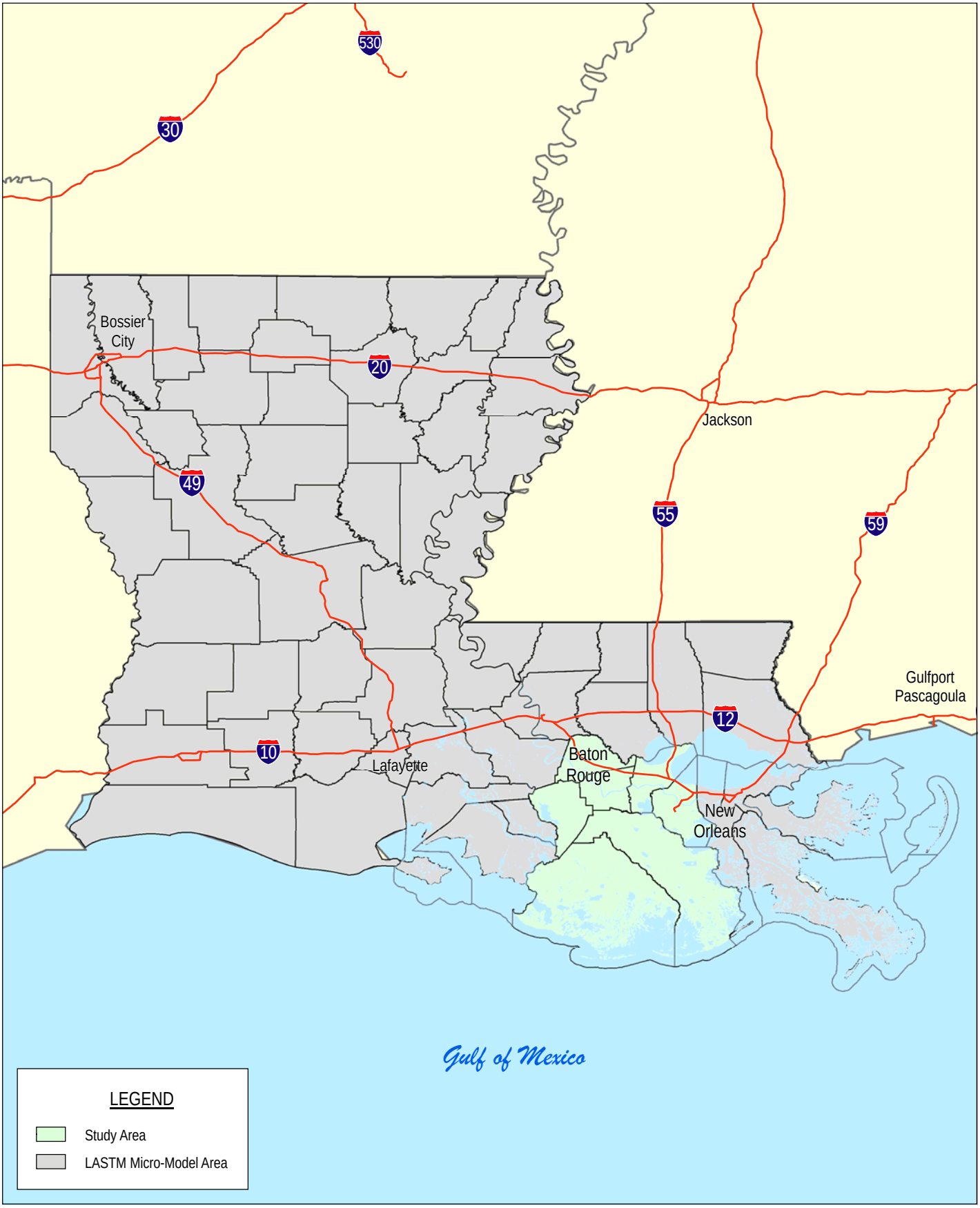
A major component of the overall effort associated with this Toll Study was the development of specialized tools for forecasting toll and non-toll traffic in the study corridor. This chapter discusses the steps taken and processes followed to provide capability in this area, including the following:

- Specification of travel demand modeling requirements;
- Review and evaluation of pre-existing travel demand models used in prior studies of the same corridor;
- Extraction and refinement from the WSA statewide Lousiana model of a sub-area model suitable for use in this study; and
- Application of toll modeling and forecasting principles within this sub-area model.

FORECASTING REQUIREMENTS

In order to produce estimates of future total as well as toll demand for the proposed alternatives, a travel demand model was required having the following characteristics:

- Study area extent including the project corridor, defined for this task as including the parishes of Ascension, Assumption, St. James, St. John the Baptist, St. Charles, Lafourche, and Terrebonne;
- A sufficiently complete and up-to-date computer representation of the network of major roadways in this study area;
- User equilibrium traffic assignment capability with link travel times adjusted to reflect congested conditions in peak periods;
- Processes for generating weekday trip tables based upon socio-economic forecasts, including long-distance, truck, tourist, business,



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LASTM MICRO-MODEL AND STUDY AREAS

FIGURE 4-1

journey-to-work, and all other categories of roadway travel within and outside of the study area;
- Calibration based upon year 2000 traffic count and socioeconomic data, reflecting the latest U.S. Census and LaDOTD sources; and
- Forecast horizon year no earlier than 2025, with interim future year trip tables based upon reasonable growth assumptions.

These requirements were considered in evaluating the attributes of the various travel demand models available to WSA, as discussed below.

REVIEW OF EXISTING TRAVEL DEMAND MODELS

WSA is aware of a number of pre-existing travel demand models that had been created for other studies in this area, including the following:

- The Houma-Thibodaux Metropolitan Planning Organization (MPO) Model;
- The LaDOTD Statewide Model; and
- The prior Hurricane Evacuation Model.

The first of these is a TRANPLAN-based weekday travel demand model developed for and maintained by the Houma-Thibodaux MPO. It has been used in a number of studies, including the region's Transportation Improvement Plan, the Metropolitan Transportation Plan Update, and a prior study of a proposed extension of LA 3225 to Larose. It has been calibrated at the year 2000 level using up-to-date demographic data from the 2000 U.S. Census and includes a 2025 forecast horizon year. It includes a comprehensive and detailed network representation of area roadways including local city streets as well as major highways. This network may be used to perform user equilibrium highway assignment with link travel times automatically adjusted to represent congested conditions in peak time periods. Unfortunately, however, the boundary of this model's study area terminates just north of Thibodaux, omitting most of the project area.

By contrast, the study area boundary of the Statewide Model includes the entire state of Louisiana. This is a TransCAD-based weekday travel model previously developed for the LaDOTD by WSA for use in evaluating inter-city travel on rural highways throughout the state. It has been calibrated at the year 2000 level using traffic count data taken directly from the LaDOTD's databases, as well as up-to-date demographic information from the U.S. Census. Census Journey-toWork matrices were used to develop commute trip tables, while an innovative macro/micro

modeling framework was applied in order to develop long-distance and truck trip tables. Woods and Poole socioeconomic growth projections were used to develop a 2030 horizon, as well as interim forecast years. The roadway network for this model includes all major interstate and state highways, as well as some planned improvement projects and local roads. User equilibrium assignment may be performed with link travel times adjusted for congestion in peak periods; however, this adjustment is not performed automatically in urban areas in the original statewide model. It is important to note that, although the available MPO models were used as inputs to the development of the Statewide Model, this model was developed as a tool for analyzing travel on rural highways and not congested or multi-modal urban transportation systems.

Another model, developed by URS for a prior study of the project corridor as a Hurricane Evacuation Route, includes the desired study area boundary. However, it is rather different from the other two models described here in that its trip tables are not intended to represent average weekday travel patterns. Rather, they are intended to simulate the traffic patterns that would occur during a hurricane evacuation event in the area. The roadway network is also not intended to represent those links under use by travelers on an average weekday; in fact, certain links were omitted or deleted from this network based upon the determination that these would be flooded during a hurricane. Therefore, this model is unsuitable for use in evaluating the corridor as a toll route.

TRAVEL DEMAND FORECASTING PROCESS

Due to the considerations cited above, WSA determined that the most appropriate travel demand model development approach would include the following:

- Validation/review of the Lousiana Statewide model;
- Improvement of the Statewide Model via addition of zone and network detail;
- Coding of a generalized, representative, North-South corridor alignment within the statewide model;
- Application of the macro/micro modeling run framework, with an added step involving extraction of a sub-area model having the desired geographic extent;
- Re-calibration of this sub-area model using the VOYAGER package with full equilibrium highway assignment; and
- Implementation of a standard WSA toll modeling algorithm within this package.

This process, and the statewide model itself, are discussed below in detail.

THE LOUISIANA STATEWIDE MODEL (LASTM) - BACKGROUND

The Louisiana Statewide Traffic Model (LaSTM) is focused on auto and truck traffic for intercity and other rural, non-urban highways. It includes two inter-related models, a nationwide Macro model covering the 48 states outside Louisiana for forecasting long distance interstate and intrastate trips and a Louisiana-only Micro model for short distance trips within Louisiana. Sub-area analysis and matrix disaggregation techniques are used to import and convert the macro model trip tables to the micro model, allowing the micro model to capture both short and long distance trip purposes for traffic assignments. Figure 4-1 shows the micro model area in relation to the study region.

Use of the LaSTM is streamlined by a Scenario Manager tool, which allows the user to manage important input data and model parameters. In addition, it has built-in automated procedures such as calculating scenario year social-economic data.

MODEL REFINEMENT IN THE STUDY AREA

Since the LaSTM was designed and calibrated for forecasting statewide auto and truck travel, it does not have the zone level and network detail necessary for forecasting traffic in smaller areas. To better represent the settlement and traffic patterns of the major highways, it was necessary to refine the study area's highway and zone networks.

The study area refinement process involved four steps:

1. Splitting statewide model zones into smaller zones in the micro model zone level;
2. Adding major highway collectors to reflect local traffic pattern and to work with the smaller zone system;
3. Adding centroid collectors corresponding to the zone split; and,
4. Developing socioeconomic data for the new zones.

The Houma-Thibodaux Metropolitan Area Model was used as a major reference for splitting zones and adding highway details in the Houma area, along with census tract maps from the US Census web database, USGS aerial photography, and satellite imagery freely available from ESRI. The census maps, aerial photos, and satellite photos provided especially important guidance when working with zones outside of the MPO model area.

A few major arterials in the Houma metropolitan area were added to the statewide model, including Route 3040/Tunnel Boulevard., Bayou Gardens Boulevard, and Hollywood Boulevard. Statewide model zones were split into smaller zones somewhat coarser than but nonetheless consistent with the MPO zone structure. For the area outside of Houma, the new structure is coherent with census tract boundaries and settlement patterns observed from satellite photos and aerial photography.

Socioeconomic data were disaggregated based on census tract level household and population information, as well as MPO databases when available. Employment data were disaggregated based on proportional relationships to the original zones as well as information from the MPO database when available.

LaSTM Application

Model runs were done for year 2000 (the base year), as well as years 2015, 2025, and 2030. With the exception of the base year, each year included two scenarios, one with the proposed hurricane evacuation route, and one without. In addition, committed future highway improvement programs were included in the future year highway network, e.g. upgrading US-90 to interstate highway as I-49, and adding service roads along I-49.

Sub-Area Model Extraction and Re-Calibration

Using sub-area analysis tools, a special sub-area model, including the new zone and network detail described above, was extracted from the LaSTM model runs indicated above. The geographic extent of this sub-area model is indicated by green shading in Figure 4-1. Trip tables were extracted for no-build as well as "Hurricane Evacuation" scenarios in all years, with trips entering or exiting the sub-area on roadway links becoming "external" trips.

Within the framework of the original LaSTM, link speeds are not automatically adjusted within urban areas to reflect congested conditions; rather, user-specified peak speed conditions may be entered for different facility types. However, given the nature of the proposed North-South Corridor as both an urban bypass and an inter-urban connector route, a more realistic representation of urban congestion was required. Accordingly, the traffic assignment logic of the original LaSTM was replaced with standard equilibrium traffic assignment by time of day, with link speeds automatically adjusted in all time periods to reflect congested conditions. As such, this fundamental alteration required that the sub-area model be essentially re-calibrated.

Information from LaDOTD traffic count databases, as well as WSA route reconnaissance information collected at the project's inception, and survey information made available from prior studies were used to adjust highway network link characteristics as well as travel patterns embedded within the sub-area model trip tables. All modifications were carried through to future year trip tables and networks in a manner designed to preserve the growth patterns of the original model.

Table 4-1 gives a summary of the performance of this model relative to LaDOTD traffic count information. The sub-area model mimics observed travel patterns on many if not most major roadway links in the immediate project area.

The new sub-area model was used to produce model runs representing no-build as well as non-toll alternatives for the North-South Corridor for use by Urban Systems, Inc., in analyzing the potential traffic impacts of this route in the study area. The reader may refer to the Traffic Analysis Technical Appendix of the Houma – Thibodaux to LA 3127 Connection EIS for further details regarding this analysis.

WSA TOLL MODELING ALGORITHM

To permit the analysis of toll North-South Corridor alternatives, WSA's toll modeling algorithm was imported into the context of the sub-area model. This algorithm compares the cost of non-toll and toll routes on a movement-by-movement basis and calculates the user cost-benefit ratio of utilizing a toll route. This cost comparison includes travel time, distance-based, and out-of-pocket toll costs.

Two key parameters are used within this framework to convert travel time and distance units to money costs, so that they may be compared with toll costs. The multiplier applied to distance costs within this framework is commonly referred to merely as "Vehicle Operating Costs," or VOC, while the multiplier associated with travel time is referred to within the field as the "Value of Time." Different values of each of these parameters were assigned to each trip purpose, as shown in Table 4-2.

The value of time was calculated as a function of hourly compensation rates for the project area, obtained using data from the U.S. Census and Bureau of Labor Statistics. Business travel time was assumed to be valued

Table 4-1
Summary of WSA Statewide Subarea Model Performance
No-Build Case (Planned Improvements Only)

Roadway	Section	Base Year Total Day Traffic Count	Base Year Total Day Assignment	Percent Difference	Base Year AM Peak Assignment	Year 2015 Total Day Assignment	Year 2025 Total Day Assignment	Base Year-Year 2025 Growth Rate
LA 24	LA 316-LA 311	22,540	26,000	15.4	2,000	48,400	50,300	2.67
LA 24	LA 20-LA 3185	27,600	26,800	-2.9	1,900	50,600	53,900	2.83
LA 20	LA 24-US 90	5,050	4,200	-16.8	300	5,900	6,800	1.95
LA 311	US 90-LA 24	2,800	3,100	10.7	200	7,900	8,500	4.12
LA 1	East of LA 20	10,000	9,500	-5.0	1,000	17,200	17,600	2.50
LA 648	Near LA 1/LA 308	6,800	6,800	0.0	600	12,900	14,000	2.93
LA 3213	Gramercy-Wallace Bridge	6500	6,900	6.2	600	17,700	19,600	4.26
IH 10	LA 3213-LA 3188	33000	30,400	-7.9	8,800	47,900	57,900	2.61

Table 4-2
Assumed Travel Behavior Parameters By Trip Purpose

Trip Purpose	Value of Time (cents/min)	Vehicle Operating Costs (cents/mi)
Trucking	4.7	54.5
Business	15.6	19.2
Commute	7.8	19.2
Other	5.5	19.2

at the same rate as wages, while commute travel time was assigned half this value, and travel for other purposes was assumed to have 35 percent the perceptual weight of business travel. Truck travel time valuation was assumed to be the same as the average wage rate; however, because many truckers are compensated on a per-mile rather than per-hour basis, and because operating costs are in fact significantly higher for trucks than for cars, trucks were assigned a VOC over twice as large as that of cars. In order to incorporate the effects of static tolls on driver choice, the VOT and VOC were also inflated at a nominal rate of 2.5 percent per year. This reflects the fact that tolls will decline in real terms throughout the forecast period, relative to wages and prices of other goods.

Model runs were prepared at 2015 and 2025 forecast years, reflecting the opening and horizon years for the project. In addition to the no-build and toll-free runs, which were provided to Urban Systems for use in their Traffic Analysis, four different toll rates were tested for traffic and revenue potential, to permit recommendation of a selected toll rate for each alignment. For the 2025 forecast year, runs were prepared reflecting both the initial 2015 network condition and the improved 2025 condition, including I-49 and the expansion of the North-South Corridor from two to four lanes. These additional runs were used to permit interpolation between the 2015 and 2025 traffic and revenue forecasts. The findings of these forecasts are discussed in the next chapter.

CHAPTER 5

TRAFFIC AND REVENUE ANALYSIS

This chapter presents the findings of WSA's traffic and revenue analysis for the North-South Corridor, including the following:

- Tolling alternatives development process;
- Toll sensitivity analysis;
- Background information and assumptions used in forecasting;
- Traffic and revenue estimates; and
- Cost and toll feasibility analysis.

These topics are covered in detail in the sections to follow.

DEVELOPMENT OF ALTERNATIVES

Three alternative alignments of the Houma-Thibodaux to LA 3127 Connection were developed for examination as potential future toll roads, with the understanding that these would be representative alignments, rather than final selections from existing options. These alignments were developed by analyzing the "Range of Reasonable Alternative Corridors" provided by Buchart-Horn with respect to tolling considerations.

WSA reviewed the submitted constraints map and selected three proposed alignments for the toll study, based upon an analysis of factors important to toll roads. Factors not directly related to tolling, such as construction cost, environmental or social impacts, or hurricane evacuation needs, were not within the scope of this review, given that these issues are to be treated in more depth within the overall EIS. The three preferred toll alternatives are described below, as well as the reasons for selecting these alternatives.

Twelve possible highway segments were identified for consideration under the reduced range of alternative corridors for the Houma-Thibodaux to LA 3127 Connection (refer to Figure 1-1 for a map showing these segments). In total, 13 distinct logical routings could be enumerated utilizing these segments.

WSA removed the following candidate segments from further consideration in its toll study for the following reasons:

- Segment B: Either this Segment or Segment A could be constructed at the southern terminus of a western alignment to link the project to US 90. Segment A offers direct connectivity to LA 311, while Segment B does not. Because direct connectivity is of critical importance to toll revenue generation, Segment A is preferred to Segment B.

- Segment E: Either this Segment or Segment D could be constructed at the southern terminus of a central alignment to link the project to US 90. Segment D offers direct connectivity to LA 316, while Segment E does not. Therefore, Segment D is preferred to Segment E for much the same reason that Segment A is preferred to Segment B.

- Segment H: This segment contains a section that runs very closely parallel to LA 308 and LA 1. Competition with a directly parallel tax-supported non-tolled route is generally avoided for toll roads. Therefore, Segment G is preferred to this segment.

- Segment J: This segment provides a junction at LA 3127 serving South Vacherie and providing indirect access to Future LA 3213 and the Gramercy-Wallace Bridge, while Segment K would provide access in South Vacherie and direct connectivity to Future LA 3213. As noted earlier, connectivity is of high importance to toll roads and therefore Segment K is preferred on this basis.

Having eliminated and combined the aforementioned segments as described, the following alternative routings remain:

1. ACK
2. DFGIK
3. L

The three toll alignments proposed here represent “best-case” conditions, with ideal access to the areas served by the North-South Corridor. Considerably greater study detail would be required before actually financing any alternative; and refinement would be required if some

variation on one of these alternatives using a different combination of the 12 "reduced range" segments were selected for further study. However, the three scenarios shown here provide the capability to a) develop a general sense of overall financial feasibility for each toll alternative, and b) rank alternatives with respect to relative financial feasibility. Therefore these alignments satisfy the objectives of the present toll study.

TOLLING CONCEPT

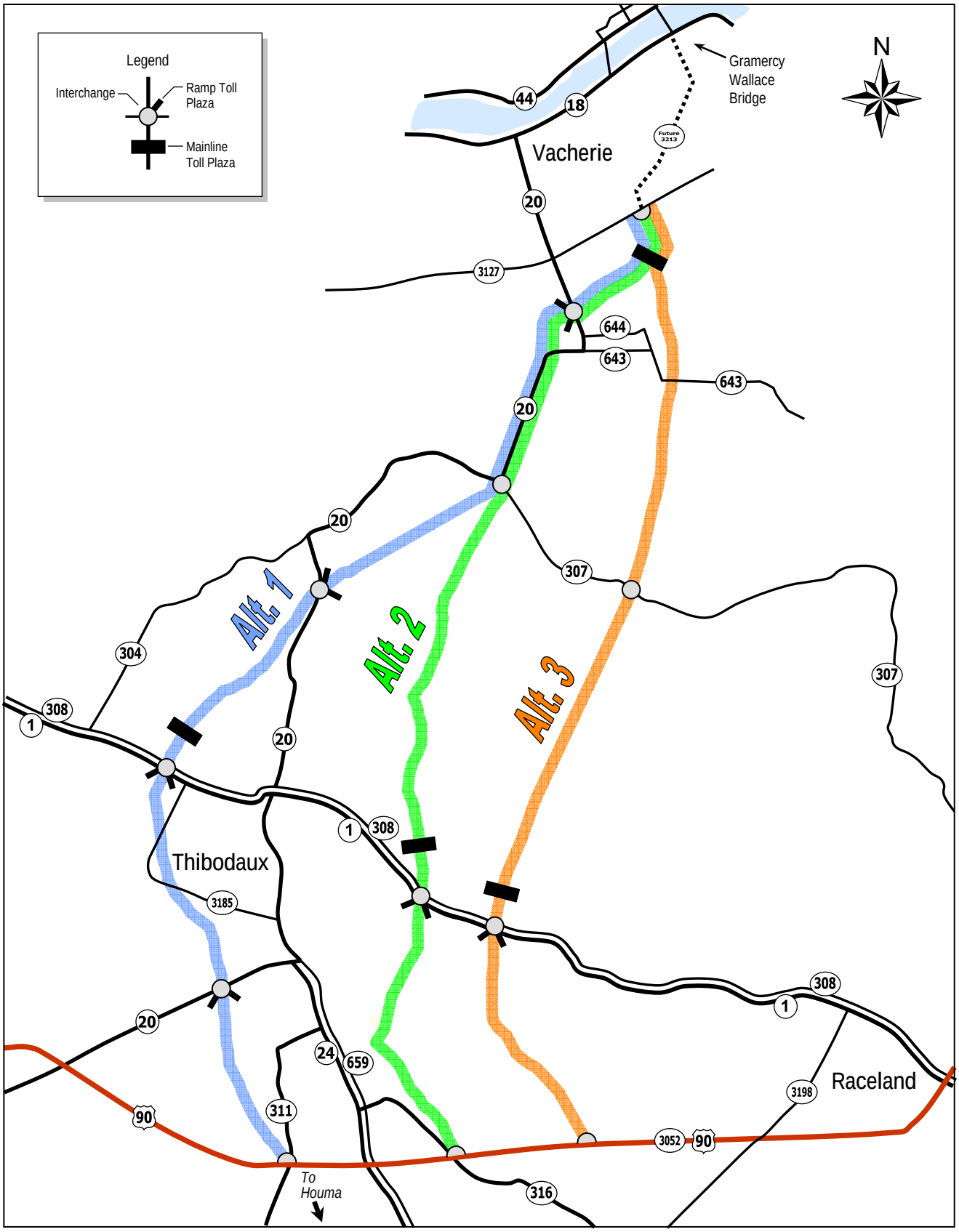
Specific tolling configurations, including locations of ramp and mainline plazas, were developed by WSA for all three alternatives (see Figure 5-1). The logic behind the tolling configurations chosen is explained below.

A fixed-barrier toll plaza configuration was chosen as the simplest and most natural configuration for a system of this type. Fixed-barrier configurations do not assume special software or interchange-to-interchange movement pricing techniques, rather, the same price is paid by every user of the same vehicle class at a given plaza, regardless of entry or exit point. Furthermore, because the north-south corridor would have a limited number of access and egress points, it is possible to design a fixed-barrier configuration such that no user would have to pass through a toll plaza more than two times on any particular trip. This design minimizes potential delays due to queuing at toll plazas.

In general, water crossings offer good locations at which to position mainline toll plazas, due to the limited number of alternative routes typically available at such locations. Based on this consideration, in all three cases the location immediately south of LA 3127 was selected as a mainline plaza location, due to its close connection with Future LA 3213 and the Gramercy-Wallace Bridge. Similarly, the segment immediately north of LA 1 / LA 308 was also chosen as a mainline plaza location, given the limited number of crossings of the waterway between these two large arterial routes.

Ramp plaza locations were added in such a manner as to ensure system closure, or the principle that every user of the toll facility should pay at least one toll. To Alternative 1, ramp plazas were added at LA 20 south of LA 1/LA 308, at LA 1, at LA 20 north of LA 1/LA 308, and at LA 20 north of LA 643. Two sets of ramp plazas were added to Alternative 2, at LA 1 and at LA 20 north of LA 643. Only one ramp plaza was added to Alternative 3, at LA 1.

Houma-Thibodaux to LA 3127 Connection Preliminary Toll Study



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TOLLING AND ACCESS CONFIGURATION
ALTERNATIVES 1-3

FIGURE 5-1

TOLL SENSITIVITY ANALYSIS

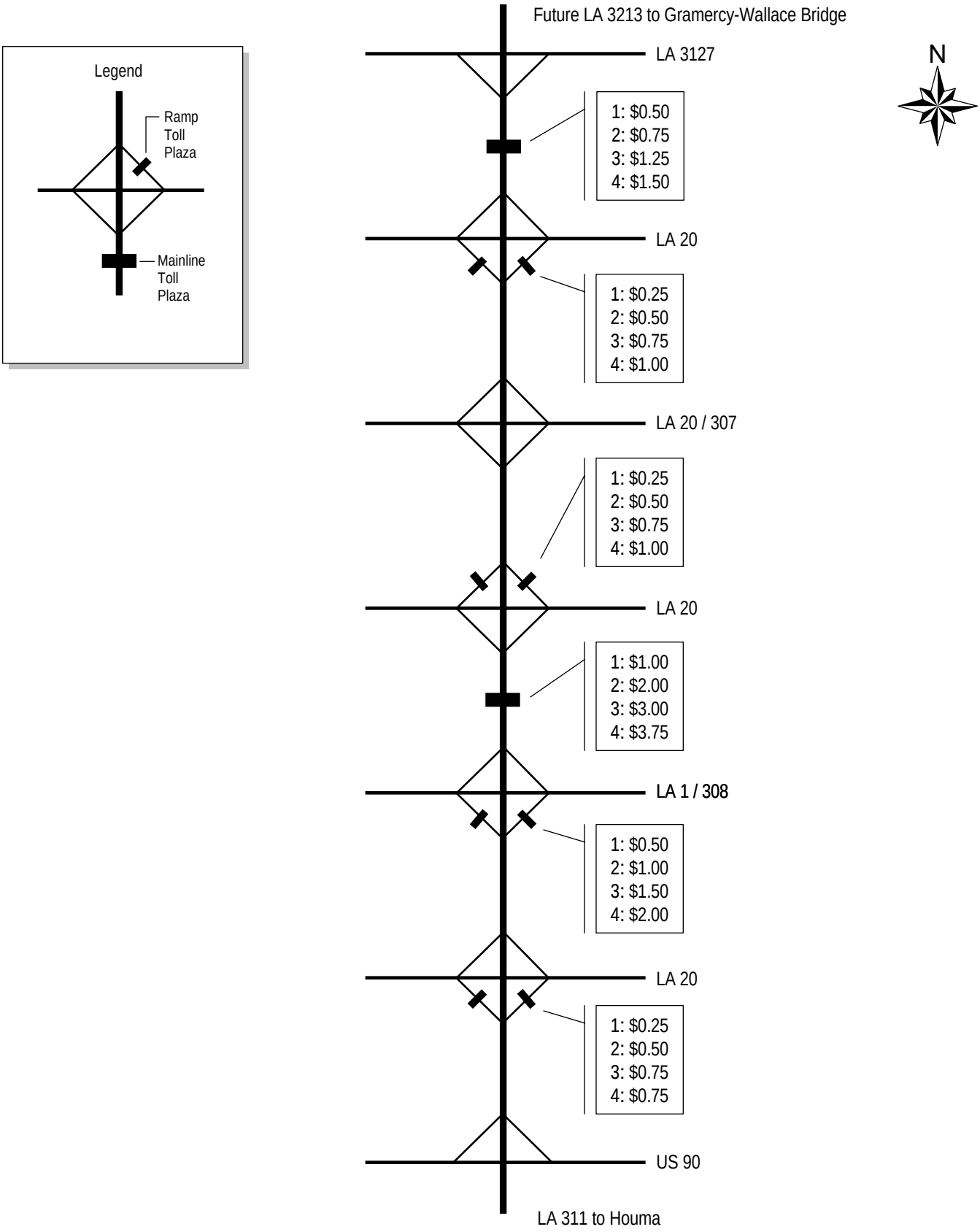
Four sets of toll rates were developed for each alternative based upon nominal rates per mile of $0.05, $0.10, $0.15 and $0.20. Toll rates for each plaza were based upon the mileage of the longest movement which would otherwise be toll-free if the toll plaza in question were not present. For example, if the toll plaza at LA 1 under Alternative 3 were not present, users could travel 4.5 miles from US 90 to LA 1 without paying a toll. Therefore, users at this location are charged for approximately 4.5 miles of toll road travel, or, at $0.05 per mile, approximately $0.25. All tolls were rounded to quarters to simplify plaza operations and revenue collections. The full range of toll rates tested for each alternative is shown in Table 5-1 and also posted by location in Figures 5-2 through 5-4.

Table 5-1
Alternative Toll Rates by Location

Alternative	Plaza	Miles	Rate 1 $0.05	Rate 2 $0.10	Rate 3 $0.15	Rate 4 $0.20
1	N.Mainline	7.5	$0.50	$0.75	$1.25	$1.50
1	LA 20 (1)	4.5	0.25	0.50	0.75	1.00
1	LA 20 (2)	4.5	0.25	0.50	0.75	1.00
1	S.Mainline	19.3	1.00	2.00	3.00	3.75
1	LA 1	9.6	0.50	1.00	1.50	2.00
1	LA 20 (3)	4.2	0.25	0.50	0.75	0.75
2	N.Mainline	7.5	0.50	0.75	1.25	1.50
2	LA 20 (1)	4.5	0.25	0.50	0.75	1.00
2	S.Mainline	16.0	0.75	1.50	2.50	3.25
2	LA 1	6.6	0.25	0.75	1.00	1.25
3	N.Mainline	8.6	0.50	0.75	1.25	1.75
3	S.Mainline	13.3	0.75	1.25	2.00	2.75
3	LA 1	5.5	0.25	0.50	0.75	1.00

Traffic assignments were performed at each of these toll rates using the sub-area travel demand model described in the previous section in the opening year for the project, 2015. The product of average weekday transactions and tolls was summed for each alternative and toll rate to

Houma-Thibodaux to LA 3127 Connection Preliminary Toll Study



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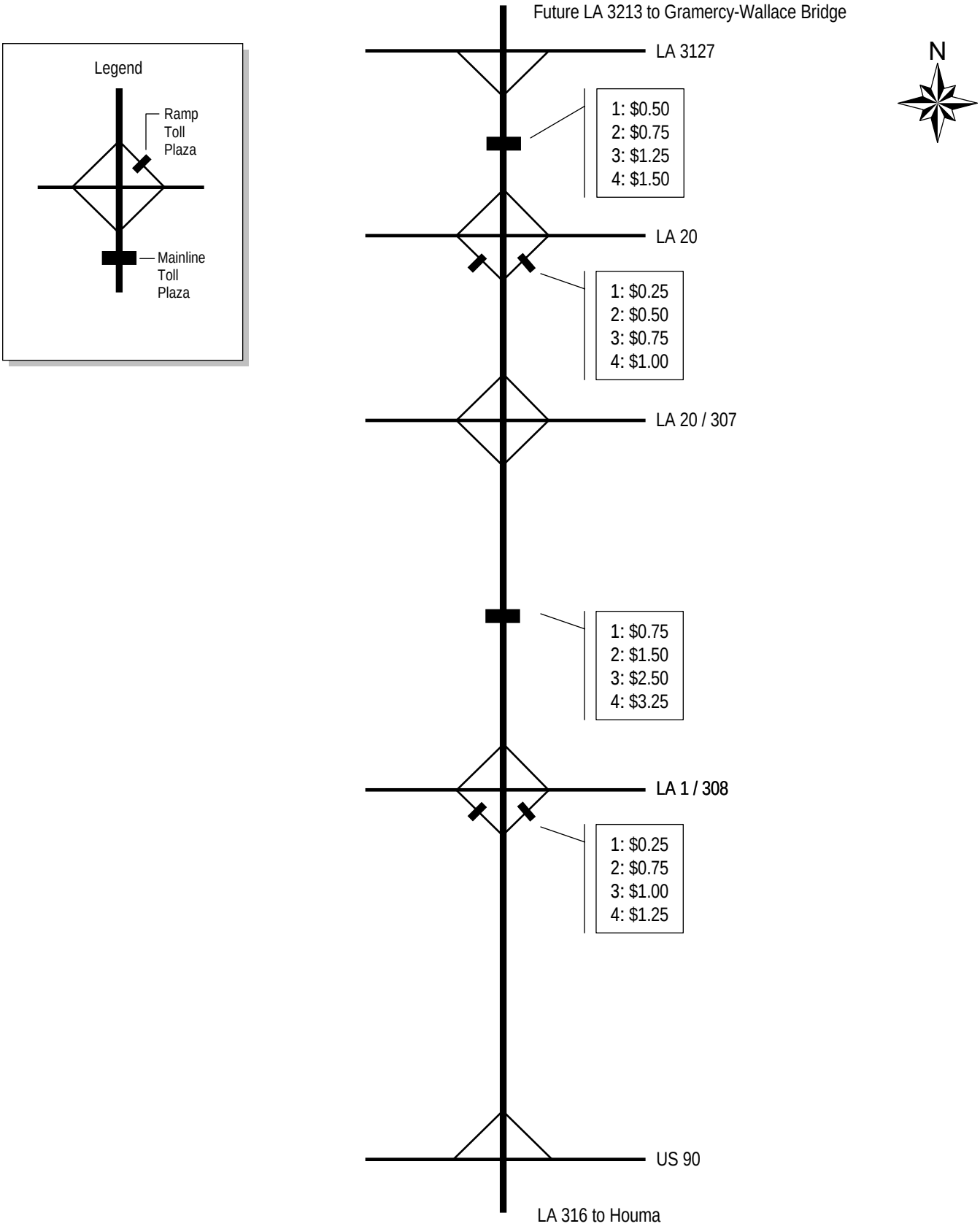
TOLL RATE OPTIONS - ALTERNATIVE 1

FIGURE 5-2



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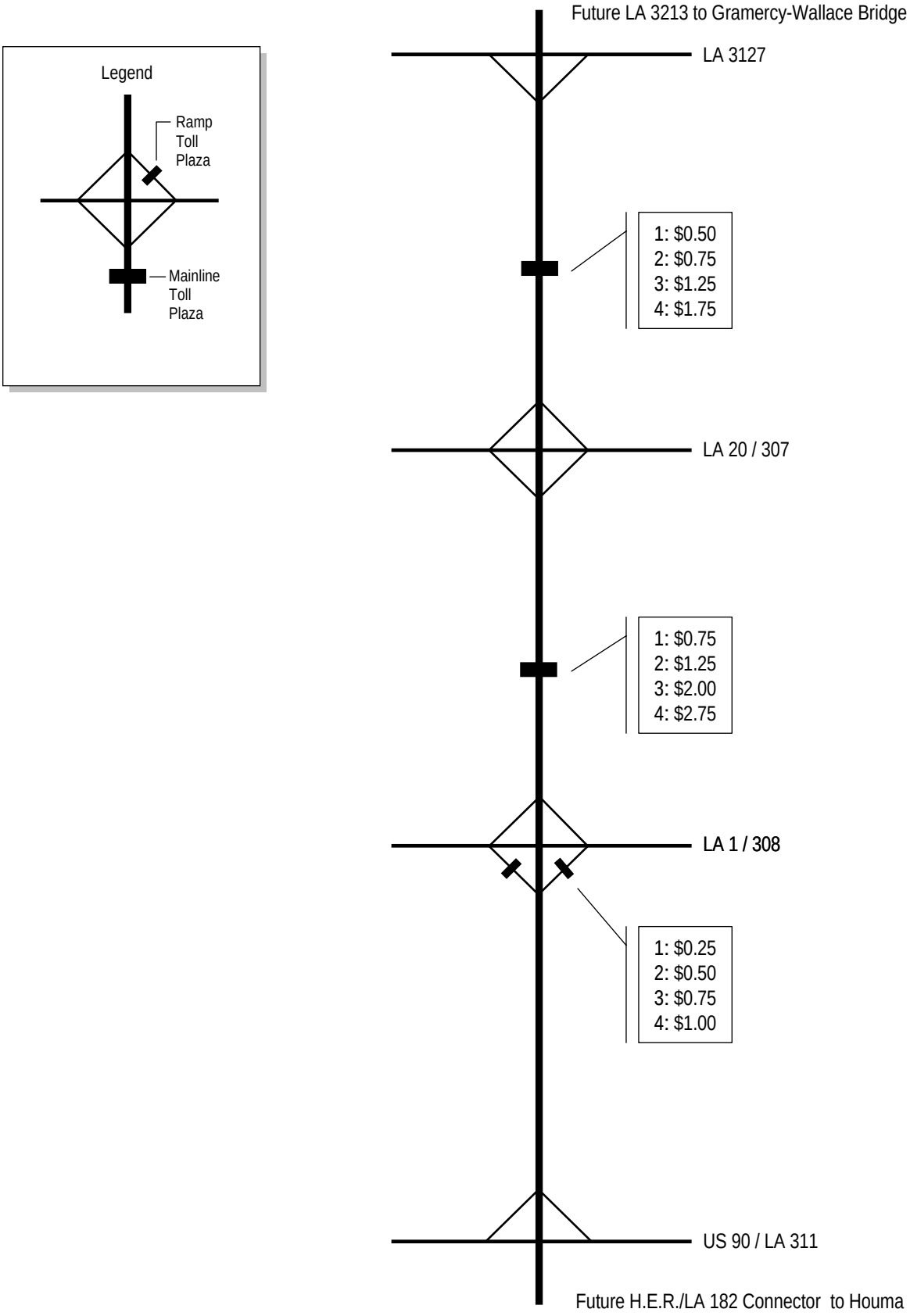
TOLL RATE OPTIONS - ALTERNATIVE 2

FIGURE 5-3

Houma-Thibodaux to LA 3127 Connection Preliminary Toll Study



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TOLL RATE OPTIONS - ALTERNATIVE 3

FIGURE 5-4

calculate variation in total transactions and revenue by toll rate for the tested range.

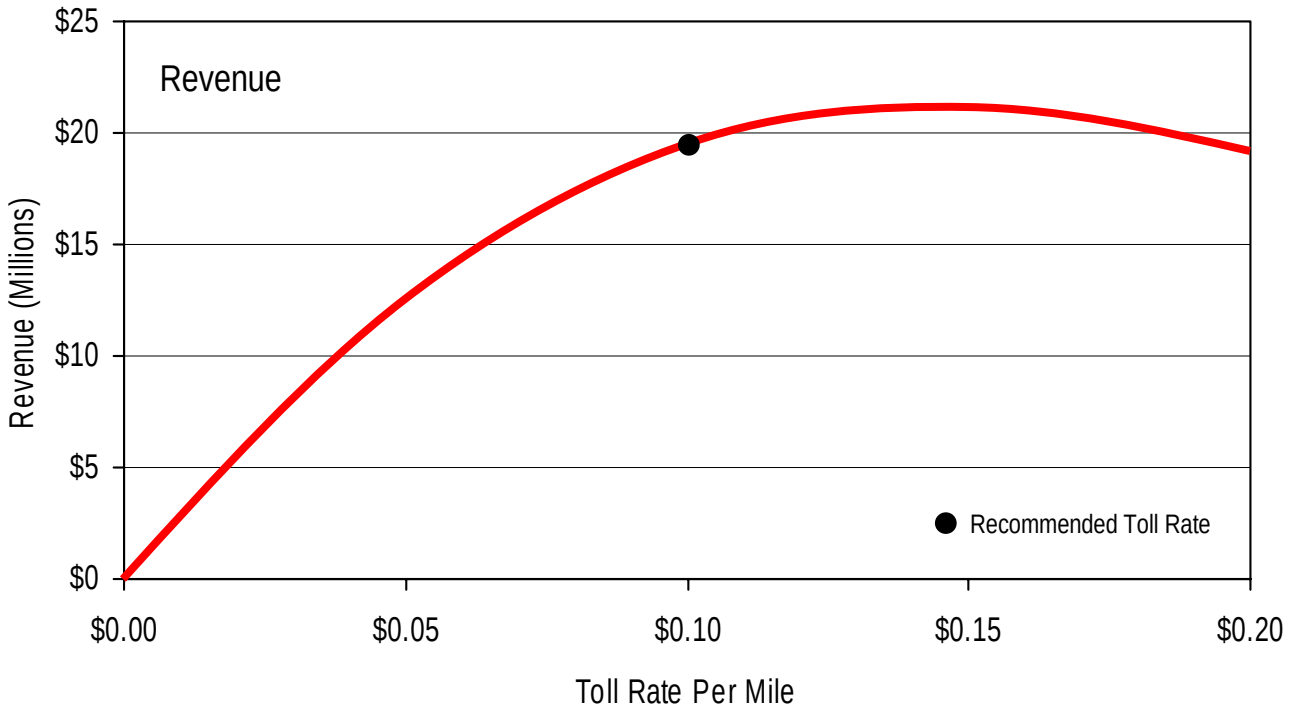
Curves showing these relationships are shown in Figures 5-5 through 5-7 for Alternatives 1, 2 and 3, respectively. Alternatives 1 and 2 show a similar pattern, whereby toll increases beyond Rate 3 ($0.15 per mile) produce declining revenues. The same is true of Alternative 3; however, the decrease in revenues beyond Rate 3 is not as significant as in the other cases.

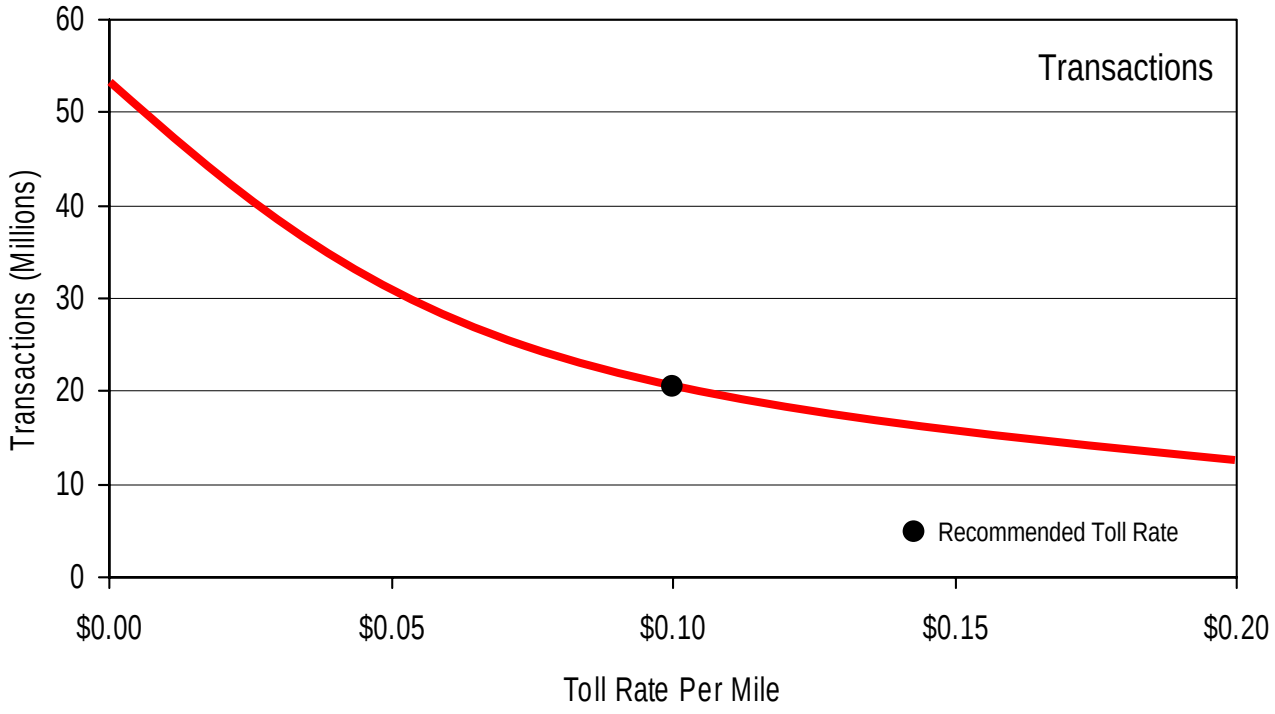
In general, WSA does not recommend the selection of revenue-maximizing tolls for new projects, but rather tolls slightly below these levels, so that, in the event of unforeseen circumstances not relating to toll sensitivity which negatively affect transactions and revenue, it is possible to increase tolls to raise additional revenues. Consequently, although Rate 3 maximizes revenue for all alternatives, it is not the recommended toll for any. Rather, the next lowest toll, Rate 2, is recommended for all alternatives based upon these considerations.

FORECAST ASSUMPTIONS

Transactions and revenue forecasts were prepared assuming that the recommended toll rate, Rate 2, would be implemented as described above. The following basic assumptions were also adopted for forecasting purposes:

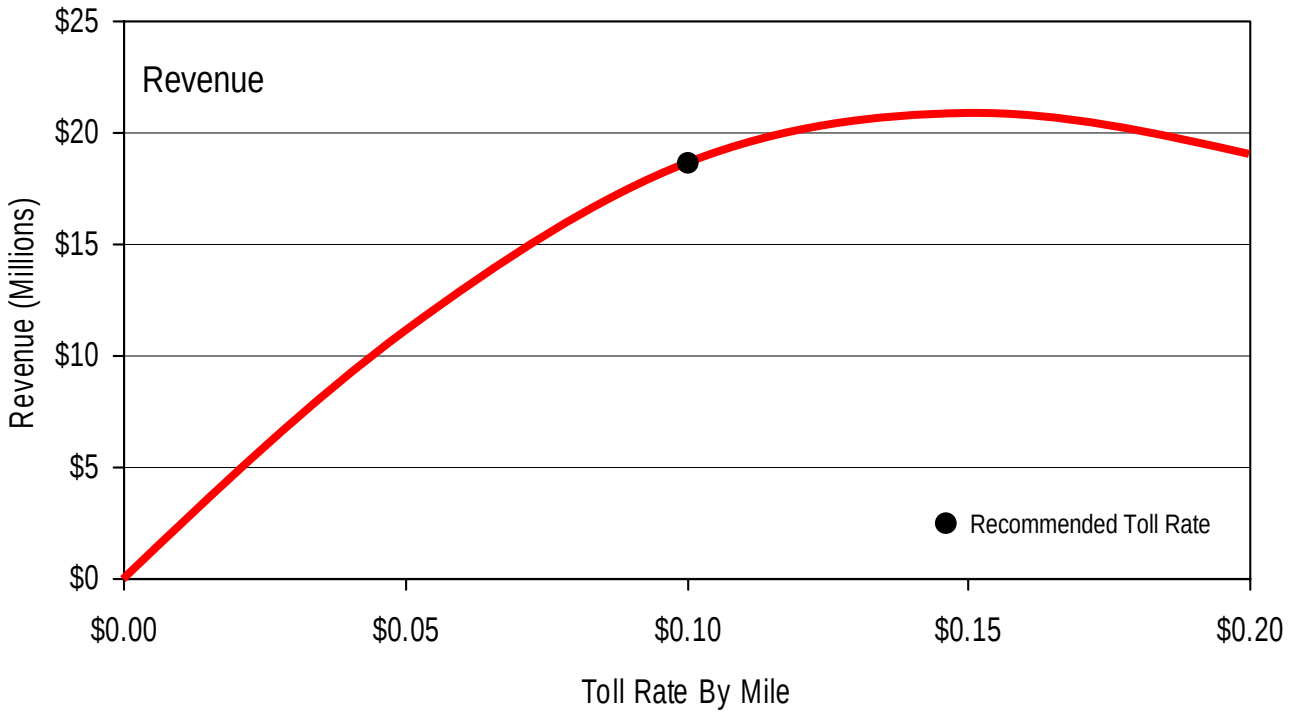
1. The project will open in 2015, regardless of exact configuration;
2. No toll increases will be enacted throughout the forecast period;
3. The project configuration would be one toll lane per direction, with dedicated ramp access at all interchanges. Should the LaDOTD opt to expand the facility in 2025 as proposed, it could examine the feasibility of financing this expansion with a future toll increase;
4. The conversion of US 90 to the I-49 freeway configuration is to occur by 2025;
5. The proposed Prospect Boulevard extension is not assumed;
6. Only funded improvements from the Houma-Thibodaux Transportation Improvement Plan are assumed;
7. Inflation is assumed to be 2.5 percent per annum throughout the forecast period;
8. No major deviations of growth in wages from this assumed inflationary rate are to occur either on a localized or region-wide basis;

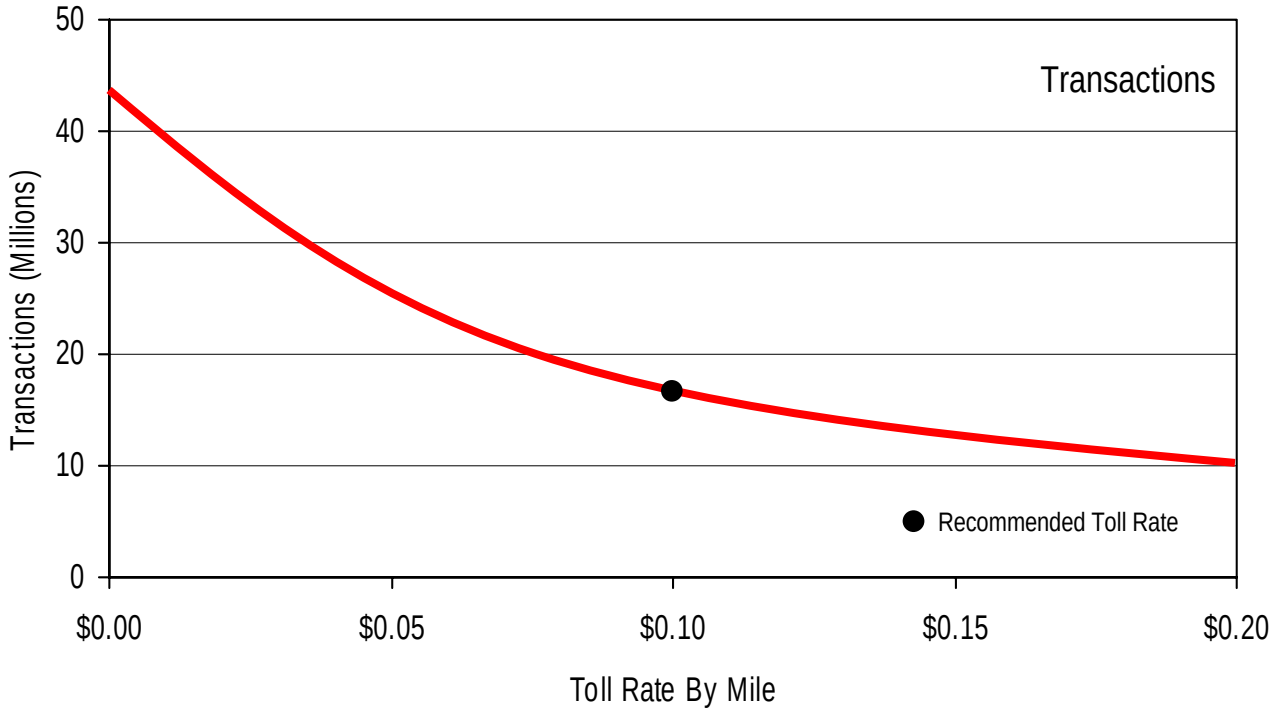




TOLL SENSITIVITY CURVES - ALTERNATIVE 1

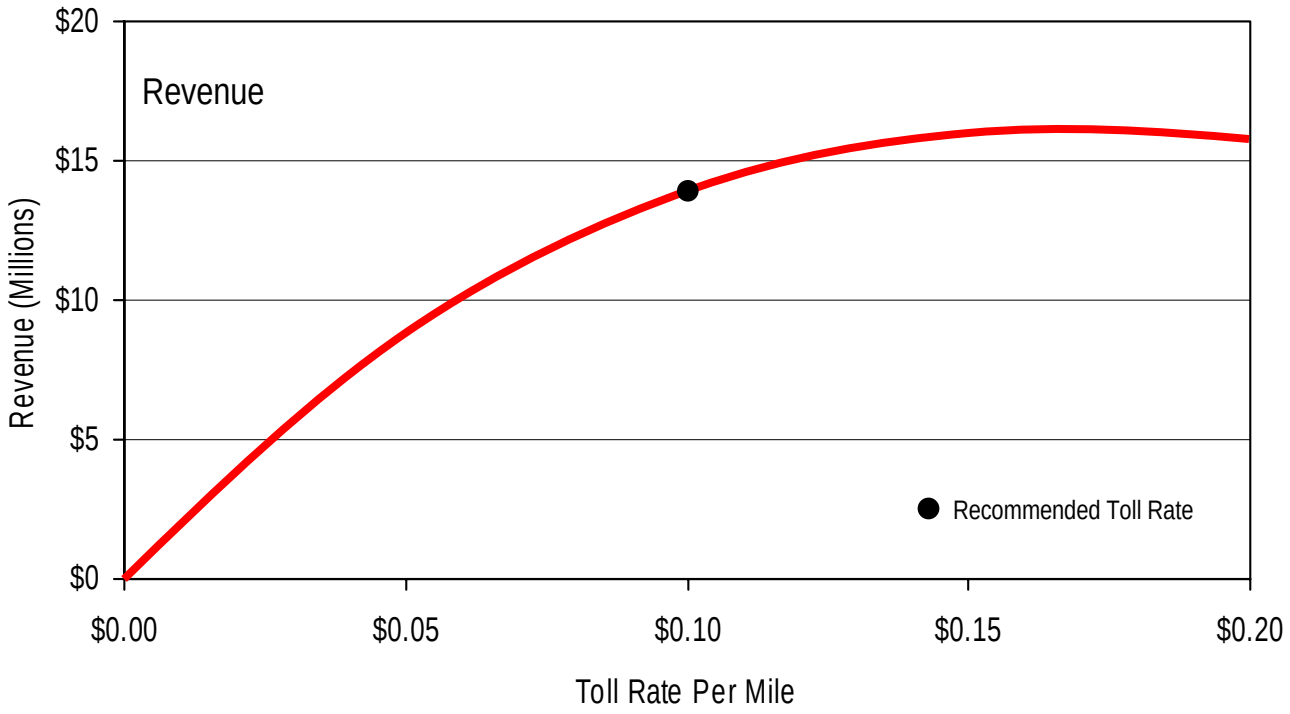
FIGURE 5-5

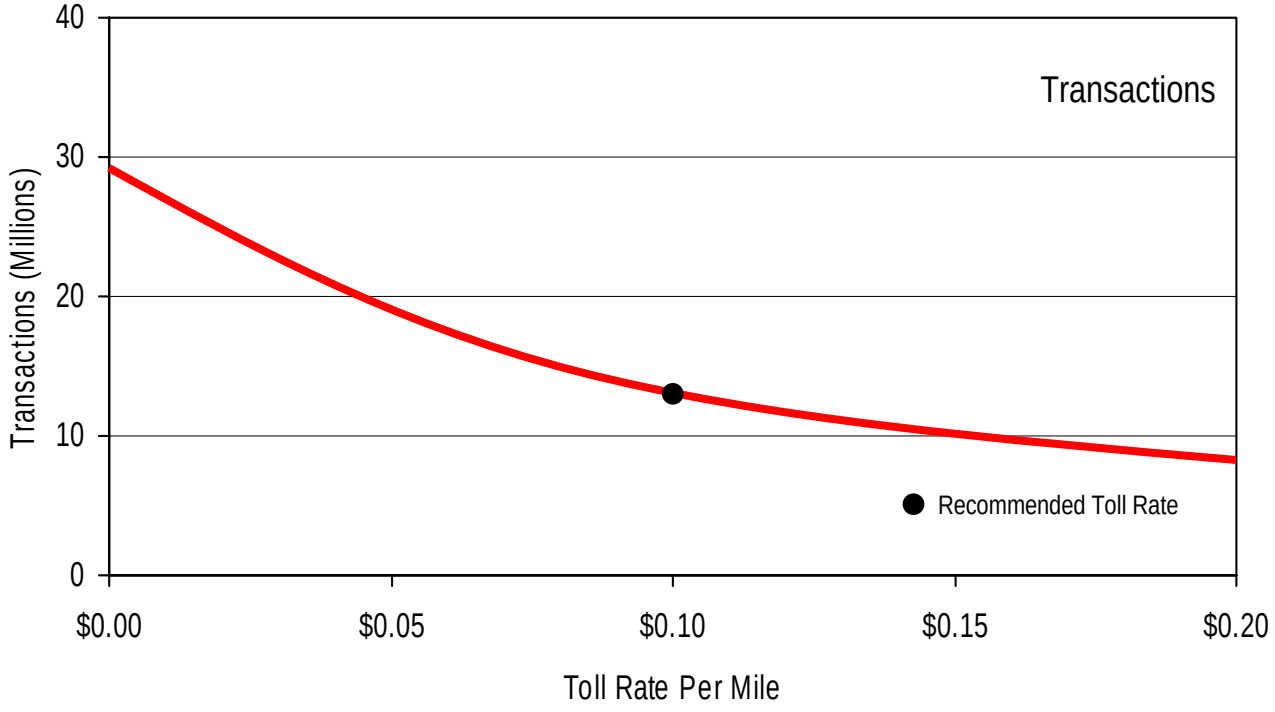




TOLL SENSITIVITY CURVES - ALTERNATIVE 2

FIGURE 5-6





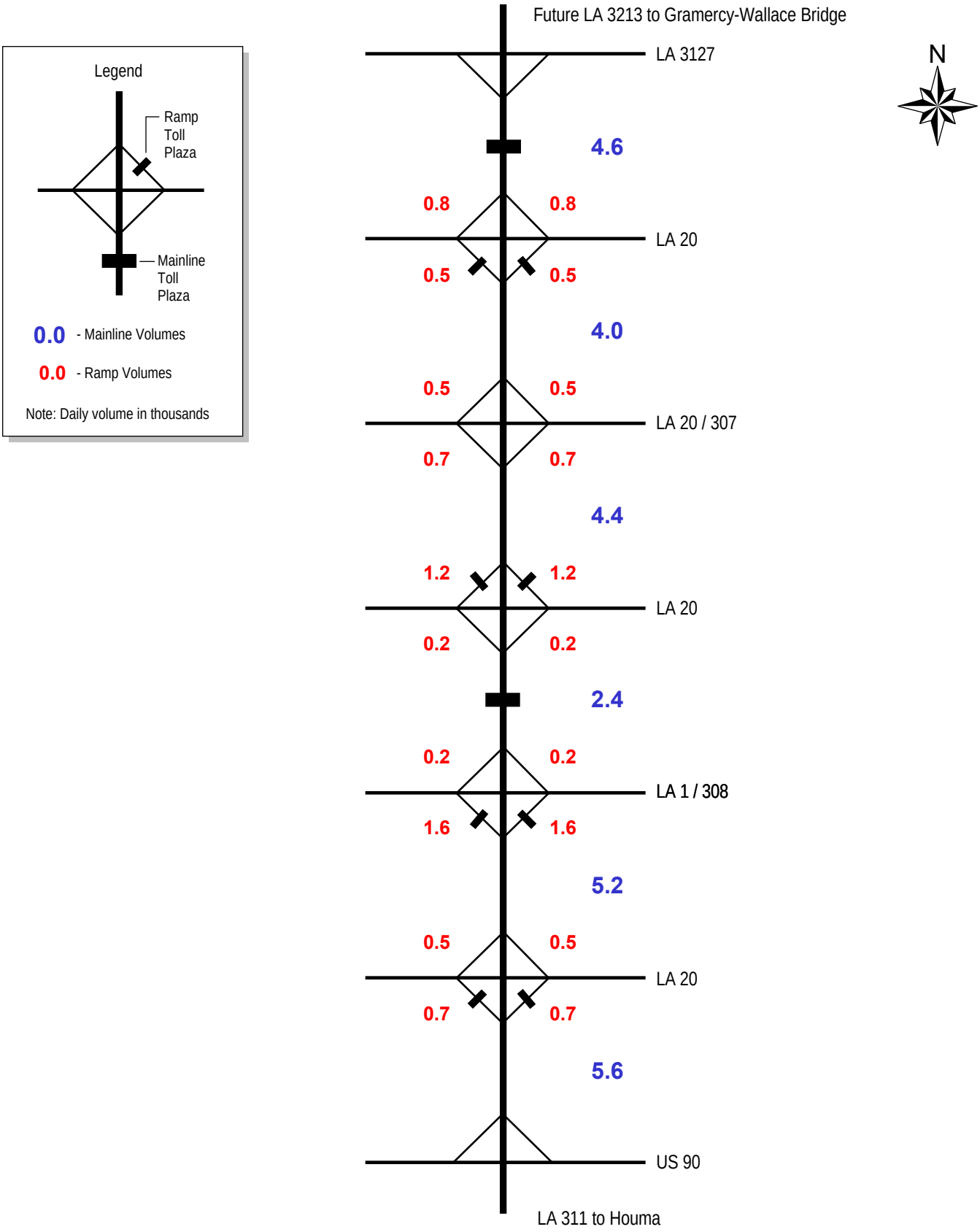
TOLL SENSITIVITY CURVES - ALTERNATIVE 3

FIGURE 5-7

9. Growth in gas prices and changes in other components of vehicle operating cost will not deviate in such a manner as to produce deviations in vehicle operating cost from the assumed inflationary rate;
10. Economic growth in the project study area will follow the trends projected by Woods and Poole Economics. These projections are the most current, however, it should be noted that the Woods and Poole projections do not reflect impacts associated with hurricanes experienced in 2005. No future major macro-economic disturbances will cause deviations from these trends;
11. Neither fluctuations in oil prices, nor vehicle prices, nor technological innovations will cause any major transformation in overall trip-making behavior;
12. The project itself will have few induced demand effects. Demand for the project will be drawn largely from currently projected traffic on nearby competing routes;
13. The project will be constructed and operated to standards comparable with other toll roads in the region, with adequate signage, collections equipment, ETC transponder distribution, and violations enforcement;
14. For an average of ten days per year no tolls will be collected due to hurricane evacuation operations; and
15. The opening year "ramp-up" percentage would be 50 percent, with 100 percent fulfillment of potential traffic and revenue by 2020. The term "ramp-up" refers to the phenomenon whereby actual traffic and revenue in the early years of a project is typically far below what might be expected due to the lag time in driver behavior shifting. It takes time for drivers to become familiar with a toll road and its rates, as well as to discover its time savings. For this reason, opening year volumes are typically not representative of a toll road's actual performance potential, and traffic growth in the first three to five years is typically much greater than in the remainder of the forecast period.

TRAFFIC AND REVENUE ANALYSIS

Forecasted 2015 weekday traffic volumes for Alternative 1 are shown in Figure 5-8, while forecasted 2025 weekday transactions for the same alternative are shown in Figure 5-9. These volumes represent total day traffic on the toll facility. Numbers for 2015 include ramp-up as assumed. Similar information is shown for Alternatives 2 and 3 in Figures 5-10 through 5-13.



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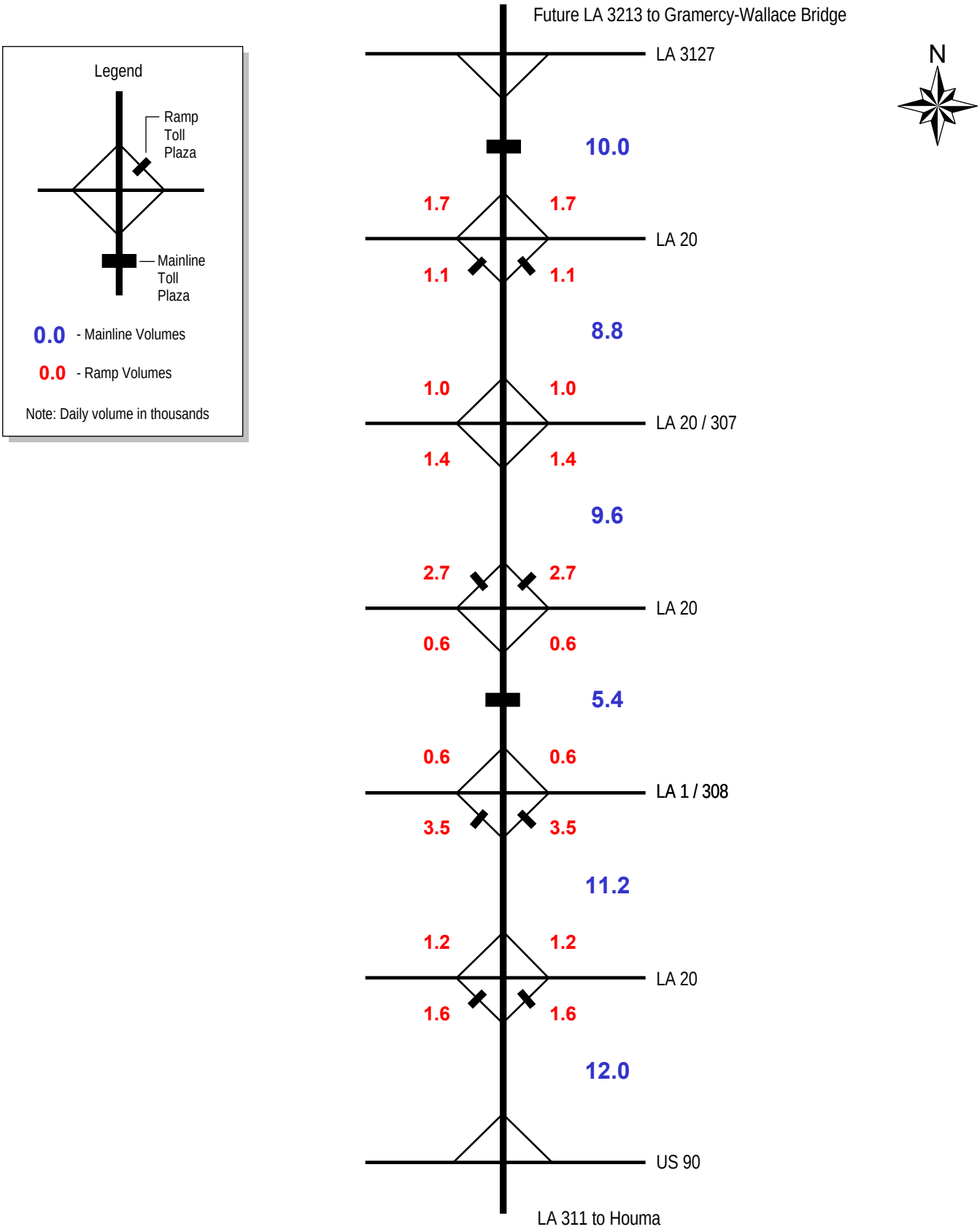
TRAFFIC VOLUMES - ALTERNATIVE 1 – YEAR 2015

FIGURE 5-8



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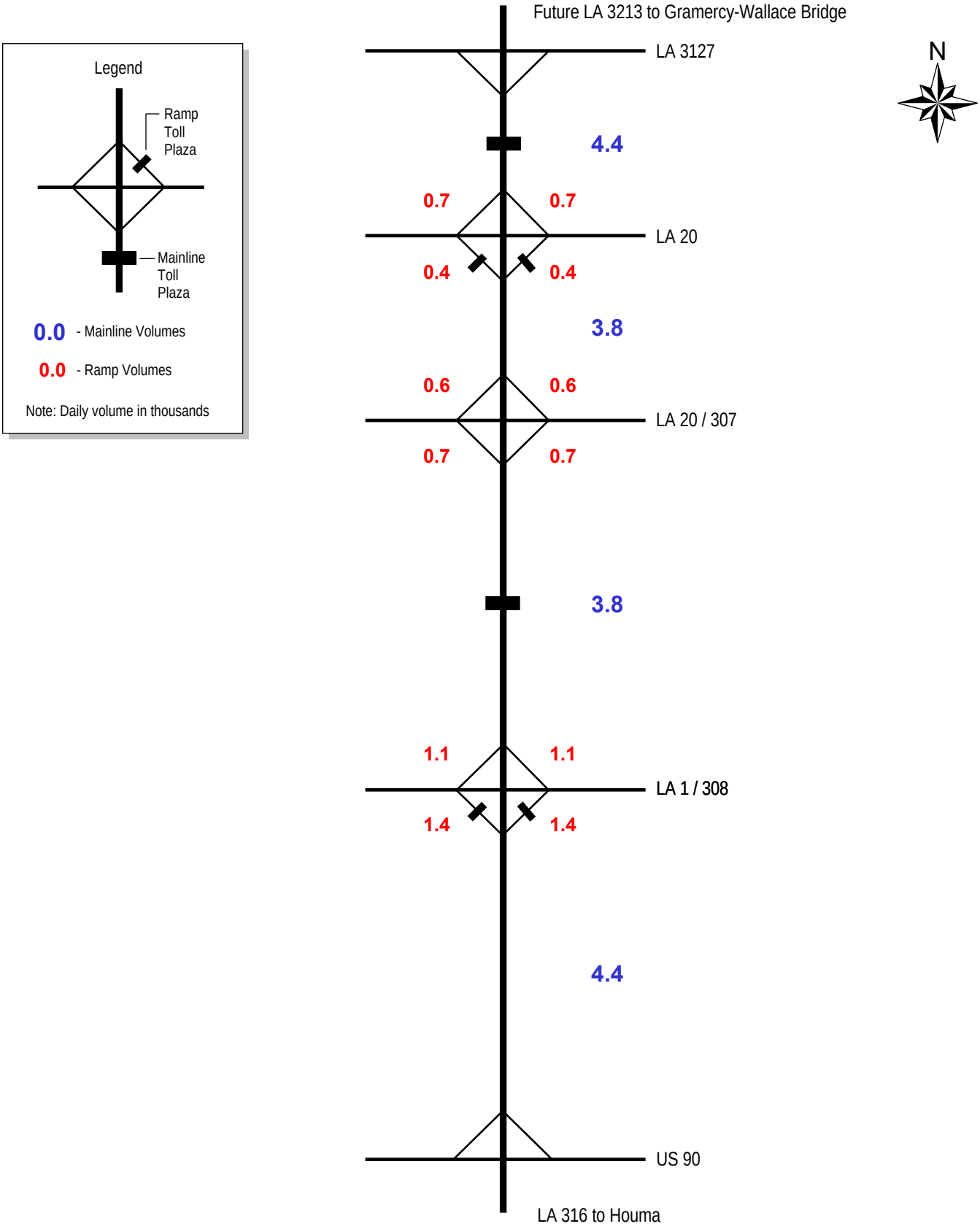
TRAFFIC VOLUMES - ALTERNATIVE 1 – YEAR 2025

FIGURE 5-9



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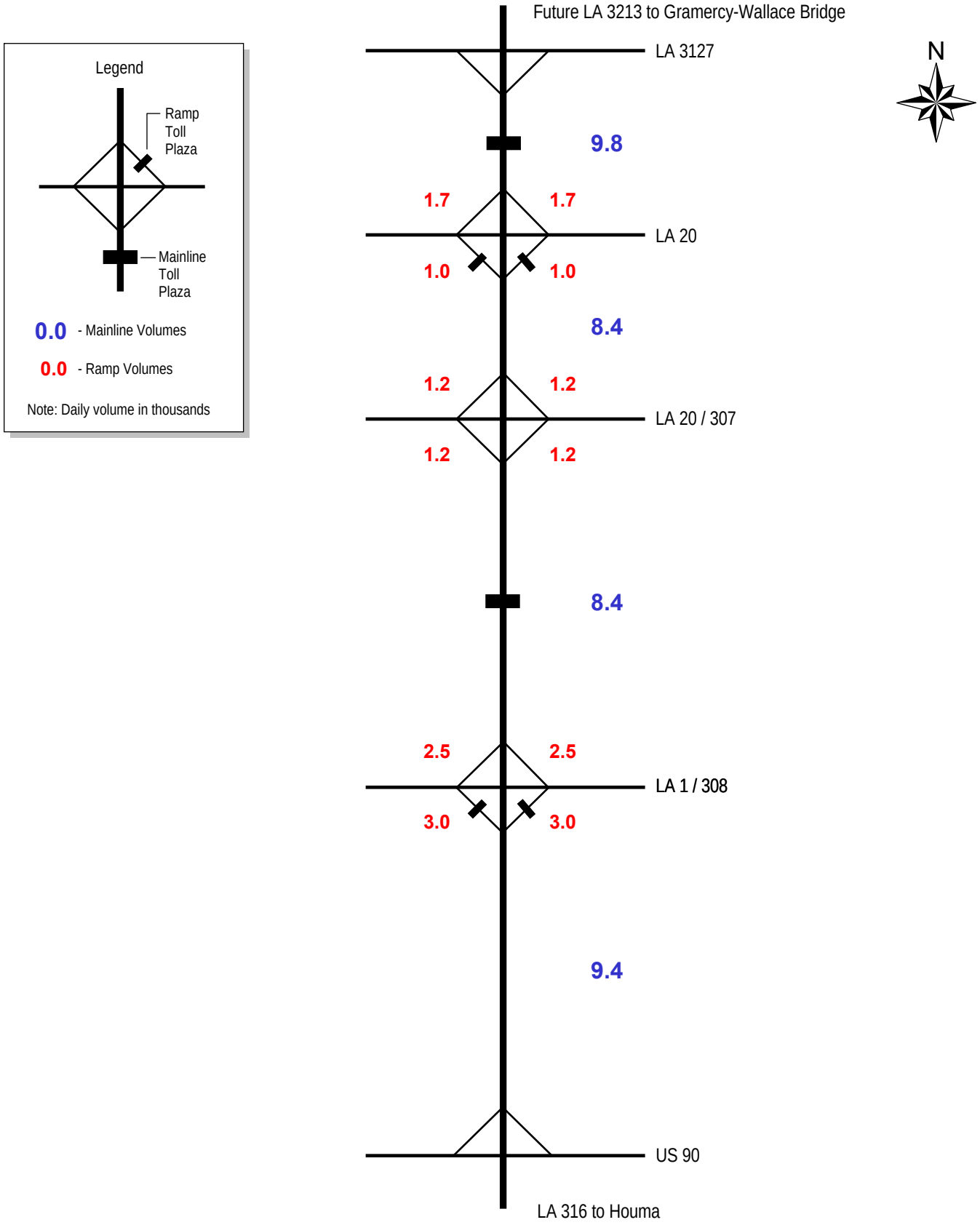
TRAFFIC VOLUMES - ALTERNATIVE 2 – YEAR 2015

FIGURE 5-10



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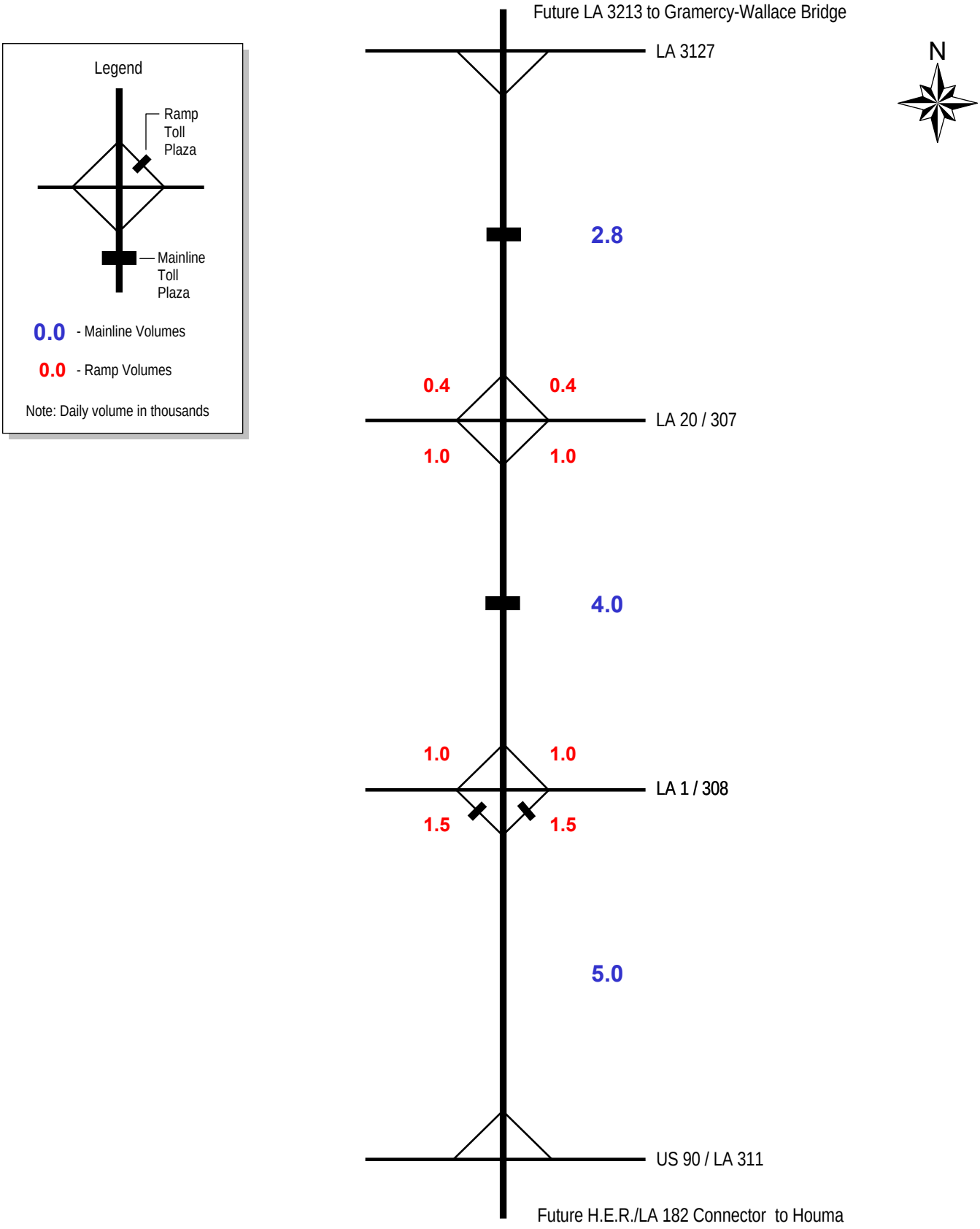
TRAFFIC VOLUMES - ALTERNATIVE 2 – YEAR 2025

FIGURE 5-11

Houma-Thibodaux to LA 3127 Connection Preliminary Toll Study



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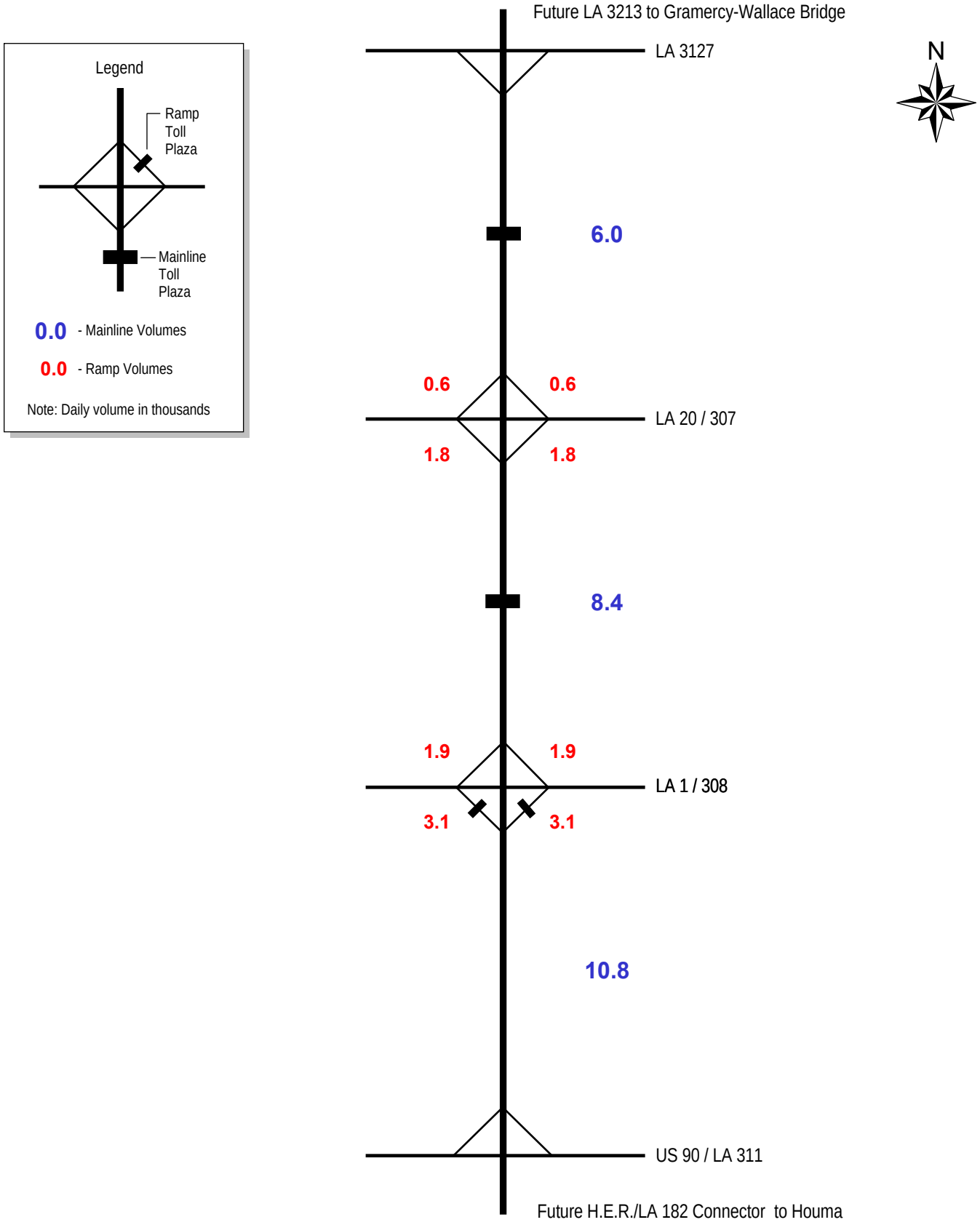
ECONOMISTS

TRAFFIC VOLUMES - ALTERNATIVE 3 – YEAR 2015

FIGURE 5-12

Houma-Thibodaux to LA 3127 Connection Preliminary Toll Study



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TRAFFIC VOLUMES - ALTERNATIVE 3 – YEAR 2025

FIGURE 5-13

The peak load point in 2025 of every alternative is south of LA 1 between Thibodaux and Houma. At this location, toll Alternatives 1, 2 or 3 would carry 11,200, 9,400, or 10,800 trips on an average weekday, respectively. Assuming peak hour directional volumes of approximately 6 percent of total day traffic, it was not found to be necessary to constrain volumes to roadway or plaza capacity levels under any alternative. Most of this traffic would be drawn from the currently projected travel cohort using LA 20/LA 24 under the no-build case.

Traffic at toll plaza locations was extracted from these traffic volume forecasts and multiplied by average tolls to produce forecasts of average weekday transactions and revenue by location as shown in Tables 5-2 through 5-7. Average tolls were based upon axle distribution information from vehicle classification counts provided by the Houma-Thibodaux MPO as previously discussed.

Weekday variation patterns from continuous counts provided by the MPO were also used to develop factors for converting weekday into annual traffic and revenue estimates. These annual growth trends in transactions and revenue are shown in Tables 5-8 through 5-10. Due to the ramp-up effects previously discussed, average growth in the early years of this forecast is in excess of 15 percent per year; however, between 2020 and 2025 growth rates for Alternatives 1, 2, and 3 are forecast to be 1.2, 1.1, and 0.7 percent per year on average, respectively, and this trend is expected to continue beyond 2025.

To compare the revenue streams presented in Tables 5-8 and 5-10 on a total basis, the net present value of these income sources is also calculated, assuming a 5 percent discount rate and a 30-year stream from 2015 to 2045. This reveals that, in addition to having the highest transactions and revenue growth rate, Alternative 1 provides the highest total amount of revenue, while Alternative 3 provides both the lowest growth and the lowest total amount of revenue.

COST AND TOLL FEASIBILITY ANALYSIS

Total net present values of revenue are compared to total costs in Table 5-11. "Total costs" were compiled using the following sources:

1. Construction costs for roadway and structures were generated in QUANTM by Buchart-Horn, using assumed per-unit costs provided by the LaDOTD. Documentation of assumptions for these costs is to be provided in their report. No construction costs necessary for ramp

tolling at interchanges were included in this total cost, nor were costs of right-of-way acquisition.

2. Interchange construction costs were added by WSA to these costs based upon general assumptions regarding grade crossing structures,

Table 5-2

Average Weekday Transactions and Revenue
Alternative 1 - 2015 (Including Ramp-Up)

Location	Transactions	Average Toll (1)	Revenue
N.Mainline	4,600	$0.83	$3,800
LA 20 N of LA 643	1,000	0.55	600
LA 20 N of LA 308	2,400	0.55	1,300
S.Mainline	2,400	2.21	5,300
LA 1	3,200	1.10	3,500
LA 20 S of LA 1	1,400	0.55	800
Weekday Total	15,000		$15,300
Annual Total (2)	4,875,000		$4,973,000

Notes:
(1) Assumes 4.8% trucks with 4.187 average axles.
(2) Assumes 325 equivalent weekdays per year.

Table 5-3

Average Weekday Transactions and Revenue
Alternative 1 - 2025

Location	Transactions	Average Toll [1]	Revenue
N.Mainline	10,000	$0.83	$8,300
LA 20 N of LA 643	2,200	0.55	1,200
LA 20 N of LA 308	5,400	0.55	3,000
S.Mainline	5,400	2.21	11,900
LA 1	7,000	1.10	7,700
LA 20 S of LA 1	3,200	0.55	1,800
Weekday Total	33,200		$33,900
Annual Total [2]	10,790,000		$11,018,000

Notes:
(1) Assumes 4.8% trucks with 4.187 average axles.
(2) Assumes 325 equivalent weekdays per year.

Table 5-4

Average Weekday Transactions and Revenue
Alternative 2 - 2015 (Including Ramp-Up)

Location	Transactions	Average Toll (1)	Revenue
N.Mainline	4,400	$0.83	$3,600
LA 20 (1)	800	0.55	400
S.Mainline	3,800	1.66	6,300
LA 1	2,800	0.83	2,300
Weekday Total	11,800		$12,600
Annual Total (2)	3,835,000		$4,095,000

Notes:
(1) Assumes 4.8% trucks with 4.187 average axles.
(2) Assumes 325 equivalent weekdays per year.

Table 5-5

Average Weekday Transactions and Revenue
Alternative 2 - 2025

Location	Transactions	Average Toll (1)	Revenue
N.Mainline	9,800	$0.83	$8,100
LA 20 (1)	2,000	0.55	1,100
S.Mainline	8,400	1.66	13,900
LA 1	6,000	0.83	5,000
Weekday Total	26,200		$28,100
Annual Total (2)	8,515,000		$9,133,000

Notes:
(1) Assumes 4.8% trucks with 4.187 average axles.
(2) Assumes 325 equivalent weekdays per year.

Table 5-6

Average Weekday Transactions and Revenue
Alternative 3 - 2015 (Including Ramp-Up)

Location	Transactions	Average Toll (1)	Revenue
N.Mainline	2,800	$0.83	$2,300
S.Mainline	4,000	1.38	5,500
LA 1	3,000	0.55	1,700
Weekday Total	9,800		$9,500
Annual Total (2)	3,185,000		$3,088,000

Notes:
(1) Assumes 4.8% trucks with 4.187 average axles.
(2) Assumes 325 equivalent weekdays per year.

Table 5-7

Average Weekday Transactions and Revenue
Alternative 3 - 2025

Location	Transactions	Average Toll (1)	Revenue
N.Mainline	6,000	$0.83	$5,000
S.Mainline	8,400	1.38	11,600
LA 1	6,200	0.55	3,400
Weekday Total	20,600		$20,000
Annual Total (2)	6,695,000		$6,500,000

Notes:
(1) Assumes 4.8% trucks with 4.187 average axles.
(2) Assumes 325 equivalent weekdays per year.

Table 5-8
Total Annual Transactions and Revenue
Alternative 1

Year	Transactions	Revenues
2015 *	4,875,000	$4,973,000
2016	7,254,000	7,402,000
2017	8,566,000	8,742,000
2018	9,291,000	9,482,000
2019	9,718,000	9,919,000
2020	10,154,000	10,365,000
2021	10,278,000	10,492,000
2022	10,404,000	10,621,000
2023	10,531,000	10,752,000
2024	10,660,000	10,884,000
2025 *	10,790,000	11,018,000
2026	10,922,000	11,154,000
2027	11,056,000	11,291,000
2028	11,191,000	11,430,000
2029	11,328,000	11,570,000
2030	11,466,000	11,713,000

30-yr. Net Present Value		$220,049,863
Average Annual Percent Change:		
2015-20	15.81	15.82
2020-30	1.22	1.23

Table 5-9
Total Annual Transactions and Revenue
Alternative 2

Year	Transactions	Revenues
2015 *	3,835,000	$4,095,000
2016	5,813,000	6,254,000
2017	6,853,000	7,371,000
2018	7,420,000	7,977,000
2019	7,748,000	8,327,000
2020	8,081,000	8,683,000
2021	8,166,000	8,771,000
2022	8,252,000	8,860,000
2023	8,339,000	8,950,000
2024	8,426,000	9,041,000
2025 *	8,515,000	9,133,000
2026	8,604,000	9,226,000
2027	8,695,000	9,320,000
2028	8,786,000	9,414,000
2029	8,879,000	9,510,000
2030	8,972,000	9,606,000

30-yr. Net Present Value		$180,727,403
Average Annual Percent Change:		
2015-20	16.08	16.22
2020-30	1.05	1.02

Table 5-10
Total Annual Transactions and Revenue
Alternative 3

Year	Transactions	Revenues
2015 *	3,185,000	$3,088,000
2016	4,713,000	4,589,000
2017	5,537,000	5,390,000
2018	5,975,000	5,814,000
2019	6,218,000	6,048,000
2020	6,463,000	6,285,000
2021	6,509,000	6,328,000
2022	6,555,000	6,370,000
2023	6,601,000	6,413,000
2024	6,648,000	6,457,000
2025 *	6,695,000	6,500,000
2026	6,742,000	6,544,000
2027	6,790,000	6,588,000
2028	6,838,000	6,632,000
2029	6,886,000	6,677,000
2030	6,935,000	6,722,000

30-yr. Net Present Value		$127,019,615
Average Annual Percent Change:		
2015-20	15.20	15.27
2020-30	0.71	0.67

Table 5-11
Project Cost and Feasibility

	Alternative		
	1	**2**	**3**
QUANTM Costs (1)	242,344,000	288,263,000	348,690,000
Interchange Construction Costs (2)	13,500,000	9,000,000	6,000,000
Tolling -- Capital Costs (4)	11,462,000	10,376,000	9,943,000
Subtotal -- Construction Costs	267,306,000	307,639,000	364,633,000
Contingency @ 15% of Construction Cost	40,096,000	46,146,000	54,695,000
Design & Administration @ 12% of Construction + Contingency	36,888,000	42,454,000	50,319,000
Maintenance and Repair Costs (3)	114,704,000	134,902,000	162,056,000
Tolling -- Operations Costs (5)	65,432,000	63,740,000	63,074,000
Total Cost (6)	524,426,000	594,881,000	694,777,000
Net Present Value of Toll Revenue (7)	$ 226,820,425	$ 186,288,816	$ 130,926,931
Toll Revenue as Percentage of Total Cost	43.3	31.3	18.8

Notes:
(1) Includes all construction and mitigation cost items except interchange costs.
(2) Includes costs of constructing and re-constructing interchanges for ramp tolling.
(3) Includes all estimated maintenance and repair costs for a thirty-year period.
(4) Includes costs of constructing mainline and ramp plazas and gantries.
(5) Includes annual costs of cash and electronic toll collection.
(6) Does not include right-of-way acquisition costs.
(7) Assumes a 5 percent discount rate and thirty-year term.

drainage, curbing, intersection control, signage, and lane and shoulder widths. A maximum grade of 3 percent was assumed. Alternative 1 would require construction at five interchanges, while Alternative 2 would require three, and Alternative 3 would require only two. No construction is required at at-grade interchanges where no ramp tolls are to be located.

3. The net total annual cost of maintaining the project over a 30-year period was added by WSA based upon general assumptions regarding frequency of inspections, re-paving, and replacement/re-construction of major structural and other components. For repair costs, it was assumed that one five-mile section of the corridor would be under repair in any given year and that repair costs would be approximately 1.5 percent of initial construction cost.
4. Tolling costs were developed by WSA's toll technology specialists. These include costs to build express electronic tolling and cash collection lanes, including two express lanes with overhead gantries for automatic vehicle identification equipment and one manual lane at each mainline plaza, as well as one ETC and one automatic cash machine lane at each ramp. Tolling operations costs include labor costs of manual collection as well as processing costs associated with electronic toll collection operations. It was assumed that 15 percent of toll traffic would use electronic toll collection technology in the opening year, rising to 65 percent by 2025.

Table 5-11 presents project costs and revenues, not including any right-of-way acquisition costs or non-toll revenue sources. As a summary measure of relative feasibility, the percentage of these project costs that may be supported by tolls is shown as well. The most economically feasible of these is Alternative 1 (West), by this measure, at 49.2 percent of project cost. Alternative 3 is least economically feasible, with only 21.5 percent of project costs supportable by toll revenues. Approximately 35.7 percent of Alternative 2's project costs could be supported by its toll revenues.

The conclusion of this study is therefore that, while none of the alternatives examined herein could be self-sufficiently financed using tolls, Alternative 1 could, with additional matching funds, be partly supported by tolling. This alternative would serve the most traffic of the three considered herein, reducing congestion and improving safety on parallel routes such as LA 20. It would also serve the regional connectivity goals set out in the project's purpose and need statement, and provide improved hurricane evacuation capacity.

Appendix H.
Noise Study

NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Noise Study

April 2015

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

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1. How is noise measured?

The addition of a new highway brings a redistribution of traffic noise from the existing roads to the new alignment. A highway noise analysis is required to quantify the expected traffic noise levels from the new road and compare them with state and federal traffic noise impact criteria.

Road traffic noise is measured in decibels, which is filtered with an "A-weighting" to replicate the frequency response of the human ear. Therefore, this noise is described in terms of A-weighted sound levels (dBA). The ear can detect sound levels ranging from 0 to over 120 dBA. A change in sound level of 3 dBA is just perceptible, a 6 dBA change is noticeable, and a 10 dBA increase in sound level is perceived as twice as loud. Examples of sound levels commonly associated with various activities are presented in **Table 1**.

Table 1
Typical Sound Levels

Common Outdoor Activities	Sound Level, dBA	Common Indoor Activities
	---110---	Rock Band
Jet Fly-over at 300 m (1000 ft)		
	---100---	
Gas Lawn Mower at 1 m (3 ft)		
	---90---	
Diesel Truck at 15 m (50 ft),		Food Blender at 1 m (3 ft)
at 80 km/hr (50 mph)	**---80---**	Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime		
Gas Lawn Mower, 30 m (100 ft)	**---70---**	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	**---60---**	Large Business Office
Quiet Urban Daytime	**---50---**	Dishwasher Next Room
Quiet Urban Nighttime	**---40---**	Theater, Large Conference
Quiet Suburban Nighttime		Room (Background)
	---30---	Library
Quiet Rural Nighttime		Bedroom at Night
	---20---	Concert Hall (Background)
		Broadcast/Recording Studio
	---10---	
Lowest Threshold of Human Hearing	**---0---**	Lowest Threshold of Human Hearing

Source: Engineering – Noise, Air Quality, and Hazardous Waste Management Office, October 1998: Table N-2136.2 – Typical Noise Levels, "Technical Noise Supplement", Rudy Hendricks-Author, Environmental

Since traffic noise varies in level over the space of minutes or hours, the equivalent continuous level of sound (Leq) is used to represent the average sound energy over an appropriate period of interest. For the purposes of this assessment, hourly Leq values for the “design hour” and “peak hours” have been used.

The traffic noise evaluation procedures required for the proposed project are stipulated in the LADOTD Highway Traffic Noise Policy[1] and federal regulations and guidelines. These documents define specific traffic noise assessment requirements and regulate maximum allowable noise levels based on land use and existing sound levels. If the noise criteria are exceeded, noise abatement measures must be considered.

Traffic noise impacts occur when the future (predicted, design year, build condition) noise levels approach or exceed the FHWA Noise Abatement Criteria, or when the future noise levels exceed the existing noise levels at any sensitive receptor by 10 dBA. LADOTD has published their Highway Traffic Noise Policy to comply with the FHWA Noise Regulations found at 23 CFR 772. The Louisiana criteria are shown below in **Table 2**.

Table 2
LADOTD Highway Noise Policy – Hourly A-Weighted Sound Level Decibels (dBA)

Activity Category	FHWA Activity Leq (H)	Evaluation Location	Activity Description	In Louisiana, impact occurs when Noise Level *is equal to or greater than* the values below
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.	56
B	67	Exterior	Residential (includes undeveloped lands permitted for residential).	66
C	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings. (Includes undeveloped lands permitted for these activities).	66
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.	51
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F. (Includes undeveloped lands permitted for these activities).	71
F	—	—	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.	N/A
G	—	—	Undeveloped lands that are not permitted.	N/A

Source: Highway Traffic Noise Policy (2011). State of Louisiana Department of Transportation and Development
N/A: Not Applicable

[1] Highway Traffic Noise Policy (2011). State of Louisiana Department of Transportation and Development.

2. What are the noise levels within the study area?

The allowable traffic noise level is a function of both the land use and the existing sound levels. The study area is predominately agricultural land and forested wetlands. The area is dotted with numerous active and inactive oil and gas wells with communities and residential neighborhoods primarily located along the natural ridges and roads. The proposed alternatives currently under consideration traverse predominantly agricultural land and forested wetlands and avoid the majority of the residential areas.

Thibodaux is the largest community and located at the southern terminus of the study area. The community consists of a downtown commercial center, surrounded by a number of small residential neighborhoods. Its noise sensitive areas also include schools, colleges, churches, parks, a hospital, and a country club. Additionally, there are several smaller communities and residential areas within the study area, as well as individual houses scattered along portions of the proposed alternatives. Alternatives currently under consideration will avoid the most populated areas of the region.

Relative to the Noise Abatement Criteria, the most predominant activity categories in the study area are those defined in Activity Category F, which includes agricultural, wetlands, lakes and bayous, and other undeveloped land, as well as commercial and industrial properties. Activity Category E includes the exterior impact criteria for developed lands that are less sensitive to highway traffic noise. Activity Category B, defined as residential properties and including single-family homes, mobile home parks, and multi-family residences, appears only sporadically within the study area. Category A, the most sensitive of the categories, is not present along the proposed alternatives currently under consideration. Based on the Activity Categories present, Category B becomes the limiting category for noise levels. Therefore, it becomes necessary to evaluate whether future external noise levels at receptors would reach 66 dBA as a minimum condition.

It is also necessary to determine if a future increase of 10 dBA in the road traffic noise will occur. An estimate of the increase in noise along the existing road network can be obtained by comparing existing (2010) and design year (2032) traffic volumes in the Traffic Analysis Technical Appendix prepared by Urban Systems, Inc. For the purpose of calculation, peak hour volume flow/hr. was used to determine the sound level, since these volumes were provided in the data. TNM 2.5 was used to calculate the predicted noise level for a given traffic volume and design speed of the road at a notional distance of 10 m (33 feet) from each road segment. This was repeated for both years. The difference is the 'impact' between the two years for the appropriate road segment, as shown in Table 4.36, below.

This method of assessment is subject to two limitations:

- The noise level at receptors depends on their distance from the road. This will vary along the roads for individual receptors. Therefore the selected calculation distance of 10 meters (33 feet) from the existing roads is only notional, to provide an *indication* of the level of noise encountered at each road. It is of more value for estimating the differences in noise levels for the build and no-build and route alternative conditions, because the differences are less subject to distance.

- Traffic volume and speed of traffic affects the noise level, and although peak hour conditions have been considered (since this data was available from the traffic analysis), it is possible for traffic speed to diminish under some peak hour conditions as congestion arises.

However, this exercise has required a *comparison* of alternatives. For such a purpose, since all conditions have been calculated with the same set of assumptions, the results are believed to provide a reasonable estimate of noise level differences to the nearest decibel, within the accuracy of the available data, for the situations considered.

For determining the impact of the 66 dBA level from the new route alternatives, TNM 2.5 was used to calculate the distance of the 66 dBA noise contour from the road edge. This was carried out on a page-by-page basis from the line and grade document (and after taking into account an amendment to the Western Alignment). Design hour traffic volumes, at design speeds were used, assuming 96% motor vehicles with 4% heavy trucks. The likely residential dwellings falling within this contour (if any) were counted from scrutiny of satellite images along the appropriate route of the road alignment (images on Google Earth and the line and grade document were compared).

The calculation of the distance of the 66 dBA contour is objective, but the estimate of the numbers of dwellings falling within the contour is subjective, because it depends on interpretation of whether a building is residential or has some other use, such as commercial or industrial.

3. What are the impacts to noise levels as a result of the No-build Alternative?

Table 3 shows the anticipated changes in noise level experienced by receptors along existing roads for the no-build condition in 2032. The noise would increase by approximately 1 to 3 dBA on all sections except for LA 308 W of LA 20, which suggests no change, and for LA 20 from US 90 to LA 24, which suggests a 1 dBA decrease. None of these changes reach the impact criterion of a10 dBA increase. Hence, on this basis it is concluded the no-build condition would result in no adverse impacts.

However, within the limitations of estimating actual noise levels along existing road sections (discussed above), it appears that two locations would be exposed to a level of 66 dBA where they were previously below this level (LA 648 E of LA 20, LA311 N of US 90). This implies an impact may occur for residences along these two road sections.

The data also suggests conditions where the 66 dBA levels are already exceeded under peak traffic conditions, and would be further exceeded under the no-build condition in 2032. Again, however, it must be stated that this indication of impact is only a calculation that is very dependent on receptor distances from the roads: many receptors may be at greater distances than the assumption of 10 m (33 feet) and hence are exposed to lower levels of noise.

Table 3. Approximate Changes in Road Traffic Volume and Noise by 2032 for No-Build Condition
(Positive dBA value in last column implies an increase, negative values a decrease)

Road Section	Current condition (2010)		No-Build condition (2032)		Approx. change in level dBA
	Peak hour volume	Level dBA*	Peak hour volume	Level dBA*	
LA 3127 W of LA 3213	129	59	250	62	3
LA 648 E of LA 20	546	65	1008	68	3
LA 316 US 90 to LA 24	225	61	308	63	2
LA 311 N of US 90	363	63	588	66	3
LA 308 W of LA 20	371	64	454	64	0
LA 1 W of LA 24	425	64	558	65	1
LA 309 S of LA 1	83	57	117	58	1
LA 24 N of US 90	933	71	1583	73	2
LA 20 W of LA 307	358	67	433	68	1
LA 20 S of LA 3127	442	68	529	69	1
LA 20 S of LA 304	479	68	671	70	2
LA 20 N of LA 308	821	71	1371	73	2

LA 20 US 90 to LA 24	179	64	154	63	-1
US 90 W of LA 24	617	69	1054	72	3
US 90 E of LA 316	579	69	825	71	2

**At a notional distance of 10 m (33 ft) from the road section (see text).*
Data Source: Technical Appendix: Traffic Analysis (2013). Houma-Thibodaux to I-10 Connection, North-South Corridor, Hurricane Evacuation. Urban Systems, Incorporated.

4. What are the impacts to noise levels as a result of the Build Alternatives?

As previously described, TNM 2.5 was used to calculate the distance of 66 dBA noise contour from the edge of the route alternatives.

The contour did not extend beyond the road edge in the majority of cases where the road is elevated. Receptors at a lower elevation are protected by the 'barrier effect' of the elevated road.

Despite the subjective limitation of judging whether a dwelling lies within the contour (discussed previously), it is clear that both alignments have several sections in the south where population density is higher and dwellings are closer to the proposed roads. The Western Alignment offers the lower number of dwellings likely to fall within the contour, and hence the greater number of impacts, compared with the Central Alignment. No impacts were found for the Northern Alignments.

Table 4 shows the number of noise receptors that will *potentially* experience noise impacts from the build alternatives. Locations of these potential impacts are more specifically noted in **Figure 4-9**. Further analysis will be conducted for the Preferred Alternative once selected. Analysis will also include an evaluation to determine whether noise abatement measures are feasible and reasonable in accordance with the LADOTD Noise Policy.

Table 4
Predicted Impacts from Noise Contours reaching or exceeding 66 dBA (total number of affected properties)

Road Section	Alternative 1 (Western Alignment + North Alignment "A")	Alternative 2 (Western Alignment + North Alignment "B")	Alternative 3 (Central Alignment + North Alignment "A")	Alternative 4 (Central Alignment + North Alignment "B")
Potential Impacts	16	16	26	26

Alternative 1 (Western Alignment + North Alignment "A") and Alternative 2 (Western Alignment + North Alignment "B")

Table 5 shows the anticipated changes in noise level likely to be experienced by receptors along existing roads if either *Alternative 1 (Western Alignment + North Alignment "A")* or *Alternative 2 (Western Alignment + North Alignment "B")* were to be chosen for the design year of 2032, compared with the No-build Alternative. Only one road section is predicted to see an increase in noise level compared with the no-build condition. This is LA 20 from US 90 to LA 24, for which the increase is only 1 dBA. The noise level at a notional distance of 10 m (30 ft) from the road would increase from 64 to 65 dBA (Table 4.36 shows the predicted noise level in 2032 for the no-build condition, to which 1 dBA is added for the Route Alternative). Since the level is less than 66 dBA, an adverse impact is predicted to be unlikely.

All other road sections show either no change or a decrease of 1 to 3 dBA compared to the No-build Alternative. Hence there would be no adverse impacts on these existing roads.

Table 5
Approximate Changes in Road Traffic Volume and Noise by 2032 with Alternatives 1 and 2 Compared with the No-build Alternative
(Positive dBA value implies an increase, negative values a decrease)

Road Section	Peak hour volume flow/hr		Approx. change in noise level, dBA
	No-build Alternative	Alternative 1 (Western Alignment + North Alignment "A") or Alternative 2 (Western Alignment + North Alignment "B")	
	2032	2032	
LA 3127 W of LA 3213	250	208	-1
LA 648 E of LA 20	1008	946	0
LA 311 N OF US 90	588	358	-3
LA 308 W of LA 20	454	446	0
LA 1 W of LA 24	558	546	0
LA 309 S of LA 1	117	92	-1
LA 24 N of US 90	1583	1408	-1
LA 20 W of LA 307	433	233	-3
LA 20 S of LA 3127	529	438	-1
LA 20 S of LA 304	671	467	-2
LA 20 N of LA 308	1371	1338	0
LA 20 US 90 to LA 24	154	175	1
US 90 W of LA 24	1054	1038	0
US 90 E of LA 316	825	804	0

Source: Technical Appendix: Traffic Analysis (2013). Houma-Thibodaux to I-10 Connection, North-South Corridor, Hurricane Evacuation. Urban Systems, Incorporated.
*This table includes both Alternatives 1 and 2 as each has a relatively similar effect on the existing northern section of LA 20.

Alternative 3 (Central Alignment + North Alignment "A") and Alternative 4 (Central Alignment + North Alignment "B")

Table 6 shows the anticipated changes in noise level likely to be experienced by receptors along existing roads if *Alternative 3 (Central Alignment + North Alignment "A")* or *Alternative 4 (Central Alignment + North Alignment "B")* were to be chosen for the design year of 2032, compared with the No-build Alternative. As with *Alternative 1 (Western Alignment + North Alignment "A")* and *Alternative 2 (Western Alignment + North Alignment "B")* only the road section of LA 20 from US 90 to LA 24 is predicted to increase by 1 dBA. The noise level at a notional distance of 10 m (30 ft) from the road would increase from 64 to 65 dBA (as before, see Table 4.36 for predicted noise level in 2032), which is less than 66 dBA and hence would be unlikely to present an adverse impact.

All other road sections show either no change or a decrease of 1 to 3 dBA compared to the No-build Alternative. Hence there would be no adverse impacts on these existing roads.

Table 6
Approximate Changes in Road Traffic Volume and Noise by 2032 with Alternatives 3 and 4 Compared with the No-build Alternative
(Positive dBA value implies an increase, negative values a decrease)

Road Section	Peak hour volume flow/hr		Approx. change in noise level, dBA
	No-build Alternative	Alternative 3 (Central Alignment + North Alignment "A") or Alternative 4 (Central Alignment + North Alignment "B")	
	2032	2032	
LA 3127 W of LA 3213	250	208	-1
LA 648 E of LA 20	1008	954	0
LA 311 N OF US 90	588	346	-3
LA 308 W of LA 20	454	446	0
LA 1 W of LA 24	558	546	0
LA 309 S of LA 1	117	92	-1
LA 24 N of US 90	1583	1408	-1
LA 20 W of LA 307	433	233	-3
LA 20 S of LA 3127	529	438	-1
LA 20 S of LA 304	671	467	-2
LA 20 N of LA 308	1371	1338	0
LA 20 US 90 to LA 24	154	175	1
US 90 W of LA 24	1054	1038	0
US 90 E of LA 316	825	804	0

Source: Technical Appendix: Traffic Analysis (2013). Houma-Thibodaux to I-10 Connection, North-South Corridor, Hurricane Evacuation. Urban Systems, Incorporated.
*This table includes both Alternatives 3 and 4 as each has a relatively similar effect on the existing northern section of LA 20.

5. Noise Analysis of Houma-Thibodaux to LA 3127 Route Alternatives Using TNM 2.5

Traffic noise analysis using the FHWA road traffic noise model TNM 2.5 has been applied to the "line and grade" images included within the Preliminary Alternatives Exhibits for the following alternative routes:

- Western Alignment (modified in 2013 to smooth curves on the southern and northern segments, but with no changes to the affected receptors);
- Central Alignment;
- North A and B Alignments

Design-hour road traffic values and design speeds, provided by Buchart-Horn, were applied as inputs to the noise model from data, assuming:

- road traffic on north and south directions travelled along the center of two lanes (the road types and separations of the two directions for different road segments are summarized in Table 1);
- barriers, 1m high, applied to elevated road sections, 2.4 m from the right edge of a breakdown lane and 1.2 m from the left. (As it happens, the barrier input parameters are not critical to this study, because the road elevations act as their own barrier to the noise before it can reach receptor dwellings.)

The TNM 2.5 program was used to calculate the distance from the road of the 66 dBA noise contour, on a page-by-page basis from the line and grade document. The likely residential dwellings within this contour (if any) were counted from scrutiny of satellite images along the appropriate route of the road alignment. The results are summarized in **Tables 8 to 12**. This contour distance was calculated from the center of the road, but to be conservative, the likely number of dwellings (if any) located within this distance from the edge of the road were counted.

As the tables show, the noise levels did not reach or exceed 66 dBA beyond the edge of the road in the majority of cases where the road is elevated. Receptors would be protected by the road elevation because it creates a barrier to sound propagating towards receptors at a lower elevation.

While the calculation of the distance of the 66 dBA contour is objective, the estimate of the numbers of dwellings affected is subjective because it depends on interpretation of whether a building is residential or has some other use, such as commercial or industrial. However, it is clear that most of the affected residences for both alignments are predominantly in their southern sections where population density is higher, and the Western Alignment offers the lower number of likely dwellings affected, compared with the Central Alignment. This result is summarized in Table 6.

Table 7 Road Type Summary

Road Type	Assumed separation of North-South Directions (Centers), m	Design Speed, kph
UA-2	11	72
UA-4	27	88
RA-2	24	97

Table 8 Western Alignment (Input Parameters and Noise Output)

		TNM 2.5 inputs						TNM 2.5 output	
		Elevations		DHV				Distance of 66 dBA contour from road edge (m)	Estimated no. of dwellings affected
Page	Road type	Start (m)	End (m)	N Cars	N heavy Trucks	S Cars	S Heavy Trucks		
1	UA-2	3.5	3.5	349	15	375	16	12	none
2	UA-2	3.5	3.5	349	15	375	16	12	none
3 - 5	UA-2	3.5	3.5	349	15	375	16	12	none
6 S of 311	UA-2	1	1	349	15	375	16	12	none
6 N of 311	UA-2	3.5	3.5	445	19	533	22	15	none
7	UA-2	3.5	3.5	445	19	533	22	15	none

8 S of St George	UA-2	3.5	3.5	445	19	533	22	17	2
8 N of St George	UA-2	3.5	3.5	445	19	533	22	17	2
9 to LA20	UA-2	3.5	3.5	445	19	533	22	15	9
10 N of LA20	UA-2	4	4	445	19	550	23	15	3
11	UA-2	4	4	445	19	550	23	15	none
12 S of lights	UA-2	4	4	445	19	550	23	15	none
12 N of lights	UA-4	4	5.5	445	19	550	23	no	none
13 - 19	UA-4	5.5	5.5	445	19	550	23	no	none
20 bridge end	UA-4	5.5	2.7	445	19	550	23	no	none
20 road n of bridge	UA-4	2.7	2.7	445	19	550	23	no	none
21 S of lights	UA-4	2.7	2.7	445	19	550	23	no	none
22 - 23	UA-4	2.7	3.7	445	19	550	23	no	none
24 S of bridge	UA-4	3.7	6.1	445	19	550	23	no	none
24 Bridge	RA-2	6.1/11.2	15.9/11.3	445	19	550	23	no	none*
25	RA-2	5.2	5.2	202	8	219	9	no	none
26 - 29	RA-2	5.2	5.2	202	8	219	9	no	none
30 - 34	RA-2	3.2	1.7	202	8	219	9	no	none
35 W of LA20	RA-2	1.7	1.7	461	19	480	20	no	none
35 E of LA20	RA-2	1.7	1.7	461	19	480	20	no	none
36	RA-2	1.7	2.1	461	19	480	20	no	none
37 - 45	RA-2	2.1	5.4	461	19	480	20	no	none
								'no' signifies 66 dBA does not extend beyond road edge	
*Note that there are 3 possible receptors for which the level exceeds 66 dBA – this is caused by close proximity to Route 1, which is an existing road.									

Table 9 Central Alignment (Input Parameters and Noise Output)

		TNM 2.5 inputs						TNM 2.5 output	
		Elevations		DHV					
Page	Road type	Start (m)	End (m)	N Cars	N heavy Trucks	S Cars	S Heavy Trucks	Distance of 66 dBA contour from road edge (m)	Estimated no. of dwellings affected
1 N of I90	UA-2			367	15	297	12	17	1
2 to 4	UA-2			367	15	297	12	12	13
5	UA-2			367	15	297	12	17	5
6 to 7	UA-2			367	15	297	12	12	7
8	UA-4			367	15	297	12	17	none
9 N of lights	UA-4	3	5	367	15	297	12	no	none
10 bridge	UA-4	5.4/10	10/5.4	367	15	297	12	no	none
11 to 14 S of bridge	UA-4	5	5	367	15	297	12	no	none
15 bridge S of 308	UA-4	5.6/16.7	16.7/5	367	15	297	12	12	none
15 bridge N of 308	UA-4			451	19	432	18	no	none
16 bridge	UA-4	5.8/17.8	17.8/3.5	451	19	432	18	no	none
17 to 19	UA-4	3.5	3.5	451	19	432	18	18	none
20 bridge	UA-4	3.5	5	451	19	432	18	no	none
21 to 36	RA-2	5	5	461	19	422	18	no	none
								'no' signifies 66 dBA does not extend beyond rroad edge	

Table 10 North Alignment A (Input Parameters and Noise Output)

		TNM 2.5 inputs	TNM 2.5 output

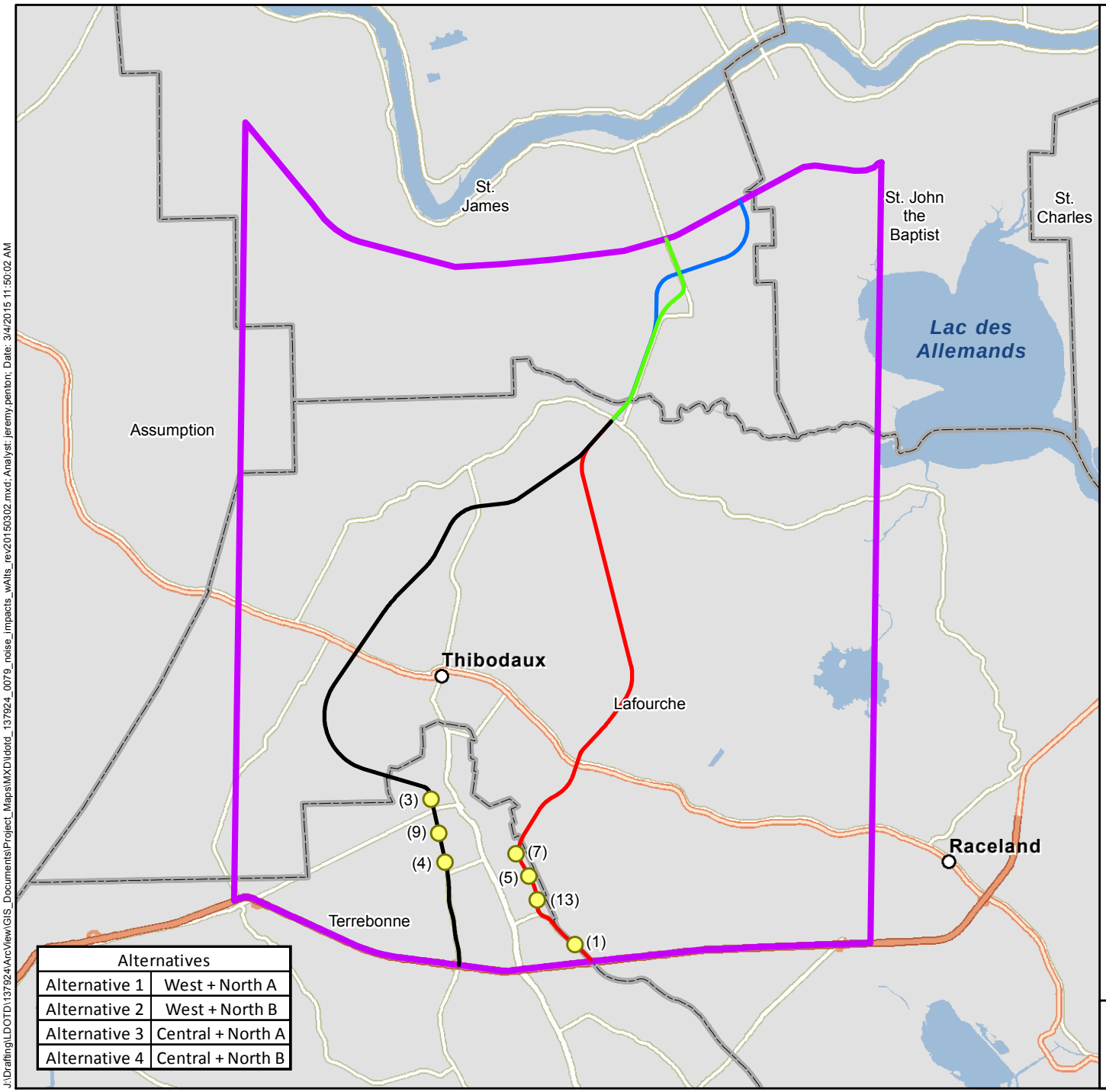
Page	Road type	Elevations		DHV				Distance of 66 dBA contour from road edge (m)	Estimated no. of dwellings affected
		Start (m)	End (m)	N Cars	N heavy Trucks	S Cars	S Heavy Trucks		
A1	RA-2	5.4	6.1	442	18	422	18	no	none
A 2-8	RA-2	6.1	4.3	442	18	422	18	no	none
A p 9 - 11	RA-2	4.3	4.3	442	18	422	18	no	none
A 12	RA-2	4.3	4.3	442	18	422	18	no	none
								'no' signifies 66 dBA does not extend beyond road edge	

Table 11 North Alignment B (Input Parameters and Noise Output)

		TNM 2.5 inputs						TNM 2.5 output	
Page	Road type	Elevations		DHV				Distance of 66 dBA contour from road edge (m)	Estimated no. of dwellings affected
		Start (m)	End (m)	N Cars	N heavy Trucks	S Cars	S Heavy Trucks		
common with A1	RA-2	5.4	6.1	442	18	422	18	no	none
Common with A2-8	RA-2	6.1	4.3	442	18	422	18	no	none
B 7-16	RA-2	4.3	4.3	442	18	422	18	no	none
B 17	RA-2	4.3	4.3	442	18	422	18	no	none
								'no' signifies 66 dBA does not extend beyond road edge	

Table 12 Totals of Receptors Likely to Reach or Exceed 66 dBA for each Alignment

Alignment	Estimated number of dwellings potentially exposed to 66 dBA or higher from introduction of new road
Western	16
Central	26
North A	0
North B	0



Alternatives	
Alternative 1	West + North A
Alternative 2	West + North B
Alternative 3	Central + North A
Alternative 4	Central + North B

Legend

- Central Alignment
- West Alignment
- North A Alignment
- North B Alignment
- Project Boundary
- Parish Boundary

Impacts

- Potential

N
W E
S

4 2 0 4
Miles

NOTE:
Labels for the impact points correspond to the figure numbers from the Line and Grade Report Technical Appendix.

NOISE IMPACTS

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Appendix I.
Air Quality Study

NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Air Quality Technical Report

November 2013

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

CDM Smith

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Acronyms and Abbreviations

$\mu g/m^3$	micrograms per cubic meter
AADT	annual average daily traffic
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
EIS	environmental impact statement
EPA	United States Environmental Protection Agency
FHWA	Federal Highway Administration
FR	Federal Register
FTA	Federal Transit Administration
HEI	Health Effects Institute
LDEQ	Louisiana Department of Environmental Quality
mg/m^3	milligrams per cubic meter
MPO	Metropolitan Planning Organization
MSAT	mobile source air toxics
N/A	not applicable
NAAQS	National Ambient Air Quality Standard
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NOx	nitrogen oxides
O_3	ozone
Pb	lead
PM	particulate matter
PM_{10}	inhalable particulate matter
$PM_{2.5}$	fine particulate matter
ppb	parts per billion
ppm	parts per million
SIP	State Implementation Plan
SO_2	sulfur dioxide
SOx	sulfur oxides
TIP	transportation improvement plan
USC	United States Code
VMT	vehicle miles traveled
VOC	volatile organic compound

Section 1

Introduction

The proposed project and existing traffic volumes are discussed below. Subsequent sections will discuss the applicable regulations and air quality impact analysis for the proposed Houma-Thibodaux to LA-3127 Connection Project.

1.1 Project Desciption

The study area is within St. James, St. John the Baptist, Lafourche, Assumption, and Terrebonne Parishes of Louisiana. The existing corridors in the study area run mainly east to west along higher elevated ridges between numerous bayous. The existing roadway network in the study area limits north to south movement, resulting in circuitous routes. The proposed project will add a north-south connector between LA 3127 and US 90 near the City of Thibodaux to improve connectivity, especially for emergency evacuation events.

The proposed project has four alternatives, as shown in **Figure 1-1**:

- Alternative 1 North A Alignment and Western Alignment
- Alternative 2 North B Alignment and Western Alignment
- Alternative 3 North A Alignment and Central Alignment
- Alternative 4 North B Alignment and Central Alignment

The two North Alignments (A and B) refer to options for connecting between LA 3127 and LA 20, mainly in St James Parish. North B Alignment is approximately 2 miles longer than North A Alignment. In Lafourche Parish, where LA 20 makes an almost 90 degree turn from the north to the west, there are two proposed alignments—Western and Central—that continue either to the west or east of downtown Thibodaux and intersect with LA 1. The Western Alignment then runs along LA 3185 and LA 24 to the west of Shriever and Gray in Terrebonne Parish. The Central Alignment continues south to US 90 almost paralleling LA 24 near the border of Lafourche and Terrebonne Parishes. For the purposes of this analysis, both Western Alignments (Alternatives 1 and 2) were considered similar and both Central Alignments (Alternatives 3 and 4) were considered similar; therefore, impacts are discussed in terms of Western Alignments and Central Alignments.

1.2 Traffic Volumes in the Study Area

The existing (2010) and projected design year 2032 no build and build annual average daily traffic (AADT) volumes in the study area are shown in **Table 1-1**. Traffic volumes are expected to grow from existing levels to 2032. In general, the projected design year volumes show that traffic on currently available north-south corridors would be rerouted to the proposed project and the overall AADT of the study area may decrease slightly due to the project.

Table 1-1 Annual Average Daily Traffic in the Study Area

Roadway Segment	Existing (2010) AADT	No Build (2032) AADT	Western Alignments (2032)		Central Alignments (2032)	
			AADT	% Change from No Build	AADT	% Change from No Build
East-West Corridors						
LA 3127	4,100	6,000	5,000	-17%	5,000	-17%
LA 308	8,900	10,900	10,700	-2%	10,500	-4%
LA 1	10,400	13,400	13,100	-2%	12,500	-7%
US 90	14,800	25,300	24,900	-2%	25,200	0%
North-South Corridors						
LA 316 (LA 24 to US 90)	5,400	7,400	5,800	-22%	5,800	-22%
LA 648	13,100	24,200	22,700	-6%	20,500	-15%
LA 20 (South of LA 3127)	10,600	12,700	10,500	-17%	10,400	-18%
LA 20 (South of LA 304)	11,500	16,100	11,200	-30%	11,800	-27%
LA 20 (N of LA 308)	19,700	32,900	32,100	-2%	24,100	-27%
LA 20 (US 90 to LA 24)	4,300	3,700	4,200	14%	3,400	-8%
LA 24	22,600	38,200	33,800	-12%	34,200	-10%
LA 311 (US 90 to LA 24)	8,700	14,100	8,300	-41%	13,100	-7%
LA 3185 (South of LA 1)	7,300	14,800	15,100	2%	14,600	-1%
LA 309 (South of LA 1)	2,000	2,800	2,200	-21%	2,800	0%
Project (South of LA 3127)	--	--	8,600	--	8,500	--
Project (North of LA 307)	--	--	9,200	--	10,500	--
Project (LA 307 to LA 20)	--	--	10,200	--	--	--
Project (LA 20 to LA 308)	--	--	4,800	--	9,200	--
Project (LA 1 to LA 20)	--	--	8,000	--	7,700	--
Project (LA 20 to US 90)	--	--	8,800	--		--

Source: Urban Systems, Inc. 2013.

Figure 1-1 Study Area and Proposed Alignments

Section 2

Regulatory Framework

Air quality management and protection responsibilities exist in federal, state, and local levels of government. The Federal Clean Air Act (CAA) is the primary statute that establishes ambient air quality standards and establishes regulatory authorities to enforce regulations designed to attain those standards. The United States Environmental Protection Agency (EPA) is responsible for implementation of the CAA. The CAA was enacted in 1955 and was amended in 1963, 1965, 1967, 1970, 1977, 1990, and 1997. EPA delegated the responsibility of implementing and enforcing New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants to the Louisiana Department of Environmental Quality (LDEQ). LDEQ is also responsible for operating the ambient air monitoring program in Louisiana.

2.1 Criteria Pollutants

EPA regulates seven common pollutants called criteria pollutants. They include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), inhalable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and sulfur dioxide (SO_2). Each pollutant is described below.

Carbon Monoxide

CO is a colorless, odorless gas that is highly toxic. It is formed by the incomplete combustion of fuels. In Louisiana, the majority of CO emissions occur from mobile sources (74 percent), fuel combustion (14 percent), fires (5 percent), and industrial processes (4 percent) (EPA 2011). Exposure to CO can reduce the body's ability to carry oxygen. CO exposure can cause people with several types of heart disease to experience chest pain (angina) when exercising or under increased stress. Extremely high levels of CO can cause death (EPA 2012a).

Lead

Lead is a soft and chemically resistant metal that is naturally found in the environment. It has historically been found in motor vehicles and industrial sources, which led to EPA's efforts to remove Pb from gasoline in 1980 and beyond. The aviation sector continues to be a major source of Pb emissions from piston aircraft, as are certain industrial sectors like ore and metals processing (EPA 2012b). Emissions of Pb from the study area are minimal (EPA 2011).

In addition to Pb exposure through air, Pb can also accumulate in soils and other sediments, especially in urban environments where it would have accumulated from years of exposure from leaded gasoline. Lead exposure can adversely affect the nervous system, kidney function, immune system, reproductive and development systems, and the cardiovascular system. Lead exposure may also contribute to behavioral problems, learning deficits, and lowered IQ in infants and young children (EPA 2012c).

Nitrogen Dioxide

NO_2 is a reddish-brown to dark brown reactive gas that is formed during high-temperature combustion processes, such as those occurring in trucks, cars, and power plants. The sum of nitric oxide and NO_2 is commonly called nitrogen oxides (NOx), but other oxides like nitrous oxide and nitric

acid are also classified as NOx. Mobile sources and fuel combustion are the main sources of NOx in Louisiana (EPA 2011).

Exposure to NO_2 can cause adverse respiratory effects including airway inflammation. NOx can react with ammonia, moisture, and other compounds to form small particles that can lodge deeply into sensitive parts of the lungs. This action can cause or worsen respiratory disease like emphysema and bronchitis, or can aggregative existing heart disease (EPA 2013a).

Ozone

O_3 is a highly reactive and unstable gas that is formed in the atmosphere through complex reactions with sunlight, NOx, and volatile organic compounds (VOCs). Hot, sunny, and calm days promote O_3 formation. EPA regulates ground-level O_3, which is not to be confused with stratospheric O_3. Ground-level O_3 is close to where people live, breathe, and exercise and can cause adverse health effects; stratospheric O_3 is high in the atmosphere and reduces the amount of ultraviolet light entering the earth's atmosphere, which actually helps protect animal and plant life.

Certain people are particularly sensitive to the effects of O_3 including people with lung disease, children, older adults, and active people. Generally, as O_3 concentrations increase, both the number of people affected and the seriousness of the health effects increase. The effects of exposure to ground-level O_3 include cough, chest tightness, and pain upon taking a deep breath; worsening of wheezing and other asthma symptoms; reduced lung function; and increase hospitalizations for respiratory causes.

O_3 also has detrimental effects on the environment. O_3 exposure can damage cells and leaf tissue, reducing plants' ability to photosynthesize and produce food. Plants will grow more leaves in an attempt to produce more food, but this response has the net effect of making plants more susceptible for disease, pests, cold, and drought. O_3 can also damage materials like rubber, plastics, fabrics, paint, and metals (EPA 2003; EPA 2009).

Particulate Matter

Particulate matter (PM) consists of solid and liquid particles of dust, soot, aerosols, and other matter small enough to remain suspended in the air for a long period of time. PM is divided into two size classes of particles: particles up to 10 microns[1] (PM_{10}) and particles up to 2.5 microns ($PM_{2.5}$). To place the sizes in perspective, a human hair is approximately 60 microns in diameter, which makes it six times larger than the largest coarse particle and over 20 times larger than the largest fine particle.

Primary particles are those that are directly emitted from a source, such as construction sites, unpaved roads, fields, smokestacks, or fires. Burning fuels primarily produces $PM_{2.5}$, while other sources like windblown dust contribute to PM_{10} emissions. Secondary formation of $PM_{2.5}$ can occur from complex reactions in the atmosphere of pollutants like NOx, sulfur oxides (SOx), VOCs, and ammonia. Most of the $PM_{2.5}$ pollution in the United States occurs from these secondary reactions as opposed to direct (primary) emissions. Sources of PM_{10} and $PM_{2.5}$ in Louisiana include fugitive dust, industrial processes, fires, agriculture, fuel combustion, and mobile sources (EPA 2011).

Particles smaller than 10 microns (i.e., PM_{10} and $PM_{2.5}$) represent that portion of PM thought to represent the greatest hazard to public health because they can become deeply embedded in

[1] A micron is a unit of measurement that is one-millionth of a meter. A meter is slightly larger than 3 feet.

someone's lungs. This can lead to adverse health effects including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Aside from adverse health effects, $PM_{2.5}$ is primarily responsible for reduced visibility (haze) in the United States. PM can also cause aesthetic damage by staining or damaging stone and other materials (EPA 2013b; EPA 2013c).

Sulfur Dioxide

SO_2 is formed when locomotives, ships, and nonroad diesel equipment burn sulfur-containing fuel. Certain industrial processes, such as petroleum refining and metal processing, also contribute to SO_2 emissions. Industrial processes and fuel combustion are the main sources of SO_2 in Louisiana (EPA 2011). Health effects of SO_2 exposure include bronchoconstriction and increased asthma symptoms. SO_2 can also react with other compounds in the atmosphere to form small particles. Exposure to the resulting particles can aggravate existing heart disease, leading to increased hospital admissions and premature death (EPA 2012d).

2.2 National Ambient Air Quality Standards

Under authority of the CAA, EPA established National Ambient Air Quality Standards (NAAQS) for CO, Pb, NO_2, O_3, PM_{10}, $PM_{2.5}$, and SO_2. **Table 2-1** presents the current NAAQS for the criteria pollutants. The federal CAA requires states to classify air quality control regions (or portions thereof) as either attainment or nonattainment with respect to criteria air pollutants, based on whether the NAAQS have been achieved.

Table 2-1 National Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS Primary	NAAQS Secondary	Violation Criteria
CO	1 Hour	35 ppm (40 mg/m^3)	N/A	Not to be exceeded more than once per year
	8 Hour	9 ppm (10 mg/m^3)		
NO_2	1 Hour	100 ppb (188 µg/m^3)	N/A	98th percentile of 1-hour daily maximum concentrations, averaged over three years
	Annual	53 ppb (100 µg/m^3)	Same as Primary Standard	Annual mean
O_3	8 Hour	0.075 ppm (147 µg/m^3)	Same as Primary Standard	Annual fourth-highest daily maximum 8-hour concentration, averaged over three years
Pb	Rolling 3-Month Average	0.15 µg/m^3	Same as Primary Standard	Not to be exceeded
PM_{10}	24 Hour	150 µg/m^3	Same as Primary Standard	Not to be exceeded more than once per year on average over three years
$PM_{2.5}$	24 Hour	35 µg/m^3	Same as Primary Standard	98th percentile, averaged over three years
	Annual [(1)]	12 µg/m^3	15 µg/m^3	Annual mean, averaged over three years

Table 2-1 National Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS Primary	NAAQS Secondary	Violation Criteria
SO_2	1 Hour	75 ppb (196 µg/m^3)	N/A	99th percentile of 1-hour daily maximum concentrations, averaged over three years
	3 Hour	N/A	0.5 ppm (1,300 µg/m^3)	Not to be exceeded more than once per year
	24 Hour	0.14 ppm (366 µg/m^3) (2)	N/A	Not to be exceeded more than once per year
	Annual	0.030 ppm (79 µg/m^3) (2)		Annual mean

Source: EPA 2012e; 40 CFR 50.

Notes:

(1) On January 15, 2013, the EPA published a final rule to lower the primary annual $PM_{2.5}$ NAAQS to 12.0 µg/m^3. The final rule became effective on March 18, 2013 (78 Federal Register [FR] 3086).

(2) On June 22, 2010, the 24-hour and annual primary SO_2 NAAQS were revoked (75 FR 35520). The 1971 SO_2 NAAQS (0.14 parts per million [ppm] and 0.030 ppm for 24-hour and annual averaging periods) remain in effect until one year after an area is designated for the 2010 1-hour primary standard.

Key:

µg/m^3 = micrograms per cubic meter; CO = carbon monoxide; mg/m^3 = milligrams per cubic meter; N/A = not applicable; NAAQS = National Ambient Air Quality Standard; NO_2 = nitrogen dioxide; O_3 = ozone; Pb = lead ; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; ppb = parts per billion; ppm = parts per million; SO_2 = sulfur dioxide

2.3 Attainment Status

Areas that exceed the NAAQS are designated as nonattainment. Areas that previously exceeded the NAAQS, but have since attained the standard, are called maintenance areas. States are also required to prepare State Implementation Plans (SIPs) containing emission reduction strategies to maintain the NAAQS for those areas designated as maintenance and to attain the NAAQS for those areas designated as nonattainment.

Certain pollutants, namely O_3 and PM_{10}, are further subdivided based on how close an area is to achieving the NAAQS. The possible classifications for the O_3 NAAQS are marginal, moderate, serious, severe, or extreme. Areas with worse classifications are given more time to attain the NAAQS than areas with better air quality. For example, an area classified as an extreme nonattainment area has an attainment date of December 31, 2032 (20 years from the date of designation), while an area classified as a marginal nonattainment area has until December 31, 2015 to attain the NAAQS (77 FR 30160). The possible classifications for the PM_{10} NAAQS are moderate and serious. Section 188 of the CAA (42 United States Code [USC] 7513) states that all areas designated nonattainment for the PM_{10} NAAQS are to be initially classified as moderate; however, an area can be reclassified as serious if the EPA determines that the area cannot practicably attain the standard by the attainment date.

The study area is within St. James, St. John the Baptist, Lafourche, Assumption, and Terrebonne Parishes. These Parishes are in attainment and have been determined to comply with the NAAQS for all criteria pollutants (EPA 2012f).

Criteria air pollutants are monitored at 36 stations in Louisiana. The closest monitoring station to the study area is located in Thibodaux (Site ID 220570004), but only monitors O_3. Air quality data from the following stations for the most recent three years of available data (2010-2012) are summarized in **Table 2-2:**

- CO and SO_2: Baton Rouge-Capitol (Site ID 220330009) 1061-A Leesville Ave, Baton Rouge, East Baton Rouge Parish
- Pb: La Place (Site ID 220950003) 115 Garden Grove, Laplace, St. John the Baptist Parish
- NO_2: Kenner (Site ID 220511001) 100 West Temple Place, Kenner, Jefferson Parish
- O_3: Thibodaux (Site ID 220570004) 194 Thoroughbred Park Drive, Thibodaux, Lafourche Parish
- $PM_{2.5}$: Houma (Site ID 221090001) 4047 West Park Avenue, Gray, Terrebonne Parish
- PM_{10}: City Park (Site ID 220710012) Florida & Orleans Avenue, New Orleans, Orleans Parish

Table 2-2. Ambient (Background) Air Quality Data

Pollutant [(1)]	NAAQS	2010	2011	2012	Design Value (2010-2012)
CO [(2)]					
Maximum 1-hour concentration (ppm)	35	3.1	1.8	2.2	N/A
Maximum 8-hour concentration (ppm)	9	2.3	1.5	1.9	N/A
Number of days exceeding 1-hour standard		0	0	0	
Number of days exceeding 8-hour standard		0	0	0	
Pb [(3)]					
Maximum 24-hour concentration (µg/m^3)	0.15	0.219	0.125	0.121	--
NO_2 [(4)]					
98th percentile 1-hour concentration (ppb)	100	47	51	46	48
Number of days exceeding 1-hour standard		0	0	0	
O_3 [(5)]					
4th high 8-hour concentration (ppm)	0.075	0.074	0.076	0.072	0.074
Number of days exceeding 8-hour standard		1	4	3	
$PM_{2.5}$ [(6)]					
98th percentile 24-hour concentration (µg/m^3)	35	17	19	17	18
Annual design value (µg/m^3)	15	8.8	8.7	7.7	8.4
Number of days exceeding 24-hour standard		0	0	0	
PM_{10} [(7)]					
Maximum 24-hour concentration (µg/m^3)	150	78	83	104	N/A
Number of days exceeding 24-hour standard		0	0	0	
SO_2 [(2)]					
99th Percentile 1-Hour concentration (ppb)	75	42	31	32	35
Number of days exceeding 1-hour standard		0	0	0	

Source: EPA 2013d.

Notes:

[(1)] An exceedance is not necessarily a violation. Violations are defined in 40 Code of Federal Regulations (CFR) 50.

[(2)] Data from Baton Rouge-Capitol monitoring station. 3-hour average SO_2 concentrations were not available from EPA.

[(3)] Data from La Place monitoring station. 3-month average statistics were not available from the EPA. Although the maximum 24-hour concentration is above the NAAQS, only the first two highest concentrations observed at this station in 2010 were above the NAAQS, therefore a 3-month average concentration would not exceed the NAAQS.

[(4)] Data from Kenner monitoring station. Annual NO_2 data was not available from EPA.

[(5)] Data from Thibodaux monitoring station.

[(6)] Data from Houma monitoring station.

[(7)] Data from City Park monitoring station.

Key:

-- = There was insufficient (or no) data available to determine this value; µg/m^3 = micrograms per cubic meter; CO = carbon monoxide; N/A = not applicable; NAAQS = National Ambient Air Quality Standard; NO_2 = nitrogen dioxide; O_3 = ozone; Pb = lead; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; ppm = parts per million; SO_2 = sulfur dioxide

2.4 Transportation Conformity

Approval, funding, or implementation of Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) projects is subject to the transportation conformity regulations under the CAA (40 Code of Federal Regulations [CFR] 93 Subpart A). Each metropolitan planning area is required to develop an official metropolitan transportation plan pursuant to 23 CFR Part 450. If a potential project is included in a transportation plan and transportation improvement program (TIP) that conform to the SIP and the CAA Amendments, then the project is already included in the emission budgets developed for the region. Thus, a unique, regional analysis of project emissions would not be required; however, analysis regarding possible localized impacts is still required. The metropolitan planning organization (MPO), in this case the Houma-Thibodaux MPO, is responsible for transportation planning and determining regional conformity.

In order for a FHWA/FTA project to be found to conform, regardless of whether it is in a conforming transportation plan or TIP or not, the following criteria and procedures must be followed:

- §93.110 – The conformity determination must be based upon the most recent planning assumptions in force at the time the conformity analysis begins.
- §93.111 – The conformity determination must be based on the latest emission estimation model available.
- §93.112 – Conformity must be determined according to the consultation procedures in 40 CFR 93 Subpart A.
- §93.114 – There must be a currently conforming transportation plan and currently conforming TIP at the time of project approval.
- §93.116 – The project must not cause or contribute to any new localized CO, PM_{10}, and/or $PM_{2.5}$ violations or increase the frequency of severity of any existing CO, PM_{10}, and $PM_{2.5}$ violations.
- §93.117 – The project must comply with any PM_{10} and $PM_{2.5}$ control measures in the applicable SIP.

Transportation conformity applies to nonattainment and maintenance areas. Since the study area is in attainment for all pollutants, requirements of the transportation conformity regulations do not apply.

2.5 Air Toxics

In addition to the criteria air pollutants for which there are NAAQS, EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources (e.g., cars, trucks, and construction equipment), nonroad mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories, refineries, and power plants). EPA has also recognized emissions of air toxics from mobile sources as a potential environmental and health concern. The interim guidance released by FHWA dated February 2007 requires discussion of Mobile Source Air Toxics (MSATs) in National Environmental Policy Act (NEPA) documents. The guidance was updated in September 2009 and December 2012.

The current guidance on MSATs is FHWA's *Interim Guidance Update on Air Toxic Analysis in NEPA Documents*, released on December 6, 2012. This guidance advises on when and how to analyze MSATs in the NEPA process for highway projects. This guidance is interim because MSAT science is still evolving. Currently, there are limitations on tools and techniques for evaluating potential project-level health risks from MSAT exposure. FHWA regularly updates the guidance based on new scientific data.

Section 3

Impact Analysis

Impacts of the proposed project to the air quality in the study area are discussed in this section.

3.1 Vehicle Emissions

The impact resulting from a new transportation project ranges from intensifying existing air pollution problems to improving the ambient air quality. Changing traffic patterns are a primary concern when determining the impact of a new roadway or an existing highway facility.

3.1.1 Criteria Pollutants

Motor vehicles emit CO, NOx, VOC, PM_{10}, $PM_{2.5}$, SO_2, and Pb (listed in order of decreasing emission rate). Emissions of criteria pollutants as a result of the implementation of the project are discussed below.

Carbon Monoxide

Motor vehicles are considered the major source of CO in the project area. CO levels measured near the study area are well below the NAAQS and, this project is not expected to produce a projected violation of the CO NAAQS. There are no existing violations of CO in the project area. The proposed action is not anticipated to have an adverse impact on CO concentrations in the region. Since the study area is in attainment for CO, no additional analysis is warranted.

Ozone and Nitrogen Dioxide

Motor vehicles are regarded as sources of VOC and NOx. VOC and NOx emitted from vehicles are carried into the atmosphere where they react with sunlight to form O_3 and NO_2. Automotive emissions of VOC and NOx are expected to decrease in the future due to the continued installation and maintenance of pollution control devices on new cars. However, regarding area-wide emissions, these technological improvements may be offset by the increasing number of cars in the area.

The photochemical reactions that form O_3 and NO_2 require several hours to occur. For this reason, the peak levels of O_3 generally occur 10 to 20 kilometers (approximately 6 to 12 miles) downwind of the source of VOC emissions. Urban areas as a whole are regarded as sources of VOC, not individual streets and highways. The emissions of all sources in an urban area mix in the atmosphere, and, in the presence of sunlight, this mixture reacts to form O_3, NO_2, and other photochemical oxidants. This project is not expected to cause O_3 or NO_2 to exceed the NAAQS.

Particulate Matter and Sulfur Dioxide

Motor vehicles are not regarded as significant sources of PM_{10}, $PM_{2.5}$, and SO_2. Nationwide, highway sources account for less than 7 percent of PM emissions and less than 2 percent of SO_2 emissions. PM_{10}, $PM_{2.5}$, and SO_2 emissions are predominantly the result of nonhighway sources (e.g., industrial, commercial, and agricultural). Because emissions of PM_{10}, $PM_{2.5}$, and SO_2 from automobiles are very low and current monitored levels are well below the NAAQS, the traffic on the project will not cause air quality standards for PM_{10}, $PM_{2.5}$, and SO_2 to exceed the NAAQS.

Lead

Automobiles without catalytic converters can burn regular gasoline. The burning of regular gasoline emits lead as a result of regular gasoline containing tetraethyl lead, which is added by refineries to increase the octane rating of the fuel. Newer cars with catalytic converters burn unleaded gasoline, thereby eliminating lead emissions. Also, EPA has required the reduction in the lead content of leaded gasoline. The overall average lead content of gasoline in 1974 was approximately 0.53 gram per liter. By 1989, this composite average had dropped to 0.003 gram per liter. The CAA Amendments of 1990 made the sale, supply, or transport of leaded gasoline or lead additives unlawful after December 31, 1995. Because of these reasons, it is not expected that traffic on the proposed project will cause the NAAQS for lead to be exceeded.

3.1.2 Mobile Source Air Toxics

Motor vehicles contribute significantly to emissions of acrolein, benzene, 1,3-butadiene, diesel PM (including diesel exhaust organic gases), formaldehyde, naphthalene and polycyclic organic matter. Of these compounds, FHWA considers diesel PM as the dominant MSAT of concern.

The FHWA has developed a tiered approach for analyzing MSATs in NEPA documents, depending on the specific project circumstances:

- No analysis for projects with no potential for meaningful MSAT effects;
- Qualitative analysis for projects with low potential MSAT effects; or
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

The proposed project includes construction of a north-south limited-access primary route to improve connectivity in the North/South directions, especially for emergency evacuation events. As shown in **Table 1-1**, the design year AADT for the proposed connection is projected to be less than 140,000 to 150,000 vehicles per day, which is the FHWA criterion for a qualitative analysis; the project is expected to have low potential MSAT effects.

Vehicle mix is not anticipated to change due to this project; therefore, MSATs emitted would be proportional to the vehicle miles traveled (VMT). Although locally along the proposed alignments, MSAT emissions would increase from the addition of motor vehicle traffic, and therefore increased VMT, MSAT emissions along existing corridors are anticipated to decrease due to rerouted trips. Overall, VMT may be reduced for those who, without the project, had to take longer routes to travel north/south. **Table 3-1** shows estimated daily VMT on the proposed Houma-Thibodaux to LA 3127 connection. Also, speed may increase due to additional capacity increasing the efficiency of the transportation network.

Table 3-1 Estimated Daily Vehicle Miles Traveled on the Houma-Thibodaux to LA 3127 Connection

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Project VMT (miles)	273,360	296,004	237,930	261,030

Note: VMT calculated based on corridor length and AADT from Urban Systems, Inc. 2013.

Emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent from 2010 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turn over, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great, even after accounting for VMT growth, that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

MSAT science is still evolving and the available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternative evaluated in the Environmental Impact Statement (EIS). Due to these limitations, the following discussion is included in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.22) regarding incomplete or unavailable information.

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation, rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI).

The methodologies for forecasting health impacts include emissions modeling, dispersion modeling, exposure modeling, and then final determination of health impacts—each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70-year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that timeframe, since such information is unavailable. It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds and, in particular, for diesel PM.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by EPA as provided by the CAA to determine whether more stringent controls are required to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine a "safe" or "acceptable" level of risk due to emissions from a

source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decisionmakers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities, plus improved access for emergency response, that are better suited for quantitative analysis.

3.2 Construction Emissions

Heavy construction equipment—including excavators, scrapers, graders, rollers, compactors, and pavers—may be used to clear and grub, excavate, grade, and pave for construction of new roadways. Contractors will be responsible for maintaining, repairing, and adjusting all construction equipment to keep them in full satisfactory condition to minimize pollutant emissions. Equipment emissions may be reduced by using newer, lower-emitting equipment, retrofitting older equipment engines, and controlling activity.

All materials resulting from clearing and grubbing, demolition, or other operations will be removed from the project, burned, or otherwise disposed of by the Contractor. Any burning will be done in accordance with applicable local laws and ordinances and regulations of the state. Care will be taken to ensure burning will be done at the greatest distance practical from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will be performed under constant surveillance.

Measures should be taken to reduce any fugitive dust generated by construction activities. A dust control plan may be prepared to outline control methods specific to the construction site. Dust control methods may include watering areas of disturbance, covering haul trucks, stabilizing or covering stockpile areas, washing equipment to minimize track out, and reducing speeds on unpaved roads.

Section 4

Conclusions

The study area is located in St. James, St. John the Baptist, Lafourche, Assumption, and Terrebonne Parishes, which have been determined to comply with the NAAQS. The proposed project is located in an attainment area; therefore, 40 CFR Parts 51 and 93 are not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

No significant MSAT impacts are anticipated from this project. Air toxics analysis is a continuing area of research. At this time, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited.

Section 5

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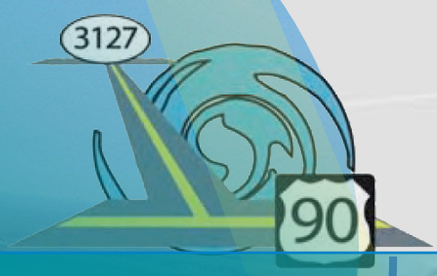
Appendix J.
Economic Study



NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Economic Study

December 2013

Prepared for:

Louisiana Department of Transportation and Development

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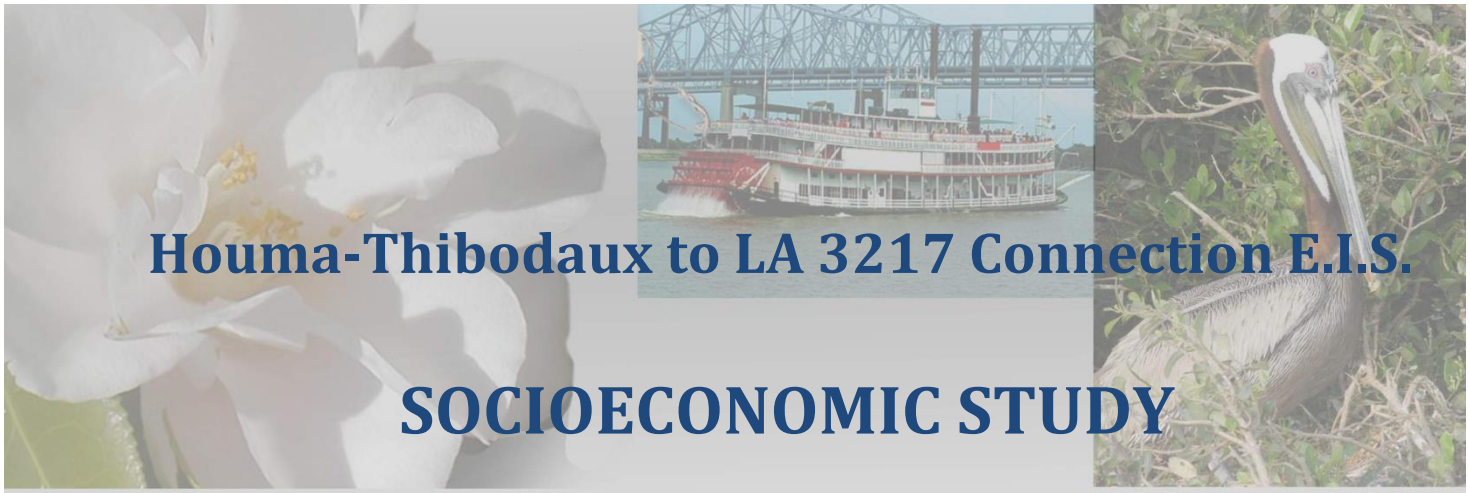

Houma-Thibodaux to LA 3217 Connection E.I.S.

SOCIOECONOMIC STUDY

Prepared for:

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Prepared by

CDM Smith

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Section 1

Study Overview

1.1 Introduction

This report presents the findings of the economic study conducted for the Louisiana Department of Transportation and Development (LADOTD) proposed construction of a north-south connection from US Highway 90 to LA 3127. This socioeconomic report was conducted as part of the Houma-Thibodaux to LA 3217 Connector Environmental Impact Statement (EIS) to evaluate the potential environmental and socioeconomic consequences of the proposed project. Information provided in this report will be used by the Louisiana Department of Transportation as part of the permit decision-making process.

Houma-Thibodaux to LA 3127, or the North-South Connector, is a two-lane divided highway between the urban areas of Houma, in Lafourche Parish, and Vacherie in St. James Parish. The proposed state highway would provide connectivity through constructing the two-lane section to LA 3127 by increasing the number of north-south links. Should the scenario where LA 20 fails ever occur, the project would provide additional options for north-south travel. Additional capacity would be provided for the north-south highway network. This North-South Connector would also provide a direct, limited access route between the Houma-Thibodaux area and the Mississippi River Corridor that would in turn improve access to and from the Houma-Thibodaux area. Additionally, the implementation of this project would result in improved system redundancy, decreased travel time, the provision of facility access and capacity, as well as balance the distribution of evacuation traffic among critical Mississippi River crossings. This will in turn indirectly maximize the efficient use and operation of hurricane evacuation routes.

Four alignment alternatives (Alternatives North A, North B, Central, and Western) have been identified as meeting the purpose and need of the project. The two main purposes for this project are system linkage and proposed emergency and hurricane evacuation. The specific objective of this project is to provide an adequate north-south transportation system linkage as presently there is a lack thereof. In addition there is a need to address the existing roadway networks current peak period congestion and Level of Service (LOS) deficiencies. Presently, portions of existing LA 20 show an LOS of E during both peak hours, along with three additional primary roadways (LA 308, LA 1, and LA 70) that have sections currently operating at LOS D. In the interest of public safety, a need for this connection exists due to the lack of a north-south emergency evacuation route. Such a scenario is further perpetuated by the traffic volumes pushing the roadways far beyond their capacity. The existing designated evacuation routes within the study area include US 90, LA 1, LA 20, LA 308, LA 24, and LA 3127. The majority of these evacuation routes provide east-west connectivity. An additional caveat is that these roadways, with the exception of US 90, are not controlled access facilities and are not used as contra flow during evacuation.

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Section 2

Socioeconomics and Communities

2.1 Community Characteristics Houma-Thibodaux North-South Connector Study Area

The study area for the North-South Connector is approximately 221,042 acres in southeastern Louisiana, south of the Mississippi River between Baton Rouge and New Orleans, and includes portions of five parishes—Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne Parishes. The study area is roughly bounded by US 90 to the south; LA 3127 and the Mississippi River to the north; LA 1/LA 308 and Bayou Lafourche to the west/southwest; and LA 307 and Lac des Allemands to the east.

The Mississippi River bisects Ascension, St. James, St. John the Baptist, and St. Charles Parishes, the four parishes known as the "River Parishes," two of which—St. James, and St. John the Baptist—comprise the northern portion of the study area along the river between Baton Rouge and New Orleans. Bayou Lafourche, paralleled by LA 1 to its west and LA 308 to its east, flows through parts of Ascension, Assumption, and Lafourche Parishes. Development is concentrated along the study area's periphery roadways, including residential, commercial, mixed-use development within the city and town limits, surrounded by cultivated agricultural fields. The Mississippi River corridor supports industrial development in the northern portion of the study area. Industrial development facilitates an important component of the region's economy. The center and the eastern/southeastern fringe of the study area consist primarily of undeveloped woody wetlands. The study area is located within the part of Louisiana known as the Bayou Region. This region is known for its abundance of natural features such as coastal wetland, bayous, and includes both natural and man-made waterways. Due to the unique geography of this area, past and present development has mainly occurred near higher elevations and natural ridges. Due to this fact, the roadway network within the study area is very limited and the existing transportation network provides better east-west connectivity than north-south connectivity.

Assumption Parish

Assumption Parish is located west of the Mississippi River and the adjacent industrial corridor between Baton Rouge and New Orleans. The parish is predominantly agricultural based, with some related industrial activity, such as sugar processing and refining. Napoleonville is the parish seat and the only incorporated community in the parish. Napoleonville village and several other small unincorporated communities, including Belle Rose, Labadieville, Paincourtville, and Supreme, are located in the study area along the banks of Bayou Lafourche.

Lafourche Parish

Lafourche (French for "the fork") Parish is named after Bayou Lafourche, which forms a fork where it flows out of the Mississippi River in Ascension Parish and runs the length of Lafourche Parish into the Gulf of Mexico. Bayou Lafourche is nicknamed the "Longest Street in the World" because of the many continuous miles of closely spaced homes along the bayou. There are three incorporated municipalities in Lafourche Parish, one of which is located within the study area. Thibodaux, the parish seat, is located along the banks of Bayou Lafourche in the northwestern part of the parish.

St. James Parish

St. James Parish is one of the four "River Parishes" located between New Orleans and Baton Rouge and bisected by the Mississippi River. The western portion of the parish, below LA 3127, is located within the study area, including the unincorporated town of South Vacherie. The unincorporated community of Convent is the parish seat.

St. John the Baptist Parish

St. John the Baptist Parish is located between St. Charles and St. James Parishes, and is one of the four "River Parishes" bisected by the Mississippi River. Though the river actually separates the Parish into northern and southern parts, the former is referred to as the "east bank" and the latter as the "west bank." Eight communities comprise St. John Parish, none of which are located in the study area.

Terrebonne Parish

Terrebonne Parish is one of the largest and one of the southernmost Louisiana parishes. Houma, the parish seat, is the only incorporated city in Terrebonne Parish. The northernmost portion of the parish, north of US 90 and the Houma city limits, is within the study area boundary. Terrebonne Parish also has the largest land area of all the study area parishes with approximately 1,231 square miles.

Table 2-1 summarizes some of the geographical data of the study area and two comparison areas; Louisiana and the United States.

Table 2-1. Geographic Characteristics of the Study Area and Comparison Areas

	United States	Louisiana	Assumption	Lafourche Parish	St. James	St. John the Baptist	Terrebonne	Study Area Parishes
Land area (sq. miles), 2010	3,531,905.43	43,203.90	338.66	1,068.21	241.54	213.07	1,231.82	3,093.3
Population living in urban area, percent 2010	219,922,123	4,601,893	55.01	75.78	72.3	86.55	79.37	—

Sources: US Census Bureau- Urban and Rural Reclassification data; Census 2010

Section 3

Population

3.1 Population Growth in the Study Area

Table 3-1 presents information about the population in the study area including changes in the rate of population growth from 1990 to 2010. For comparison purposes, the 2000 to 2010 change in population of Louisiana is given. The population of the Study Area parishes as a whole grew by an average of approximately 6 percent from 1990 to 2000, with very similar growth (6.2 percent) between 2000 and 2010. This amount of growth in the Study Area is approximately 4.8 percent greater than that of Louisiana from 2000 to 2010. Lafourche Parish has experienced the most growth over the past 10 years from 2000 to 2010. The least amount of growth in the study area was experienced by Assumption Parish. These growth estimates differ from those recorded between 1990 and 2000 whereby Terrebonne Parish experienced the most growth in the study area with 7.8 percent and St. James Parish experienced the least at 1.6 percent. The population of Louisiana, however, grew less between 2000 and 2010 (approximately 1 percent) compared to the growth seen between 1990 and 2000 (approximately 6 percent). Key factors in this growth appear to be the affordable cost of land and construction in the areas compared to other areas of the state. This is probably due to population increases, as well as upgrades in utilities and other infrastructure after the 2005 storms.

Table 3-1. Population Data for the Study Area

Location	1990	2000	Growth Rate 1990-2000	2010	Growth Rate 2000-2010
Louisiana	4,219,973	4,468,976	5.9%	4,533,372	1.4%
Assumption	22,753	23,388	2.8%	23,421	0.1%
Lafourche	85,860	89,974	4.8%	96,318	7.1%
St. James	20,879	21,216	1.6%	22,102	4.2%
St. John the Baptist	39,996	43,044	7.6%	45,924	6.7%
Terrebonne	96,982	104,503	7.8%	111,860	7.0%
All Study Area Parishes	*266,470*	*282,125*	*5.9%*	*299,625*	*6.2%*

Source: US Census Bureau - Census 1990; Census 2000; Census 2010

3.2 Indirect and Cumulative Growth Impacts

Construction of the proposed state road between US Highway 90 and LA 3127, regardless of the alignment selected, will minimally impact the projected population in the study area. Population growth and resulting development that will occur both naturally and that associated with the project in the study area could likely entail that surrounding retail services (e.g., fueling stations and restaurant) as the first development projects followed by additional residential development in non-wetland areas that are attractive to North-South commuters.

The controlled access of the proposed North-South Connector may adversely affect access in some areas and provide new, beneficial access to other areas that currently have none. These access changes may change travel patterns and affect growth concentrated at access points to the North-South Connector.

Adverse impacts are truly a legitimate concern in Terrebonne Parish as 90 percent of land area is considered environmentally sensitive. According to Terrebonne Parishes Vision 2030 Plan, the City of Houma's increased economic development opportunities are predicted to rebound the post storm related lagging population levels that were apparent pre 2010. The influx of population growth will create demand for housing in this area of the parish. The population cohort that is predicted to drive the most implications for land use over the next 20 years is that of senior citizens. It is thought that the desired communities of this "Baby Boomer" population are those that provide walkability and convenience. The parish also intends to utilize much of its environmentally sensitive areas as recreational space. Residential commercial and industrial are predicted to outpace agricultural development and take the form of traditional growth patterns on higher elevations that have been observed in the past.[1]

[1] Vision 2030 - Terrebonne Comprehensive Master Plan Document, Chapter 3: Population and Land Use. Pages 2-7. Approved November 2013. http://www.tpcg.org/view.php?f=planning&p=vision2030Last access May 6.

Section 4

Housing

4.1 General Housing Characteristics of the Study Area

General housing characteristics of the study area are presented in **Table 4-1**, and characteristics of the housing market are presented in **Table 4-2**. The majority of the study area parishes as a whole (approximately 86 percent) are comprised of owner-occupied housing, and the percentage of owner-occupied housing in each study area parish is higher than the statewide average. Terrebonne Parish has the highest percentage of renter-occupied housing at approximately 28 percent. Assumption Parish has the highest percentage of vacant housing, approximately 15 percent.

Table 4-1. General Housing Characteristics of the Study Area

Location	Total Housing Units	Owner-Occupied	Renter-Occupied	Vacant	Single-Family Detached	Mobile Home	Median Value (2000)	Median Value (2008-2010)
Louisiana	*1,967,882*	*67.2%*	*32.8%*	*12.0%*	*65.2%*	*13.3%*	*$77,500*	*$137,900*
Assumption	10,361	81.6%	18.4%	15.6%	60.5%	30.4%	$58,400	$90,700
Lafourche	38,645	75.8%	24.2%	8.0%	70.4%	23.3%	$71,100	$126,300
St. James	8,470	83.9%	16.1%	8.7%	73.8%	17.5%	$69,300	$124,100
St. John the Baptist	17,522	79.2%	20.8%	8.8%	78.8%	10.2%	$79,000	$150,500
Terrebonne	43,914	68.2%	27.8%	8.6%	70.4%	16.7%	$72,200	$128,900
All Study Area Parishes	*118,912*	*85.8%*	*20.8%*	*10.7%*	*71%*	*18.4%*	--	--

US Census Bureau, Census 2000; 2009- 2011 American Community Survey 3-Year Estimates

Table 4-2. Study Area Housing Market Characteristics

Location	Active Listings	Average Listing Price	Median Listing Price
Assumption	102	$158,166	$49,000
Lafourche	554	$186,808	$125,000
St. James	65	$124,487	$109,500
St. John the Baptist	344	$183,794	$149,000
Terrebonne	678	$224,008	$152,500

Source: Realtor.com, August 2010

Most homes in the study area parishes are rural (with some suburban), moderately valued, single-family detached homes built between 1950 and 1990. According to Census 2000 data, median owner-occupied home values for the Study Area parishes were between $58,400 (Assumption) and $79,000 (St. John the Baptist Parish), with a statewide average of $77,500. The Census 2009-2011 American Community Survey 3-Year Estimates report median owner-occupied home values ranging from $90,700 (Assumption) to $150,500 (St. John the Baptist Parish) and a statewide average of $137,900.

Real estate listings were reviewed to determine the availability and estimated market value of homes in the Study Area, as shown in Table 4-2. There were approximately 1,743 active listings of one- to five-bedroom homes throughout the Study Area parishes in August 2010, with average listing prices by parish ranging from $124,487 to $224,008. Median listing prices by parish range from $49,000 to $152,500.

Section 5

Economics

5.1 Existing Conditions

The study area is located within portions of Assumption, Lafourche, St. James, St. John the Baptist, and Terrebonne Parishes. Within these five parishes, there are more than 130,000 employed individuals. As shown in **Table 5-1** below, the greatest proportion of employed residents work within the educational services and health care and social assistance industries, followed by the retail trade and manufacturing industries. A considerably greater proportion of study area residents are employed in the manufacturing; and agriculture, forestry, fishing and hunting, and mining industries than state residents overall. These industry proportions are for the most part similar to those of Louisiana with the exception of Manufacturing and Agriculture, forestry, fishing and hunting, and mining industries, which have a stronger presence in the study area.

Table 5-1. Proportion of Study Area Employment by Industry as Compared to the State Overall

Industry	Study Area	Louisiana
Civilian employed population 16 years and over	130,302	1,978,701
Educational services, and health care and social assistance	19.01%	23.61%
Retail trade	12.31%	11.78%
Manufacturing	11.37%	7.99%
Construction	9.90%	8.32%
Agriculture, forestry, fishing and hunting, and mining	8.37%	4.35%
Arts, entertainment, and recreation, and accommodation and food services	8.06%	9.96%
Transportation and warehousing, and utilities	6.97%	5.18%
Professional, scientific, and management, and administrative and waste management services	6.27%	8.30%
Other services, except public administration	5.90%	5.15%
Finance and insurance, and real estate and rental and leasing	4.30%	5.26%
Public administration	3.57%	5.75%
Wholesale trade	2.77%	2.82%
Information	1.20%	1.54%

Source: U.S. Census Bureau, 2009-2011 American Community Survey, 3-Year Estimates, S2403

5.2 Employment Rates

Employment comprises estimates of the number of jobs, full time plus part time, by place of work. Full-time and part-time jobs are counted at equal weight. Employees, sole proprietors, and active partners are included; however, unpaid family workers and volunteers are not included in these estimates. **Table 5-2** presents the percentage of the population that are both employed and unemployed in the study area as well as the median household income. These estimations are compared with Louisiana. St. John the Baptist Parish has the greatest unemployment rate in the study area with 6.5 percent. The study area parish with the lowest unemployment rate is Lafourche with 2.8 percent. The study area as a whole has an unemployment rate of 4.1 percent. This is nearly a percent lower than that of Louisiana. Pre-construction activities and construction of the proposed Houma Thibodaux to LA 3127 Connection, regardless of the alignment selected, will have a very small impact on employment in the study area.

Table 5-2. Employment Characteristics of the Study Area (for the year 2010)

	Persons Employed		Persons Unemployed	
Location	**Population**	**%**	**Population**	**%**
Louisiana	1,986,772	56.7	175,550	5.0
Assumption	9,546	51.7	773	4.2
Lafourche	43,630	58.1	2,101	2.8
St. James	9,486	55.7	891	5.2
St. John the Baptist	21,009	59.4	2,292	6.5
Terrebonne	49,120	57.2	3,531	4.1
All Study Area Parishes	*132,791*	*57.3*	*9,588*	*4.1*

Source: US Census Bureau - Census 2010

5.3 Median Household Income and Poverty Status

According to the 2010 Census, approximately 16 percent of the study area parishes as a whole have incomes below the poverty level, which is less than the statewide average of approximately 18 percent. Lafourche Parish has the lowest percentage at approximately 14 percent, which is significantly lower than the statewide average, while Terrebonne Parish has the highest percentage at approximately 18 percent, which is comparable to the statewide average. Similarly, St. James Parish has the highest median household income of study area parishes, while Assumption Parish has the lowest, yet still has a median household income above the statewide average. Poverty and income characteristics of the study area, based on 2010 Census data, are presented in **Table 5-3**.

Table 5-3. Poverty and Income Characteristics of the Study Area (for the year 2010)

Location	Total Popluation[1]	Persons Below Poverty Level		Median Household Income
		Population	%	
Louisiana	4,533,372	824,906	18.7 %	$43,484
Assumption	23,421	3,951	17.1%	$44,583
Lafourche	96,318	13,584	14.4%	$48,398
St. James	22,102	3,310	15.3%	$58,128
St. John the Baptist	45,924	6,976	15.5%	$50,736
Terrebonne	111,860	19,848	18.0%	$47,859
All Study Area Parishes	*299,625*	*47,669*	*15.9%*	--

Source: US Census Bureau - Census 2010. 1 Population for whom poverty status is determined.

Section 6

Business Patterns

6.1 Existing Industry

As demonstrated in Table 5-1, like in the state overall, the majority of study area residents have management, business, science and arts, and sales and office occupations. However, a greater proportion of study area residents have production, transportation, and material moving, and natural resources, construction, and maintenance occupations than Louisiana residents overall. The agricultural economy has the greatest share of employment in the study area in comparison to that of the state. Lafourche Parish reflects this emphasis on a natural resources and agricultural economy.[2] In particular, Lafourche includes the major industries of oil and gas production, sugar refinery, shipbuilding, and commercial fishing. According to the 2010 Census, the primary sectors of Lafourche's economic base that contain the greatest amount of employment are retail trade, healthcare, and social assistance. The third largest sector is transportation and warehousing. There are a total number of 1,923 establishments for all sectors of Lafourche Parishes economy. This translates into 27, 330 paid employees.[3]

Terrebonne Parish accounts for 20 percent of Louisiana's seafood and tourism has become a large part of its economic base. According to the 2010 Census, the primary sectors of Terrebonne's economic base that contain the greatest amount of employment are retail trade, healthcare, and social assistance. The third largest sector is professional, scientific, and technical services. There are a total number of 2,910 establishments for all sectors of Terrebonne Parishes economy. This translates into 48,991 paid employees. The Acadian culture, diverse environment and wildlife, plantation homes, excellent food, and close proximity to New Orleans, Baton Rouge, and Lafayette make this area an excellent central location for the visitor who wishes to see all the sights and sounds of southern Louisiana.[4]

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[2] LaDOTD and US FHWA. Preliminary Alternatives Screening Study for an East-West Corridor from Houma-Thibodaux to the Sunshine Bridge. Chapter 2 page 7. March 2009.

[3] Lafourche Parish Government. http://www.lafourchegov.org/AboutLafourche.aspx,, Last accessed August 6, 2010. 13 U.S Census Bureau, 6.U.S Economic Census County Business Patterns, Geography Area Series: 2010 BusinessPatterns,NAICScodes http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=BP_2010_00A1&prodType=table Last accessed May 7, 2013.

[4] http://www.tpcg.org/view.php?f=main&p=history, Last accessed August 25, 2010.

Table 6-1. Proportion of Study Area Population by Occupation as Compared to the State Overall

Occupation	Study Area	Louisiana
Civilian employed population 16 years and over	130,302	1,978,701
Management, business, science, and arts occupations	26.42%	31.36%
Sales and office occupations	24.57%	25.01%
Production, transportation, and material moving occupations	17.87%	12.46%
Natural resources, construction, and maintenance occupations	15.61%	12.39%
Service occupations	15.53%	18.79%

Source: U.S. Census Bureau, 2009-2011 American Community Survey, 3-Year Estimates, S2406

There are nearly 28,000 businesses within the five-parish study area, approximately 78 percent of which are "nonemployer businesses" that are mostly self-employed individuals with no paid employees. **Table 6-2** demonstrates that nearly 72 percent of all businesses in the study area are located within just two parishes: Lafourche and Terrebonne. Historically, the regional economy has been based on the area's natural resources, agriculture, and natural and built waterways. The region was also involved in the development of mechanized sugar cane harvesting and offshore oil exploration and production techniques.[5]

Table 6-2. Number of Business Establishments within the Study Area

Parish	Employer Establishments	Nonemployer Establishments*	Total
Assumption	251	1,490	1.741
Lafourche	1,923	6,930	8,853
St. James	317	1,312	1,629
St. John the Baptist	733	3,728	4,461
Terrebonne	2,910	8,211	11,121
Total	6,134	21,671	27,805

*A nonemployer business is one that has no paid employees, has annual business receipts of $1,000 or more ($1 or more in construction industries), and is subject to federal income taxes. Most nonemployers are self-employed individuals operating very small unincorporated businesses. (U.S. Census Bureau, www.census.gov/epcd/nonemployer/view/define.html)

Sources: U.S. Census Bureau, 2010 County Business Patterns; U.S. Census Bureau, 2010 Nonemployer Statistics

Approximately 97 percent of the more than 6,100 employer establishments within the study area have less than 100 employees. According to the U.S. Census Bureau, Terrebonne Parish accounts for almost half of the major employers within the study area. **Table 6-3** below provides the number of major employers by parish.

[5] South Central Planning Development Commission. Comprehensive Economic and Development Strategy 2012. Page 3. http://www.scpdc.org/wp-content/uploads/CEDS_2009_Final.pdf. Last accessed May, 7, 2013.

Table 6-3. Number of Major Employers within Study Area

Parish	100 to 499 Employees	500 to 999 Employees	≥1,000 Employees	Total
Assumption	4	0	0	4
Lafourche	37	2	0	39
St. James	16	2	0	18
St. John the Baptist	22	2	0	24
Terrebonne	75	4	3	82
Total	154	10	3	167

Sources: U.S. Census Bureau, 2010 County Business Patterns

Table 6-4 19 presents a list of the major employers within the study area. These businesses range from 100 to nearly 2,500 employees. The majority of the major employers is in, or provides support services to, the oil and gas industry. Manufacturing companies, chemical, food, metal, and plastic are also major employers in the area.

Top employers within the study area are clustered in three main areas—the Gramercy/Wallace area, the Thibodaux area, and south of US 90, the Houma area.

Table 6-4
Major Employers within the Study Area

Parish	Employer	Category
Assumption	Assumption Association for Retarded Citizens, Inc.	Non-profit
Assumption	Assumption Parish School Board	Education
Assumption/Lafourche/Terrebonne	Catholic Diocese of Houma-Thibodaux	Religion
Assumption	Heritage Manor of Napoleonville	Healthcare
Assumption	Industrial Electrical	Electrical Contractor
Lafourche	Bollinger Shipyards, Inc.	Marine Transportation
Lafourche	Danos & Curole Marine Contractors	Oil and Gas Technical Services
Lafourche	Edison Chouest Offshore	Marine Transportation
Lafourche	Grand Isle Shipyard, Inc.	Marine Transportation
Lafourche	International Offshore Services, LLC	Marine Transportation
Lafourche	Nicholls State University	Education
Lafourche/Terrebonne	Rouses Supermarkets	Supermarket
Lafourche	Thibodaux Regional Medical Center	Healthcare
Lafourche/Terrebonne	Walmart	Retail
St. James	Louisiana Sugar Refining, LLC	Sugar Refinery
St. James	Mosaic Co.	Chemical Manufacturing
St. James	Motiva Enterprises, LLC	Oil and Gas
St James	Noranda Alumina, LLC	Metal Manufacturing
St. James	Occidental Chemical Corp.	Chemical Manufacturing
St. James	Zen-Noh Grain Corp.	Grain Elevator
St. John the Baptist	ArcelorMittal La Place, LLC	Metal Manufacturing
St. John the Baptist	Cargill, Inc.	Grain Elevator
St. John the Baptist	Diversified Well Logging, Inc.	Oil and Gas
St. John the Baptist	DuPont Performance Elastomers, LLC	Rubber Manufacturing
St. John the Baptist	Louisiana Machinery, Co.	Equipment and Supplies
St. John the Baptist	Marathon Ashland Petroleum, LLC	Oil and Gas
St. John the Baptist	Nalco Chemical Co.	Chemical Manufacturing
St. John the Baptist	Pinnacle Polymers	Plastics Manufacturing
Terrebonne	Chet Morrison Contractors	Oil and Gas Technical Services
Terrebonne	Gulf Island Fabrication, Inc.	Equipment and Supplies
Terrebonne	Leonard J. Chabert Medical Center	Healthcare
Terrebonne	Performance Energy Services, LLC	Oil and Gas Technical Services
Terrebonne	Seacor Marine, LLC	Marine Transportation
Terrebonne	Terrebonne General Medical Center	Healthcare
Terrebonne	Terrebonne Parish Government	Government
Terrebonne	Terrebonne Parish School Board	Education

Sources: Assumption Parish, "Community Profile" www.assumptionla.com/Community_Profile?view=day&lh=2&d=01&m=07&y=2011; Houma Today "Lafourche's Largest Employers" October 29, 2009; Accessed May 17, 2013: www.houmatoday.com/article/20091029/NEWS0101/910299972; River Region Economic Development Initiative (RREDI) "St James Parish" Accessed May 17, 2013: http://portsl.com/businessdevelopment/docs/StJames_Parish_Profile.pdf; (RREDI) St "St. John Parish" Accessed May 17, 2013: http://portsl.com/businessdevelopment/docs/StJohn_Parish_Profile.pdf; John the Baptist, "Major Employers", Accessed May 17, 2013: http://sjbparish.com/ecodev_demographics.php?id=162; Daily Comet "Terrebonne's Top Employers" November 13, 2012; Accessed May 17, 2013: www.dailycomet.com/article/20121113/ARTICLES/121119874?template=printpicart

Section 7

Economic Development Strategy

7.1 Economic Development Agencies and Plans

Each of the five parishes within the study area is a member of the South Central Planning and Development Commission (SCPDC); a regional planning and economic district. The SCPDC annually prepares a "Comprehensive Economic Development Strategy" (CEDS) report to aid in the coordination of economic development efforts. The SCPDC's mission has been defined as, "simply to help member parishes and municipalities plan for the future."[6] In doing so, SCPDC provides services consisting of economic development, building code enforcement, transportation planning, and community planning services within its region. SCPDC is also the Economic Development District (EDD) for the region, which enables it to receive economic development assistance from the U.S. Department of Commerce Economic Development Administration (EDA). As part of this assistance, the EDA requires the development of a Comprehensive Economic Development Strategy (CEDS) that is the result of strategic economic development planning among collaborating public and private sector partners. SPDPC has also outlined goals and objectives in its CEDS to further its regional economy and ensure the most efficient and sustainable land development patterns. The goals include the following:

- **Goal 1:** Improve the region's public infrastructure in order to support and sustain a viable economy and environment
- **Goal 2:** Create and retain quality jobs and foster a more diversified economy
- **Goal 3:** Improve the region's overall capacity to make efficient land use decisions
- **Goal 4:** Improve the region's overall capacity to make economic development decisions
- **Goal 5:** Improve the fiscal capacity of local government to make the region financially attractive for economic development
- **Goal 6:** Protect and conserve the region's natural resources and promote more equitable use of these resources for business and recreation

[6] South Central Planning and Development Commission. Mission Statement. http://www.scpdc.org/?page_id=260, Last accessed May 7, 2013.

Two additional regional economic development agencies that support economic growth in the study area are the South Louisiana Economic Council (SLEC) and the Greater New Orleans, Inc. (GNO, Inc.). SLEC serves the Bayou Region, which includes three of the parishes within the study area (Assumption, Lafourche, and Terrebonne). GNO, Inc. serves Southeastern Louisiana; its 10-parish region includes St. James and St. John the Baptist Parishes. These agencies provide technical assistance and business incentive programs. In 2002, Terrebonne Parish developed "A Strategic Plan for Economic Development." In addition, Assumption, St. James, St. John the Baptist, and Terrebonne Parishes have developed, and Lafourche Parish is in the process of developing, comprehensive plans or land use plans that incorporate economic development, transportation, and land use considerations and goals.

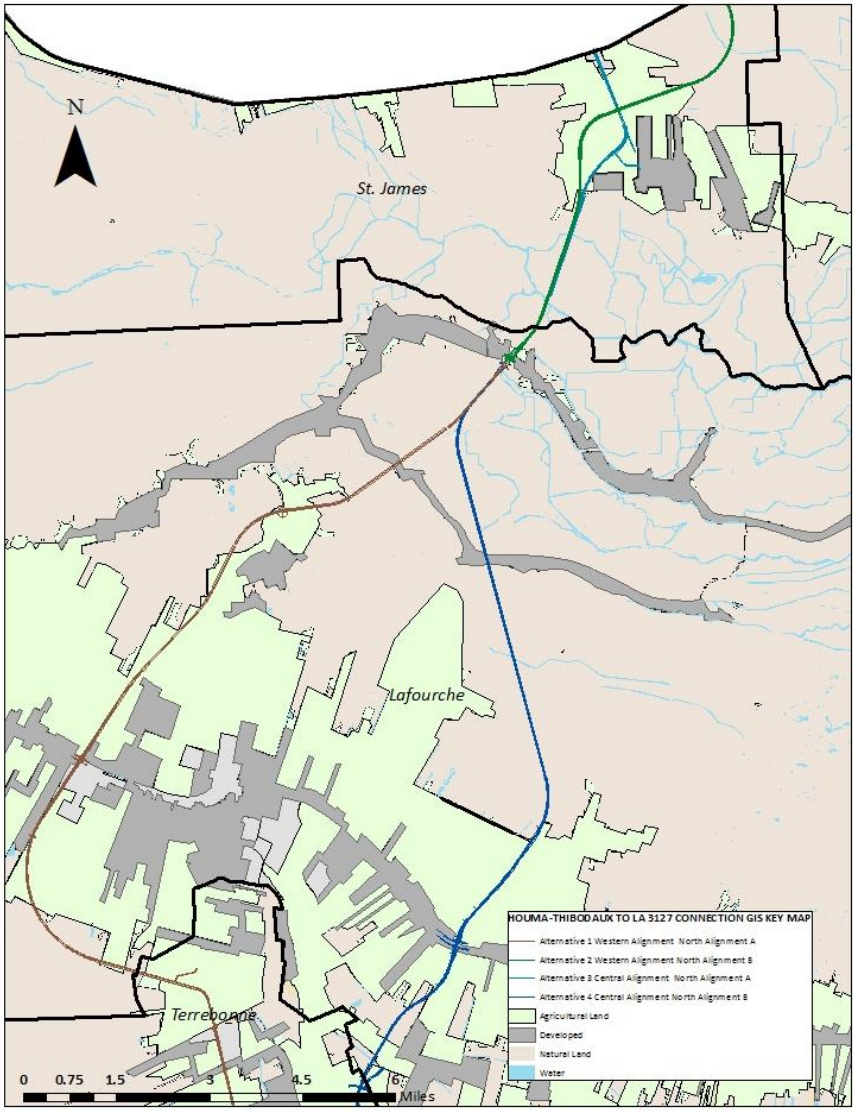
Section 8

Environmental Consequences

8.1 Impacts to Alternatives

The proposed alternatives would have little overall socioeconomic and environmental impact to the study area. A slight increase in residential and commercial development is predicted to occur as a result of this project. Potential impacts to the build alternatives are described below.

Figure 8-1 Houma-Thibodaux to LA 3127 Connection Alternatives Map



No Build

The No Build Alternative would not impact the existing economic conditions of the study area.

Impacts (Build Alternatives)

Alternative 1 (Western Alignment + North Alignment "A")

Under *Alternative 1 (Western Alignment + North Alignment "A")*, approximately 32,451 linear feet of roadway would be expanded, and approximately 109,211 linear feet of roadway would be built. The right-of-way (ROW) acquisition could result in business displacement of an estimated eight commercial establishments (as explained in Section 4.9). Relocation would be completed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended. Existing businesses along the alignment may experience temporary construction impacts such as noise, dust generation, and impeded vehicular access due to detours.

Alternative 2 (Western Alignment + North Alignment "B")

Under *Alternative 2 (Western Alignment + North Alignment "B")*, approximately, 25,301 linear feet of roadway would be expanded, and approximately 127,819 linear feet of roadway would be built. The ROW acquisition could result in business displacement of approximately seven commercial establishments (as described in Section 4.9). Relocation would be completed in accordance with the Uniform Act, as amended. Existing businesses along the alignment may experience temporary construction impacts such as noise, dust generation, and impeded vehicular access due to detours.

Alternative 3 (Central Alignment + North Alignment "A")

Under *Alternative 3 (Central Alignment + North Alignment "A")*, approximately, 34,150 linear feet of roadway would be expanded, and approximately 85,336 linear feet of roadway would be built. The ROW acquisition could result in business displacement of an estimated three commercial establishments (as explained in Section 4.9). Relocation would be completed in accordance with the Uniform Act, as amended. Existing businesses along the alignment may experience temporary construction impacts such as noise, dust generation, and impeded vehicular access due to detours.

Alternative 4 (Central Alignment + North Alignment "B")

Under *Alternative 4 (Central Alignment + North Alignment "B")*, approximately, 27,000 linear square feet of roadway would be expanded, and approximately 104,155 linear feet of roadway would be built. The ROW acquisition could result in business displacement of approximately two commercial establishments, the lowest number of potential relocations among the build alternatives (Section 4.9). Relocation would be completed in accordance with the Uniform Act, as amended. Existing businesses along the alignment may experience temporary construction impacts such as noise, dust generation, and impeded vehicular access due to detours.

Secondary and Cumulative Impacts

The Build Alternatives would serve to improve connectivity and capacity within and through the study area, easing commutes for employees and shortening travel times for shipping and trucking companies, as well as potential customers. The indirect effects of the Build Alternatives could include bringing more people to the area and attracting new development along the proposed alignment. New development could entail the construction of new businesses, or the relocation of existing businesses so as to take advantage of the changes in traffic patterns. The build alternatives could impact community cohesion if the alignments separate residents, block access or mobility patterns, or set certain areas of neighborhoods apart from others. Due to the general lack of interconnectivity between residential streets and limited north-south connectivity that currently exists in the study area, there is the potential for significant impacts to community cohesion. The type and severity of the impacts will primarily depend on whether or not tie-ins to local side roads and drives are provided and how they are configured, which will be determined during detailed design of the preferred alternative. The areas with the greatest potential for impact are the neighborhoods with single access points off of the existing sections of the proposed Central and Western alignments. However, mitigation measures would be incorporated into the design to address any significant impacts that are identified.

Section 9

Summary and Conclusions

9.1 Overall Impact of the Houma-Thibodaux to LA 3217 Connector

The construction of the North-South Connection based on previously given analysis of the existing conditions will vastly improve connectivity between US 90 and LA 3127 while creating minimal disturbance through predominantly rural areas. One alternative is not more economically viable than another. The build alternatives for the North-South Connection will serve as a reliever route to the LA 20 route. As such, it is anticipated that development along the build alternatives could be similar. Existing development along LA 20 either consists of single-family residential with frontage directly onto LA 20 or, in the lower areas, does not currently have development. The developed lots generally consist of small plots of pasture or cultivated crops with one to few buildings. With the limited-access designed for the North-South Connector, it is less likely that a similar level of development will occur along the North-South Connector. The controlled access of the proposed North-South Connector may adversely affect access in some areas and provide new, beneficial access to other areas that currently have none. These access changes may change travel patterns locally as crossroad termination is proposed on low-volume roads where local service and local access exists with alternate routes. This direct effect will inconvenience the fewest number of residents in the study area based on roadway volume. However, some of the effects on residents could be substantial depending on the proximity and length of an alternate route. These changes are related to short trips and generally don't contribute much to the overall travel patterns of an area which are characterized by longer trips. In summary, based upon the socioeconomic data presented in this report the population growth and industry of the study area would be better accommodated by this project. The benefits of a north-south connection including greater roadway network linkage, alleviation of congestion, and improved emergency and hurricane evacuation within Louisiana's Bayou region outweigh any possible adverse effects. Thus, the Houma-Thibodaux to LA 3217 Connection is a viable and warranted endeavor given the discussed circumstances.

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Appendix K.
Conceptual Relocation Report

NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Conceptual Relocation Report

September 2013

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

Conceptual Stage Relocation Plan

STATE PROJECT NO. 700-99-0302
F.A.P. NO. 9902(518)
Houma-Thibodaux to LA 3127 Connection EIS

The proposed project will be mostly new alignment over uninhabited areas, with the exception of some portions of existing roadways with surrounding residents being widened. It is not expected that the project will have any major disruptive effect on the surrounding human environment, with the exception of some residential and commercial relocations. An effort to minimize required relocations was made during the development of each alternative. **Table 1** below outlines the potential relocations that would be incurred should a build alternative be selected.

Table 1. Potential Relocations

	Commercial	Residential	Total
No-Action	0	0	0
Alternative 1	8	31	39
Alternative 2	7	29	36
Alternative 3	3	24	27
Alternative 4	2	22	24

The commercial properties that would potentially be affected and the alternatives that they apply to are as follows:

Cajun Home Improvements Inc.
- Potentially affected by Alternative 1 and 2
- The two front buildings on their property would need to be relocated
- It appears that relocation onto the remaining property is feasible

Napasco Inc.
- Potentially affected by Alternative 1 and 2
- Potential full relocation

An Exxon Gas Station
- Potentially affected by Alternative 1 and 2
- Potential full relocation

Shop Rite Convenience Store
- Potentially affected by Alternative 1 and 2
- Potential full relocation

Delta Restaurant Supply
- Potentially affected by Alternative 1 and 2
- Potential full relocation

Thibodaux Regional Airport
- Potentially affected by Alternative 1 and 2
- Only a solitary storage building or shed seems to be affected
- It appears that relocation onto the remaining property is feasible

Hair Masters
- Potentially affected by all four alternatives
- Potential full relocation

Daiquiri Explosion
- Potentially affected by Alternatives 1 and 3
- Potential full relocation

Brad's Automotive
- Potentially affected by Alternatives 3 and 4
- Potential full relocation

All potential residential relocations seem to be low to middle class, single-family homes consisting of standing structures and mobile homes. Some home owners will have the option to relocate on the remainders of their property following the right-of-way acquisition. Based on the preliminary review of the housing inventory and market data discussed previously, there appears to be a large and adequate supply of replacement housing available for potential full displacements. Relocation programs available through LaDOTD to displaced residents include relocation assistance, relocation moving payments, and relocation replacement housing payments or rent supplement. Comparable housing will be provided for all displaced residents.

During right-of-way acquisition, each property that will be required for purchase will be assigned a relocation officer from LaDOTD, who will be the point of contact for the resident during transition from existing to new housing. No person or family will be displaced until comparable replacement housing has been offered or provided to the displaced resident within a reasonable time prior to displacement. In the event comparable replacement housing is not available, or when unavailable within the displaced resident's financial means, the Last Resort Housing program may be used by the LaDOTD to help provide housing. This program provides states flexibility in implementing relocation programs in order to insure all displaced residents will be provided decent, safe, and sanitary housing.

An estimated $125,000 will be offered for residential relocations and $300,000 will be offered for commercial relocations. No special or unusual conditions have been identified that would cause disruption in the relocation process.

Appendix L.
Hazardous Materials

NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Hazardous Materials

March 2015

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

CDM Smith

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NS EIS
Hazardous Material Sites
Technical Report

Executive Summary

CDM Smith, Inc. (CDM Smith) conducted an evaluation of hazardous material sites that have the potential to affect the proposed Houma-Thiboaux to LA 3127 Connection project. The proposed project consists of a 346 square mile study area and four alignment alternatives. Due to the size of the study area a Geographic Information System (GIS) model was created to assist in the analysis process. State and federal regulatory agency databases containing information on hazardous materials and hazardous waste sites were downloaded and inventoried. These regulated sites have the potential to contain hazardous materials.

Construction of any of the four build alternatives are anticipated to have a low potential for creating additional hazardous material impacts on the environment. Impacts associated with contaminated media would most likely be identified during construction and would be related to activities on or near existing contaminated sites. These sites may have already been impacted and/or have the potential to impact the environment based on historic conditions, such as remnant USTs. Regulated sites also have the potential of contaminating adjacent sites, creating risk when acquiring properties adjacent to regulated sites. Right-of-Way (ROW) acquisition will be required for the selected preferred alternative alignment. Prior to ROW negotiation and/or acquisition, an American Society for Testing and Materials (ASTM) Phase I Environmental Site Assessment (ESA) would need to be conducted for the preferred alternative alignment.

All four build alternative alignments would have minimal risks for hazardous material impacts on the environment. Impacts would most likely occur on or near existing hazardous material sites. Regulated sites were identified within or near all of the proposed alternative alignments. These sites create a higher potential for encountering hazardous contamination during construction.

Mitigation of hazardous waste sites impacted by the proposed preferred alignment will vary depending on the type, size, and location of hazardous material sites. Each site would have to be assessed and if necessary, mitigation would have to be determined according to the issues associated with each site.

1.0 Introduction

This report provides an evaluation of hazardous material sites that have the potential to be affected by the proposed Houma-Thiboaux to LA 3127 Connection project. The proposed project consists of a 346 square mile study area and four alignment alternatives. Due to the size of the study area a Geographic Information System (GIS) model was created to assist in the analysis process. State and federal regulatory agency databases containing information on hazardous materials and hazardous waste sites were downloaded and inventoried. These regulated sites have the potential to contain hazardous materials.

1.1 Purpose

Construction of any of the four build alternatives are anticipated to have a low potential to be impacted by hazardous material sites. Impacts associated with contaminated media would most likely be identified during construction and would be related to activities on or near existing contaminated sites. These sites may have already been impacted and/or have the potential to impact the environment based on historic conditions, such as remnant USTs. Regulated sites also have the potential of contaminating adjacent sites, creating risk when acquiring properties adjacent to regulated sites. Right-of-Way (ROW) acquisition will be required for the selected preferred alternative alignment. Prior to ROW negotiation and/or acquisition, an American Society for Testing and Materials (ASTM) Phase I Environmental Site Assessment (ESA) would need to be conducted for the preferred alternative alignment. Phase II ESAs may also be necessary depending on the findings of the Phase I ESA. The Phase II ESA would provide additional testing and sampling of all potential hazardous sites and would provide additional information about the types and extent of contamination, if present. If contaminated media was identified, interim measures or site remediation may be necessary.

1.2 Special Terms and Conditions

No investigation can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. **Consequently, this report in no way expresses any warranty or guarantee with respect to recognized environmental conditions at the project site.** Every reasonable effort was made to ensure that the information presented in this report is materially complete and accurate.

The conclusions of this report are based solely upon observations made during this evaluation. CDM Smith's opinions should not be construed as relating to health and safety issues, directly. Should additional information become available, this information should be reviewed by CDM Smith, and the conclusions herein modified, as appropriate. In addition, this report should not be construed as verification of compliance by the present owners or operators of the project corridor with federal, state, or local laws and regulations.

Information provided by third parties was used in assessing the site conditions. The accuracy of the conclusions made from this information is inherently based on the accuracy of the information provided. It must be recognized that the limited scope of services may have precluded recognition of contamination at the site. The absence of contamination recognition in this report cannot be interpreted as a warranty, expressed or implied, that no contamination exists at the site, and CDM Smith cannot be held liable for damages if contamination of some type is discovered in the future.

This report should not be considered as a recommendation to purchase, sell, or develop the site, and the opinions contained herein are not legal opinions. To evaluate the information contained in this report, the reader must understand the limitations associated with this assessment.

2.0 Records Review

State and federal regulatory agency databases containing information on hazardous materials and hazardous waste sites were downloaded and inventories. GIS spatial data layers of regulated sites were overlaid onto existing mapping of the project area to locate hazardous material sites. Appropriate search distances were used for each of the four alternatives. Regulated Sites were identified using GIS and spatial data layers. An onsite visit will need to be conducted during the analysis of the preferred alternative to verify all locations when preparing the Final Environmental Impact Statement.

The U.S. Environmental Protection Agency (EPA) is the leading federal agency having regulatory authority over hazardous waste sites. EPA collects and maintains databases for all sites that are subject to environmental regulations. These databases are then combined into one database called the Facility Registry System (FRS). EPA provides the ability to download a file containing all facilities and/or sites within the FRS for a given State, or other search criteria. The FRS file for Louisiana was downloaded on March 19, 2015. The following is a list, with descriptions, of some of the main databases within FRS. EPA Facilities records were accessed via the NEPAssist database.

- National Priorities List (NPL) – NPL sites are priority sites for cleanup under the federal Superfund program. EPA has determined that these sites pose a threat to human health and remediation is required;
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) – Listing of Superfund sites that the EPA has investigated or is currently investigating for a release or threatened release of hazardous substances. Contains sites which are either on or proposed to be added to the NPL and sites which are in the screening and assessment phase for possible inclusion on the NPL;
- CERCLIS "No Further Remedial Action Planned" (NFRAP) – Contains information on sites that have been removed and archived from the inventory of Superfund sites. Archive status indicates that, to the best of EPA's knowledge, federal Superfund assessment of a site is complete and it has been determined that no further steps will be taken to list the site on the NPL;
- Resource Conservation and Recovery Act Information (RCRAInfo) – EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database provides information on sites that generate, transport, store, treat and/or dispose of hazardous waste (TSDF). The data also includes information for hazardous waste generators; a conditionally-exempt small quantity generator (CESQG) produces less than 100 kilograms per month of hazardous waste, a small quantity generator (SQG) produces between 100 kilograms and 1,000 kilograms per month of hazardous waste, and a large quantity generator (LQG) produces over 1,000 kilograms per month of hazardous waste;
- RCRIS Corrective Action (CORRACT) – Identifies Hazardous Waste Handlers with RCRA Corrective Action Activity;
- Emergency Response Notification System (ERNS) – The ERNS database supports the release notification requirements of Section 103 of the CERCLA, as amended; Section 311 of the CWA; and Sections 300.51 and 300.65 of the National Oil and Hazardous Substances Contingency Plan. ERNS records and stores information on reported releases of oil and hazardous substances;

- Toxic Chemical Release Inventory System – Identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313;

In addition to the EPA databases, several state sources were identified and data reviewed to be incorporated into the GIS model. These sources include the Louisiana Oil Spill Coordinator's Office (LOSCO) Data Catalog, the Louisiana Statewide GIS (Atlas), and the Louisiana Department of Environmental Quality (LDEQ) Interactive Mapping Application (LIMA). Data retrieved from these sources include:

- UST-TEMPO – The Registered Storage Tank database is a listing of sites with permitted underground storage tanks (USTs);
- LUST - An inventory of reported leaking petroleum storage tank incidents
- UST – Motor Fuel UST sites that have utilized the UST Trust Fund
- LDEQ Landfills - Type I Facility is disposal of industrial solid wastes. Type II is used for disposal of residential or commercial solid waste Type II Facility-a facility used for disposing of residential or commercial solid waste. (If the facility also is used for disposing of industrial solid waste, it is also a Type I facility)
- Petroleum Pipelines – an USGS database of pipeline for the petroleum based industries

The Louisiana Oil Spill Coordinator's Office (LOSCO) Data Catalog provided a point dataset of oil and gas and injection wells in the state of Louisiana and oil and gas fields. It contains data from the Department of Natural Resource Office of Conservation database of wells permitted dating back as early as the 1900's. This dataset was processed on January 4, 2007 and downloaded for the project on August 26, 2010. Additionally, the data catalog contained spatial layers known as 'Pit Study'. This point file identified former oil extraction sites that could pose a threat in regards to hazardous waste. These sites could include tank batteries, collection and separation apparatuses, metering stations and wells, and other related items. The Pit Study dataset was downloaded for the project on August 26, 2010.

3.0 Regulated Sites Along Alignments

3.1 Alternative 1 (Western Alignment + North Alignment "A")

A total of 33 regulated sites and other potential contamination sources were identified within or adjacent to the ROW for this alternative alignment. The project area was also studied for sites/facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database but may handle petroleum products. In reviewing the project aerial photography, four gas stations were identified along the alignment. Two of these were listed in the UST databases. These included Hill City Oil Co and Shop Rite #42 at the intersection of Park Road and Louisiana 20. This alternative was also estimated to impact one petroleum waste pit site and five oil and gas wells. Table 3-1 lists the registry ID and type of hazardous waste sites impacted by this alternative.

Table 3-1 Alternative 1 Hazardous Waste Sites

HAZARDOUS WASTE SITES – ALT 1				
REGISTRY ID	**NAME**	**ADDRESS**	**DATABASE**	**DESCRIPTION**
110002377071	LEBLANC BROTHERS READY-MIX INC SCHRIEVER PLT	819 HWY 311, SCHRIVER, LA	LA-TEMPO	STATE MASTER
110002377071	LEBLANC BROTHERS READY-MIX INC SCHRIEVER PLT	819 HWY 311, SCHRIVER, LA	AIRS/AFS	AIR MINOR
110003260006	BYRON E TALBOT CONTRACTORS INC	301 MAIN PROJECT RD, SCHRIVER, LA	RCRAINFO	TRANSPORTER
110003260006	BYRON E TALBOT CONTRACTORS INC	301 MAIN PROJECT RD, SCHRIVER, LA	RCRAINFO	USED OIL PROGRAM
110003305771	DELTA BEVERAGE GROUP THIBODAUX BRANCH	111 ROBIN LN, SCHRIVER, LA	RCRAINFO	CESQG
110003326115	SCHRIEVER RPR SVC	512 ST GEORGE, SCHRIVER, LA	RCRAINFO	CESQG
110003331617	CLM EQUIPMENT CO INC	213B MAIN PROJECT RD, SCHRIVER, LA	RCRAINFO	CESQG
110003335294	PETROLEUM HELICOPTERS INC SHCRIEVER BASE	221 N MAIN PROJECT RD, SCHRIVER, LA	RCRAINFO	CESQG
110006028011	WESTERN AUTO	22044 HWY 20, VACHERIE, LA	NPDES	ICIS-NPDES UNPERMITTED
110006028011	WESTERN AUTO	22044 HWY 20, VACHERIE, LA	PCS	NPDES NON-MAJOR
110006028011	WESTERN AUTO	22044 HWY 20, VACHERIE, LA	RCRAINFO	CESQG
110008388627	TEC SCHRIEVER AVIATION	MAIN PROJECT RD .25 M N HWY 20, SCHRIVER, LA	RCRAINFO	UNSPECIFIED UNIVERSE
110011176574	VACHERIE AUTO & HOME CENTER	22044 HWY 20, VACHERIE, LA	PCS	NPDES NON-MAJOR
110011176574	VACHERIE AUTO & HOME CENTER	22044 HWY 20, VACHERIE, LA	NPDES	ICIS-NPDES NON-MAJOR
110020061957	HILL CITY OIL CO INC	301 HWY 20, SCHRIVER, LA	NPDES	ICIS-NPDES NON-MAJOR
110020061957	HILL CITY OIL CO INC	301 HWY 20, SCHRIVER, LA	PCS	NPDES NON-MAJOR
110032939756	HOUMA OPERATIONS	LEARNING CENTER, HOUMA, LA	NPDES	ICIS-NPDES NON-MAJOR

HAZARDOUS WASTE SITES – ALT 1				
REGISTRY ID	**NAME**	**ADDRESS**	**DATABASE**	**DESCRIPTION**
110032939756	HOUMA OPERATIONS	LEARNING CENTER, HOUMA, LA	PCS	NPDES NON-MAJOR
110032939756	HOUMA OPERATIONS	LEARNING CENTER, HOUMA, LA	NPDES	ICIS-NPDES NON-MAJOR
110032939756	HOUMA OPERATIONS	LEARNING CENTER, HOUMA, LA	PCS	NPDES NON-MAJOR
110037488689	TESI-REBECCA PLANTATION	HWYS 90 & 311, HOUMA, LA	NPDES	ICIS-NPDES NON-MAJOR
110037488689	TESI-REBECCA PLANTATION	HWYS 90 & 311, HOUMA, LA	PCS	NPDES NON-MAJOR
110039154633	ERA HELICOPTER LLC	221 N. MAIN PROJECT RD., SCHRIVER, LA	ICIS	ENFORCEMENT/ COMPLIANCE ACTIVITY
NA	HILL CITY OIL CO.	NA	UST	GASOLINE STATION
NA	SHOP RITE #42	243 HWY 20, SCHRIEVER, LA	UST	GASOLINE STATION
NA	SHELL STATION	HWY 3127 AND HWY 20	LOCATED VIA AERIAL PHOTOGRAPHY	GASOLINE STATION
NA	CHEVRON STATION	HWY 3127 AND HWY 20	LOCATED VIA AERIAL PHOTOGRAPHY	GASOLINE STATION

3.2 Alternative 2 (Western Alignment + North Alignment "B")

A total of 25 regulated sites and other potential contamination sources were identified within or adjacent to the ROW for this alternative alignment. The project area was also studied for sites/facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database but may handle petroleum products. In reviewing the project aerial photography and UST databases, two gas stations were identified along the alignment. These included Hill City Oil Co and Shop Rite #42 at the intersection of Park Road and Louisiana 20. It was also estimated that this alternative would impact one petroleum waste pit site and four oil and gas wells. Table 3-2 lists the registry ID and type of hazardous waste sites impacted by this alternative.

Table 3-2 Alternative 2 Hazardous Waste Sites

HAZARDOUS WASTE SITES – ALT 2				
REGISTRY ID	**NAME**	**ADDRESS**	**DATABASE**	**DESCRIPTION**
110002377071	LEBLANC BROTHERS READY-MIX INC SCHRIEVER PLT	819 HWY 311, SCHRIVER, LA	LA-TEMPO	STATE MASTER
110002377071	LEBLANC BROTHERS READY-MIX INC SCHRIEVER PLT	819 HWY 311, SCHRIVER, LA	AIRS/AFS	AIR MINOR
110003260006	BYRON E TALBOT CONTRACTORS INC	301 MAIN PROJECT RD, SCHRIVER, LA	RCRAINFO	TRANSPORTER
110003260006	BYRON E TALBOT CONTRACTORS INC	301 MAIN PROJECT RD, SCHRIVER, LA	RCRAINFO	USED OIL PROGRAM
110003305771	DELTA BEVERAGE GROUP THIBODAUX BRANCH	111 ROBIN LN, SCHRIVER, LA	RCRAINFO	CESQG
110003326115	SCHRIEVER RPR SVC	512 ST GEORGE, SCHRIVER, LA	RCRAINFO	CESQG
110003331617	CLM EQUIPMENT CO INC	213B MAIN PROJECT RD, SCHRIVER, LA	RCRAINFO	CESQG
110003335294	PETROLEUM HELICOPTERS INC SHCRIEVER BASE	221 N MAIN PROJECT RD, SCHRIVER, LA	RCRAINFO	CESQG
110008388627	TEC SCHRIEVER AVIATION	MAIN PROJECT RD .25 M N HWY 20, SCHRIVER, LA	RCRAINFO	UNSPECIFIED UNIVERSE
110020061957	HILL CITY OIL CO INC	301 HWY 20, SCHRIVER, LA	NPDES	ICIS-NPDES NON-MAJOR
110020061957	HILL CITY OIL CO INC	301 HWY 20, SCHRIVER, LA	PCS	NPDES NON-MAJOR
110032939756	HOUMA OPERATIONS	LEARNING CENTER, HOUMA, LA	NPDES	ICIS-NPDES NON-MAJOR
110032939756	HOUMA OPERATIONS	LEARNING CENTER, HOUMA, LA	PCS	NPDES NON-MAJOR
110032939756	HOUMA OPERATIONS	LEARNING CENTER, HOUMA, LA	NPDES	ICIS-NPDES NON-MAJOR
110032939756	HOUMA OPERATIONS	LEARNING CENTER, HOUMA, LA	PCS	NPDES NON-MAJOR
110037488689	TESI-REBECCA PLANTATION	HWYS 90 & 311, HOUMA, LA	NPDES	ICIS-NPDES NON-MAJOR
110037488689	TESI-REBECCA PLANTATION	HWYS 90 & 311, HOUMA, LA	PCS	NPDES NON-MAJOR
110039154633	ERA HELICOPTER LLC	221 N. MAIN PROJECT RD. , SCHRIVER, LA	ICIS	ENFORCEMENT/COMPLIANCE ACTIVITY
NA	Hill City Oil Co.	NA	UST	GASOLINE STATION
NA	Shop Rite #42	243 HWY 20, SCHRIEVER, LA	UST	GASOLINE STATION

3.3 Alternative 3 (Central Alignment + North Alignment "A")

A total of 19 regulated sites and other potential contamination sources were identified within or adjacent to the ROW for this alternative alignment. The project area was also studied for sites/facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database but may handle petroleum products. In reviewing the project aerial photography, two gas stations were identified as being impacted. These locations were not listed in the UST databases. It was also estimated that this alternative would also impact one petroleum waste pit site and five oil and gas wells. Table 3-3 lists the registry ID and type of hazardous waste sites impacted by this alternative.

Table 3-3 Alternative 3 Hazardous Waste Sites

HAZARDOUS WASTE SITES – ALT 3				
REGISTRY ID	**NAME**	**ADDRESS**	**DATABASE**	**DESCRIPTION**
110006018665	BRAUDS AUTOMOTIVE SVC	3204 HWY 316, GRAY, LA	RCRAINFO	CESQG
110006028011	WESTERN AUTO	22044 HWY 20, VACHERIE, LA	NPDES	ICIS-NPDES UNPERMITTED
110006028011	WESTERN AUTO	22044 HWY 20, VACHERIE, LA	PCS	NPDES NON-MAJOR
110006028011	WESTERN AUTO	22044 HWY 20, VACHERIE, LA	RCRAINFO	CESQG
110006809141	ABBIE DOMANGUE	130 BAYOU BLUE BY-PASS, GRAY, LA	NPDES	ICIS-NPDES UNPERMITTED
110006809141	ABBIE DOMANGUE	130 BAYOU BLUE BY-PASS, GRAY, LA	PCS	NPDES NON-MAJOR
110011176574	VACHERIE AUTO & HOME CENTER	22044 HWY 20, VACHERIE, LA	PCS	NPDES NON-MAJOR
110011176574	VACHERIE AUTO & HOME CENTER	22044 HWY 20, VACHERIE, LA	NPDES	ICIS-NPDES NON-MAJOR
110027254913	TESI -QUIET OAKS SUBDIVISION	100TH BLOCK OF BAYOU BLUE, GRAY, LA	NPDES	ICIS-NPDES NON-MAJOR
110027254913	TESI -QUIET OAKS SUBDIVISION	100TH BLOCK OF BAYOU BLUE, GRAY, LA	PCS	NPDES NON-MAJOR
110040088197	JIM'S RENTALS	111 GLORY LANE, GRAY, LA	NPDES	ICIS-NPDES NON-MAJOR
NA	SHELL STATION	HWY 3127 AND HWY 20	LOCATED VIA AERIAL PHOTOGRAPHY	GASOLINE STATION
NA	CHEVRON STATION	HWY 3127 AND HWY 20	LOCATED VIA AERIAL PHOTOGRAPHY	GASOLINE STATION

3.4 Alternative 4 (Central Alignment + North Alignment "B")

A total of 11 regulated sites and other potential contamination sources were identified within or adjacent to the ROW for this alternative alignment. The project area was also studied for sites/facilities located in or adjacent to the proposed ROW that may not show up on a federal or state regulatory database but may handle petroleum products. It was estimated that this alternative would impact one petroleum waste pit site and four oil and gas wells. Table 3-4 lists the registry ID and type of hazardous waste sites impacted by this alternative.

Table 3-4 Alternative 4 Hazardous Waste Sites

HAZARDOUS WASTE SITES – ALT 4				
REGISTRY ID	**NAME**	**ADDRESS**	**DATABASE**	**DESCRIPTION**
110006018665	BRAUDS AUTOMOTIVE SVC	3204 HWY 316, GRAY, LA	RCRAINFO	CESQG
110006809141	ABBIE DOMANGUE	130 BAYOU BLUE BY-PASS, GRAY, LA	NPDES	ICIS-NPDES UNPERMITTED
110006809141	ABBIE DOMANGUE	130 BAYOU BLUE BY-PASS, GRAY, LA	PCS	NPDES NON-MAJOR
110027254913	TESI -QUIET OAKS SUBDIVISION	100TH BLOCK OF BAYOU BLUE, GRAY, LA	NPDES	ICIS-NPDES NON-MAJOR
110027254913	TESI -QUIET OAKS SUBDIVISION	100TH BLOCK OF BAYOU BLUE, GRAY, LA	PCS	NPDES NON-MAJOR
110040088197	JIM'S RENTALS	111 GLORY LANE, GRAY, LA	NPDES	ICIS-NPDES NON-MAJOR

4.0 Summary

All four build alternative alignments would have minimal risks for hazardous material impacts on the environment. Impacts would most likely occur on or near existing hazardous material sites. Regulated sites were identified within or near all of the proposed alternative alignments. These sites create a higher potential for encountering hazardous contamination during construction. A summary of impacts associated with each of the alternatives are shown in Table 4-1.

Table 4-1 Hazardous Waste Sites Summary

SITE TYPE	Alt 1	Alt 2	Alt 3	Alt 4
HAZARDOUS WASTE SITES	23	18	11	6
USTs	4	2	2	0
WASTE PITS	1	1	1	1
OIL AND GAS WELLS	5	4	5	4
TOTAL IMPACTS	33	25	19	11

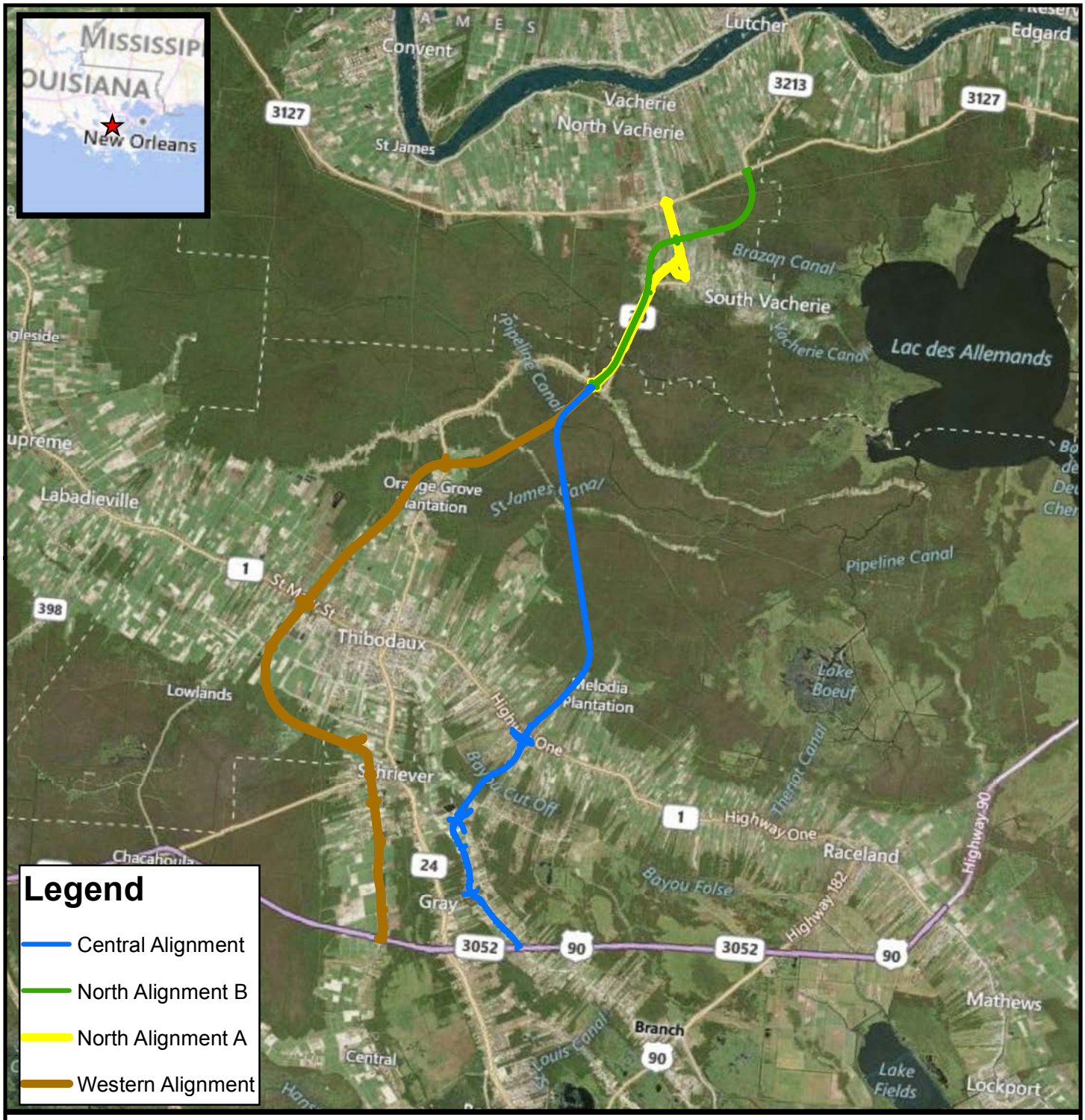
Records indicate that there are well sites located within or adjacent to the ROW for the proposed alternative alignments. During the ROW acquisition and negotiation process, responsible well operators/owners would be contacted to determine appropriate actions to take for each site.

The proposed alternative alignments may also cross/impact several petroleum pipeline segments. During further project development, owners and/or operators of these pipelines would be contacted. Exact locations and depths of these lines will need to be established. During ROW negotiation, determinations will be required to make necessary adjustments and/or relocations of these pipelines. Location and depth of pipelines that will remain in place will need to be marked on the ground (in the field) prior to construction activities, in order to prevent damage to the pipelines. If proper precautions are taken, impacts related to petroleum lines within the project area should be minimal.

Mitigation of hazardous waste sites impacted by the proposed preferred alignment will vary depending on the type, size, and location of hazardous material sites. A Phase 1 Environmental Site assessment will be conducted following the ASTM standards on the preferred alignment once it has been determined.

NORTH SOUTH CONNECTOR

Figures



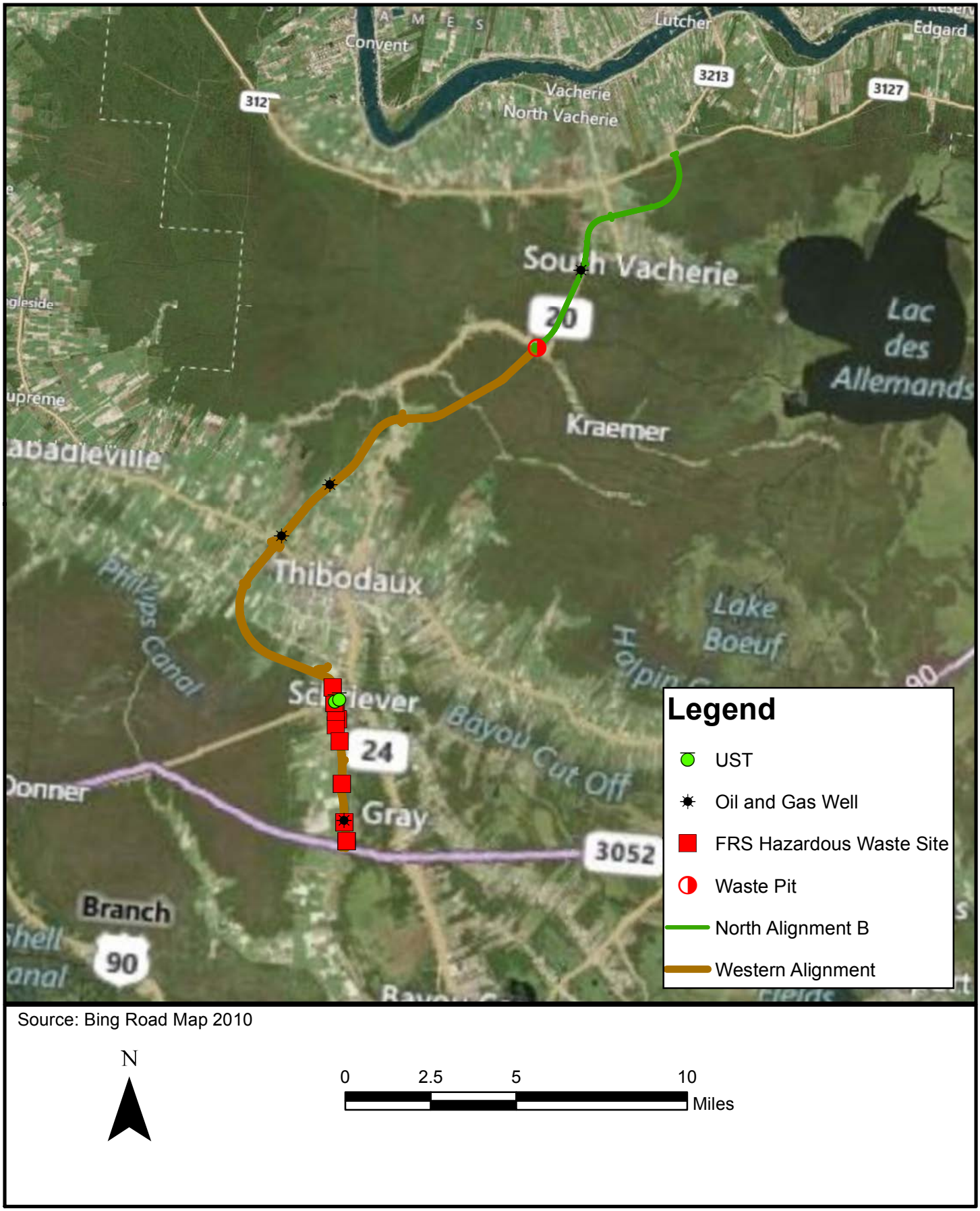
Source: Bing Road Map 2010

N

0 2.5 5 10 Miles

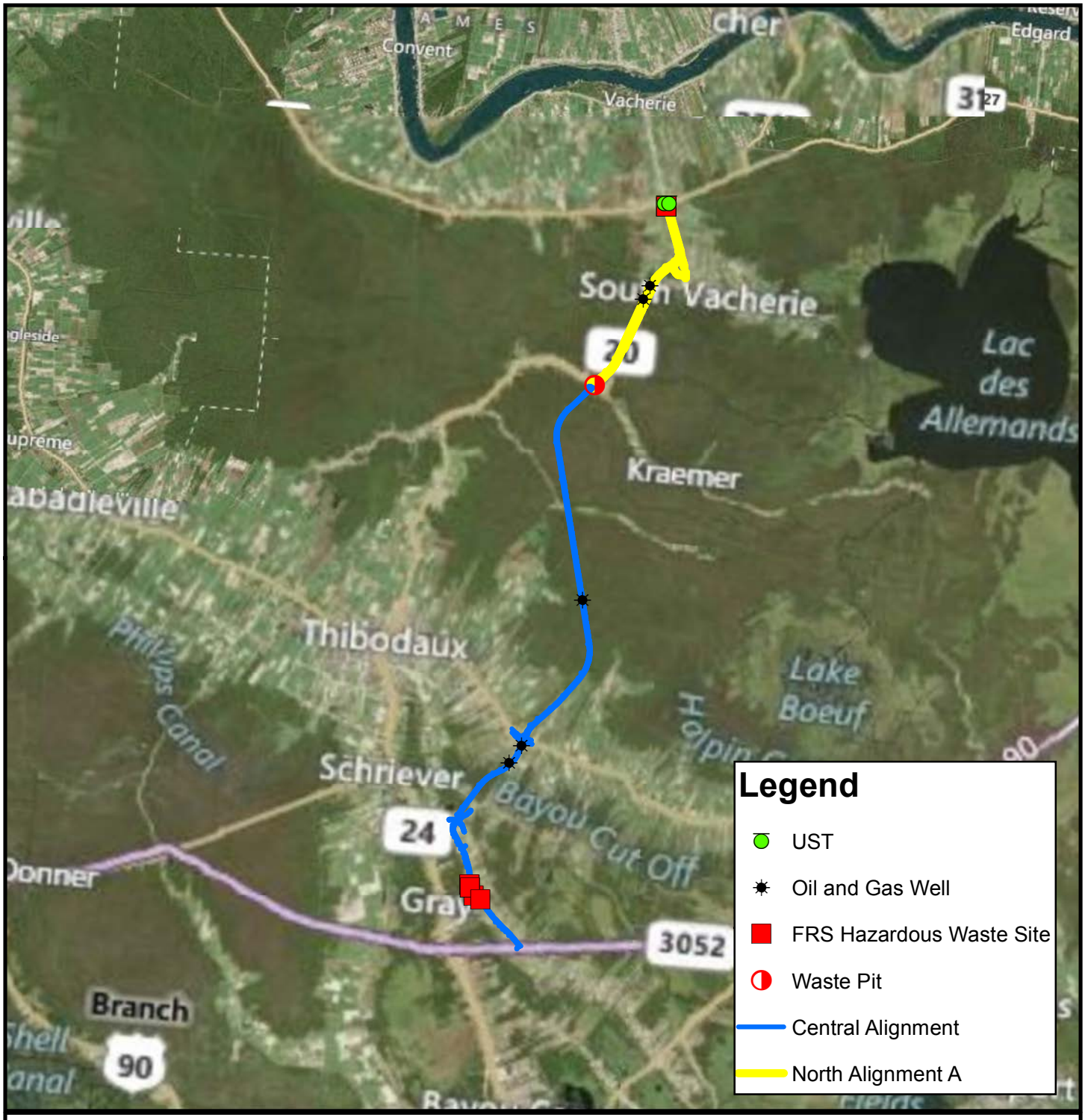
CDM Smith

Figure 1
Alignment Location Map
North South Connector EIS
Louisiana



Source: Bing Road Map 2010

Figure 3
Potential Hazardous Waste Sites - Alternative 2
North South Connector EIS
Louisiana



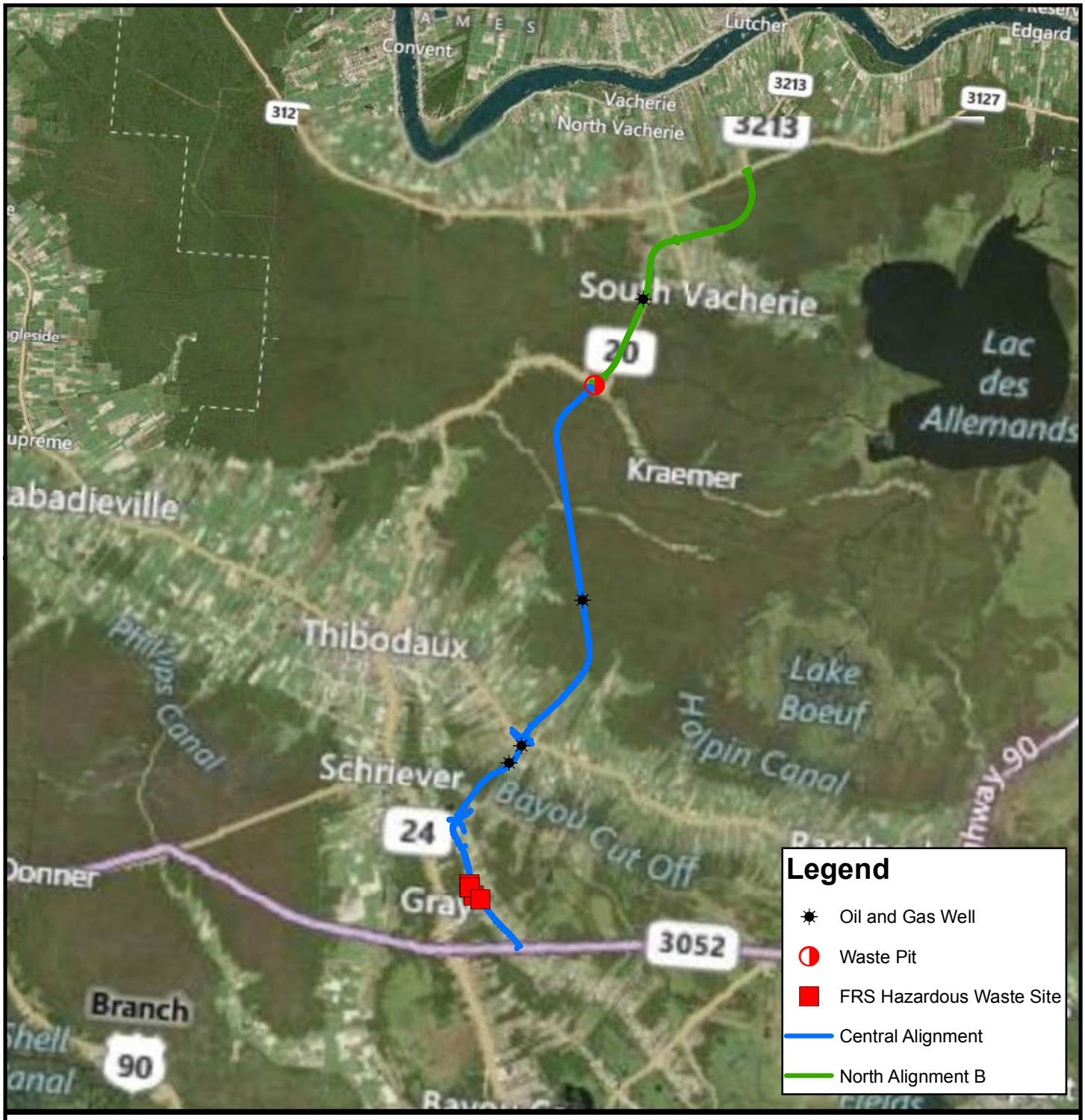
Source: Bing Road Map 2010

N

0 2.5 5 10 Miles

CDM Smith

Figure 4
Potential Hazardous Waste Sites - Alternative 3
North South Connector EIS
Louisiana



Source: Bing Road Map 2010

N

0 2.5 5 10 Miles

Figure 5
Potential Hazardous Waste Sites - Alternative 4
North South Connector EIS
Louisiana

Appendix M.
Wetlands Technical Memorandum

NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Wetlands Technical Memorandum

April 2015

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

Wetlands Technical Memorandum

Introduction

Wetlands comprise a large portion of the overall Study Area. Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions" (40 CFR 230.3 and 33 CFR 328.3). Executive Order EO11990 of May 1977 was enacted to protect and slow the loss of the nation's wetlands.

How the Alternatives were Evaluated

A preliminary wetland assessment was performed to evaluate the Study Area based on the guidance provided by the U.S. Army Corp of Engineers (USCOE) Wetland Delineation Manual[1,2] and the Atlantic and Gulf Coastal Plain Regional supplement[3]. The New Orleans District of the USCOE has the sole authority to make the official determinations of wetlands or jurisdiction over property in the various parishes within the Study Area.

This preliminary assessment used historical aerial and satellite imagery, the National Wetlands Inventory (NWI) maps, individual parish Natural Resource Conservation Service (NRCS) Soil Surveys[4,5,6,7], the NRCS Web Soil Survey[8], United States Geological Survey (USGS) 7.5 minute topographical maps, site observations, and local knowledge to aid in the identification of potential jurisdictional wetlands and habitat quality ratings for wetlands. The various habitat quality ratings include; high – undeveloped, relatively undisturbed, medium – disturbed but retaining some wetland function, low – affected by development, and agricultural/urban.

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[1] Federal Interagency Committee for Wetland Delineation. (1989). Federal Manual for Identifying and Delineating Jurisdictional Wetlands, Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S. Department of Agriculture, Soil Conservation Service, Washington, D.C.

[2] U.S. Army Corps of Engineers. (1987) Corps of Engineers Wetland Delineation Manual. Wetland Research Program Technical Report Y-87-1, Waterways Experiment Station, Environmental Laboratory, Vicksburg, MS, January 1987.

[3] U.S. Army Corps of Engineer.s (2008). Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region. Engineer Research and Development Center, Environmental Laboratory, ERDC/EL TR-08-30, Vicksburg, Mississippi, October 2008.

[4] U.S. Department of Agriculture. (2007). Soil Survey of Assumption Parish, Louisiana.

[5] U.S. Department of Agriculture. (2007). Soil Survey of Lafourche Parish, Louisiana.

[6] U.S. Department of Agriculture. (2007). Soil Survey of St. James Parish, Louisiana.

[7] U.S. Department of Agriculture. (2007). Soil Survey of Terrebonne Parish, Louisiana.

[8] U.S. Department of Agriculture. – Natural Resources Conservation Service (2010). National Cooperative Soil Survey, Web Soil Survey 2.1.

Wetland Habitat Types

Wetland habitat types observed within the Study Area include cypress-tupelo swamps, freshwater marsh, shrub-scrub, bottomland hardwoods, agricultural wetlands, and other waters of the U.S. These habitats provide basic wetland functions, such as wildlife habitat, flood attenuation, water quality improvement, and sediment retention.

Cypress-tupelo swamps are wetlands dominated by woody vegetation with a relatively high abundance and density of Bald Cypress and Water Tupelo trees measuring over 20 feet tall. Swamps are characterized by saturated soils during the growing season, and standing water during most of the year. The highly organic soils of swamps are comprised of thick, black, nutrient-rich matter. Herbaceous vegetation species found in bottomland hardwoods and fresh marsh are common in the cypress-tupelo swamps. Freshwater marshes are wetlands frequently or continually inundated with water, characterized by emergent soft-stemmed vegetation adapted to saturated soil conditions and shrub-scrub wetlands include areas dominated by woody vegetation less than 6 meters (20 feet) tall. Bottomland hardwood forests are found along rivers and streams, generally in broad floodplains. They are deciduous forested wetlands. Identifying features of these wetland systems include fluted or flaring trunks that develop in several species, and the presence of knees, or aerial roots.

Farmed (agricultural) wetlands are defined as wetlands that have been partially drained or altered to produce an agricultural crop or pasture, but still may exhibit wetland values of varying degrees. Existing drainage networks may utilize ditches and water control structures to make the land suitable for agricultural purposes. For the purposes of this project, the drainage networks in the existing active agricultural lands were not included in the wetland category. However, other lowland areas that have become fallow and transitioned into various types of wetlands due to forced drainage from agricultural practices were included in the wetland category.

Waters of the U.S. are partly defined as non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (40 CFR 230.3[s]). Waters of the U.S. do not include prior converted cropland. The Study Area contains numerous water bodies including lakes, ponds, canals, bayous, and drainage canals.

Alternatives

No-Build Alternative

The No-build Alternative would result in no wetland impacts.

Build Alternatives

Wetland impacts are anticipated from all of the proposed Alternatives. These impacts will be associated with clearing (all portions), filling (at-grade portions), and shading (elevated portions). Elevated sections will be constructed through the wetland habitats which will allow for re-vegetation of the wetland area and also maintain a significant portion of their original functionality; however, these alterations could result in shading that may inhibit re-vegetation by woody species. **Table 1** depicts the general impact acreages that each alternative would pose.

Table 1. Estimated Wetland Impact Types by Alternative

Impact Type	Potential Impacts - Per Alternative (acres)			
	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Clearing/Shading - Forested	199.25	238.60	252.81	260.25
Shading - Open Water	1.57	1.58	0.98	0.98
Fill - Forested	0.56	2.64	6.67	8.75
Fill - Open Water	1.97	1.97	0.0	0.0
Total	**203.35**	**244.79**	**260.46**	**301.90**

Forested wetlands (which represent the most abundant wetland habitat type within all of the proposed alternatives) generally provide a greater functional value than herbaceous and open water type systems. Therefore, minimizing impacts to forested wetland habitats will essentially reduce the overall mitigation effort required. **Table 2** shows the acreage impact for each of the alternatives by wetland habitat type.

Table 2. Impact to Wetland Habitats by Type (Acres)

Wetland Habitat Type	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	Elevated	At-Grade	Elevated	At-Grade	Elevated	At-Grade	Elevated	At-Grade
Cypress-Tupelo	88.50	N/A	118.56	N/A	135.50	N/A	165.56	N/A
Bottomland Hardwood	88.71	0.45	92.58	2.53	60.46	2.86	64.34	4.94
Shrub-Scrub	0.33	0.10	5.75	0.10	24.93	3.81	30.35	3.81
Riverine	0.94	N/A	0.95	N/A	0.98	N/A	0.98	N/A
Cypress	21.71	N/A	21.71	N/A	31.91	N/A	31.91	N/A
Farmed Wetland	0.63	N/A	0.63	N/A	N/A	N/A	N/A	N/A
Lake	N/A	1.97	N/A	1.97	N/A	N/A	N/A	N/A
Total	**200.82**	**2.52**	**240.18**	**4.60**	**253.78**	**6.67**	**293.14**	**8.75**

Table 3 presents a preliminary wetland assessment quantification based on historical aerial and satellite imagery, the NWI maps, individual parish NRCS Soil Surveys, the NRCS Web Soil Survey, USGS 7.5 minute topographical maps, limited site observations, local knowledge, and best professional judgments. The data does not represent an actual amount of wetland acreage affected by the respective alternatives, but rather a general representation. The linear footage was based on scaling from aerial imagery as well as geographica information system (GIS) data. A percentage was obtained for wetlands based on the total alignment length and the wetland length. Acreage was calculated by applying the total length of wetlands by the width of the right-of-way (ROW; obtained in GIS format), which ranges from approximately 150 to 250 feet. A more indepth and precise quantification of potential jurisdictional wetlands will be conducted on the preferred Alternative.

Table 3. Alternatives – Wetland and Non-Wetland Acreages

Alternative	Wetland Acreage	Non-Wetland Acreage	Wetland Percentage	Total Acreage
Alternative 1	203.35	596.45	25.43	799.80
Alternative 2	244.79	615.64	28.45	860.43
Alternative 3	260.46	414.53	38.59	674.99
Alternative 4	301.90	443.72	41.04	735.62

Comparison of Alternatives

As depicted in the previous tables, Alternative 1 appears to pose the least overall impact to wetland systems within the Study Area. The total length of this alternative is approximately 26.1 miles, of which half is proposed to be elevated and the other half constructed at-grade. Approximately 6.1 miles of the total length will be built over existing roadways resulting in minimal wetland losses. Alternative 1 also represents the least impact (both fill and shading) to forested wetland systems, which will allow the remaining wetlands to maintain their functional values, such as attenuation, wildlife movement, and nutrient assimilation.

Alternative 1 would result in 16.93 percent less wetland impacts when compared with Alternative 2, 21.93 percent less impact than Alternative 3, and 24.68 percent less impact than Alternative 4.

Mitigation

Following minimization and avoidance of impacts to wetlands, the purchase of wetland mitigation bank credits is the USCOE preferred method of offsetting wetland impacts (33 CFR 332.3[b]). Mitigation banks are preferred because they are established in advance of the impacts they offset, eliminating potential risks and/or temporal lag associated with stand-alone mitigation efforts. The hydrologic unit code (HUC) in which the potential ROWs occur is a stand-alone HUC with high competition for mitigation credit purchase because of the low availability of credits at only two mitigation banks—Laurel Valley Coastal Mitigation Bank and Enterprise Woodlands. Mitigation bank credits and the associated costs are largely dependent upon supply and demand and can fluctuate dramatically. A present cost per acre estimate is approximately $35,000.

Appendix N.
Agency Involvement

NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Agency Involvement

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

Interagency Scoping Meeting No. 1

Location: South Central Planning and Development

Date: 7/13/2004

AGENDA

LADOTD STATE PROJECT NO. 700-99-0302
FEDERAL AID PROJECT NO. HP-9902(518)
HOUMA-THIBODAUX TO LA 3127 CONNECTION
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION)
STATEWIDE

FORMAL INTERAGENCY SCOPING MEETING

JULY 13, 2004
10:00 AM – Noon
Afternoon – Field View

- Introductions
- Overview of the project – scope, schedule, overall approach to studies
- Review of efforts to date – including but not limited to a review of traffic data, termini assessment, approach to alternatives development and analysis with Quantm software
- Review schedule date(s) for future agency coordination meetings
- Request input of attendees – question and answer session
- Discuss afternoon field view logistics

QUESTIONS / COMMENTS FROM FORMAL INTERAGENCY SCOPING MEETING
(AS RECORDED ON FLIP CHART)
JULY 13, 2004

QUESTIONS / COMMENTS

1 **Question:** Would it be worthwhile running Quantm on all of the 1999 Feasibility Study corridors?

2 **Comment:** The Army COE and EPA want "Avoidance" Alternates evaluated.

3 **Comment:** If the 1999 Study did not consider other projects, then that study was not complete.

4 **Question:** Will we be addressing how traffic is getting to US 90?

5 **Question:** Will we consider "Non-Build" Alternatives?

6 **Comment:** Culturally…You should consider doing a detailed survey of archaeological resources on selected path.

7 **Question:** What are plans for improvement to LA 3127?

8 **Question:** Is it wise to be directing Houma-Thibodaux residents to Gramercy-Wallace Bridge? Would this not be sending them into "harm's way"?

9 **Question:** Would one or the other bridges (Sunshine or Gramercy-Wallace) be more critical than the other to the Houma-Thibodaux population?

10 **Comment:** Study area boundary on the east is logical.

11 **Comment:** The next Agency Meeting will be scheduled for September/October 2004 to look at preliminary range of alternatives. This will be prior to Public Meeting #2, which is targeted for November 2004.

12 **Comment:** Need to revisit, but not dwell on, 1999 study findings.

13 **Comment:** Seems to be conflict regarding US 90's ability to act as a hurricane evacuation route. (This Purpose & Need vs Route 1 Purpose & Need)

14 **Comment:** New construction best if along Lafourche Ridge.

LADOTD STATE PROJECT NO. 700-99-0302
FEDERAL AID PROJECT NO. HP-9902(518)
HOUMA-THIBODAUX TO LA 3127 CONNECTION
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION)
STATEWIDE

SUMMARY OF FORMAL INTERAGENCY SCOPING MEETING
JULY 13, 2004
10:00 AM – Noon
Afternoon – Field View

The meeting was held in the offices of the South Central Planning and Development Commission (SCPDC). Ed Gabsewics, Project Manager for the BH Team, opened the meeting by thanking Kevin Belanger of the SCPDC for providing the meeting space. He asked that all attendees please make sure they signed in before leaving. The sign-in list is attached.

Following introductions of the team, all agency representatives were asked to identify themselves. Ed indicated that this is the first of numerous meetings that will be held on the project. He emphasized that the input of the agencies is critical to the decision making process. He added that the team was also taking this same presentation to public officials and the general public on Thursday, July 15, 2004.

Ed then reviewed the agenda for the day:

- Provide a (PowerPoint) overview of the project scope, schedule, and overall approach to the studies
- Review efforts to date – including but not limited to a review of traffic data, termini assessment, and approach to alternatives development and analysis using the Quantm software
- Review of the schedule for future interaction with the agencies
- Take input from the attendees in a question and answer session
- Field view of the project

The PowerPoint presentation (see e-mail attachment) set the stage for an engaging comment/question period. During the PowerPoint presentation, there was concern expressed

by a number of agencies, especially by the Corps and EPA, regarding the conclusions reached in the URS report, particularly regarding the elimination of the Gramercy-Wallace connection…specifically Alternative 7. The Corps also quickly pointed out that they will be looking hard for "avoidance" alternatives. Michele responded that we will use the results of the 1999 study to address avoidance. The Corps also suggested that consideration be given to the evacuation route running along the Lafourche ridge so as to totally avoid impacts to the expansive wetlands north of Thibodaux. Another question was raised, also by the Corps, as to why our southern boundary is US 90…and not extending further south. They suggested that we look at how people are going to get to US 90, again reinforcing their opinion that the study area is not large enough. They asked whether non-construction alternatives are being looked at as well. Kevin Belanger of the SCPDC spoke to the "south of US 90" comment, indicating that, at least in the north-south direction, there is no problem for people living south of US 90 to get access to points along 90. He added that east-west access may be a problem. Michele added that there are numerous improvements that can be made south of US 90…stating that "It doesn't matter how people get to 90. Once they are there, they must move north."

The Corps concluded their comments stating that they feel that the DOTD has eliminated alternatives that should be considered in the NEPA process. They requested a copy of the 1999 URS study to review before moving further in the process. Other agencies echoed this request. Michele indicated that the DOTD would see that copies are sent to all agencies. EPA asked if the URS study could be summed up so they can see why some of the alternatives were ruled out…like going along the Lafourche ridge. It was also noted that I-49 future developments and the Donaldsonville to the Gulf study recommendations, to name just a few of the other projects in the area, need to be addressed. The Corps added that if the 1999 study did not seriously consider other projects, then they would consider its findings incomplete.

There was a strong suggestion by the US Fish and Wildlife Service (USFWS) that we strongly consider going on elevated structure through the wetland areas because fill would have significant immediate and long term impacts both from a biologic and hydrologic standpoint. Michele commented that access on this facility must be controlled and that there is no better way to control access than to have an elevated highway. LA 1 was cited as a good example of a project that proceeded quickly because it was elevated. The USFWS also suggested putting the divided highways as close as possible to each other or not having any median at all so as to avoid impacts…and require less right of way area.

The following summarizes the comments and questions recorded.

1 **Question:** Would it be worthwhile running Quantm on <u>all</u> of the 1999 Feasibility Study corridors?

2 **Comment:** The Army COE and EPA want "Avoidance" Alternates evaluated.

3 **Comment:** If the 1999 Study did not consider <u>other</u> projects, then that study was <u>not</u> complete.

4 **Question:** Will we be addressing how traffic is getting to US 90?

5 **Question:** Will we consider "Non-Build" Alternatives?

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9 **Question:** Would one or the other bridges (Sunshine or Gramercy-Wallace) be more critical than the other to the Houma-Thibodaux population?

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13 **Comment:** Seems to be conflict regarding US 90's ability to act as a hurricane evacuation route.
(This Purpose & Need vs. Route 1 Purpose & Need)

14 **Comment:** New construction best if along Lafourche Ridge.

Michele Deshotels, Project Manager for the LADOTD, fielded many of the questions. She provided some background to the 1999 Feasibility Study, indicating that a (geographically) far more comprehensive analysis of traffic was completed with the 1999 study. She added that due to the variability of storms and the need to evacuate New Orleans, there is a need to be able to move traffic to either the Gramercy-Wallace Bridge or the Sunshine Bridge. Michele emphasized that the EIS will focus on the three alternative corridors recommended in the 1999 URS study and that the team will be developing those three alternatives further, and refining them, based on new and updated traffic data and environmental information.

Following lunch, a demonstration of the Quantm tool was conducted by Katie Wingerd, the BH Team's lead GIS professional. Katie informed the audience that data layers from GIS are combined into one Quantm file for each type of layer (polygon or line). She informed them that elevation data used is LIDAR information.

It was demonstrated that engineering, natural resource, cultural, and cost data can be used in the software and how it is used. It was also mentioned that if it is desirable to use existing roadways, Quantm can be used on just the areas that would be new.

Finally Katie demonstrated what typical first run results would look like once returned from Quantm. She also mentioned that for the initial training runs, we did not have all of the information that we do now.

It was agreed that the next meeting with the agencies will occur in the September to October 2004 timeframe and the agenda would include revisiting the issues raised today and a workshop on alternatives development and analysis using the Quantm tool.

Following the distribution of a DRAFT Purpose and Need Statement for the project, the meeting was concluded with a field tour. The tour route included a look at potential termini points on US 90, the Lafourche ridge area, and a trip up LA 20 and back to view the area to be traversed from Thibodaux north to LA 3127.

HOUMA-THIBODAUX TO LA 3127
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE

FORMAL INTERAGENCY SCOPING MEETING

JULY 13, 2004 – 10:00 to 12:00 NOON

SIGN IN SHEET - PLEASE PRINT

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HOUMA-THIBODAUX TO LA 3127
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE

FORMAL INTERAGENCY SCOPING MEETING

JULY 13, 2004 – 10:00 to 12:00 NOON

SIGN IN SHEET - PLEASE PRINT

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HOUMA-THIBODAUX TO LA 3127
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE

FORMAL INTERAGENCY SCOPING MEETING

JULY 13, 2004 – 10:00 to 12:00 NOON

SIGN IN SHEET - PLEASE PRINT

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HOUMA-THIBODAUX TO LA 3127
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE

FORMAL INTERAGENCY SCOPING MEETING

JULY 13, 2004 – 10:00 to 12:00 NOON

SIGN IN SHEET - PLEASE PRINT

NAME	AFFILIATION	ADDRESS	PHONE #	E-MAIL
Tim Killeen	LA Dept of Natural Resources	2045 Lakeshore Drive New Orleans, LA 70122	504-280-4062	timk@dnr.state.la.us
Chuck Spears	LA Dept of Natural Resources	PO Box 44487 Baton Rouge, LA 70804-4487	225-342-7930	chucks@dnr.state.la.us
Fred Dunham	LA Dept of Wildlife and Fisheries	PO Box 98000 Baton Rouge, LA 70898	225-765-2367	fdunham@wlf.louisiana.gov
Sean K. Fontenot	LA Office of Homeland Sec & Emer Preparedness	7667 Independence Blvd. Baton Rouge, LA 70806	225-925-7500	sfontenot@ohsep.louisiana.gov
Kelly Shotts	NOAA Fisheries Nat'l Marine Fisheries Svc	c/o LSU, Rm 266 Military Science Bldg Baton Rouge, LA 70803	225-389-0508	Kelly.shotts@noaa.gov
Kevin Belanger	South Central Planning & Development Commission	PO Box 1870 Gray, LA 70359	985-851-2900	Kevin@scpdc.org
Kevin Ghirardi	South Central Planning & Development Commission	PO Box 1870 Gray, LA 70359	985-851-2900	ghirardi@scpdc.org
Scott Leger	South Central Planning & Development Commission	PO Box 1870 Gray, LA 70359	985-851-2900	scott@scpdc.org
James Barlow	US Army Corps of Engineers	PO Box 60267 New Orleans, LA 70160	504-862-2250	james.a.barlow@mun02.usace.army.mil
Derek Hamilton	US Fish and Wildlife Service	646 Cajundome Blvd., Ste 400 Lafayette, LA 70506	337-291-3138	derek_hamilton@fws.gov

✓ on email distribution list

Gabsewics, Edward

From: Karl_Hakala@nps.gov
Sent: Thursday, July 15, 2004 9:52 AM
To: Gabsewics, Edward
Subject: meeting

Good Morning I was unable to attend the scoping meeting of July 13th. Would there be anyway for me to receive minutes of meeting and/or overview of project. My snail mail address in listed below and my fax is 337-232-5740.

Regards,

Karl

Karl Hakala
Park Manager, Acadian Unit, Lafayette, Thibodaux and Eunice Louisiana
Jean Lafitte National Historical Park and Preserve
337-232-0789, x13

501 Fisher Road
Lafayette, Louisiana 70508

The National Park Service cares for special places saved by the American People so that all may experience our heritage!

EXPERIENCE YOUR AMERICA

Parish of St. James

P.O. Box 106
Convent, Louisiana 70723
president@parish.stjames.la.us

Phone: (225) 562-2260
Fax: (225) 562-2279
TDD: (225) 562-8500

Dale J. Hymel, Jr.
Parish President

RECEIVED
JUL 1 2004
BUCHART-HORN, INC.

July 20, 2004

Mr. Ed Gabsewics, Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, Louisiana 70002

SUBJECT: ***State Project Number 700-99-0302***

Dear Mr. Gabsewics:

On July 13, 2004 I attended a meeting at South Central Planning and Development Commission's office in Houma, Louisiana which you hosted concerning the North/South Hurricane Evacuation Route. Present with me at this meeting was Mr. Jody Chenier, my Director of Operations and Mr. Gerald Falgoust, my Director of Emergency Preparedness. This meeting we found to be informative; however, we feel that the best route is Alternate #7 which was totally ignored. Thus, from that standpoint we were extremely disappointed, for it's felt that Alternate #7 as discussed in Exhibit "A" (enclosed) which is my letter dated May 7, 1999 to Ms. Michele Deshotels presents my detailed position concerning this matter. Please note that attached to my letter is St. James Parish Council Resolution No. 99-65 which was unanimously passed by our council also supporting Alternate #7. Upon reviewing Exhibit "A" it is unconceivable that Alternate #7 would not be the route of choice.

If you have any questions concerning this matter please feel free to call me at 225-562-2260 or Mr. Gerald Falgoust at 225-562-2310.

Your objective, sincere and methodical consideration concerning Alternate #7 will be greatly appreciated.

Sincerely,

Dale J. Hymel, Jr.
Parish President

GJF/tpc

Enclosures

Where Business, Industry and Agriculture Grow, Work and Prosper Together

07/21/2004 WED 10:56 FAX 1 504 831 2981 Buchart-Horn Metairie LA ⇒⇒ Ed Gabsewics 001/000

Parish of St. James

P.O. Box 106
Convent, Louisiana 70723
president@parish.stjames.la.us

Phone: (225) 562-2260
Fax: (225) 562-2279
TDD: (225) 562-8500

Dale J. Hymel, Jr.
Parish President

RECEIVED
JUL 1 2004
BUCHART-HORN, INC.

July 20, 2004

Mr. Ed Gabsewics, Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, Louisiana 70002

SUBJECT: ***State Project Number 700-99-0302***

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Sincerely,

Dale J. Hymel, Jr.
Parish President

GJF/tpc

Enclosures

07/21/2004 WED 12:10 FAX 1 504 831 2981 BUCHART-HORN METAIRIE LA ??? DH-DA MAIN OFF 001/000

SOUTHEAST LOUISIANA HURRICANE TASK FORCE
MICHAEL J. DEROCHE - CHAIRMAN
500 HONDURAS STREET
HOUMA, LOUISIANA 70360
OFFICE: (985) 873-6357
FAX: (985) 850-4643

July 28, 2004

Mr. Ed Gabsewics, Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, LA 70002

SUBJECT: ***State Project Number 700-99-0302***

Dear Mr. Gabsewics:

On July 13, 2004 I attended a meeting at South Central Planning and Development Commission's office in Houma, Louisiana which you hosted concerning the North/South Hurricane Evacuation Route. Although I found this meeting very informative, I feel that the best route, Alternate #7, was totally ignored. Thus, I was very disappointed. In fact the Southeast Louisiana Hurricane Task Force felt strong enough about Alternate #7 that the attached Resolution was unanimously passed by all members present.

Should you have any questions concerning this matter please feel free to call me at (985) 873-6357.

Your open minded consideration concerning Alternate #7 will be greatly appreciated, for it's felt that Alternate #7 is the best possible location for this proposed highway.

Sincerely,

Michael J. Deroche

Michael J. Deroche
Chairman
Southeast Louisiana Hurricane Task Force

GJF/tpc

Enclosure

cc: Glenn Graham - with enclosure
Colonel Michael Brown – with enclosure
John Ballard –with enclosure
Larry Ingargiola – with enclosure
Jesse St. Amant – with enclosure
Terry Tuiller – with enclosure
John Boudreaux – with enclosure
Gerald Falgoust – with enclosure
Paul Oncale – with enclosure
Tab Troxler – with enclosure
Walter Maestri, III – with enclosure
Tori Siears – with enclosure
Greg Serigny – with enclosure
Rodney Hart – with enclosure

RESOLUTION
SOUTHEAST LOUISIANA HURRICANE TASK FORCE

A RESOLUTION REQUESTING THAT ALTERNATE 7 OF DOTD STATE PROJECT NO. 700-99-0302 BE SELECTED AS THE NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION ROUTE

WHEREAS, we are all aware of the significant need for a Hurricane Evacuation Route from the Houma/Thibodaux areas, and,

WHEREAS, the southeast and south-central section of Louisiana needs immediate relief for evacuation during times of an approaching hurricane, and,

WHEREAS, immediate relief would be achieved by the completion of the four-laning from the relocated US 90 to LA 3127, to the Veterans Memorial Bridge, to US 61 and I-10 via Alternate 7 would provide true hurricane evacuation relief; and,

WHEREAS, this route would provide a different route for traffic and vehicles traveling south from LA 3127 to Thibodaux and Houma over the present LA 20 which is a sub-standard extremely hazardous highway from Vacherie to Chackbay; and,

WHEREAS, Alternate 7 will not involve the relocation of mass residents; and,

WHEREAS, Alternate 7 will provide immediate relief at less cost (a minimum of $64.7 million savings) in comparison to other alternatives; and,

WHEREAS, Alternate 7 will provide greater utilization of the Veterans Memorial Bridge, Sunshine Bridge and the Hale Boggs Bridge; and,

WHEREASE, Alternate 7 will better serve the populated areas that can feed onto this new highway, the Central and Lower Lafourche area (including the Raceland area) from Highways 90, 3052, 308 and 1, Houma, Gray, Schriever, South Thibodaux, Thibodaux proper (including Thibodaux Regional Medical Center and Nicholls State University), the North Thibodaux area, Choctaw, Chackbay/Choupic, Bayou Beouf/Kraemer areas (from Highways 304, 20 and 307), South Vacherie (from Highway 20) and the remainder of West St. James Parish (from Highways 3127, 18 and 20); and,

WHEREAS, Alternate 7 services more populated areas than Alternate 6, 6A or 7A; and,

WHEREAS, Alternate 7 provides easier access from the River Parish area to Nicholls State University, Thibodaux Regional Medical Center, Thibodaux/Houma area businesses, catholic schools, etc.; and,

WHEREAS, Alternate 7 provides easier flow of tourism between the River Parish area and the Lafourche/Terrebonne area; and,

WHEREAS, Alternate 7 has the least environmental impact; and,

WHEREAS, Alternate 7 will also provide a more efficient evacuation of the River Parish area south due to a nuclear power plant issue and/or a hazardous material incident along the river; and,

NOW, THEREFORE, BE IT RESOLVED, that the Southeast Louisiana Hurricane Task Force enthusiastically and wholeheartedly supports Alternate 7 as described in the March 1999 Draft Hurricane Evacuation Corridor Study prepared by URS Greiner Woodward Clyde and submitted by the Louisiana Department of Transportation and Development under State Project No. 700-99-0132

The resolution having been submitted to a vote, was enthusiastically endorsed by all members present. There were no dissenting votes.

7-27-04
Date

Michael J. Deroche
Michael J. Deroche
Chairman
Southeast Louisiana Hurricane Task Force

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

FILE

FEB 2 8 2005

Mr. William C. Farr
Program Operations Manager
Federal Highway Administration
5304 Flanders Drive, Suite A
Baton Rouge LA 70804

Dear Mr. Farr:

This letter is in response to a request by Mr. Ted Fridirici of Buchart-Horn, Inc., contractor on the proposed project: Federal Aid Project No. HP-9902 (518), and State Project No. 700-99-0302. The project is titled as: Houma-Thibodaux to LA 3127 Connection (North-South Corridor/Hurricane Evacuation), Environmental Impact Statement (EIS), Terrebonne, LaFourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary Parishes, Louisiana. Mr. Fridirici requested concurrence by this agency on the Purpose and Need statement for the Environmental Impact Statement that has been initiated for the proposed project.

The Environmental Protection Agency (EPA) has significant interest in the proposed project that has been declared by the Federal Highway Administration (FHWA) to be a hurricane evacuation project. EPA has several responsibilities to the public regarding this project including the Clean Water Act (CWA), Section 404, to ensure compliance with the CWA 404(b)(1)Guidelines related to dredge and fill activities in waters of the U.S. including wetlands. EPA also has National Environmental Policy Act responsibility under the Clean Air Act, Section 309 to review, and rate the EIS, and publish the rating with comments in the Federal Register.

EPA staff provided initial comments and concerns at the Formal Interagency Scoping Meeting held July 13, 2004. These concerns centered on an overly restrictive statement of purpose and need, and with the study area. The very narrow study area seems to essentially guarantee that a new alignment through a large, valuable wetland area in the upper Barataria Basin is necessary.

EPA is concerned that alternatives that will be less environmentally damaging have been prematurely eliminated under the proposed Purpose and Need statement. We continue to call for existing routes, such as use of LA 1 north to I-10, just west of Baton Rouge, to be fully evaluated. And, lastly, there is a fundamental question of why hurricane evacuees in the study area would choose to travel to I-10, which experience has repeatedly shown to be very highly congested during evacuations. Indeed, during the recent Hurricane Ivan evacuation, thousands, if not tens of thousands, of vehicles avoided I-10 congestion by traveling on the southerly route provided by U.S. 90. Given the FHWA plans to significantly upgrade U.S. 90 to become I-49, which is intended as an evacuation route, it appears the I-49 evacuation route would become an even more attractive evacuation route.

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EPA cannot concur on the Purpose and Need statement which provides only for a North-South evacuation route when other alternatives exist. We also are concerned that the practicable alternatives test in meeting compliance with the CWA 404(b)(1) Guidelines cannot be met with the present approach being used.

Please contact Jeanene Peckham at 214-665-6411 for further discussion on these comments.

Sincerely,

David W. McQuiddy
Acting Chief
Marine and Wetlands Section

cc: James Barlow, COE
Michele Deshotels - DOTD
Robert Mahoney - FHWA
Ted Fridirici - Buchart-Horn, Inc.

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

FAX TO:
JIMMIE
TED F
STEVE M

REPLY TO
ATTENTION OF:

March 30, 2005

RECEIVED
APR 5 2005
BUCHART-HORN, INC.

FILE ORIG.

Operation Division
Regulatory Branch

SUBJECT: Houma/Thibodaux to LA 3127 Connection

U.S. Department of Transportation
Federal Highways Administration
5304 Flanders Drive, Suite A
Baton Rouge, La 70808

Gentlemen:

This correspondence is in reply to your e-mail dated March 18, 2005, requesting Department of the Army review and concurrence with your identified purpose and need for a new highway constructed to serve as transportation link for the Houma/Thibodaux, Louisiana area.

We concur with your stated purpose and need. Although we concur, information needs to be incorporated into the subject Environmental Impact Statement that fully addresses and/or documents the following: (1) engineering and safety deficiencies in the existing highway infrastructure; (2) traffic information on existing and projected usage with and without the proposed project; (3) origins and destinations of potential users; (4) alternative transportation corridors within the project area; and (5) how other existing and planned highway projects would or would not assist to facilitate that movement. This information will assist us in evaluating a permit application should the preferred highway alignment require a Department of the Army permit.

We previously identified concerns by letter dated February 10, 2005, regarding the potential for significant wetland impacts that could be avoided and the potential for significant secondary and cumulative impacts associated with other highway construction projects in the project area that may be important to this transportation link.

We look forward to assisting in identifying potential alternatives that could meet the overall purpose of the your proposed project and developing an EIS that both agencies can use to satisfy their NEPA requirements. We are most interested in attending all interagency meetings scheduled to discuss the proposed project. We request that dates, times and location of future meetings be coordinated with us well in advance so that measures can be taken to assure our attendance.

If you have any questions, please contact Dr. James Barlow of this office at (504) 862-2250 or by email at james.a.barlow@mvn02.usace.army.mil

Sincerely,

for Ronald J. Ventola
Chief, Regulatory Branch

cc:

Louisiana Department of Transportation
And Development
Post Office Box 94245
Baton Rouge, Louisiana 70804-9245

Buchart-Horn, Inc.
✓ 3330 West Esplanade Ave., Suite 201
Metairie, LA 70002

Safe Community Partnership

an Initiative of the South Central Safe Community Task Force

Mr. Johnny Bradberry
State of Louisiana
Department of Transportation & Development
P.O. Box 94245
Baton Rouge, LA 70804-9245

December 15, 2005

Dear Mr. Bradberry:

RE: State Project Number 700-99-0302

Because of our recent experience with Hurricanes Katrina and Rita along with the active hurricane pattern that we are in, and the predictions by experts that we will continue to experience these active hurricane seasons for the next ten to fifteen years, the South Central Safe Community Partnership feels a sense of urgency that the North/South Hurricane Evacuation Route from Houma to Thibodaux to the Veteran's Memorial Bridge be placed on a fast track. The South Central Safe Community Task Force was originally established through a grant from the Louisiana Highway Safety Commission in October 1999. This is the sixth year of funding of the program through the Louisiana Highway Safety Commission. The Task Force was developed for the express purpose of establishing a Safe Community Fund, Action Plan and Media Campaign designed to focus on highway safety needs in the South Central Region of Assumption, Lafourche, St. Charles, St. James, St. John the Baptist and Terrebonne.

In keeping with our mission we feel that the North/South Hurricane Evacuation Route, Alternate #7, would afford the people of our area the following:

1.
2. The shortest route to get people across the Mississippi River utilizing the Veterans Memorial Bridge
3. Access to two four lane highways headed to the northwest, US 61 and I-10
4. Highway 3125 on the east bank could also access Highway 70
5. Ability to divert traffic to the Sunshine Bridge

P.O. Box 1870
Gray, LA 70359
985-851-2900

6. Closer access to the Hale Boggs Bridge via LA 3127
7. Closer access to I-55 and I-59 utilizing the Veterans Memorial Bridge
8. Will better serve populated areas that can feed into the new highway
9. Will service a great population then other alternatives
10. Cost effective
11. Easier access from River Parish area to Houma/Thibodaux area
12. Easier flow of tourism between River Parish area and Lafourche/Terrebonne area
13. Easier flow of traffic will allow for better economic development of River Parish area and Lafourche/Terrebonne area
14. Replaces Highway 20 as main throughway between Thibodaux and Vacherie, an especially hazardous and sub-standard section of Highway 20 between Vacherie and Chackbay
15. More efficient evacuation of the River Parish area south due to a Nuclear Power Plant problem and/or hazardous material problem along the Mississippi River.

Per all of the above, The South Central Safe Community Partnership strongly recommends that the North/South Hurricane Evacuation Route from Houma to Thibodaux to the Veteran's Memorial Bridge be placed on a fast track if we are to protect the lives of our citizens by affording them a more effective means for evacuation during hurricanes.

Sincerely,

Greg Maurin

Captain Greg Maurin, St. John Sheriff's Office
Chairman

P.O. Box 1870
Gray, LA 70359
985-851-2900

KATHLEEN BABINEAUX BLANCO
GOVERNOR

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245
www.dotd.louisiana.gov

JOHNNY B. BRADBERRY
SECRETARY

January 10, 2006

Captain Greg Maurin, St. John Sheriff's Office
Chairman
Safe Community Partnership
P. O. Box 1870
Gray, Louisiana 70359

Dear Captain Maurin:

I am in receipt of your letter of December 15, 2005 supporting the selection of Alternative #7 from the feasibility study for the Houma-Thibodaux to LA 3127 Connector.

An Environmental Impact Statement is currently being prepared for this project and a public meeting is planned for this spring to gain input on a preferred alternative. We welcome widespread participation and input in the selection process. The public meeting will be advertised in local newspapers and we will add you to the project mailing list.

Thank you for your interest and input regarding this important regional project. We look forward to your continued participation in the project development process.

Sincerely,

Cedric S. Hunt

For Johnny B. Bradberry
Secretary

cc: FHWA
Mr. Ted Fridirici, Buchart-Horn
(each w/ copy of Safe Community Partnership letter)

Local Officials Meeting

Location: LADOTD Headquarters
Date: 4/18/2006

Houma/Thibodaux to LA 3127 (SP700-99-0302)

4/18/2006
10:00 AM
Louisiana Dept Transportation and Development (505a)

Attendees:
Lei Jin
Katie Wingerd
Bob Mahoney
Bill Farr
Jim Joffrion
Darius Bonton
Mark Stinson
Noel Ardoin
Amanda Dykes
Jeff Messina
Jayson Romig

Agenda

Alternative reduction methodology and rationale

The Purpose and Need

The Traffic Study

The Toll Study

Data disproving the "No-Build" alternative as feasible

Additional Information

Houma/Thibodaux to LA 3127 (SP700-99-0302)

4/18/2006
10:00 AM
Louisiana Dept Transportation and Development (505a)

Attendees:
Lei Jin
Katie Wingerd
Bob Mahoney
Bill Farr
Jim Joffrion
Darius Bonton
Mark Stinson
Noel Ardoin
Amanda Dykes
Jeff Messina
Jayson Romig

Agenda

Alternative reduction methodology and rationale

Discussion:

Weighted factors used in the initial Quantm analysis of the project area should be provided. Rationale used in the reduction from the initial 50+ alternatives to the current ~3 alternatives should be provided.

Conclusions:

Agency concurrence is needed on these items in order to proceed.

Action items:	Person responsible:	Deadline:
Present weighted factors used in Quantm analysis @ the Agencies meeting.	• BH	
Present rationale used in the alternative reduction process @ the Agencies meeting.	• BH	

The Purpose and Need

Discussion:

Seeking agency concurrence on the revised Purpose and Need.

Conclusions:

The revised Purpose and Need will be discussed for approval @ agency meeting.

Action items:	Person responsible:	Deadline:

The Traffic Study

Discussion:

The traffic study encompassed the western, central and eastern regions/corridors of the project area and gave forecasted traffic volumes for the year 2015 and 2025 for those regions/corridors based on non-hurricane evacuation assumptions. A hurricane evacuation traffic analysis is to follow agency concurrence on the alignment reduction methodology.

Conclusions:

Traffic study done under non-hurricane evacuation assumptions; hurricane evacuation traffic study should follow agency concurrence on alignment reduction methodology and precede the preparation of the Draft Environmental Impact Statement.

Action items:	Person responsible:	Deadline:
A traffic study under hurricane evacuation assumptions should be completed after agency concurrence of alignment reduction methodology and prior to Draft Environmental Impact Statement (DEIS).	Urban Systems	

The Toll Study

Discussion:

Toll study data to be presented at the May 2nd Agency meeting by Wilbur-Smith.

Conclusions:

Action items:	Person responsible:	Deadline:

Data disproving the "No-Build" alternative as feasible

Discussion:

Evidence that substantially discounts the upgrade and expansion of LA20 as a feasible “no-build” alternative needs to be provided.

Conclusions:

Proper documentation of a substantial impact to residential areas should be presented to the Agencies in order to rule out an upgrade to LA20 as a feasible option.

Action items:	Person responsible:	Deadline:
Obtain photographs visually depicting a substantial impact to residences.	BH	

Additional Information

This information should be presented to LADOTD for review and comment prior to the May 2nd Agencies meeting.

From:	Barlow, James A MVN
To:	Bonton, Darius;
CC:	
Subject:	RE: Alternative Screening Process Newsletter_Houma/ Thibodaux to Sunshine Bridge
Date:	Thursday, January 10, 2008 6:31:32 AM
Attachments:	Alternative Screening Process Newsletter_Houma/Thibodaux to Sunshine Bridge

---

My mailing address is below. However, because of other commitments at this time, it is doubtful whether we will be able to provide any substantive comments by your stated deadline. Our failure to provide comments at this time is no indication that we may not have serious concerns with any proposal that may have adverse impacts on jurisdictional wetlands and other waters of the United States.

James A. Barlow, Jr.
Environmental Resource Specialist
(504) 862-2250

Department of the Army
New Orleans District, Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267
ATTN: Dr. James A. Barlow, Jr.
<<Alternative Screening Process Newsletter_Houma/Thibodaux to Sunshine Bridge>>

From:	Barlow, James A MVN
To:	Bonton, Darius;
CC:	
Subject:	RE: Reminder: Alternative Screening Process Newsletter_Houma/Thibodaux to Sunshine Bridge
Date:	Thursday, February 14, 2008 11:34:31 AM
Attachments:	Reminder: Alternative Screening Process Newsletter_Houma/ Thibodaux to Sunshine Bridge ALCI ADDENDUM.pdf

---

Comments previously forwarded by e-mail dated 1/10/08. other comments: The Assumption Land Company Mitigation Bank is located immediately NE of Labadieville. An alignment on the east bank of Bayou Lafourche following the swamp interface will likely impact that bank.

James A. Barlow, Jr.
Environmental Resource Specialist
US Army Corps of Engineers
New Orleans District
(504) 862-2250

From:	Peckham.Jeanene@epamail.epa.gov
To:	Bonton, Darius;
CC:	James.A.Barlow@mvn02.usace.army.mil; David_Soileau@fws.gov;
Subject:	Fw: Alternative Screening Process Newsletter_Houma/ Thibodaux to Sunshine Bridge
Date:	Thursday, February 14, 2008 10:26:18 AM
Attachments:	

Apparently clicked on "forward" instead of "send" last week. Sorry about that.
----- Forwarded by Jeanene Peckham/R6/USEPA/US on 02/14/2008 10:12 AM -----

Jeanene Peckham/R6/USEPA /US 02/06/2008 12:32 PM

To "Bonton, Darius" <dbonton@BH-BA.com>

cc

Subject RE: Alternative Screening Process Newsletter_Houma/Thibodaux to Sunshine Bridge(Document link: Jeanene Peckham)

The information provided in the newsletter has been reviewed to the extent possible. Some things are unclear.
It is stated that four alternative corridors were developed in relation

to a Bayou Lafourche Ridge area; however it is not possible to discern four discrete corridors from what is provided. Is it to be understood that there is to be a screening exercise between only these four corridors, and a screening report would be prepared for only the Bayou Lafourche Ridge? Then, is it intended that only one corridor associated with the Bayou Lafourche Ridge could "go forward" for the next step of planning? It is quite likely that more than one corridor associated with Bayou Lafourche Ridge should be given full evaluation. Or, is it intended that the "screening criteria" included in the newsletter be applied to all of the corridors presently conceived?
Regarding the "Criteria" listed, some of the questions are puzzling. For example, the first question under Environmental has contradiction within it. We suggest to you that there are expected to be many more considerations that have to be made, and compared in detail, than appear in the newsletter.

Jeanene Peckham
ph. 214-665-6411
fx. 214-665-6689
EPA 6WQ-EM

United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

January 28, 2008

Mr. Darius Bonton
Buchart Horn, Inc.
9100 Bluebonnet Centre Blvd., Suite 502
Baton Rouge, Louisiana 70809

Dear Mr. Bonton:

Please reference your January 9, 2008, electronic mail message (e-mail) requesting comments regarding the evaluation of new alignments for the proposed Houma – Thibodaux to Louisiana Highway (Hwy.) 3127 Connection Project (State Project Number 700-99-0302; Federal Aid Project Number HP 9902[518]). The proposed project would be located in Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, St. Mary, and Terrebonne Parishes, Louisiana. The U.S. Fish and Wildlife Service (Service) has reviewed your e-mail including the attached document, as well as the digital maps sent via standard mail subsequent to your e-mail, and offers the following supplemental comments in accordance with provisions of the National Environmental Policy Act of 1969 (83 Stat. 852, as amended; 42 U.S.C. 4321 et seq.).

According to information provided in your e-mail, additional alignments for the proposed Hwy. 3127 Connection Project that would connect Thibodaux to the Sunshine Bridge are currently proposed for further evaluation. Although detailed analyses have not yet been performed for the newly proposed alignments, based on our review of your maps it appears that virtually all of those alignments would be less environmentally damaging than the alignments that have been previously proposed (i.e., the alignments that would connect Thibodaux to the Gramercy-Wallace Bridge). Accordingly, we support further consideration and evaluation of those currently proposed alignments. We also recommend adjusting the new alignments to completely avoid wetland impacts where technically feasible. Such adjustments appear possible for the two proposed alignments occurring on the western and eastern extents of the Bayou Lafourche ridge.

Regarding your request for our input relative to screening criteria, we have reviewed and concur with your proposed criteria. As an environmental resource agency, we will continue to focus on the anticipated environmental affects of this action and to recommend that only the least environmentally damaging alternatives receive additional consideration as project development progresses.

We appreciate the opportunity to comment on the above-referenced documents and look forward to our continued participation in the project evaluation process. If you have questions regarding our comments, please contact David Soileau, Jr., (337/291-3109) of this office.

Sincerely,

James F. Boggs
Supervisor
Louisiana Field Office

cc: COE, Regulatory Branch, New Orleans, LA
EPA, Dallas, TX
LDOTD, Baton Rouge, LA
LDWF, Baton Rouge, LA

Interagency Meeting No. 3

Location: South Central Planning and Development
Date: 5/2/2006

AGENDA

LADOTD STATE PROJECT NO. 700-99-0302
FEDERAL AID PROJECT NO. HP-9902(518)
HOUMA-THIBODAUX TO LA 3127 CONNECTION
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION)
STATEWIDE

INTERAGENCY MEETING #3
May 2, 2006
10:00 AM

- Introductions

- Review of efforts to date –
  - Revised Project Purpose and Need
  - Traffic and Transportation Report
  - Toll Study Update
  - Reduced Range of Alternatives
    - How did the project team determine the reduced range of alternatives?

- Anticipated Public Meeting Dates

- Review schedule date(s) for future agency coordination meetings

- Request input of attendees – question and answer session

Joffrion, James

From: Bonton, Darius
Sent: Sunday, May 07, 2006 3:31 PM
To: Joffrion, James; 'Jin, Lei (E-mail)'; 'Mahoney, Bob (E-mail)'; 'Mark Stinson'; noelardoin@dotd.louisiana.gov; 'Farr, William C. (E-mail)'
Subject: Summary of May 2nd Agencies' Meeting

For your review and comment,

(1) The presentation:

- Noel Ardoin begins the presentation with an opening statement @ 10:08am.
- Following introductions, Jim Joffrion discusses the meeting's agenda.
- Jake Romig presents and discusses the project's revised Purpose and Need Statement along with constraints addressed in the initial assessment of the project area.
- Katie Wingerd explains the methodology and assumptions used in the Quantm analysis of the project area and the subsequent corridor selection.
- Jeff Messina discusses the traffic study.
- Ray Richard discusses the toll study.
- Jake discusses our current position in the NEPA process and opens the floor for comment and discussion.

(2) The discussion (w/corresponding action items):

- Had a southern connection with Prospect Blvd been included in the Quantm runs and toll study; how would that connection have affected the eastern trends?
  - Include a statement in the Draft EIS stating that the location of the Prospect Blvd/US90 intersection has no bearing on the location of the southern terminus of the project.
- The possibility of making the new LA1 @ US-90 the southern terminus of the project was discussed; it was determined that point lied outside the study area.
  - The project boundary will be extended east to include the intersection of US90 and LA1.
- The possibility of the study area being too narrow was discussed. It was proposed that the study area be extended east to the intersection of LA1 & US-90.
  - The project boundary will be extended east to include the intersection of US90 and LA1.
- Pre & post hurricane evacuation response and processing in the metro-Thibodaux area was proposed by local OEP personnel as a parameter for evaluation of alternatives considered.
  - Establish contact with the Houma and Thibodaux OEP and obtain all available hurricane evacuation and processing data.
- US Fish and Wildlife voiced reluctance to concur with the stated Purpose and Need on the basis that "linkage" between a population center and a non-population center doesn't provide enough project justification when a significant wetlands impact and an existing north/south route are taken into consideration. Additional justification for the project would need to be presented in the DEIS to supplement the Purpose and Need in order to obtain concurrence from US Fish.
  - Supplement the Purpose and Need statement in the DEIS by expounding on the potential benefits offered by the project.
  - Upon completion of the Purpose and Need chapter of the DEIS, present to US Fish for review and comment.
- A proposal was made for an elevated section of roadway adjacent to the existing LA-20 north of 307, south of Vacherie. This elevated section would ultimately replace the existing un-developed section of roadway allowing for wetland restoration in that area.
  - Details of all alternatives considered will be discussed in the DEIS.
- The DEIS should include justification as to why the use of existing corridors such as LA1/308 are not viable options in achieving the purpose of the project.
  - Details of all alternatives considered will be discussed in the DEIS.
- Through input and comment from those in attendance, it was agreed that the eastern corridor and the central corridor traveling through Nicholls State could be eliminated from further consideration.
- It was agreed that copies of the presentation would be made available for review on the FTP site.
- It was agreed that alignments to be presented at the next public meeting would be reviewed and concurred upon through the use of the FTP site and email correspondence respectively.

Darius Bonton
Engineer II
Buchart-Horn, Inc
Baton Rouge, LA
225.293.1111 (o)
504.234.4571 (m)
dbonton@bh-ba.com

LADOTD

U.S. Department of Transportation Federal Highway Administration

HOUMA-THIBODAUX TO LA 3127
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE
INTERAGENCY MEETING #3
May 2, 2006 – 10:00 AM
SIGN IN SHEET - PLEASE PRINT

NAME	AFFILIATION	ADDRESS	PHONE #	E-MAIL
Noel Ardoin	DOTD	P.O. Box 94245 BRLA 70804	225 242 4504	nardoin@dotd.louisiana.gov
Lei Jin	"	"	225 2424510	leijin@dotd.louisiana.gov
DAN BROUSSARD	"	"	225 379-1924	DanBroussard@dotd.louisiana.gov
Steve Clarke	ST Mary Sheriffs	PO Box 571 Franklin 70538	337 828-1960	Clarke@STmarySO.Com
Lonnie LABouve	ST. MARY SHERIFF'S	"	"	LABouve@STMARYSO.COM
Todd Gagnard	Thibodaux P.D	1309 Canal Blvd Thibodaux, LA	"	—
Mark Stinson	FHWA	5304 Flanders Dr. Baton Rouge, LA 70808	225-757 7617	mark.stinson@fhwa.dot.org
Bill Farr	FHWA	"	" 7615	William.Farr@FHWA.DOT.gov
BOB MAHONEY	FHWA	"	225-757-7624	robert.mahoney@fhwa.dot.gov
Chris Boudreaux	Lafourche Parish Gov.	PO Box 1661 Raceland, La 70301	985 537-7603	chrisb@lafourchegov.org

LADOTD

U.S. Department of Transportation Federal Highway Administration

HOUMA-THIBODAUX TO LA 3127
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE
INTERAGENCY MEETING #3
May 2, 2006 – 10:00 AM
SIGN IN SHEET - PLEASE PRINT

NAME	AFFILIATION	ADDRESS	PHONE #	E-MAIL
Pat Matherne	Lafourche Parish Govt	P.O. Box 1661 Raceland, LA 70394	985-537-7603	planning@lafourchegov.org
John Boudreaux	Assumption Parish OHSEP	P.O. Box 520 Napoleonville La 70390	985-369 7386	johnboudreaux@assumptionoep.com
Dale Hymel	St James	PO Box 106 Convent, LA 70723	225 562-2260	dale.hymel@stjamesla.com
Richard Blanchard	State Police Troop C	4027 W. Park Gray, LA 70359	985 857-3690	Richard.Blanchard@dps.la.gov
Darrin Naquin	State Police Troop C	4027 W Park Gray, LA 70359	985 857-3690	Darrin.Naquin@dps.la.gov
Eric Deroche	St. James OEP	Po Box 106 Convent, la 70723	225 562-2346	eric.deroche@stjamesla.com
Tim Robertson	DNR/CMD	625 N 4th St. Baton Rouge, La.	225-342 7472	Tim2@dnr.state.la.us
Tim Killeen	CMD/DNR	4219 St. Francis Metairie, La. 70001	(504) 427-4277	timk@dnr.state.la.us
Al Levron	Terrebonne Parish	P.O. Box 2768 Houma	985 873-6407	allevron@tpcg.org
Kevin Ghirardi	SCPDC LAT MPO	PO Box 1870 Gray LA 70359	985 851-2900	Ghirardi@scpdc.org

LADOTD

U.S. Department of Transportation Federal Highway Administration

HOUMA-THIBODAUX TO LA 3127
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE
INTERAGENCY MEETING #3
May 2, 2006 – 10:00 AM
SIGN IN SHEET - PLEASE PRINT

NAME	AFFILIATION	ADDRESS	PHONE #	E-MAIL
Gerald Falgoust	St James Pk DEP	70723 P.O. Box 106 Convent La	225-562-2310	gerald.falgoust@stjamesla.com
Conrad Baker Jr	St John S/O	1801 W. Airline, Laplace 70068	985 652 9513	sisos95@hotmail.com
David Soileau, Jr.	US. Fish & Wildlife Service	Lafayette, LA 70506 646 Cajundome Blvd, Suite 400	(337) 291-3109	david_soileau@fws.gov
James A. Barlow, Jr	Corps of Engineers	P.O. Box 60267 New Orleans, LA 70160	(504) 862-2250	JAMES.A.BARLOW@MVN@2.USACE.ARMY.mil
Chuck Spears	LDNR CMD	Baton Rouge LA	225 3427930	ChuckS@DNR.State.LA.US
JEANENE B PECKHAM	EPA	1445 ROSS AVE DALLAS TX 75202	214-665-6411	peckham.jeanene@epa.gov
Scott Leger	SCPDC HTMPO	P.O. Box 1870 Gray, LA, 70359	985 857-7900	Scott@SCPDC.org
Doug Foreman		805 CRESCENT Avenue Lakeport		
Jill Yakubik	ESI	PO BOX 770336 NOLA 70177	504-947 0730	esi@cris.com
LEONARD BETTESS	QUANTM	2544 KINNARD AVENUE HENDERSON NV 89074	702 837-1473	len.bettess@quantm.net

United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

February 15, 2006

Mr. William Farr
Program Operations Manager
U.S. Department of Transportation
Federal Highway Administration
5304 Flanders Drive, Suite A
Baton Rouge, Louisiana 70808

Dear Mr. Farr:

Please reference the Final Technical Appendix: Traffic Analysis report prepared jointly by the Federal Highway Administration (FHWA) and the Louisiana Department of Transportation and Development (LDOTD), and your electronic mail message (e-mail) transmitting a new, post-hurricane revision of the purpose and need statement for the proposed Houma – Thibodaux to Louisiana Highway (Hwy.) 3127 Connection (State Project Number 700-99-0132; Federal Aid Project Number HP 9902[518]). The proposed project would be located in Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, St. Mary, and Terrebonne Parishes, Louisiana. The U.S. Fish and Wildlife Service (Service) has reviewed those documents, both of which were transmitted on January 26, 2006, and offers the following supplemental comments in accordance with provisions of the National Environmental Policy Act of 1969 (83 Stat. 852, as amended; 42 U.S.C. 4321 et seq.).

According to information provided in your e-mail, the purpose and need statement for the above-referenced project has been revised to include the need for improved hurricane evacuation in the project area and vicinity. The previous purpose and need statement for this project, delivered in your March 18, 2005, e-mail, indicated that hurricane evacuation was being de-emphasized as the primary justification for the proposed project, due to an "analysis of recent hurricane traffic movements." The current purpose and need statement again suggests that the proposed project is necessary to improve traffic flow during hurricane evacuations, in addition to the established purpose of constructing a north-south functional transportation link to the existing roadway network and Interstate Highway System. Given that the Final Technical Appendix: Traffic Analysis report does not analyze hurricane traffic evacuation conditions, we are not able to fully evaluate the currently revised purpose and need statement. Accordingly, we would appreciate the opportunity to review any applicable hurricane traffic movement analyses and the post-hurricanes Katrina and Rita concerns that substantiate the new purpose and need statement.

The Final Technical Appendix: Traffic Analysis report presents a summary of existing and projected future *non-hurricane evacuation* traffic conditions, and describes modifications/revisions to the previously presented project alignment alternatives. That

document states that one of the primary needs of the corridor study is the "lack of available corridors that provide north-south movement through the area." Consistent with our April 6, 2005, letter, the Service remains concerned about the potential construction of an entirely new roadway through the Des Allemands wetland complex. As stated in that correspondence, an entirely new roadway constructed through that area could have significant adverse impacts to wetlands (including a site proposed for restoration under the Coastal Wetlands Planning, Protection, and Restoration Act) and other Federal-trust fish and wildlife resources (including migratory birds and federally listed species).

While we recognize that an environmental analysis of revised alternatives will be developed in the future, we encourage FWHA and LDOTD to evaluate the alternative of improving and/or elevating existing facilities. Such an alternative may provide a means to improve north-south movement and connectivity within the study area, while avoiding and minimizing potential adverse environmental impacts. Many such improvements are currently being considered as described on page 16, Section 3.1, of the Technical Appendix: Traffic Analysis report. Accordingly, the Service recommends that the feasibility of widening and/or elevating Highway 20 be evaluated in the forthcoming environmental documentation, so it can be compared with the currently proposed new alternatives, prior to selecting a preferred alignment.

We appreciate the opportunity to comment on the above-referenced documents and look forward to participation in the collaborative development and selection of environmentally sound alternatives that would also achieve the project purposes. If you have further questions regarding our comments, please contact David Soileau, Jr., (337/291-3109) of this office.

Sincerely,

Russell C. Watson
Supervisor
Louisiana Field Office

cc: COE, Regulatory Branch, New Orleans, LA
EPA, Dallas, TX
LDOTD, Baton Rouge, LA
LDWF, Baton Rouge, LA

You forwarded this message on 4/10/2006 8:28 AM.

Joffrion, James

From: LeiJin@dotd.louisiana.gov [LeiJin@dotd.louisiana.gov] **Sent:** Tue 3/21/2006 10:26 AM
To: Joffrion, James
Cc: Robert.Mahoney@FHWA.DOT.GOV
Subject: Fw: Final Purpose and Need for Houma-Thibodaux to LA 3127 Connection
Attachments:

Jim,

fyi as you requested. Please update the web-page also. Thanks!

Lei
----- Forwarded by Lei L Jin/section28/ladotd/us on 03/21/2006 09:20 AM -----

"Mahoney, Robert" <Robert.Mahoney@fhwa.dot.gov>

03/21/2006 09:14 AM

To<LeiJin@dotd.louisiana.gov>
cc"Farr, William" <William.Farr@fhwa.dot.gov>, "Stinson, Mark" <Mark.Stinson@fhwa.dot.gov>
SubjectFW: Final Purpose and Need for Houma-Thibodaux to LA 3127 Connection

This is the last P&N that was sent out. It will be good to get to consultant and have it put on the web-page if not done already. BobM.

From: Farr, William
Sent: Thursday, January 26, 2006 10:47 AM
To: kevin@scpdc.org; Ronald.j.ventola@mvn02.usace.army.mil; James.A.Barlow@mvn02.usace.army.mil; jansky.michael@epa.gov; Russell_Watson@fws.gov; MicheleDeshotels@dotd.louisiana.gov
Cc: Bloise, Joe; Stinson, Mark; Mahoney, Robert
Subject: Final Purpose and Need for Houma-Thibodaux to LA 3127 Connection

All,
Following Hurricanes Katrina and Rita there has been continued concern regarding the hurricane evacuation aspects of an improved transportation corridor north of the Houma-Thibodaux area. The Purpose and Need Statement has been modified to reflect this concern by adding the words and hurricane evacuation in the last sentence. The Purpose and Need portions have also been combined. This is a modification to the Purpose and Need Statement referred to in our April 13, 2005 letter. This Purpose and Need statement will be included in future environmental documents.

Purpose & Need (1-26-06):

The purpose of the Houma-Thibodaux to LA 3127 Connection is to establish a north-south functional transportation link to the roadway network including the interstate system to the north, as well as the future I-49 route to the south, in the South Central Planning and Development District serving the Parishes of Terrebonne, Lafourche,

Assumption, St. James, St. John the Baptist, St. Charles and St. Mary.
Existing north-south access in the region between the Houma-Thibodaux area to the south and the Mississippi River Corridor area to the north, for approximately a 38-mile east-west stretch, is mainly limited to LA 20. LA 20 is a two-lane circuitous route, with doglegs and narrow shoulders, which serves this region as the main roadway linking the Houma-Thibodaux area (regionally served by the trending east west routes, US 90 (Future I-49), LA 1 and LA 308) to the Mississippi River Corridor (regionally served by the trending east west routes LA 3127, LA 18, LA 3125, US 61 and I-10). The existing LA 20 roadway, which partly tracks a narrow winding ridge through the wetlands, also functions as the main street for the communities of Chackbay ad Vacherie. Narrow LA 20 has multiple driveway access points in these developed areas, increasing conflict points and limiting the efficient movement of people, goods and services and hurricane evacuation between the Houma-Thibodaux area and the central Mississippi River Corridor.

Background:

The March 1996 Louisiana Statewide Intermodal Transportation Plan placed the Houma-Thibodaux to I-10 Connection in the Tier 3 funding level of projects to pursue. This proposed project, identified as one of eleven projects throughout the state in this tier, was one of the few projects in the entire plan not consisting of a proposed existing interstate improvement. The plan noted that this facility would provide "vastly improved north-south access and enhanced evacuation capabilities." The plan also noted that, "The major obstacle to this link (i.e. the Mississippi River) has already been overcome through the completion of a new bridge between Gramercy and Wallace."

In 1998, Congress, in the Transportation Equity Act for the 21st Century (TEA-21) noted that their intent for this project (listed as High Priority Project item 202, LA 024) was to "Construct Houma-Thibodaux to I-10 connector from Gramercy to Houma". It is noted that the connection from I-10 via LA 641, and the Gramercy Bridge is in place, and the proposed connection from the Gramercy Bridge to LA 3127 has received a USCOE 404 Permit and has been approved for construction. Because of the above existing/underway infrastructure, the purpose and need for this effort is to connect the Houma/Thibodaux area north to LA 3127 and the communities of the Mississippi River Corridor (including Vacherie) south to the Houma-Thibodaux area.

The December 2003 Louisiana Statewide Transportation Plan (LSTP) continued to identify this regional linkage to be of statewide importance, including emphasis on the additional facilitation of moving people during hurricane evacuation that such linkage and improvement to the transportation system would provide.

The implementation of the first two lanes of the proposed four-lane facility is classified as a Priority A mega project in funding Scenario 2. According to the plan, "Priority A mega projects which scored and ranked high in both the quantitative (travel demand model results) and qualitative (plan goals and objectives) evaluation, were considered highest priority and included in funding Scenario 2." It should be

noted that funding Scenario 1 in the LSTP is a status quo scenario in which no new major projects could be constructed with regular trust fund revenue. Only projects earmarked by Congress as High Priority Projects, with additional Federal-aid funds provided, such as this project, could be undertaken by DOTD.

I spoke to Steve Glascock about the evacuation plan and its relationship to the H-T connector project on 4/26/2006.

The evacuation plan has 3 scenarios: At 50 hrs, at 40 hrs and at 30 hrs.

At 50 hours: They will evacuate the area south of the intercoastal waterway. Basically, evacuees can use whatever route they want.

At 40 hours: They will evacuate, geographically the area south of the Mississippi River, which includes the Westbank of Jefferson and Orleans. Evacuees will be encouraged to use the Primary evacuation routes, I-10, Causeway, all US Routes (90, 61, and 190) and LA 3127/Hwy 1 Corridor. They will not be prevented from using other routes.

At 30 hours: They will evacuate the Eastbank of Jefferson and Orleans and implement contraflow. Evacuees will be prevented from using other routes. Basically, for the H-T Connector, you will not be able to cross the river to get to I-10. Eastbank stays on eastbank, and Westbank stays on westbank.

Analysis of La. 24 - La. 20 Corridor

La. 24 from U.S. 90 to its intersection with La. 20 and a continuation of La. 20 to its intersection with La. 3127 is an existing South to North roadway that provides a connection between Houma/Thibodaux and La 3127. The following is a summary of the roadway features and the impacts on the human and natural environment caused by improving the roadway to a 4-lane roadway meeting current design standards.

U.S. 90 to La. 308
This section is approximately 8.7 miles in length. There is an existing interchange at U.S. 90 and La. 24; then, La 24 is a 4-lane couplet separated by Bayou Terrebonne to the intersection of La. 20. La. 20 continues to the north as a 4-lane urban section and intersects in Thibodaux with La. 1 and La. 308. Because of the density of residential and commercial properties, this section could not be reconstructed.

La. 308 to North of Walmart
This section is approximately 1 mile long. A portion of the section is five lanes then reduces to a 3-lane section with 8-ft shoulders. This section is lined with commercial and residential development. The right of way width is constant and the roadway could be widened to a five lane section without impacting any residence or businesses.

North of Walmart to Beginning of Four Lane Section
This section is approximately 1 mile in length and is a 3-lane roadway with 8-ft shoulders. This section of roadway is new residential offset to the east approximately 100-ft from the roadway. The right-of-way appears consistent and a five lane section could be constructed with no impacts on business or residence.

Begin Four Lane to End Four Lane Section
This section is approximately 1.3 miles in length and consists of four 12-foot lanes divided by a 20-ft median with 8-ft shoulders. There is little development through this section.

End Four Lane to La. 307
Relocation of La.20 would begin at the end of the four lanes section. Bypassing the residential to the west , then turning north east to the intersection of La. 20 and La. 307. Approximately 3.5 miles of this section would be at grade and 4 miles on structure

La. 307 to La. 3127
This section is approximately 5.5 miles in length. It is proposed that this section would be relocated and the new construction would be a four lanes section with a forty foot median. The first 3.5 miles would be on structure and the last two at grade.

SUMMARY

The section of the Project from U.S. 90 to La. 308 is in a highly developed area and little improvements can be made that would improve capacity. This section would function as constructed.

From U.S 90 to La. 308 there would be minimal reconstruction, primarily within the existing right-of-way. The section from La. 308 would function as constructed through 2025 with the third lane being used during hurricane evacuation. The four lanes section would continue to function as constructed. Through this section there would be no commercial or residential impacts

.

The section from the end of the four lanes to the intersection with La. 307 would have to be relocated. Approximately twelve residences would be impacted. This 7.5 mile section would have 3.5 miles at grade and 4 miles on structure.

The 3.5 mile section from La.307 to south of Vacherie would be constructed in wetland and be on structure.

The final 2 miles of roadway from south of Vacherie to La. 3127 would be constructed west of La. 20 and have little impact on wetlands or businesses/residences.

The section from U.S. 90 to La. 3127 would traverse a total distance of approximately 23 miles and would take no businesses, approximately twelve residences and one hundred eighty acres of wetlands.

The only major construction until 2025 would be from the end of the four lanes to La. 3127.

Assumptions/Costs for Quantm Runs

(Assumptions dated December 2, 2004)

Assumed that we would be elevated on structure over cypress swamps and bottomland hardwood wetlands and that we would avoid fresh marsh wetlands.

For elevated structure through cypress swamps and bottomland hardwood wetlands, we assumed an elevation of 10'. *Source is a hydrologic study/model provided by the Army Corp of Engineers. This study included a stream gauging station near Chackbay, the maximum height for the gauge at that area was between 9' and 10'; therefore, we chose 10'.*

Extra Mitigation Costs assigned to wetlands were the following, using wetland bank information (*Source is Army Corp of Engineers*):
Cypress swamp - $15,000.00 per acre
Bottomland Hardwood - $10,000.00 per acre
Fresh Marsh - $20,000.00 per acre

We used a 3:1 ratio for wetland mitigation, therefore the numbers above are multiplied by 3 for Quantm inputs.

We avoided wetland mitigation banks in the project area.

We avoided sensitive biological areas, which include threatened, endangered, and rare species.

We avoided Urban Areas in order to minimize impacts to businesses, residents, community features, etc.

We avoided historic districts and sites that were on the National Register of Historic Places.

We applied mitigation costs to archeological sites where necessary based on best professional judgment (ESI).

All excavated material was assumed to be unusable for fill.

In upland areas, assumed that we had the same type of upland soil material throughout the project area.

The stiffness factor in Quantm was set to .7. The stiffness refers to how straight or how many curves the road can have. The Quantm software limits the number range to 0 – 1, with 1 being the stiffest or straightest number. Preliminary Quantum runs with other stiffness factors used (mostly less than .7) resulted in more curvature to the output trends. This results in greater impacts to resources and increased costs. A stiffness factor of one (1) is typically used for railroad projects where increase curvature is extremely

undesirable. At this point in the project .7 provided enough curvature to avoid sensitive areas without adding significant costs. Please note that the stiffness factor can be lowered if requested to evaluate additional Quantum trends.

Pipelines were crossed with a bridge at grade. This assumption is based on the need to cross pipelines at 90^0 with minimum cover. Due to the number of pipeline crossings and the potential impact to corridor shape, structures were used to cross pipelines.

All roads were crossed at grade with no structure.

Streams were crossed at 5 ft with a bridge.

Water bodies were crossed at 10 ft with a bridge.

The following design standards were take from the LADOTD Design Standards for and F-3 freeway:

Limiting Grade for the road was set to the following:

Design % -2.99 for downhill and 3.00 for uphill
Sustained % -2.99 for downhill and 3.00 for uphill

Formation (roadway) width was set to 300 ft.

Minimum Curvature was set to 1910 ft.

Sight distance was set to 850 ft, Eye level was set to 3.5 ft and Object level was set to 2 ft.

The following costs were taken from LADOTD average unit bid cost published on the DOTD website

For embankment in wetland areas we assumed that we would have 5 ft of muck excavation and that the cost per acre to excavate 5 ft of muck and fill in with suitable sub base material up to natural grade would be $124,685.00 per acre.

The cost to haul material was set to $.25 per cubic yard per mile.

The fill cost was split between fill and borrow (the cost of purchasing the fill material and transporting it to the site) evenly. Therefore, borrow was $4.54/cubic yard and fill was $4.54/cubic yard.

The cut cost was also split evenly between cut and dump (the cost to haul the material off site and dispose of it). Therefore, dump was $3.88/cubic yard and cut was $3.88/cubic yard.

Culvert Costs were as follows:
18" culvert – $37.00/ft
24" culvert – $47.00/ft
36" culvert – $82.00/ft
48" culvert – $170.00/ft
54" culvert – $170.00/ft
60" culvert – $170.00/ft

The cost for bridges was $3200.00/ft.

The cost for roadway base was $310/ft (this includes asphalt, base, fabric, drainage, contingency and right of way)

BRIDGE

42' WIDE @ 55 $/SQFT ~~(110 $/SQFT)~~

84'

2-LANE

3,250,000/MI

1080/FT [4-LANE]

$\left(\frac{84}{FT^2}\right)\left(\frac{}{}\right)$

$\frac{55}{FT^2}\left(84F\right)$

615 .53 for 2LANE
FT
1080 for 4
2 LANE

4620/FT

HTMPO Policy Committee Meeting

Location: South Central Planning and Development
Date: 5/15/2008

Houma-Thibodaux Metropolitan Planning Organization (MPO)
Policy Committee Minutes
May 15, 2008, 12:30 PM

(AS APPROVED BY THE POLICY COMMITTEE ON JULY 24, 2008)

Prayer: Arlanda Williams

Pledge of Allegiance: Pete Lambert

Roll Call: Leo Marretta

Terrebonne Parish President, Michel Claudet – Present, proxy Pat Gordon
City of Thibodaux Mayor, Charles Caillouet – Present, proxy Bonnie Lafont
Terrebonne Parish Council Member, Peter Lambert – Present
Terrebonne Parish Council Member, Johnny Pizzolatto - Present
Terrebonne Parish Council Member, Arlanda Williams - Present
Terrebonne Parish Council Member, Clayton Voisin – Present
LADOTD, Michael Stack – Present, proxy Dennis Hebert
Lafourche Parish President, Charlotte Randolph - Absent
FHWA, Jamie Setze – Absent

Others in attendance were:

Kevin Belanger, SCPDC
Leo Marretta, SCPDC
Emma Bergeron, SCPDC
Kermit Kraemer, City of Thibodaux
Katherine Gilbert, TEDA
Joan Schexnayder, TPCG
Al Levron, TPCG
Wendell Voisin, TPCG
Mark Atzenhoffer, Private Citizen

1. Approval of Minutes from February 28, 2008 meeting

It was motioned by A. Williams to approve the minutes from the February 28, 2008 meeting with discussion, J. Pizzolatto seconded. Motion carried. Mr. P. Gordon inquired on the status of the Bayou Gardens Extension. K. Belanger relayed that the Lafourche Parish President and the Councilman Matherne is supposed to contact SCPD&C after meeting with constituents. They have yet to contact SCPD&C. K. Belanger stated Mr. Mark Atzenhoffer was in attendance to speak on said issue.

2. Public Comments

Chairman C. Voisin asked if the were any public comments. Mr. Mark Atzenhoffer introduced himself as the former Lafourche Parish Councilman for the Bayou Blue area. He reported that he has recently received many telephone calls from residents of concerning the Bayou Gardens Extension Project. He reported the people who contacted him expressed that there is no longer strong opposition to the project and that they would like to see this project become a reality. It seems that they are now eager to know when this project will take place. Mr. Atzenhoffer requested that the MPO consider tying the Bayou Gardens Extension Project in with the North/South Corridor project. Discussion ensued. P. Gordon suggested that Lafourche would benefit from the creation of a “Parish Thoroughfare Plan” similar to the one in Terrebonne. The resulting plan would aide with local transportation planning. Corridor preservation and

coordination with neighboring parish's plans would be important components of that planning effort. K. Belanger explained that in addition to the need for a Lafourche Parish Thoroughfare Plan the MPO is currently updating the long range plan for the region - the Metropolitan Transportation Plan (MTP). This process will ultimately delineate proposed roadway corridors such as the Bayou Gardens Extension and the North/South Hurricane Evacuation Corridor. The MTP will have to go through a public hearing process, be reviewed by the Planning Commissions and ultimately be adopted by the Parish Councils of all the MPO member jurisdictions within the urbanized area as delineated by the US Census.

It was motioned by P. Gordon, that the MPO draft a letter for Chairman Voisin's signature which will inform the Lafourche Parish Government as they may want to consider the proposed Bayou Gardens Extension Project in their actions affecting that area. The motion was seconded by P. Lambert. Motion carried.

3. Terrebonne Parish Consolidated Government (TPCG) and Good Earth Transit (GET)'s new grant applications and associated transit issues.

Chairman C. Voisin introduced the next item for discussion: new transit grant applications. L. Marretta reported that the MPO had received a letter from TPCG requesting the MPO draft a letter in support of their new grant applications as required by the Federal Transit Administration (FTA). The letter assures the FTA that the new grant applications submitted by GET, if approved for funding by DOTD, would be included in the Regional Coordination Plan and the Transit Element of the MPO's Transportation Improvement Program (TIP). He went on to explain that due to the fact that the City of Thibodaux is in the process of conducting a study regarding the feasibility of providing transit service in the city, GET is no longer the only transit related entity within our MPO's borders. L. Marretta further clarified that the grants in question were only for the next fiscal year and that the City of Thibodaux would not be acting on the results of the feasibility study within that time frame. Mr. Wendell Voisin spoke on behalf of GET. Discussion ensued.

It was motioned by A. Williams, seconded by P. Gordon to approve the writing of the letter in support of the new grant applications. Motion carried.

4. Staff Report on the Louisiana Department of Transportation and Development (DOTD)'s administrative adjustments to the MPO's Transportation Improvement Program (TIP)

L. Marretta briefed the committee as to administrative adjustments made to the MPO TIP as a result of an April 1, 2008 email from DOTD. He reported that these changes were the subject of a staff report which had been emailed to all the MPO Policy Committee members on May 9, 2007 as required by our current TIP. Additionally it was reported that another set of administrative adjustments had just arrived by US Mail on May 12, 2008. The latest adjustments were received too late to implement the requested changes to the TIP before the Policy Committee meeting, but a copy of the letter was included in the packet handed out at today's meeting. K. Belanger stated that all of the changes which DOTD is continually working through do not typically affect the projects that we as the Policy Committee have control over. Most of the administrative adjustments are to state projects that are outside of the MPO's purview. Much discussion ensued.

P. Gordon and others raised concerns that the process, as it currently exists, takes way too long and that the true costs have risen so dramatically that projects continue to languish un-started for years past the time we have programmed them to begin. This has left us with the situation in which the public's expectations have been raised as to the delivery date of our local projects only to be disappointed time and again.

It was explained that in an effort to rectify this situation staff is currently contacting the consulting engineers and DOTD project managers for each of our projects and will attempt to validate or change the numbers and dates used in the TIP. This has proven to be very time consuming but is necessary in order to properly program our available funds and accurately estimate the time and phasing of the STP<200k funded projects, the only ones that actually fall under our control.

As an example of the difficulties with the TIP Al Levron (TPCG) was called upon to speak about the current situation with the Hollywood Road project. It seems that costs for right of way (ROW) acquisition and relocation of utilities were historically programmed in the TIP together at $3 million total. The Parish's latest estimate of these same costs is $3 million each. Furthermore the TIP has a breakdown of $2.4 million for ROW and $750,000 for utilities programmed for this project as starting together in 2008. TPCG is actually ready to begin the ROW acquisition and would be allowed to move forward by spending the $3 million programmed for this year to solely to acquire ROW. But, since the TIP does not reflect the true costs and cost allocations required for all the work specified, the question then becomes, if the Parish does spend it all on ROW, where will they find the additional $3 million needed for the utility relocation, also programmed for this year. If they spend all $3 million this year and then need an additional $3 million of STP<200k funds for utilities will the project stall until an additional $3 million becomes available (maybe years in the future) as the expected MPO resources are budgeted out to other projects for the next 5 years, or will they be allowed to do both and other projects will then get pushed back in time to accommodate the budgetary needs of the Hollywood Road project.

K. Belanger stated that the answer to these questions has to come from the Policy Committee and until we understand the true costs of all the projects in the TIP we will not be able to program any of the projects in an equitable fashion. In order to rectify the situation staff has been working with DOTD to update the cost estimates for each of our projects and will attempt to ground truth these numbers with the consulting engineers and may need to energize the MPO's Technical Advisory Committee. After that is accomplished we will be better able to program the projects with direction from the Policy Committee. L. Marretta added that complicating the situation is the fact that the target continues to move as DOTD makes more administrative adjustments to our TIP like the one that arrived on May 12th just days before our meeting. In closing L. Marretta stated that we will soon be starting the process of updating our long range plan – the Metropolitan Transportation Plan (MTP) and that as such these issues will become very relevant and will have to be examined thoroughly.

Noting the concerns expressed at this and other Policy Committee meetings, staff has agreed to continue to investigate ways to deal with the situation. Towards that goal, the following agenda item, which speaks to the ongoing meetings staff is having with DOTD planning staff and project managers, was called.

5. Staff Report on HTMPO Project Managers meetings at DOTD headquarters

K. Belanger reported to the committee on the meetings with DOTD in Baton Rouge held the day before. He and L. Marretta had met with several of the managers who handle our MPO's projects, as well as Dawn Sholmire and Robin Romero from DOTD Office of Planning and Programming.

Acadian By-Pass Road has completed the Stage "0" process and you should be receiving a city-state agreement from the DOTD contract section very soon. Additionally, an intergovernmental agreement between Thibodaux and Lafourche Parish will have to be enacted to specify which portion of the local match will be absorbed by the City and what portion by the Parish, probably based upon the number of miles of the project which lay in either jurisdiction.

Westside Blvd Phase B has been through several iterations before being approved but according to our conversations today it should be finalized within the month.

Hollywood Road was discussed and it was noted that Al Levron would be visiting with the DOTD project manager the next day with regards to this project and some other "Off System Bridge" projects.

LA 57 Industrial Blvd to Thompson Road effluent issues addressed. DOTD has said that the construction cost for the wastewater improvements could be included in the project but that the Parish must pay for the engineering. DOTD was made aware that the Parish wants a firm acknowledgement that if they do so, the improvements will be included in the project. Fred Borne of DOTD will pursue this on our behalf, if the Parish sends a request letter. Al Levron mentioned that he thinks a similar letter has already been sent. He will investigate further.

K. Belanger also reported on the current State funding situation. MPOs with access to monies other than DOTD funds are seemingly better able to get projects engineered and environmentally cleared. This allows them to better leverage federal and state monies for construction or to do more projects. It was suggested that as an MPO we need to figure out how to generate other revenues in order to compete more effectively. Some of the ideas mentioned included sales taxes dedicated for capital projects, impact fees, public/private partnerships, a local gasoline tax consistently applied across the region, leverage parish money to obtain more bang for our buck. It was also suggested that we may need to think about limiting our large scale projects (which are becoming more and more unattainable) in favor of smaller projects that add capacity without constructing new roadways. The Efficiency Analysis which the Policy Committee has already reviewed and endorsed has also been approved by most of the other Louisiana MPOs. It has however, been delayed in Shreveport. Popular opinion holds that this is because they knew they were in line for the lion's share of the recently allocated State surplus funds. Baton Rouge and New Orleans have come on board as well as some ranking officials that K Belanger has spoken with at DOTD. He reported that everyone agrees that finding a better way to move forward with projects in a timelier and less costly fashion would be good for our future. Discussion ensued and a general dissatisfaction with the manner in which State

Surplus Finds were distributed was expressed by several members, including C. Voisin and Pat Gordon.

6. City of Thibodaux's request for new projects to be included in the TIP

On behalf of the City of Thibodaux, Ms. B. Lafont requested the two high priority projects for the City of Thibodaux to be included in the 2008 MPO TIP. The projects are as follows: Tiger Drive Bridge Replacement +/- $3.4 million and LA Highway 20 (N. Canal Blvd) Road Widening +/- $4.8 million. A Canal Blvd Bridge Pedestrian Crossing (already funded by Transportation Enhancement Grant, $200,000 donation and city funds) was also mentioned. Discussion ensued.

It was motioned by P. Gordon, seconded by B. Lafont to include the Tiger Drive Bridge replacement project, LA Hwy 20 Road Widening project, and Canal Blvd Bridge Pedestrian Crossing in the 2008 MPO TIP. Motion carried.

7. Discussion about how to go about maintaining a fiscally restrained TIP

It was agreed upon by all that this issue was touched through the previous topics.

8. Assumption Parish Representation

L. Marretta spoke to the committee about representation of Assumption Parish within the HTMPO. A part of Assumption Parish is included in our urbanized area; therefore Assumption Parish should be represented on the MPO's governing boards. Setting up a sub-committee or energizing the Technical Advisory Committee (TAC) to further research this topic was recommended by L. Marretta. K. Belanger spoke about the funding structure of the MPO, as well as the representation being based upon the population of the various jurisdictions that actually lay within the Urbanized Area. He suggested that if a sub-committee is appointed they also be tasked with reviewing the pro rata share structure of both of these components. Discussion ensued.

It was motioned by B. Lafont, seconded by J. Pizzolatto to consider setting up a sub-committee consisting of J. Pizzolatto, A. Williams, C. Randolph and C. Caillouet (or his designee) to further research Assumption Parish Representation within the HTMPO. Motion carried.

9. Safe Community Task Force's Annual Traffic Summit $500 Grant

K. Belanger briefed the committee on the upcoming Safe Community Task Force's Annual Traffic Summit will be held on July 17, 2008 at 8:00 a.m. The MPO typically sponsors the food for the event out of its Administrative Budget. This year's grant $500.00.

10. LADOTD newly promulgated rules regarding "New Access Requests Affecting Traffic on State Highways"

Item deferred until later date due to the individuals scheduled to speak were not present. It will be placed on a future agenda.

L.S. LADOTD Letting Schedules

LADOTD Letting Schedules dated 5/13/08 were given to each committee member within their meeting packet for their review on their own accord.

Other Business

K. Belanger brought up P. Lambert's request for a turning movement count to be conducted at LA 24 and LA 659 Intersection at the Presque Isle Bridge. Al Levron and Pat Gordon mentioned that this was recently accomplished; Neel Schaffer did study for new traffic signal controllers at the intersection. They will see if the study will be sufficient to fulfill Mr. Lambert's request.

Next Meeting Date

It was agreed upon that the next meeting date of the Houma-Thibodaux Policy Committee would be held on July 24, 2008 at 12:00 PM.

Adjournment

The motion to adjourn the meeting was made by J. Pizzolatto, seconded by P. Lambert. Motion carried.

South Central Industrial Association-Governmental Affairs and Infrastructure Committee

Location: 1340 West Tunnel Blvd, The Atrium, Suite 500 B
Date: 6/22/2009

South Central Industrial Association
Governmental Affairs and Infrastructure Committee
Monday, June 22, 2009

I. Welcome

II. Reports
   a. Regional Highway Projects
      i. LA 1: Henri and Ted
         Groundbreaking July 7, tolling to begin after Tarpon Rodeo
         Still looking for funding from Leeville to Golden Meadow, seeking competitive stimulus funds
      ii. I-49: Troy Cloutier and Mart Black
         I-49/Michot Bill (HB 176) defeated; problems with bill from start re: inclusion of Bayou Region, also problems from other parts of the state
         Will work with group on future legislation
         Coalition: not active
         Statewide task force: need to ensure Bayou Region is represented
      iii. North-South Corridor
         DOTD accepted latest consultant study on E/W alignment, Hwy 308 alignment preferred
         3 N/S routes considered, with Sunshine Bridge alternative preferred
         Begin working on scope for final EIS, will include tolling, traffic, etc.- anticipated in 2 yrs
   b. Local Highway Projects
      i. Prospect Street Bridge
         August 26- bid date
         Delayed to see how traffic can be reduced during construction
         Estimated $28 million
      ii. Larose Bayou Lafourche Bridge
         Work to begin within the month
      iii. Grand Isle Bridge
         July 24 award, estimated $30 million
   c. Houma Navigation Canal Lock
      No known activity
      Need to find out more information about the barge vs. lock- important factor for navigation, protection and restoration
   d. Restoration and Protection
      CDBG funds towards levees, including Morganza, as well as pump stations
      BL bid date July 8, work to begin late August/early September
      Caminada breakwater funding stimulus funds decision anticipated soon
      Long distance sediment pipeline project moving forward
   e. 2009 Legislative Session
      Statewide issues
      Post legislative wrap-up- Governor at July luncheon; BR- need date
      Port Commission bill signed
      Still working on OCPR clean-up legislation
   f. Business Recovery/Reentry
      TEDA backlog issues; will be present at next SCIA meeting; Jane to meet with Mike
      Need to promote Lafourche Parish as well

g. FEMA DFIRM Flood Maps
   Terrebonne appeal period June 24-September 2
   Lafourche- begins July 2
   Both are using Sudhaya and Shaw for help with appeal
h. Federal Legislation
   i. Employee Free Choice Act
      1. SCIA ICE Workshop, June 23
   ii. Obama Oil and Gas Legislation

III. New Business
a. 311 Expansion
   Mtg in Houma in past few weeks
   Seems to take more from southern? land owners
   Public comment period ends 6/23/09
   Will prepare draft environment assessment for public in fall, no public meetings unless requested
b. Houma Tunnel Expansion
   One mtg, another meeting planned. Green bridge (?)/ railroad bridge current preferred site. Will forward meeting announcement to committee.
c. CDBG-Hazard Mitigations
   Terrebonne- $123 million= $80 million levees+$20 million pump stations+$7 million juvenile detention center, remainder for Economic Development, elevations., buy outs, repairs
   Also, $16 million in Hazard Mitigation- should elevate 100 homes
   Lafourche- $33 million CDBG= $3 million for housing. Hiring a consultant to assist in documentations, will have public meetings, and prepare proposal package for September 09.
   Received $6.4 million in Hazard Mitigation, funds go to different municipalities for pump stations, retrofitting, Caminada Breakwater Project, sea wall in Golden Meadow, drainage in Lockport, and acquisitions and elevations
d. July 15- SCIA General Membership Meeting with Governor Bobby Jindal
e. Senate District 20 Race- August 1 Election

IV. Action Items and Responsibilities
- Talk to Mike Ferdinand re: Terrebonne re-entry applications
- Talk to TLCD or TNAC re: Houma Navigational Canal lock
- Attend Houma Tunnel Expansion Meeting

HTMPO Policy Committee Meeting- Project Update

Location: South Central Planning and Development
Date: 8/13/2009

M E E T I N G M I N U T E S

HTMPO Policy Committee Meeting **Date:** August 13, 2009

Meeting Location: SCPDC's Pelican Room, Gray, LA.

In Attendance

Committee:	Terrebonne Parish President, Michel Claudet – Present City of Thibodaux Mayor, Charles Caillouet – proxy Bonnie Lafont Terrebonne Parish Council Member, Peter Lambert – Present Terrebonne Parish Council Member, Johnny Pizzolatto - Absent Terrebonne Parish Council Member, Arlanda Williams – Proxy Al Levron Terrebonne Parish Council Member, Clayton Voisin – Present LADOTD, Michael Stack – proxy, Lyle Leblanc Lafourche Parish President, Charlotte Randolph – Present Town of Lockport Mayor, Richard Champagne – Present Assumption Parish President, Marty Triche – proxy Erin Watson FHWA, Jamie Setze – Present
Staff:	Leo Marretta, SCPDC Emma Bergeron, SCPDC
Others in Attendance:	Kainen LeBlanc, Duplantis Design Group Ricky Galloway, Duplantis Design Group Mary Lou Davis, TPCG Philip Chauvin, T. Baker Smith Eric Faucheaux, City of Thibodaux Gregory Boudreaux, Deputy Chief Bayou Cain Fire Department Henry Richard, Richard Development Darius Bonton, Buchart Horn Terry Arabie, Lafourche Parish Henri Boulet, LA 1 Coalition Michael Ferdinand, TEDA Patrick Gordon, TPCG Dawn Sholmire, DOTD Dan Broussard, DOTD Clay Breaux, GSE Michael Knobloch, Lockport Alvin Tillman, Terrebonne Parish Council, District 1 Kermit Kraemer L. P. Ledet, NSI J. D. Allen, ATG Dennis Hebert, DOTD

Roll Call

E. Bergeron called roll.

Call to Order

C. Voisin called the meeting to order at 12:05pm.

Invocation
R. Champagne led the invocation.

Pledge of Allegiance
P. Lambert led the Pledge of Allegiance.

Agenda Item # 1
Approval of Minutes from May 14, 2009 Policy Committee Meeting

L. Marretta explained that it was brought to his attention that Pat Gordon was not recorded as being present at the last meeting. He explained that this will be changed on the final version of the minutes to be posted to the MPO's website.

It was motioned by A. Levron to approve the minutes from the May 14, 2009 meeting, C. Randolph seconded. Motion carried unanimously.

Agenda Item # 2
Public Comment

Chairman Voisin asked if there were any public comments.

Henry Richard, a local real estate developer, addressed the committee regarding his proposed development along Citi Place Drive. Discussion ensued.

Chairman Voisin again asked if there were any public comments. Seeing none, moved on to the next agenda item. No action necessary.

Agenda Item # 3
LADOTD Projects Update
Lyle Leblanc, LADOTD Area Engineer

L. Leblanc gave a status report on Prospect Street Bridge, LA 311 turning lanes, LA 308 in Thibodaux, LA 3090, LA 3107, and other area projects. Discussion ensued. No action necessary.

Agenda Item # 4
ARRA Project Update
Each Jurisdictions Staff or Consultants

L. Marretta asked each jurisdiction to give an update on their ARRA funded projects. Assumption Parish reported that the scope of their project on LA 1 has changed from a turn lane to strictly an overlay. Lafourche reported that the plans for their turning lanes have been submitted and they are awaiting comments back from DOTD. Lockport, Terrebonne, and Thibodaux also all reported that plans have been submitted to DOTD, and they are awaiting comments back.

Agenda Item # 5
MTP Progress Report
L. P. Ledet, Neel-Schaffer, Inc. and J. D. Allen, Alliance Transportation Group, Inc.

L. Ledet gave the policy committee an update on the MTP planning process. He reported that visioning meetings were held throughout the region to gather public input. He also presented maps of these findings and explained that a summary of what took place at those meetings, along with the comments generated, would be submitted to the MPO in the form of a Visioning Memo. He requested that all interested review the memo and submit any thoughts or comments back to him. He then explained that calibration of the model is complete, and that Alliance Transportation will begin the forecasting of future demographics.

L. Marretta reported that Josh Manning from the MPO staff is currently in Boston attending TransCAD training directly from Caliper, the company that makes the software. He also reported that he and J. D. Allen from Alliance Transportation would be visiting Lafourche's planning department later that day to begin gathering data for the demographic forecast.

L. Leblanc made a comment about L. Ledet's current projections. He explained that he disagreed with the maps showing the Presque Isle area shrinking. He believes that residents of the lower parts of the Parish are moving there as it is considered high ground.

At this point, C. Randolph explained that she was contacted by a group out of Texas that is interested in building high-speed rail from Texas to New Orleans. She suggested that this might be something the MPO could look into. L. Marretta requested that any information she has on the project be forwarded to him so that he can follow up with it.

No action necessary.

Agenda Items # 6
N-S Hurricane Evacuation Route Project Update
Darius Bonton, Buchart Horn

D. Bonton gave a brief update on the N-S Corridor project. He explained that in June of 2007, DOTD asked Buchart Horn to start a supplemental study to review various alternatives, including any paths traversing LA 1 and LA 308 that would tie in with the Sunshine Bridge. The study resulted in the conclusion that the best alternative is the northern-most route that would tie in to LA 3213 and connect to the Gramercy-Wallace Bridge.

Discussion ensued. No action necessary.

Agenda Item # 7
ITS Phase III Update and Phase IV Funding Situation
DOTD ITS Staff

L. Marretta reviewed information from DOTD relevant to the funding for Phase IV of the Houma ITS project. He reported that he and a delegation from Terrebonne Parish have

a meeting scheduled with DOTD Secretary Anknar to discuss options for the project. No action necessary.

Agenda Item # 8
Tiger Grants
HTMPO Staff

L. Marretta explained the background information on TIGER grants and reported that SCPDC will be applying for a grant to fund part of the LA 1 project between Golden Meadow and Port Fourchon. Marretta explained that the SCPDC board has passed a resolution in support of the application, and Henri Boulet from the LA 1 Coalition has requested that the MPO pass one also. He then reviewed a draft resolution for the Policy Committee to pass.

H. Boulet explained that the LA 1 Coalition would write the application, but SCPDC would be the actual applicant through its position as the Regional Planning Commission. He explained that the grant would be very competitive, with more applications than available funds. Discussion ensued.

It was motioned by C. Randolph to pass the drafted resolution, R. Champagne seconded.

Before the vote, A. Levron motioned to amend the resolution from, "NOW, THEREFORE BE IT RESOLVED that the *Houma Thibodaux Metropolitan Planning Organization*, does hereby support the funding request by the LA 1 Coalition to the United Stated Department of Transportation through the Tiger Discretionary Grant Program," to, "NOW, THEREFORE BE IT RESOLVED that the *Houma Thibodaux Metropolitan Planning Organization*, does hereby support the funding request by the LA 1 Coalition or their designees to the United Stated Department of Transportation through the Tiger Discretionary Grant Program." Seconded by C. Randolph.

Both motions carried unanimously.

Agenda Item # 9
Administrative TIP Amendments/Changes
FHWA/FTA

L. Marretta explained the new requirements on administrative modifications and amendments to the TIP from the FHWA. The MPO is now required to approve funding changes to any DOTD project located in the Urbanized Area that is above certain thresholds. He also presented a list of all amendments and administrative changes made this year. L. Marretta then explained that, because of these new changes, the MPO now will need to vote to approve funding changes to the LA 57 widening project. Discussion ensued.

It was motioned by M. Claudet and seconded by A. Levron to accept the change in the LA 57 widening project and amend the TIP to reflect these changes. Motion passed unanimously.

Agenda Item # 10
Technical Advisory Committee Meetings

HTMPO Staff

L. Marretta discussed the idea of holding more Technical Advisory Committee meetings to hash out the details on projects to be present to the Policy Committee meeting. He proposed at least one meeting each quarter to be held at least a week before each Policy Committee meeting.

No action necessary.

At this time, C. Randolph left the meeting and designated Terry Arabie as her proxy.

Agenda Item # 11
Coordinated Human Services Transportation Plan
J. D. Allen, Alliance Transportation Group, Inc.

J. Allen explained that the CHSTP was developed by SCPDC several years ago but was never adopted by the Policy Committee. He explained the idea of the plan was to bring all the area transit providers and those agencies that provide funding for providers into one document to ensure there is no duplication of service. He said the last step needed is for the Policy Committee to adopt the document.

It was motioned by T. Arabie and seconded by P. Lambert to adopt the plan.

Before the vote, M. Claudet explained that this was the first time he had seen the plan, as it was developed before he was elected to office. He said he would like more time to be able to review and comment before it was adopted.

T. Arabie pulled the motion to adopt to allow all policy committee members the opportunity to review and comment on the plan.

Agenda Item # 12
Roundabouts Discussion

L. Marretta reviewed a brochure on roundabouts and explained they are reportedly safer and more efficient that traditional intersections. He also reported that they are able to be 100% federally funded if they are linked to some sort of safety issue. He suggested that this is a topic that the TAC could look at and make recommendations of specific intersections that could be improved with a roundabout.

It was motioned by M. Claudet and seconded by A. Levron to have the TAC further study the possibility of recommending intersections that could potentially be improved with the addition of roundabouts.

Agenda Item # 13
Other Business

L. Marretta reported that the intergovernmental agreement to include Lockport and Assumption Parish representation in the MPO has been sent to DOTD to be signed by the governor. No action necessary.

Agenda Item # 10

Next HTMPO Policy Committee Meeting

It was decided that the next meeting date of the Houma-Thibodaux MPO Policy Committee is to be held on November 12, 2009 at 12:00 PM.

Agenda Item # 11
Adjournment

The motion to adjourn the meeting was made by T. Arabie seconded by R. Champagne. Motion carried unanimously.

Date:
Copies to: ***MPO Policy Committee, MPO Interested Parties List, file***

SCPDC
South Central Planning & Development Commission
5058 W. Main Street; Houma, LA 70360-4900 • Post Office Box 1870; Gray, LA 70359
Phone: (985) 851-2900 • Facsimile: (985) 851-4472

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OFFERED BY: Ms. Charlotte Randolph
SECONDED BY: Mr. Richard Champagne

Houma Thibodaux MPO
RESOLUTION NO. 2009-04

A Resolution supporting the La 1 Coalition or their designees for their funding request to the United States Department of Transportation (USDOT) for funding through the Tiger Discretionary Grant Program

WHEREAS, the *Houma Thibodaux Metropolitan Planning Organization* is united by the Parishes of Assumption, Lafourche, and Terrebonne in supporting the La 1 Coalition, and

WHEREAS, $1.5 billion of grant funds for state or local governments will be awarded by the Secretary of the USDOT through a competitive process to projects that have a significant impact on the Nation, a metropolitan area, or a region, and

WHEREAS, Priority will be given for projects that can be completed by February 17, 2012, and also that can complete a project's overall financing package, and

WHEREAS, the La 1 project has already received a Record of Decision for environmental clearance for all phases of the project, and has acquired all necessary rights-of-ways, and

WHEREAS, the State of Louisiana has already invested over $ 309 Million for building Phase 1 from Port Fourchon to Leeville, and

WHEREAS, Phase 2 is expected to cost $330 Million and the LA 1 Coalition is seeking $300 million from the Tiger Discretionary Grant fund, and

WHEREAS, $30 Million will be provided by the Outer Continental Shelf revenues deposited in the Louisiana Coastal Protection and Restoration Trust Fund, and through other various local funding sources, and

WHEREAS, it has been long established that the strategic significance of Port Fourchon to the Gulf Of Mexico is critical to supporting over 18% of Nation's daily crude oil and 27% of Nation natural gas, and

WHEREAS, the accessibility of Port Fourchon is critical to servicing the oil and gas exploration and production infrastructure, and

NOW, THEREFORE, BE IT RESOLVED that the *Houma Thibodaux Metropolitan Planning Organization,* docs hereby support the funding request by the La 1 Coalition or their designees to the United States Department of Transportation through the Tiger Discretionary Grant Program.

THERE WAS RECORDED:
YEAS: Mr. Charles Caillouet (Ms. Bonnie Lafont, Proxy) , Mr. Richard Champagne, Mr. Michel Claudet, Mr. Pete Lambert, Ms. Charlotte Randolph, Mr. Michael Stack (Mr. Lyle Leblanc, Proxy), Mr. Martin Triche (Ms. Erin Watson, Proxy), Mr. Clayton Voisin, Ms. Arlanda Williams (Mr. Al Levron, Proxy)

NAYS: none
ABSTAINING: none
ABSENT: Mr. John Pizzolatto

The Chairman declared the resolution adopted on this, the 13th day of Aug, 2009.

* * * * * * * * *

I hereby certify the above to be a true copy of the resolution adopted by the Houma-Thibodaux Metropolitan Planning Organization, on the above date mentioned.

Mr. Clayton Voisin, Chairman

Dale J. Hymel, Jr.
CHAIRMAN
President
St. James Parish Council

Michel Claudet
VICE CHAIRMAN
President
Terrebonne Parish Council

Mark Atzenhoffer
SECRETARY-TREASURER
Business Appointment
Lafourche Parish Council

Kevin Belanger
CHIEF EXECUTIVE OFFICER

Changes to the TIP in 2009

April 2, 2009 – *Amended to include ARRA projects and reflect By-Law Changes to include Assumption and Lockport.*

May 14 – *Amended to reflect changes from May 14 Policy Committee meeting. Finalized ARRA projects and added backup projects.*

June 4, 2009 – *Administratively Changed Neel-Schaffer's latest project cost estimates.*

June 11, 2009 – *Administratively Changed several ARRA project names to match with DOTD project names. Removed LA 1 @ Justin Street and Church Street Intersection Improvements at Lockport's request.*

June 22, 2009 – *Administratively Changed and corrected typos.*

June 26, 2009 – *Administratively Changed Prospect Street Bridge's funding from FFY 2009-2010 / $13,000,000 / STPFLEX-DEMO to FFY 2008-2009 / $28,000,000 / STPFLEX-DEMO as per Jamie Setze email on 6/25/09.*

July 15, 2009 – *Administratively Changed Prospect Street Bridge's funding source to FBRON/DEMO as per Robin Romeo's email on 7/15/09.*

August 4, 2009 – *Administratively Changed adding correct funding sources to some FBRON projects that were previously left blank.*

August 6, 2009 – *Administratively Changed ITS Phase III funding from FFY 2010-2011 / $2,000,000 (State Share) / State DOTD Construction to FFY 2009-2010 / $1,600,000 (Fed Share), $400,000 (State Share) / DEMO .*

OFFERED BY: Mr. Michel Claudet

SECONDED BY: Ms. Arlanda Williams (Mr. Al Levron, Proxy)

RESOLUTION NO. 2009-05

A Resolution to amend the to the Houma Metropolitan Planning Organization's Transportation Improvement Plan for FFY 2009-2010 and FFY 2010-2011.

WHEREAS, The Houma-Thibodaux Metropolitan Planning Organization is responsible for transportation planning for the Houma-Thibodaux Urbanized Area, and

WHEREAS, the Houma-Thibodaux Metropolitan Planning Organization must create and maintain a Transportation Improvement Plan, and

WHEREAS, the Louisiana Department of Transportation and Development has proposed transportation improvements for the area in the Letting Schedule, as listed below:

	Estimated Cost	Construction Fiscal Year	Fund Type
Project Number 246-01-0054 LA 57 Widening	$12,000,000	2010-2011	NHS

NOW, THEREFORE, BE IT RESOLVED that the MPO Policy Committee does hereby approve the addition of the above listed projects for inclusion in the Houma-Thibodaux Metropolitan Planning Organization's Transportation Improvement Plan.

THERE WAS RECORDED:

YEAS: Mr. Charles Caillouet (Ms. Bonnie Lafont, Proxy) , Mr. Richard Champagne, Mr. Michel Claudet, Mr. Pete Lambert, Ms. Charlotte Randolph, Mr. Michael Stack (Mr. Lyle Leblanc, Proxy), Mr. Martin Triche (Ms. Erin Watson, Proxy), Mr. Clayton Voisin, Ms. Arlanda Williams (Mr. Al Levron, Proxy)

NAYS: none

ABSTAINING: none

ABSENT: Mr. John Pizzolatto

The Chairman declared the resolution adopted on this, the 13th day of Aug, 2009.

* * * * * * * * *

I hereby certify the above to be a true copy of the resolution adopted by the Houma-Thibodaux Metropolitan Planning Organization, on the above date mentioned.

Mr. Clayton Voisin, Chairman

South Central Industrial Association-Governmental Affairs and Infrastructure Committee

Location: 1340 West Tunnel Blvd, The Atrium, Suite 500 B
Date: 12/1/2009

Redistricting and re-apportionment will be two important issues the Infrastructure Committee will address in early 2010. Look for committee meetings and reports on these issues.

The North-South Corridor Project consultant for DOTD is moving ahead with revising the traffic study, toll study, and analysis of the alternatives and look for public meetings on this project next

The percentage of completion of Phase 1A of the LA 1 Project as of November 30th was 37.6%. Prospect Street bridge construction is moving, the contractor is in the mobilization mode.

Construction of the Caminada Bay Bridge to Grand Isle is progressing. The contractor is on site completing the test pile program.

The construction of the new Bayou Lafourhce Bridge in Larose is proceeding as scheduled, and should be complete in 2011.

SCPDC Board Meeting - Project Update

Location: Belle Terre Country Club, 111 Fairway Drive, Fairway, LA 70068
Date: 1/14/2010

MEETING NOTICE
for
South Central Planning and Development Commission

DATE: January 14, 2010

TIME: 10:30 am

LOCATION: Belle Terre Country Club
111 Fairway Drive
LaPlace, LA 70068

A G E N D A

Call to Order
Pledge of Allegiance
Roll Call
Introduction of Guests

1. Acceptance of minutes of September 17, 2009 regular meeting
2. Review and Acceptance of Management Committee Minutes of January 5, 2010
3. Election of 2010 Officers
   Chairman • Vice-Chairman • Secretary-Treasurer
4. Review and Approve Financial Statement ending November 30, 2009
5. Ratification of new members to the RLF/RFC Boards
   - Trent Olivier, Coastal Commerce Bank, Terrebonne
6. **RESOLUTION:** Authorizing CEO to enter into a contract with legal counsel for protection of intellectual properties.
7. Presentation of the FY2009 Annual Audit by Bourgeois Bennett, LLC
8. Acceptance of 2009 Comprehensive Economic Development Strategy (CEDS)
9. Discussion of Policy Changes (Travel, Emergency, Overtime Pay, etc) – Kevin Belanger
10. Building Enforcement Overview – Michael Wich
11. Update on the North/South Corridor – Darius Bonton of Buchart-Horn
12. **RESOLUTION:** Authorizing the filing of an application with the LaDOTD for a grant under Section 3037 of TEA-21 and/or Section 5316 of SAFETEA-Lu, Job Access and Reverse Commute Competitive Grants.
    RESOLUTION: Authorizing SCPDC to file a project application with LaDOTD for grants through the US DOT FTA, as authorized under Federal Transit Laws, as codified, 49 USC Section 5317, New Freedom Program and executing a contract with the LaDOTD upon project approval.
13. Delta Regional Authority 2010 Grant Round
14. Agency Activity Report
15. **Corporate Sponsor Presentation** by Jacob Loeske of Buchart-Horn
16. Other Business
17. Next meeting date **March 18, 2010** (Terrebonne) - Adjournment

DRAFT

MINUTES

SOUTH CENTRAL PLANNING AND DEVELOPMENT COMMISSION
BOARD OF COMMISSIONERS MEETING

Thursday, January 14, 2010

A regular meeting of the Board of Commissioners for South Central Planning and Development Commission was called to order at approximately 10:45 a.m. on Thursday, January 14, 2010, at LaPlace, Louisiana.

Chairman D. Hymel called the meeting to order and requested P. Gordon lead the forum in saying the Pledge of Allegiance.

Members present or represented by proxy were W. Reed, R. Animashaun, T. Arabie representing C. Randolph, E. Faucheaux representing C. Caillouet, R. Champagne, T. Vial representing V. J. St. Pierre, W. Bendetto, B. Boe representing P. McTopy, A. Tregre, D. Hymel, M. Guillot, H. Bourgeois, M. Claudet, L. Charles, P. Gordon representing A. Williams, T. Cloutier, M. Marmande, Jr., and A. Badeaux. Members absent were M. Triche, C. James, M. Atzenhoffer, J. Bouziga, B. Raymond, Sr., J. Boucvalt, K. Brass, R. Scott, and D. Pothier. Staff members present were K. Belanger, J. Boudreaux, M. Wich, and E. Bergeron. Guests in attendance were: Dan Toepfer and Miranda Pellegrin of Bourgeois-Bennett, Darius Bonton, Carley Flemming, Jacob Loesky, and Jim Gioffron of Buchart-Horn, Randy Noel, Chairman of the Louisiana State Uniform Construction Code Council, and State Representative Nicky Monica.

Chairman Hymel requested each guest introduce their self. K. Belanger introduced the SCPDC staff members present.

First item on the agenda was the acceptance of minutes of September 17, 2009 regular meeting. It was motioned by T. Vial, seconded by W. Reed to accept minutes of the September 17, 2009 regular meeting. Motion passed.

Next on the agenda was the acceptance of Management Committee Minutes of January 5, 2010. K. Belanger briefed the members on the amended changes made to the Management Committee minutes. It was motioned by R. Champagne, seconded by T. Vial to accept minutes of the Management Committee.

B. Boe entered meeting at this time.

The third item on the agenda was the Election of 2010 Officers. Chairman Hymel requested to step down from his duties as Chairman. He opened the Chairman nominations. It was motioned by M. Claudet, seconded by T. Vial to nominated R. Champagne as Chairman. There being no other nominations, it was motioned by H. Bourgeois, seconded by M. Marmande to close Chairman nominations. By unanimous vote, R. Champagne was elected as Chairman of SCPDC for 2010. Motion passed.

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Chairman Hymel opened nominations for Vice-Chairman. It was motioned by M. Claudet, seconded by R. Champagne to nominate D. Hymel as Vice-Chairman. There being no other nominations, it was motioned by M. Claudet, seconded by H. Bourgeois to close Vice-Chairman nominations. By unanimous vote, D. Hymel was elected as Vice-Chairman of SCPDC for 2010. Motion passed.

Next was the election of Secretary-Treasurer. A. Badeaux suggested separating the duties of Secretary and Treasurer. K. Belanger explained with the expansion of board members the Management Committee was not expanded. However, by expanding the Management Committee to four members the By-Laws and the Articles of Incorporation will have to be amended. It was agreed upon by all to table the discussion of said suggestion until the next meeting.

Chairman Hymel opened nominations for Secretary-Treasurer. K. Belanger relayed a message from M. Atzenhoffer that he would be more than happy to continue as Secretary-Treasurer. It was motioned by T. Vial, seconded by B. Boe to nominate M. Claudet as Secretary-Treasurer. There being no other nominations, it was motioned by R. Champagne, seconded by all to close Secretary-Treasurer nominations. By unanimous vote, M. Claudet was elected as Secretary-Treasurer of SCPDC for 2010. Motion passed.

K. Belanger reviewed the Financial Statement ending November 30, 2009.
It was motioned by B. Boe, seconded by W. Reed to accept the Financial Statement ending November 30, 2009. Motion passed.

Next on the agenda was the ratification of Trent Olivier to the RLF/RFC Boards. K. Belanger spoke of the banker's luncheon SCPDC's Economic Development Department would be hosting on January 19, 2010. The goal of the luncheon was to inform local bankers as to what the RLF/RFC programs are about and to generate new interest in these programs. It was motioned by B. Boe, seconded by P. Gordon to ratify Trent Oliver to the RLF/RFC Boards. Motion passed.

Chairman Hymel requested to deviate from the agenda and move on to item ten, the Building Enforcement Overview. M. Wich gave a PowerPoint presentation on the building code process. He demonstrated how SCPDC has exceeded the original goals set forth when beginning the building code process. M. Wich spoke of the training SCPDC's inspectors have undertaken and are continuing to pursue. He informed the Board how permit fees have since been reduced and continues to lessen. Also, he spoke of the initial problems SCPDC's Building Code Department has encountered since its inception, how those issues have been resolved, and the remaining issues at hand.

M. Wich introduced R. Noel, Chairman of the LSUCCC. R. Noel spoke on how well the Regional Code Council program is working and continues to work. He praised SCPDC on how being a model for what the state had envisioned and for having exceeded the state's expectations. Discussion ensued.

Item six on the agenda was a resolution authorizing the CEO to enter into a contract with legal counsel for protection of intellectual properties. K. Belanger briefed the Board on the strides SCPDC's IT team were making with the mypermitsnow.org program. SCPDC has sought the advice of a patent attorney. Discussion ensued.

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It was motioned by T. Vial, seconded by B. Boe to authorize the CEO to enter into a contract with legal counsel for protection of intellectual properties. Motion passed.

Dan Toepfer of Bourgeois-Bennett gave an overview of the FY2009 Annual Audit. He assured the Board there were no significant findings.

It was motioned by M. Claudet, seconded by H. Bourgeois to accept the FY2009 Annual Audit. Motion passed.

Acceptance of 2009 Comprehensive Economic Development Strategy (CEDS) was next on the agenda. It was motioned by B. Boe, seconded by T. Vial to accept the 2009 CEDS. Motion passed.

The Board agreed to table item nine, policy changes, until the next meeting.

Next, Darius Bonton of Buchart-Horn gave an update on the North/South Corridor. He informed the Board that DOTD and the Consultant Team have completed the scoping process required to restart the project with the expanded boundary and additional alternative. The Notice to Proceed was issued November of 2009. September 2011 is the projected date for the final EIS and November 2011 for the ROD Development. Discussion ensued.

It was motioned by M. Claudet, seconded by M. Marmande to authorize the filing of an application with the LaDOTD for a grant under Section 3037 of TEA-21 and/or Section 5316 of SAFETEA-Lu, Job Access and Reverse Commute Competitive Grants. Motion passed.

It was motioned by M. Claudet, seconded by R. Champagne to authorize the filing of a project application with LaDOTD for grants through the US DOT FTA, as authorized under Federal Transit Laws, as codified, 49 USC Section 5317, New Freedom Program and executing a contract with the LaDOTD upon project approval. Motion passed.

K. Belanger informed the Board that the DRA grant notices has yet to go out. Upon receiving the notices, SCPDC will forward the information to the parishes.

Chairman Hymel offered each member to read at their leisure the Activity Agency Report included in the meeting packet.

Chairman Hymel introduced State Representative Nicky Monica who welcomed the Board to St. John the Baptist Parish and thanked them for their service.

Buchart-Horn was the Corporate Sponsor for the meeting. Jacob Loesky and Carley Flemming of Buchart-Horn gave an overview of the services provided by Buchart-Horn and projects they are working on within the Region.

Under Other Business, A. Badeaux requested an update on the EPA Air Quality Standards. He also recommended to the Board to consider amending the check signature requirements for checks under $1,000.

The next meeting date will be set for March 18, 2010 in Terrebonne Parish.

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There being no other business to discuss, it was moved by M. Claudet, seconded by L. Charles to adjourn. Motion carried.

As duly authorized officers of South Central Planning and Development Commission, Board of Commissioners, we do hereby certify that the above and foregoing is the official version of the minutes of the meeting of the Board of Commissioners held on September 17, 2009.

_____
Richard Champagne, Chairman
South Central Planning & Development Commission

_____
Michel Claudet, Secretary/Treasurer
South Central Planning & Development Commission

DRAFT

HTMPO Policy Committee Meeting- Project Update

Location: South Central Planning and Development
Date: 1/21/2010

Houma – Thibodaux
Metropolitan Planning Organization (HTMPO)

South Central Planning and Development Commission Office
5058 West Main Street, Gray, LA 70359
985-851-2900

(As approved by the Policy Committee on May 13, 2010)

In Attendance

Committee:	Terrebonne Parish President, Michel Claudet – Present City of Thibodaux Mayor, Charles Caillouet – Proxy Bonnie Lafont Terrebonne Parish Council Member, Peter Lambert – Proxy Pat Gordon Terrebonne Parish Council Member, Johnny Pizzolatto – Present Terrebonne Parish Council Member, Arlanda Williams – Present Terrebonne Parish Council Member, Clayton Voisin – Present LADOTD, Michael Stack – Proxy Lyle Leblanc Lafourche Parish President, Charlotte Randolph – proxy Terry Arabie Town of Lockport Mayor, Richard Champagne – Present Assumption Parish President, Marty Triche – proxy Erin Watson FHWA, Jamie Setze – Present
Staff:	Leo Marretta, SCPDC Joshua Manning, SCPDC Scott Leger, SCPDC Kevin Belanger, SCPDC
Others in Attendance:	Dennis Hebert – LA DOTD Gregory Boudreaux – Bayou Cane Fire Department Kermit Kramer – BDR Pat Matherne – Lafourche Parish Government Eric Faucheaux – City of Thibodaux Joan Schexnayder – TPCG Al Levron – TPCG Dawn R. Sholmire – LA DOTD Dan Broussard – LA DOTD Rosa Lou Molaison – Assumption COA Charlene Rodriguez – Lafourche COA Linda Pertait – Lafourche COA Wendell Voisin – TPCG Doug Bourg – TPCG Sheila Bella – TEDA A. F. “Bob” Blair, Jr. - Citizen Clay Breaud – GSE Jeff Messina – Urban Systems

Call to Order
C. Voisin called the meeting to order at 12:00pm.

Invocation
J. Pizzolatto led the invocation.

Pledge of Allegiance
T. Arabie led the Pledge of Allegiance.

Roll Call
L. Marretta called roll.

Before beginning Agenda Item #1, C. Voisin explained that the MPO Bylaws state that the MPO Chairman and Vice Chairman are to be elected during the first Policy Committee meeting of even-numbered years. This was left off the agenda due to administrative oversight and must be added on by motion and vote before any action can be taken.

It was motioned by J. Pizzolatto to add Election of MPO Officers to the agenda, P. Gordon seconded. Motion passed unanimously.

Election of MPO Officers

P. Gordon nominated C. Voisin for MPO Chairman. J. Pizzolatto moved to close nominations. Motion passed unanimously. C. Voisin elected MPO Chairman.

M. Claudet nominated R. Champagne as MPO Vice Chairman. T. Arabie moved to close nominations. Motion passed unanimously. R. Champagne elected MPO Vice Chairman.

Agenda Item # 1
Approval of Meeting Notes from November 12, 2009 Policy Committee Meeting

It was motioned by J. Pizzolatto to approve the minutes from the November 12, 2009 meeting, M. Claudet seconded. Motion carried unanimously.

Agenda Item # 2
Public Comment

Chairman Voisin asked if there were any public comments.

No action necessary.

Agenda Item # 3
Existing Transportation Project Update
Lyle Leblanc, LADOTD Area Engineer

L. Leblanc updated the Policy Committee on DOTD District 02 projects currently under construction or soon to be let to bid.

A. Williams entered the meeting during the presentation at 12:10.

L. Marretta explained that the area engineer for DOTD District 61, the district covering Assumption Parish, was not able to make it to the meeting, but will try to attend in the future.

No action necessary.

Agenda Item # 4
ARRA Projects Update
Each Jurisdictions Staff and/or Consultants; Dawn Sholmire, LA DOTD

D. Sholmire gave a status update in each of the ARRA projects. She explained that the continuous turn lane in Matthews needed to increase in funding to $2.2 million in order to be constructed to DOTD's standards, and asked that the TIP be amended to reflect this increase.

T. Arabie asked why the increase occurred. L. Leblanc explained that it was to increase the structural integrity of the shoulders.

K. Belanger and L. Marretta asked if the increase in funds would be the responsibility of the local jurisdictions or the MPO's STP<200K funds. D. Broussard of DOTD said the intention is to shift ARRA funds from projects coming in below bid to this one. Discussion ensued.

It was motioned by M. Claudet to amend the TIP to reflect the changes to the LA 1 continuous turn lane in Matthews funding, L. Leblanc seconded. Motion carried unanimously.

D. Sholmire continued the presentation on the other ARRA projects. No action necessary.

Agenda Item # 5
Planned Transportation Projects Update
HTMPO Staff

North-South Hurricane Evacuation Corridor
K. Belanger updated the committee on the N-S Corridor's status. He explained that the project is in the Environmental Stages and that consultants are in the process of vetting all the different alternatives for the placement of the route. Discussion ensued.

ITS – Phase III and Phase IV
L. Marretta asked L. Leblanc to explain the upcoming traffic signal updates on LA 24 due to ITS improvements. L. Leblanc explained that that Neel-Schaffer recently completed a traffic signal warrant-analysis study on the LA 24 corridor to determine which lights were necessary and which were unnecessary. He said that the unnecessary lights would soon be removed from the corridor and that the remaining ones would be upgraded with ITS technology. As a result, the new lights will have much better synchronization, causing traffic to flow more freely. Discussion ensued.

L. Marretta explained that these updates are part of ITS Phase IV, and said that the TIP needs to be amended to reflect these changes.

K. Belanger said that bids for this project are expected to be approximately $800,000 less than originally expected, and recommended the TIP be amended to use the extra funds to go towards the construction of a Traffic Management Center to be based at South Central Planning. Discussion ensued.

M. Claudet motioned to amend the TIP to reflect the initial ITS changes mentioned by L. Marretta; seconded by P. Gordon. Motion passed unanimously. (Attachment "A")

It was motioned by P. Gordon to amend the TIP to reflect that any additional funding left over after ITS Phase IV completion be used towards the construction of a Traffic Management Center, M. Claudet seconded. Motion carried unanimously.

Agenda Items # 6
Changes to the Current TIP
Leo Marretta, MPO Administrator

J. Manning presented proposed changes to the TIP to ensure fiscal constraint. During this presentation, J. Pizzolatto exited the proceedings and appointed A. Levron as his proxy.

It was motioned by M. Claudet to amend the TIP to reflect the changes needed to bring the TIP into fiscal constraint, R. Champagne seconded. Motion carried unanimously. (Attachment "B")

L. Marretta then explained the need to issue letters to transit providers on an annual basis. He said that if LADOTD decides to award certain grants to providers, then the expenditures will be included in the TIP. Discussion ensued.

It was motioned by T. Arabie to issue the letters to the Terrebonne Parish Council on Aging, the Assumption Parish Council on Aging, the St. James Parish Government, the Assumption ARC, the Lafourche ARC, and the Lafourche Council on Aging, the Lafourche Special Ed. District No. 1, Good Earth Transit, and South Central Planning. R. Champagne seconded. Motion carried unanimously. (Attachment "C")

W. Voisin from Good Earth Transit then presented GET's 2010 program of projects for inclusion in the TIP.

It was motioned by P. Gordon to amend the TIP to include GET's 2010 program, A. Levron seconded. Motion carried unanimously. (Attachment "D")

At this time, D. Sholmire of LADOTD asked to address the committee on an additional TIP amendments needed to advance an LA DOTD project. She requested the TIP to be amended to include the phrase "Advance Construction" in the funding source for the LA 1 overlay in Lafourche Parish. Discussion ensued as to the scale and location of the project.

It was motioned by T. Arabie to amend the TIP to include the project requested by D. Sholmire of LA DOTD, L. Leblanc seconded. Motion carried unanimously.

Agenda Item # 7
FHWA / LADOTD Approved "Policy and Procedures for the Employment of Consultants"
Leo Marretta, HTMPO Administrator

L. Marretta presented the document entitles "Policy and Procedures for the Employment of Consultants" for adoption by the Policy Committee. He explained that adoption of the document would allow the MPO to employ consultants for certain projects. Discussion ensued.

It was motioned by L. Leblanc to adopt the document, R. Champagne seconded. Motion carried unanimously.

Agenda Item # 8
Public Participation Plan
Josh Manning, HTMPO

J. Manning explained that the MPO needs to update the Public Participation Plan to comply with SAFETEA-LU standards. L. Marretta said this process will require a 45-day public input process that will begin soon.

No action necessary.

Agenda Item # 9
Livability, Sustainability and Air Quality
Jamie Setze, FHWA

J. Setze stated that livability initiatives are being directed at MPOs and communities at the President's direction. He briefly defined livability and explained the reasons for the initiative.

No action necessary.

Agenda Item # 10
2010 HTMPO Compliance Review and Certification
Genevieve Smith, FHWA

J. Setze stated that the FHWY will be reviewing the HTMPO in February to make comments and suggestions on the organization.

No action necessary.

Agenda Item # 11
Other Business

J. Manning updated the committee on the 2009 traffic counting program.

L. Marretta explained the Superbowl planner and letting schedules included in the meeting packet. He then reviewed the upcoming Metropolitan Transportation Plan update timeline.

Agenda Item # 12
Next HTMPO Policy Committee Meeting

It was motioned by B. Lafont to that the next Policy Committee meeting be held on May 13, 2010, R. Champagne seconded. Motion carried unanimously.

Agenda Item # 13
Adjournment

The motion to adjourn the meeting was made by M. Claudet seconded by R. Champagne. Motion carried unanimously.

Date:
Copies to: ***MPO Policy Committee, MPO Interested Parties List, file***

South Central Industrial Association-Governmental Affairs and Infrastructure Committee

Location: 1340 West Tunnel Blvd, The Atrium, Suite 500 B
Date: 2/1/2010

The SCIA Infrastructure and Governmental Affairs Committee will have a full committee meeting in March to review our priorities, as well as recommendations from several legislative committees before the session begins at the end of March. Also, the chairs of Redistricting Subcommittee have met, identified key potential committee members and will be extending invitations before the end of the month, in preparation for our first official meeting with the SCIA Board of Directors on Wednesday, March 17.

On local highway projects:
As of Jan. 31st the Port Fourchon to Leeville segment of the LA 1 Project was 41% complete. The La 1 Coalition is still awaiting results of our $300 million stimulus grant request to construct the Golden Meadow to Leeville 8.3 mile segment of the elevated highway project.

The contractor working on the new Prospect Street Bridge is still in the assembly period. They have been doing some clearing and grubbing, and they are about to start mobilizing some equipment. You will likely see a crane in late March doing a test pile, and the existing bridge will likely close in late April.

The new Bayou Lafourche Bridge in Larose, a $30 million stimulus project under construction, was 10.3% percent complete as of mid January.

The contractor constructing the new $50 million Caminada Bay Bridge to Grand Isle is 3% complete. He has driven the required test piles, and is expected to drive the first permanent concrete piles in early March. He is going to begin dredging operations necessary for construction of the new bridge this Friday.

Finally, the consulting firm of Buchart Horn who is working for DOTD on the EIS for the North-South Corridor reports that they are now redoing the old toll and traffic studies. They were instructed to evaluate the feasibility of putting tolls on it. They are planning two informational meetings, likely in the second week of March, one for the public and one for local, state, and federal agencies. The meeting for the public will likely be in Thibodaux, and I will ask Jane to forward the meeting announcement to all SCIA members.

South Central Industrial Association-Governmental Affairs and Infrastructure Committee

Location: 1340 West Tunnel Blvd, The Atrium, Suite 500 B
Date: 3/31/2010

South Central Industrial Association
Governmental Affairs and Infrastructure Committee
Wednesday, March 31, 2010

Attended: Simone Maloz, Kirk Meche, Roy Francis, Bobby Barthel, Mitch Marmande, Henri Boulet, Reggie Dupre, Shane Thibodaux, Ted Falgout, Cullen Curole, Jane Arnette, Kevin Ghirardi, Francis Richard

Redistricting Subcommittee
The group met 3/30, and will make the following recommendation to the SCIA Board on 4/20:
The priority of the group is for the Houma-Thibodaux-Bayou Cane MSA to remain intact. Future action items include: engaging the chambers and local governments of St. Mary and Assumption Parish, as well as South Central Planning, the other regional chambers and industrial organizations, and the local delegation, especially Rep. Dee Richard and Sen. Norby Chabert who serve on the House and Senate Governmental Affairs Committees, respectively.

Federal Legislation:
Employee Free Choice Act- Obama has made two recess appointments to the National Labor Board. It is a fear among industry that this board will be able to enact powerful standards, etc. without federal legislation. SCIA will ask Senator Vitter's office for an update on the legislation.

Obama Oil and Gas Legislation- There was no new news concerning this item, but SCIA will again ask Senator Vitter's office for an update on the oil and gas tax repeals/budget issues. Simone did distribute an article on the Obama's announcement that he is opening up parts of the East Coast to study and potential drilling.

Regional Highway Projects
LA 1- LA 1 was not awarded funds through round 2 of federal stimulus dollars, aka TIGER Grant. The LA 1 Coalition is working on a strategy for Phase 3 funds from Leeville to Golden Meadow and may ask for SCIA's support in the future when a funding source is identified. Phase 2 of the project is scheduled to be complete on 11/11/11. Henri also cleared up any misconception about a recent announcement from MMS regarding LA 1 securing $24 million in funding, which had been previously awarded.

I-49- Henri attended a public meeting in Morgan City regarding the future of the I-49 corridor. Significant funds are needed to complete both the elevated portion of Lafayette, as well additional bypasses/loops and elevated bridges at the Calumet Cut and Bayou Des Allemands. Several of state delegation members from North Louisiana were meeting with Governor Jindal regarding securing additional funds to complete I-49 in North Louisiana. SCIA and other area organizations need to be aware and be proactive in defending any attempts to create a special taxing district along the corridor, as was attempted in 2009.

North-South Corridor- Ted and Kevin G. attended a public meeting at Nicholls to discuss the current status of the North-South Corridor. It was noted that hurricane evacuation would be a consideration for the project, but not a primary driver like general utility. An EIS is still in the works and could be as far as 2 years away. Kevin G. suggested we stick with the strategy of slowing improving the area in and around the Veterans Memorial

(Gramercy-Wallace) Bridge. Kevin also suggested getting an update on the update of the State's Master Plan re: highways, etc. from DOTD regarding this project and others.

Local Highway Projects

Prospect Street Bridge- Work is scheduled to begin on the bridge on May 24, 2010. SCIA will make a concerted effort to inform its membership of this important date. Kevin G. commented that the State has not responded to several requests made over time (including one from SCIA) regarding how DOTD plans to deal with this traffic interference. As it stands now, there will be DOTD representatives on the ground to deal with traffic in real time. The project is expected to take 2 years, and there are significant incentives and penalties built in to encourage the project finishing sooner than expected and not exceeding the 2 year time frame.

Houma Navigation Canal Lock- Mitch, Reggie and Jane just returned from Washington, D.C., where they participated in meetings concerning the current status of the lock. It appears the Corps has conceded to continue to work on the design of the lock, which will cost approximately $8 million, of which funds have not been appropriated. The Levee District will likely seek SCIA's support in securing these funds.

Dredging of the HNC- Roy reported that the long term deepening study did experience some setbacks in its timeline and is now expected in February of 2011. (Because of this, a delay in the next WRDA bill would be advantageous to this project.) The economic justification is still strong, despite several modifications and revisions to the data collected for the study. In the short term, there have been several reports of shallowing, which would indicate the channel needs to be dredged for maintenance again. Current estimate to dredge 1 million cubic yards is $10 million, a much higher estimate than the latest $6m/2mcy estimate recently given. Roy will be seeking SCIA's support to reach out to industry for large load-outs expected, as well as any relocation costs incurred.

Restoration and Protection

Morganza- Things are steadily progressing with the project on the local level. Work on Reach H2 is scheduled to begin in May, and in April and May, bids are to be opened and accepted on the barge and receiving structure. Reach F is currently going for a permit, and the Levee District is negotiating with one landowner in the area (Harry Bourg Corp.). Mitch will provide Jane with an updated timeline after the next project meeting with the Corps. Reggie and Mitch both thanked SCIA for hosting the workshop last month. There were over 150 participants, and both thought it would be very beneficial to the Levee District in the future.

Restoration- Bids for the Emergency Capacity Dredging Project of Bayou Lafourche by the Bayou Lafourche Fresh Water District with the assistance of La OCPR will be opened in late May. The clearing work has been completed, and this bid is for the larger dredging project of the first 6.2 miles of bayou to allow for greater current pumping capacity. Simone also noted the Convey Atchafalaya project, which is part of the LCA 6 due to have a signed Chief's Report in 12/10, greatly hinges on the use of the HNC Lock as an environmental feature. Simone will pass along project managers contact information to Mitch and Reggie, and will continue to pass along any critical information with regards to the Lock and Morganza to them.

South Central Industrial Association-Governmental Affairs and Infrastructure Committee

Location: 1340 West Tunnel Blvd, The Atrium, Suite 500 B
Date: 4/1/2010

SCIA Update on Highway Projects:

Prospect Street Bridge:

Prospect Street Bridge closure scheduled for May 24th. A Public Outreach Meeting will be held by DOTD on May 5th, from 7-8:30pm at the Terrebonne Council Meeting Room to explain the project benefits, timing, and traffic re-directing during the construction. The public will be able to view project updates on DOTD's website.

North – South Corridor:

By June 1st DOTD will have results of revised traffic counts and toll revenue studies on all 4 routes (3 N/S, and the Back-of-308/Sunshine Bridge alternative) they are considering for this project. After they have these results, they will begin tom prepare the Draft EIS.

LA 1 Project:

The LA 1 Project Phase between Port Fourchon and Leeville is now 49% complete. The state is now acquiring R/O/W and doing necessary Geotechnical Field Work in the Phase II segment, between Golden Meadow and Leeville. $4 million is needed to actually design this 8.3 mile segment.

Caminada Bay Bridge:

The $50 million New Caminada Bay Bridge project to Grand Isle will begin driving of cement pilings 150-160 feet deep and 36 inches wide by the end of this month.

Bayou Lafourche Bridge at Larose:

The $30 million dollar stimulus funded New Bayou Lafourche 5-lane Lift Span Bridge at Larose is now 15% complete.

HTMPO Policy Committee Meeting- Project Update

Location: South Central Planning and Development
Date: 4/15/2010

M E E T I N G M I N U T E S

(Approved by the HTMPO Policy Committee on July 14, 2011)

HTMPO Policy Committee Meeting **Date:** April 14, 2011

Meeting Location: SCPDC's Pelican Room, Gray, LA.

In Attendance

Committee:	City of Thibodaux Mayor, Tommy Eschete - Present Town of Lockport Mayor, Richard Champagne – Absent Terrebonne Parish President, Michel Claudet – Proxy, Jennifer Robinson Terrebonne Parish Council Member, Peter Lambert – Proxy, Patrick Gordon Terrebonne Parish Council Member, Johnny Pizzolatto – Present Lafourche Parish President, Charlotte Randolph – Proxy, Terry Arabie FHWA, Jamie Setze – Present LA DOTD, District 02 Engineer Administrator Michael Stack– Present Assumption Parish President, Marty Triche –Proxy, Erin Watson Terrebonne Parish Council Member, Clayton Voisin – Present Terrebonne Parish Council Member, Arlanda Williams – Present
Staff:	Leo Marretta, SCPDC Joshua Manning, SCPDC Rudynah Capone, SCPDC Garrick Rose, SCPDC
Others in Attendance:	Brandon Buckner, FHWA Jack Gardner, Terrebonne Parish Consolidated Government Joan Schexnayder, Terrebonne Parish Consolidated Government Dennis Herbert, LA DOTD, District Traffic Engineer Sgt. Matt Trahan, LA State Police Troop C Luci Sposito, City of Thibodaux Ryan Perque, City of Thibodaux Henry Richard, Richard Development Anthony Giardina, Rebecca Development Alan Kelly, Bayou Country Cyclists Lyle LeBlanc, LA DOTD David Tippet, LA DOTD Clay Breaud, GSE Associates Peter Rhodes, Public AF "Bob" Blair Jr., Public Ed Hammerli, Bayou Greens Neal Shearer, Insituform Technologies Ken Himel, Bayou Cane FD Darius Bonton, Buchart Horn, Inc. Ronnie Shaw Rickie Pitre, SLECA Jason Tudor, AARP Wallace McCann, Lafourche Parish Government

Lunch and Learn

L. Marretta introduced Garrick Rose, SCPDC Transit Planner. While the attendees ate lunch, G. Rose did a presentation on the Regional Bicycle and Pedestrian Plan and the efforts of the Active Transportation Committee. He made mention of how potential locations for bike routes (including hazards) were identified by committee members during their initial meeting. SCPDC staff is in the process of digitizing (electronically mapping) those maps hand drawn by the committee. He also announced that 2.6M is available for bike trails/paths and trailside facilities through Recreational Trail Grants administered by Michael Domingue the FHWA Recreational Trails Administrator for Louisiana.

Call to Order

C. Voisin called the meeting to order at 12:00 noon.

Invocation

A. Williams led the invocation.

Pledge of Allegiance

T. Arabie led the Pledge of Allegiance.

Roll Call and Introductions

L. Marretta called roll. A quorum is reached.
C. Voisin asked everyone to introduce themselves.

Agenda Item # 1

Approval of Meeting Notes from the November 4, 2010 Policy Committee Meeting

L. Marretta referred the committee members to Tab #1 of the meeting packet to review the draft version of the meeting minutes proposed for approval.

It was motioned by A. Williams to approve the minutes from the January 27, 2011 meeting. P. Gordon seconded. Motion carried unanimously.

Agenda Item # 2

Public Comment/Public Hearing

Chairman Voisin asked if there were any public comments.

R. Shaw spoke about roadway inundation during heavy rain events on LA 24 near the UPS facility in Schriever, remarking that Terrebonne residents rely heavily on this route for hurricane evacuation purposes. He had brought this matter up on several occasions and wondered if there had been any progress on it. L. LeBlanc responded that LADOTD is in the process of addressing the problem. A. Williams said that TPCG has submitted an emergency resolution to support the DOTD's efforts and that they are closely working with L. LeBlanc on this matter.

L. Marretta reminded everyone that local transportation safety concerns can be raised through the Houma Thibodaux MPO and/or the SCPDC Transportation Division. This can be accomplished by put down in writing the specifics of your transportation safety concern on the yellow report sheets supplied at all meetings. R. Capone in her role as Transportation Safety

Coordinator will compile the reported concerns, refer them to the proper authorities and report back on corrective actions taken.

R. Pitre expressed gratitude to DOTD for completing the overlay project on Hwy 90 to LA 24. He also shared his concerns on LA 316 intersections at Savanne Road. L. LeBlanc responded with an update.

N. Shearer spoke of his concern about intersections on LA 311. L. LeBlanc informed that they're working on turning lane projects on LA 311.

No further comments. No actions necessary.

Agenda Item # 3
DOTD Letting Schedules and Current LADOTD Projects Report
Lyle LeBlanc, LADOTD, District 02 Houma Sub-District, Operations Engineer

L. Marretta referred the attendees to Tab #3 of the meeting packet to view the entire list of the latest DOTD letting schedule.

L. LeBlanc updated the Policy Committee on DOTD District 02, Houma Sub-District projects currently under construction or soon to be let to bid. He mentioned DOTD is finishing up an overlay project on LA 1 on Grand Isle and started striping on parts of LA 1. They just finished overlaying in Golden Meadow and are getting ready for intersection improvements on Fourchon Road to terminate elevated sections. The north end of LA 3235 would be overlaid as well. Traffic Safety funds are also available for them to add turning lanes, additional signs, flashing lights, etc. The bridge in Larose is on schedule, and hopefully be connected to LA 308. More overlay projects are coming up in the next few months. Bayou Blue Bridge is scheduled to open on April 27, 2011. Hwy 311 is on preservation list.

Discussion ensued. No action necessary.

Agenda Item # 4
Houma Thibodaux to I-10 Connection Project Update a.k.a. North/South Hurricane Evacuation Route
Darius Bonton, Buchart Horn, Inc.

D. Bonton gave an update on the project, remarking that it is progressing again now that the supplemental study was complete and the route tied to the Sunshine Bridge eliminated. Thus the project's boundaries and potential routes have again been redefined. He showed a slide (in the meeting) that defined the north and south links and showed map exhibits that delineated remaining routes to be considered. His firm has also revised the traffic and toll studies and a public & agency information meeting was held in March 2010.

L. Marretta asked for clarification of the official name for the project. D. Bonton said it's called "Houma Thibodaux to LA 3127 Connection EIS". Discussion ensued.

No further questions. No action necessary.

Agenda Item # 5
I-49 Coalition Meeting Report
Leo Marretta, SCPDC Transportation Division/HTMPO Administrator

L. Marretta referred everyone to Tab #5 of the packet for information regarding the I-49 International Coalition. The LA 1 Coalition had hosted a meeting of the I-49 International Coalition here at SCPDC on March 28, 2011. He said this is a big project with immense benefits that is in search of funding sources. He mentioned the people involved in the Coalition and invited interested folks to join. No questions were raised. No action necessary

Agenda Item # 6
Transportation Improvement Program (TIP) Projects Report

L. Marretta gave an update on some of the projects that the MPO has done for the five-year plan TIP.

A. The Acadian Road West (Canal Street to LA 3185 Intersection Trail)
   The roadway is on hold due to fixed safety issues regarding the five-legged intersection. With some design help from DOTD, a roundabout is planned to be constructed around the said intersection to improve safety and traffic flow. Stage 0 is about to be approved since it was identified to be a feasible project. A serious interest to do a pedestrian and bicycle trail in the same area also sprouted. He invited interested parties to attend the Active Transportation Meeting to get involved in the bike and pedestrian-related projects.
B. Country Drive Widening and St. Anne Bridge Replacement
   This is progressing. Refer to Tab#6 of the meeting packet for more details.
C. Hollywood Road Widening
   This is progressing. Right-of-ways are being acquired. Refer to Tab#6 of the meeting packet for more details.
D. Houma Intelligent Transportation System
   MPO is in Phase 4. The signals are being upgraded. They're exploring on how those lights can function more efficiently. A funding amount of $600,000 is allocated to make a Traffic Management Center at SCPDC. Generators are also going to be placed at the back building facility in case power outages occur.

   No action necessary.

Agenda Item # 7
Locally Funded Projects Update

Assumption Parish, Erin Watson

E. Watson announced that they're in the process of having to repair the Bayou Crab Bridge. DOTD shut it down last year for field inspection. It's been placed on the off-system bridge program but funding is not expected for another two years. L. Marretta asked if there's anything the HTMPO can do to speed up the process. E. Watson said it's already approved for $46,000-repair but no timeline is determined. The Safe Routes to School sidewalk project (Napoleonville Middle School) is almost finished.

Lafourche Parish, Terry Arabie

T. Arabie reported on some of their projects in Lafourche. The drainage master plan, which has transportation implications, is going on pretty well. Completion is targeted for March-April 2012. He also mentioned about the progress on Bayou Lafourche (Highway 1) drainage improvement project and the Golden Meadow overlay project is 85% complete.

Terrebonne Parish, Pat Gordon and Joan Schexnayder

P. Gordon said they're getting ready to kick off the Comprehensive Plan Steering Committee and waiting on the money ($91,000) for bicycle trail construction. They intend to apply for the other recreation trail grant. In addition, J. Schexnayder gave an update on the ongoing projects such as the West Side Blvd. Phase B (18% complete), Thompson Road Phase I, ROW acquisition for Savanne Road, Bayou Gordon's Extension, and Island Road (14% complete). J. Gardner and L. Marretta informed the body about progress on the Houma ITS Project.

Town of Lockport

On behalf of Mayor Champagne, L. Marretta said that the signage project they're working on is progressing.

City of Thibodaux, Mayor Tommy Eschete

T. Eschete said they are planning a locally funded project for the North Canal Blvd road widening, for which they're still short by 3 million dollars. Currently in the design and planning stage it is hoped that legislature is able to find additional sources of funds. L. Marretta added that the transit and Jackson-Canal roundabout projects are progressing.

In closing, L. Marretta asked all of the jurisdictions represented to email their list of project updates to him.

Agenda Items # 8
Present Unified Planning Work Program (UPWP) for Adoption
Leo Marretta, HTMPO Administrator

L. Marretta said that the UPWP, which is HTMPO's annual work program, has been reviewed by the Technical Advisory Committee (TAC). The plan was posted publicly and sent to Policy Committee members for review. It's now subject for adoption.

It was then motioned by J. Pizzolatto to adopt the Unified Planning Work Program (UPWP), A. Williams seconded. Motion passed.

Agenda Items # 9
Policy and Procedures for the Employment of Consultants by the MPO
FHWA/LADOTD Approval Process Update

L. Marretta said the policy and procedures for hiring consultants have already been discussed in the previous meetings and it's been approved by this body. As soon as it is approved by FHWA and DOTD, HTMPO funds can be used to hire consultants that will do services, e.g. traffic engineering. No action necessary.

Agenda Items # 10
HTMPO and Transportation Division Quarterly Activity Report and Regional Sub-Committee Reports

Transportation Safety Subcommittee
Dynah Capone, SCPDC Transportation Division Staff

D. Capone said that a regional safety plan is currently being worked on. It will encapsulate both the hard and soft side of transportation safety improvements, in collaboration between DOTD, LHSC and South Central Safe Community Partnership (SCSCP) member agencies. It will cater to all of SCPDC's six parishes. She also informed the body about the education, prevention and enforcement efforts that the SCSCP does as well as the creation of Facebook and Twitter pages. SCPDC will participate in Troop C's 1st Annual Bayou Region Safety Expo this Saturday, April 16th, at Nicholls Stadium. Sgt. M. Trahan announced additional information on the expo which would feature different safety exhibitions. He invited all to come out to the expo. L. Marretta referred everyone to Tab #10B of the meeting packet.

L. Marretta remarked that part of the upcoming regional safety plan will include bike and pedestrian safety efforts.

Transit Subcommittee – CHSTP, River Parishes Transit Authority, G.E.T. and Thibodaux Transit
Garrick Rose, SCPDC Transportation Division Staff

G. Rose mentioned our ongoing collaboration with Good Earth Transit to get a Thibodaux Circulator Route up and running. Staff support for the River Parishes Transit Authority (RPTA) also continues. Additional funding opportunities for RPTA are being explored. Also part of the initiative is to bring in more funds to provide extended services for trips to health and hospital agencies.

L. Marretta extended an invitation to attend the Transit Subcommittee Meeting on June 8, 2011. Refer to the last page of the meeting packet for list of scheduled meetings. He introduced J. Tudor of AARP.

J. Tudor stated that AARP is looking into collaborating with HTMPO. Their agency can lobby for infrastructure improvements that facilitate increased mobility for an aging population, such as their support of DOTD's Complete Streets Policy. They hope to support MPO's in their human transportation services and extend volunteer work for sidewalk inventories, for instance. Refer to Tab# 10A of the meeting packet for more information.

L. Marretta also referred everyone to the new draft document titled "Citizen Guide to Transportation Planning" that D. Capone has drafted as a primer to educate and inform those interested in learning more about the transportation planning process.

Agenda Item # 11
Other Business

Agenda Item # 12

Transportation Division 2011 Meeting Calendar
Next HTMPO Policy Committee Meeting – Thursday July 14, 2011

L. Marretta announced that all the quarterly meetings for HTMPO are listed in the calendar.

Agenda Item # 13
Adjournment

The motion to adjourn the meeting was made by T. Arabie, seconded by J. Pizzolatto. Motion carried unanimously.

Prepared By: R. Capone, SCPDC Transportation Division Staff

*Date of Policy Committee Approval :*Approved by the HTMPO Policy Committee on July 14, 2011

Copies to: ***MPO Policy Committee, MPO Interested Parties List, file***

South Central Industrial Association-Governmental Affairs and Infrastructure Committee

Location: 1340 West Tunnel Blvd, The Atrium, Suite 500 B
Date: 8/1/2010

The LA 1 Project's Phase 1A between Port Fourchon and Leeville is now 67% complete. In Phase II between Golden Meadow and Leeville, half of the number of R/O/W parcels needed have been acquired and the geotechnical work throughout the whole 8 miles segment is proceeding. To construct this segment, the LA 1 Coalition in partnership with South Central Planning and Development is submitting a $100 million grant request to the US Department of Transportation next week.

Prospect Street Bridge – on schedule, the contractor is about to start driving concrete piling for the new bridge. Timewise, they are 90 days into job.

New Larose Bridge spanning Bayou Lafourche– on schedule, 38% complete, getting ready to pour the bridge piers on the Highway 308 side.

North South Corridor – The final Agencies Coordination Meeting will be held next month, where the consultant Buchart-Horne will present the screening criteria to be used in evaluating the alternatives within the draft EIS. Also they will formally announce what routes will be evaluated in the Draft EIS. They will then move forward on those evaluations and anticipate a public hearing on draft EIS in February. After public input on the draft EIS, they will work on the final EIS which will make a final recommendation on the preferred route.

Agency Coordination Meeting

Location: South Central Planning and Development
Date: 11/19/2010

Meeting Minutes

Project: Houma/Thibodaux to LA 3127 Connection EIS
State Project No. 700-99-0302
Federal Aid Project No. 9902 (518)

Attendees: Phillip Parker, GSE Associates
John Mattille – Wilbur Smith
Dan Broussard – LADOTD
Noel Ardoin – LADOTD
Darius Bonton – Buchart-Horn
Matt Weigel – LDWF
James Barlow – USACE
Joshua Marceaux – USFWS
Kerry Oriol – GSE Associates
Arthur De Fraites – GSE Associates
Mark Stinson – FHWA
Jacob Loeske – Buchart Horn
Kevin Belanger – SCPDC
Jacqueline Farabee – USACE
Josh Manning – SCPDC
Nicole Stewart – Urban Systems
Kevin Mannie – LADOTD
Jeanene Peckham - USEPA

By: Phillip Parker, GSE Associates

Date: November 19, 2010

Re: Summary of November 18, 2010 Agency Coordination Meeting

Handouts

The following is a list of handouts distributed at the meeting.

1. Buchart-Horn Handout
2. Urban Systems Handout

Meeting Summary

1. Introductions

2. Review project status and history

Darius Bonton discussed the project status based upon handouts

3. Traffic

Nicole Stewart discussed the traffic analysis. No analysis was performed for areas south of US 90. A comment was made that the report needs to discuss LOS and volumes in non-technical terms for the public.

4. Screening Analysis

John Mattille discussed the screening performed.

5. Open Discussion

Comments from James Barlow

- A combination of the western and central routes appears to be the best option
- Disagrees that the identified "East/West" option is not technically a north/south option when looking at the bigger picture
- The western and central routes following existing roads but in wetlands
- The team needs to better define linkage for the agencies and general public
- Doesn't appear a 4-lane route is needed to improve traffic
- James will recommend/require a 4-lane roadway through the wetlands to be elevated
- The purpose and need should show more project need and clearly show purpose.
- Better define traffic in the purpose
- The project appears to be a LA 20 upgrade
- Is the driving force economic development for the road?
- The "East/West" is the least damaging alternative
- The USACE would review a draft purpose and need statement prior to making comments
- Recommendations – tighten up the alignments to minimize impacts, use existing ridges to the extent possible, use existing road

Comments from Arthur De Fraites

- The connection across Gramercy provides more evacuation impacts.

Comments from Jeanene Peckham

- The project was developed by the planning commission years ago and they appear to have a preselected corridor.

Comments from Bob Mahoney

- The eastern route can be dropped (concurred by group)
- The "East/West" Alignment can be dropped. The USACE did not concur at this time based upon current Purpose and Need.

March 17, 2011

Ms. Jeanene Peckham
Environmental Protection Agency
6WQ-EM
1445 Ross Avenue
Dallas, TX 75202

RE: Houma-Thibodaux to I10 Conn. SA # 700-99-0302
F.A.P. No. HP-9902(518), HP-9907(533)
Houma/Thibodaux to LA-3127 Connection EIS
Response to Agency Comments Received February 18, 2011

Ms. Peckham:

Thank you for attending the November 18, 2010 Agency Coordination meeting held at South Central Planning and Development Commission for the referenced project. The purpose of this meeting was to present: (1) the results of the revised traffic analysis; (2) the refined project Purpose and Need, and (3) our recommendation on alternatives to carry into the draft EIS. The January 2006 traffic study was updated to reevaluate the three original alternatives under current traffic conditions and to address the forecasted traffic impacts of a project alternative traversing the Bayou Lafourche Ridge connecting to the Sunshine Bridge.

During the discussions at the meeting, the resource agencies in attendance requested that additional information on the refined Purpose and Need be provided in order to facilitate their commenting on the recommendations presented. The project team agreed to provide an advance copy of the draft project Purpose and Need chapter from the draft environmental impact statement to facilitate agency review of the information presented in the November meeting. On January 24, 2011 the draft Purpose and Need chapter was made available for agency review via a project FTP site. With the notice of the availability of the draft purpose and need chapter the project team requested comments from the resource agencies by February 14, 2011 on the recommended alternatives to be carried into the draft EIS.

On March 10, 2011 we received your comments. In response we offer the following:

- You referenced a 2005 interagency meeting where the decision was made to eliminate hurricane evacuation from the Purpose and Need. Hurricane evacuation was never eliminated from the Purposed and Need; however, following initial agency comment on the Purpose and Need in February of 2005, the focus of the project was shifted from hurricane evacuation to transportation linkage. According to the project record, the original Purpose and Need along with a request for concurrence was submitted to EPA, USACE and USFW on January 12, 2005; comments were received the final week of February 2005. Those comments, along with an analysis of recent hurricane traffic movements and the unmet need for improved transportation linkage prompted the project team to redraft the Purpose and Need shifting the focus to transportation linkage while maintaining hurricane evacuation as a secondary need. The revised Purpose and Need along with a "thank-you" letter was forwarded to resource agencies on April 14, 2005.

- Regarding your comments, "*…the purpose and need statement is so narrowly constructed as to provide selection of only a "north-south" option*" and "*…the so-called "east-west" alternatives do reach the desired end point described…*", the project team feels due diligence has been achieved in considering not only several north-south routes developed from dozens of trend lines generated by route optimization software, but also several east-west routes traversing the Bayou Lafourche Ridge tying to the Sunshine Bridge. A supplemental screening study prepared in response to resource agencies' request to independently evaluate routes tying to the Sunshine Bridge

resulted in the inclusion of an east-west route in the NEPA document. During preliminary evaluations, this east-west route, along with north-south routes originally considered, was analyzed as part of a revised traffic study to assess each route's impact on forecasted travel demand. Results of the revised traffic study indicated the east-west route had virtually no impact on forecasted travel demand in the north-south direction, while several of the north-south routes considered actually attracted traffic. Results of the traffic study along with the methodology used in conducting the study were presented at the November 18th Agency Coordination meeting.

- In response to your comment, "*…concentrate on alternatives such as widening and elevating the existing LA-20, and improvements to other existing roads…"*, the project team will consult with LADOTD and FHWA to consider evaluating the widening of LA-20 as an alternative to satisfy the project's Purpose and Need. The Central and Western Alternatives will also be evaluated in greater detail in the draft EIS.

- Based on the alternative connecting to the Sunshine Bridge's inability to impact existing or forecasted travel demand in the north/south direction and lack of evidence to the contrary, the project team is prepared to proceed as indicated during the November 18, 2010 Agency Coordination meeting by eliminating that alternative from further consideration in the draft EIS. Evaluation of this alternative up to this point will be thoroughly documented in the Alternative Section of the draft EIS.

- The project team is also prepared to eliminate the Eastern Alternative from further consideration in the draft EIS. Because the alternative lies almost wholly in wetlands, the decision was made during discussions with agency representatives at the May 2006 Agency Coordination meeting to eliminate any alternative within the eastern corridor due to the high impact to high quality wetlands compared to other alternatives considered. In addition, results of the revised traffic study indicate the Eastern Alternative did not provide the same level of transportation linkage throughout the populated region as other alternatives considered. Evaluation of this alternative up to this point will also be documented in the Alternative Section of the draft EIS

Ms. Peckham we appreciate your comments and hope you find these responses appropriate in addressing your concerns. We look forward to reengaging EPA upon completion of the draft environmental impact statement.

Regards,

Darius Bonton, PE
Project Manager
Buchart Horn, Inc

Cc: Noel Ardoin, Louisiana Department of Transportation and Development
Robert Mahoney, Federal Highway Administration
Mark Stinson, Federal Highway Administration

March 3, 2011

Mr. Pete J. Serio
Chief, Regulatory Branch
Department of the Army
New Orleans District, Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267

RE: Houma-Thibodaux to I10 Conn. SA # 700-99-0302
F.A.P. No. HP-9902(518), HP-9907(533)
Houma/Thibodaux to LA-3127 Connection EIS
Response to Agency Comments Received February 18, 2011

Mr. Serio:

We appreciate your agency's attendance at the November 18, 2010 Agency Coordination meeting held at South Central Planning and Development Commission for the referenced project. The purpose of this meeting was to present: (1) the results of the revised traffic analysis; (2) the refined project Purpose and Need, and (3) our recommendation on alternatives to carry into the draft EIS. The January 2006 traffic study was updated to reevaluate the three original alternatives under current traffic conditions and to address the forecasted traffic impacts of a project alternative traversing the Bayou Lafourche Ridge connecting to the Sunshine Bridge.

During the discussions at the meeting, the resource agencies in attendance requested that additional information on the refined Purpose and Need be provided in order to facilitate their commenting on the recommendations presented. The project team agreed to provide an advance copy of the draft project Purpose and Need chapter from the draft environmental impact statement to facilitate agency review of the information presented in the November meeting. On January 24, 2011 the draft Purpose and Need chapter was made available for agency review via a project FTP site. With the notice of the availability of the draft Purpose and Need chapter the project team requested comments from the resource agencies by February 14, 2011 on the recommended alternatives to be carried into the draft EIS.

On February 18, 2011 we received your comments. In response to your comments we offer the following:

- Your response *"What directions on a compass are Gramercy from Thibodaux or Baton Rouge from Thibodaux?"* Due to the unique geography of the region, there are no strictly east-west or north-south roadways. The project team is using these terms in a general sense, which represents the overall direction a particular roadway travels. These terms for describing the direction of travel for the roadways, east-west or north-south, is consistent with the way the previous studies have been documented for this project. Your response *"How would a traveler from this area get to Baton Rouge now?"* As shown on the maps provided, currently travelers within the study area would be required to use LA 20 to travel in an overall northerly or southerly direction to access LA 1/LA 308, LA 3127, and/or US 90 to travel to Baton Rouge. Your response *"A roadway can run east-west for a short distance at some point but this does not mean it's not a north-south connector. Please provide clarification of your meanings and instead of using terms like east-west and north-south offer a definition in terms of destination."* Transportation planning studies typically look at the general direction of transportation corridors as they move vehicles through an area. These movements are described in context as how these corridors function and not necessarily the actual directional changes that occur along the alignment. Detailed directional changes of a roadway facility are normally documented for the alternatives analysis section.

- In response to the several questions that were asked:

  1) *What is system linkage?* The project team will provide a definition of system linkage in the Purpose and Need chapter.

  2) *Why is improved linkage necessary?* The need for improved linkage is explained throughout the chapter, see the section titled "Why is north-south transportation linkage needed" beginning on page 2-8. This need was identified by the Houma-Thibodaux Metropolitan Planning Organization's long range transportation plan.

  3) *What areas need improved linkage and why?* The Houma-Thibodaux area is the only metropolitan area in Louisiana that is not directly served by an interstate facility. The study area is in need of improved access to the roadway network to provide improved access to LA 3127, which will allow network users more options to other areas.

  4) *Is this a two or four-lane facility?* The proposed roadway is being evaluated as a 4-lane, limited access facility where appropriate.

- Your response *"Page 2-3 discusses "Why the project is needed?", and this discussion is dominated by the need for a north-south emergency and evacuation route. How was this determined?"* In the paragraph "Why is the project needed?" on page 2-3, two main needs, system linkage and emergency and hurricane evacuation, are presented. The project team will address this paragraph to make sure the reader understands the primary need is system linkage and the secondary need is improved emergency evacuation. These needs were identified through recent transportation planning initiatives for the region, which are mentioned on page 2-3, in the section titled "How were these needs identified?". Your response *"An adequate description of the project is necessary as it provides the information to define the purpose and identify a need."* A detailed project description, along with the project's history and background will be provided in Chapter 1, the introduction to the draft EIS. This will provide the reader with an overall basic understanding of the project. Your response "*The Basic Purpose of this project is to provide for regional transportation needs and as such the proposed project does not require the location to be within a special aquatic site to fulfill its basic purpose.* This comment is acknowledged. As part of the NEPA process a wide range of alternatives are evaluated to ensure that all potential impacts to both the human and natural environments are considered. Your response *So, what is the overall purpose of the proposed roadway?* The overall project purpose is stated on page 2-1 of the Purpose and Need.

- Your comment *"Discussion is spent on how the study area is growing but focus is on such areas as Larose, Galliano, Ascension, St. Charles and St. John the Baptist which are located outside of the study area. Also businesses in Larose, Golden Meadow, Napoleonville, Metairie, Thibodaux and Houma were presented as being supported by this proposed roadway. If you are including such areas then the tables provided need to be updated and the contributions by such communities located outside the study area may need to be considered through broadening the study area and considering alternatives in these other areas. In expanding the study area, you could elaborate more fully in the "Affected Environment" section the role these developed areas play in supporting the need for the highway."* Portions of Ascension, St Charles and St John the Baptist parishes, although small, are located within the current study area boundary. Larose and Galliano are located outside the study area boundaries but are mentioned to illustrate that the major employers are located generally to the north and south of the study area. The roles of the Parishes and the communities will be discussed in the existing conditions and affected environment sections of the draft EIS.

- Your response *"The facts that were used to determine/identify the north-south corridor/evacuation route as a major need within the study area and region, as stated on page 2-3 of your document, should be discussed in great detail in the "Alternatives Section" of the EIS."* The Alternatives section of the document will expand the discussion of the facts that were used to determine/identify the reasonable alternatives that will be evaluated in the draft EIS.

- Your response *"The section titled "Where do people work and how do they travel to get there?" states the businesses in four cities and the number of employees for each. The information is somewhat disconnected as it does not really explain how these people travel and where the majority of these employees live. You should elaborate fully in the discussion of the "Affected Environment".* The project team will reevaluate this section of the document to present the information in a more concise manner.

- Your response *"Also using descriptive terms such as "Bayou Region" does not adequately describe the area in question."* The project team will use the most relevant term to describe the Region.

- Your response "*Other questions about the roadway that could be answered in your alternatives discussion are:*
  What would the estimated maximum annual throughput be for this project?
  What is the estimated maximum annual throughput on the existing roadways?"
  Throughput represents the number of vehicles processed by the system during a period of time. Traffic volumes used and evaluated were Average Daily Traffic (ADT) and Annual Average Daily Traffic (AADT). These traffic volumes provide information not only for a small window of time but also volumes experienced over a longer period (the entire year). These volumes would be similar to volumes collected for the throughput. We further "translate" these volumes/throughput by dividing traffic volumes by the maximum capacity the roadway facility will handle. This calculation then equates to a scale that is identified as Level of Service as discussed in the Purpose and Need. Findings from the traffic analysis, including actual traffic volumes and roadway capacity, were presented at the November 18th Agency Coordination meeting. A copy of the traffic report can be provided upon request. "*When would the estimated maximum annual throughput on the existing roadways be exceeded?"* According to the traffic study, LA-20, the only existing facility providing direct north/south access to and from the study area has already grossly exceeded its capacity resulting in an unmet travel demand that is forced to use longer, more circuitous routes to get to and from the study area.
  "Why can't existing roadways be upgraded?" The project team will consult with LADOTD and FHWA to consider evaluating the widening of LA-20 as an alternative to satisfy the project's Purpose and Need.

- Your response *"How was the information provided in paragraph three of page 2-18 determined?* The information on page 2-18 under the section "What happened during the evacuation during Hurricanes Gustav and Katrina?" was obtained from the traffic report referenced above. These traffic numbers were collected by South Central Planning and Development. Your response "*Over what time period are these traffic counts and what was the total usage (hourly vs. daily)?"* The traffic volumes shown in Table 2.7 are from August 30, 2008; these volumes are daily. The project team will clarify this in the table. Your response "*Also what was the delay time that was recorded?"* Delay time was not part of the information collected by South Central Planning and Development.

- Your response *"Public interest goes much further than the local sentiment; it involves the consideration of the full public interest by balancing the favorable impacts against the detrimental impacts. The Corps has certain processing steps to follow when evaluating a proposed project."* The project team understands that USACE has a long list of factors which encompass USACE's definition of public interest review, per 33 CFR Part 320(a)(1), which impact USACE's decision on whether to issue a permit. This section of the Purpose and Need, "What is the sentiment of the public in relation to the proposed project?" illustrates the public opinion that has been received up to this point of the project as it is relevant to the need of the project. Additional public involvement activities and sentiment will be documented in a separate chapter of the draft EIS. The project team will address the USACE's public interest review factors to the fullest extent practicable in the draft EIS and if necessary, revisit during the 404 permit process.

- Based on the alternative connecting to Sunshine Bridge's inability to impact existing or forecasted travel demand in the north/south direction and lack of evidence to the contrary, the project team is prepared to proceed as

indicated during the November 18, 2010 Agency Coordination meeting by eliminating that alternative from further consideration in the draft EIS. Evaluation of this alternative up to this point will be thoroughly documented in the Alternatives section of the draft EIS.

- The project team is also prepared to eliminate the Eastern Alternative from further consideration in the draft EIS. Because the alternative lies almost wholly in wetlands, the decision was made during discussions with agency representatives at the May 2006 Agency Coordination meeting to eliminate any alternative within the eastern corridor due to the high impact to high quality wetlands compared to other alternatives considered. In addition, results of the revised traffic study indicate the Eastern Alternative did not provide the same level of transportation linkage throughout the populated region as other alternatives considered. Evaluation of this alternative up to this point will also be documented in the Alternatives section of the draft EIS

Mr. Serio we appreciate your comments and hope you find these responses appropriate in addressing your concerns. We look forward to reengaging the U.S. Department of Army, Corps of Engineers upon completion of the draft EIS.

Regards,

Darius Bonton, PE
Project Manager
Buchart Horn, Inc

Cc: Noel Ardoin, Louisiana Department of Transportation and Development
Robert Mahoney, Federal Highway Administration
Mark Stinson, Federal Highway Administration

February 28, 2011

Mr. Joshua Marceaux
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Lafayette, LA

RE: Houma-Thibodaux to I10 Conn. SA # 700-99-0302
F.A.P. No. HP-9902(518), HP-9907(533)
Houma/Thibodaux to LA-3127 Connection EIS
Response to Agency Comments Received February 18, 2011

Mr. Marceaux:

Thank you for attending the November 18, 2010 Agency Coordination meeting held at South Central Planning and Development Commission for the referenced project. The purpose of this meeting was to present: (1) the results of the revised traffic analysis; (2) the refined project Purpose and Need, and (3) our recommendation on alternatives to carry into the draft EIS. The January 2006 traffic study was updated to reevaluate the three original alternatives under current traffic conditions and to address the forecasted traffic impacts of a project alternative traversing the Bayou Lafourche Ridge connecting to the Sunshine Bridge.

During the discussions at the meeting, the resource agencies in attendance requested that additional information on the refined Purpose and Need be provided in order to facilitate their commenting on the recommendations presented. The project team agreed to provide an advance copy of the draft project Purpose and Need chapter from the draft environmental impact statement to facilitate agency review of the information presented in the November meeting. On January 24, 2011 the draft Purpose and Need chapter was made available for agency review via a project FTP site. With the notice of the availability of the draft purpose and need chapter the project team requested comments from the resource agencies by February 14, 2011 on the recommended alternatives to be carried into the draft EIS.

On February 18, 2011 we received your comments. In response to your comments we offer the following:

- You responded that it appears that the main purpose of the purpose and need of the proposed project is to improve traffic flow during hurricane evacuations. While the project would improve hurricane evacuations, the primary intent of this project is to improve north/south mobility and connectivity during "everyday" (non-hurricane) conditions. The need to improve hurricane evacuation is secondary to improved traffic conditions in the north/south direction during non-hurricane events. Analysis of existing and forecasted traffic conditions for the "no-build" scenario has indicated inadequate capacity during non-hurricane evacuation scenarios. These unfavorable conditions are further exacerbated during hurricane evacuation conditions. We will review the language presented in the draft Purpose and Need chapter to clarify the primary and secondary needs of the project as indicated above and revise the chapter accordingly.

- Regarding your comment on the declining population trends throughout the study area, information presented in the draft purpose and need chapter indicates an overall "reduction in growth" on a per parish level between 2000 and 2009 compared to 1990 and 2000. However, the regional population growth rate (10.7%) has outpaced state population growth rate(0.5%) between 2000 and 2009 by more than twenty times. This trend further supports the need to adequately accommodate growing traffic demand.

- Based on the alternative connecting to Sunshine Bridge's inability to impact existing or forecasted travel demand in the north/south direction and lack of evidence to the contrary, the project team is prepared to proceed as indicated during the November 18, 2010 Agency Coordination meeting by eliminating that alternative from further

consideration in the draft EIS. Evaluation of this alternative up to this point will be thoroughly documented in the Alternative Section of the draft EIS.

- The project team is also prepared to eliminate the Eastern Alternative from further consideration in the draft EIS. Because the alternative lies almost wholly in wetlands, the decision was made during discussions with agency representatives at the May 2006 Agency Coordination Meeting to eliminate any alternative within the eastern corridor due to the high impact to high quality wetlands compared to other alternatives considered. In addition, results of the revised traffic study indicate the Eastern Alternative did not provide the same level of transportation linkage throughout the populated region as other alternatives considered. Evaluation of this alternative up to this point will also be documented in the Alternative Section of the draft EIS

- In response to your office's request to consider the expansion of existing north-south highway facilities, the project team will consult with LADOTD and FHWA to consider evaluating the widening of LA-20 as an alternative to satisfy the project's Purpose and Need. The Central and Western Alternatives will also be evaluated in greater detail in the draft EIS.

Mr. Marceaux we appreciate your comments and hope you find these responses appropriate in addressing your concerns. We look forward to reengaging the U.S. Department of Fish and Wildlife upon completion of the draft environmental impact statement.

Regards,

Darius Bonton, PE
Project Manager
Buchart Horn, Inc

Cc: Noel Ardoin, Louisiana Department of Transportation and Development
Robert Mahoney, Federal Highway Administration
Mark Stinson, Federal Highway Administration

BOBBY JINDAL
GOVERNOR

SCOTT A. ANGELLE
SECRETARY

State of Louisiana

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT

RECEIVED
FEB 14 2011
By KA

February 9, 2011

Buchart Horn, Inc.
18163 East Petroleum Dr.
Suite A
Baton Rouge, LA 70809
Attn: Darius Bonton, P.E.

Re: Houma-Thibodeaux To LA 3127 Connection

Dear Mr. Bonton

I have reviewed the purpose and need, preliminary screening process and recommended alternatives. Comments at this time would be to avoid and minimize wetland impacts to the maximum extent practicable. Currently, the project is located outside the coastal zone boundary. However, the coastal zone boundary may be altered to include the project at some point. Please continue to include our office on any correspondence concerning changes or updates to the project as we would like the opportunity to comment on any future project developments.

If you have any questions, you may contact Ontario James at (225)342-7358.

Sincerely,

Ontario James

Ontario James

Post Office Box 44487 • Baton Rouge, Louisiana 70804-4487
617 North Third Street • 10th Floor • Suite 1078 • Baton Rouge, Louisiana 70802
(225) 342-7591 • Fax (225) 342-9439 • http://www.dnr.louisiana.gov
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South Central Industrial Association-Governmental Affairs and Infrastructure Committee

Location: 1340 West Tunnel Blvd, The Atrium, Suite 500 B
Date: 2/1/2011

SCIA IGA Committee Meeting
February 1, 2011
3:30 p.m.
Rebecca Pond
Chair: Simone Maloz
Co Chair: - Henri Boulet
Minutes by: Jane Arnette, SCIA Executive Director for Simone Maloz, Chair

I. Agenda and sign in sheet were distributed. See attached for both.
II. Redistricting – all discussion based on upcoming census report
   A. Information distributed included:
      1. Meeting schedule for the Joint Governmental Affairs Committees
      2. A list of members of both committees with contact information
      3. Summary of Redistricting subcommittee information with timeline of events
      4. Ideal District Population chart for 2011
      5. 2010 Census Data Maps by Population change and apportionment
      6. Coastal Plan Map
   B. Congressman Jeff Landry
      1. # 1 priority is to keep Terrebonne and Lafourche together.
      2. Will consider the coastal map, but Congressman Boustany would like to make sure Lafayette and Lake Charles are together
      3. Need to review all possibilities
      4. Will present a map for the February 14th meeting
   C. Senator Norby Chabert - Federal
      1. Keep Terrebonne and Lafourche together
      2. First drawn will be the minority district
      3. Second drawn will be Shreveport, but this one is in question because of Rodney Alexander (Alexandria) and John Fleming (Shreveport) who will both want to retain their seats in Congress
      4. Must maintain no retrogression unless it is unavoidable.
      5. Will have several plans for February 14, 2011
   D. Representative Dee Richard
      1. Is on the House committee and will work with the group to push for the best possible solution
      2. Is supporting Representative Joe Harrison's coastal plan
      3. Though Rep Joe Harrison did not attend because of a prior commitment, he will have several alternative maps available for February 14, 2011
   E. Senator Norby Chabert – Discussion on state senatorial districts
      1. We need to determine and know the state lines
      2. Establish 2 senators for Lafourche and Terrebonne, rather than three.
      3. Senator Joel Chaisson is in agreement with this.
      4. Maintain Norby's district (55% Terrebonne and 45% Lafourche) and make the other senate district Upper Terrebonne and Lafourche plus Assumption (41 % Terrebonne and 59% Lafourche & Assumption)
      5. This would remove St. Mary from the equation, which would go west.

F. Schedule a meeting on February 14, 2011to include all HT chamber, Lafourche Chamber, Thibodaux Chamber and BIG. Simone will contact them with the location and time information and also send it out to all SCIA committee members.

III. LA 1 Review – Henri Boulet

A. Working with DOTD on funding for building
B. Purpose is to focus on segmenting to build smaller sections that may be easier to obtain smaller portions of funding
C. Ultimate goal is to get everything built that can be built even it has to be segmented

IV. North South Corridor – Henri Boulet

The EIS will take place this summer. More information once that takes place.

V. I-49 – Henri Boulet

A. Henri Boulet is SCIA's representative on the I-49 Coalition
B. The SCIA board felt Henri was the best choice because of his extensive knowledge of Infrastructure matters and his close association with the people involves with such matters.
C. A regional meeting will take place in Houma on March 28th or 29th.

VI. Houma Navigation Canal – Roy Francis

A. Dredging took place in January
B. We must increase ranking for the HNC in order to assure our needs
C. David Rabalais with Terrebonne Port is heading up a Track Vessel Movement Plan. He is also going to host quarterly meetings. SCIA needs to be in attendance at these meetings.
D. Scott Angelle, Secretary of DNR is on top of the HNC situation
E. Representative Gordy Dove is helping with the HNC issues.

VII. Port Fourchon – Henri Boulet

Chet is trying to get $3.1 million for LED and DOTD to elevate a road at the Port

VIII. NSU – Laynie Barrilleaux

Currently, several curriculums are being considered for termination, including Geometrics, which is being monitored by a group of business people. At this time, we should just remain informed. If action is needed, Laynie will get in touch with us about it.

Meeting adjourned at 5:00 p.m.

DOTD Meeting

Location: LADOTD Headquarters
Date: 4/6/2011

Houma-Thibodaux to I-10 Connector EIS

DOTD Alternative Development Meeting
Minutes

Meeting Date:	**April 6, 2011**
Project Name:	**Houma-Thibodaux to I-10 Connector EIS**
Project Number:	**State Project No. 700-99-0302/H.005257.2**
Minutes Prepared By:	**Darius Bonton**
Meeting Location:	**LA DOTD Headquarters, Baton Rouge, LA**

Meeting Minutes are as follows:

- Alternatives were presented for the Western, Central, and widening of LA 20 Alignments.
- A discussion was held evaluating the alternatives against the purpose and need, impacts to the human and natural environments, traffic demands, and current and future development of the project area.
- Based on this discussion, it was determined that the widening of LA 20 as a stand-alone alternative did not meet the purpose and need due to lack of system redundancy, inability to provide additional system links, and lack of limited access (due to numerous access links along the corridor). As a result, LA 20 was removed from further consideration.
- The Western and Central Alignments were selected to be carried forward in the alternative development process. And although LA 20 (as a stand-alone alternative) was removed from further consideration, a decision was made to incorporate portions of existing alignment (LA 20, LA 311, and LA 316) into the Western and Central Alignments.

HTMPO Policy Committee Meeting- Project Update

Location: South Central Planning and Development
Date: 10/13/2011

M E E T I N G M I N U T E S

HTMPO Policy Committee Meeting **Date:** October 13, 2011

Meeting Location: SCPDC's Pelican Room, Gray, LA.

In Attendance

Committee:	City of Thibodaux Mayor, Tommy Eschete – Proxy, Ryan Perque Town of Lockport Mayor, Richard Champagne - Absent Terrebonne Parish President, Michel Claudet – Proxy, Jennifer Robinson Terrebonne Parish Council Member, Peter Lambert – Proxy, Patrick Gordon Terrebonne Parish Council Member, Johnny Pizzolatto – Present Lafourche Parish President, Charlotte Randolph – Proxy, Terry Arabie FHWA, Jamie Setze – Proxy, Brandon Buckner LA DOTD, District 02 Engineer Administrator Michael Stack– Proxy, Lyle LeBlanc Assumption Parish President, Marty Triche – Absent Terrebonne Parish Council Member, Clayton Voisin – Present Terrebonne Parish Council Member, Arlanda Williams – Proxy, Doug Bourg
Staff:	Leo Marretta, SCPDC Joshua Manning, SCPDC Rudynah Capone, SCPDC
Others in Attendance:	Jack Gardner, Terrebonne Parish Consolidated Government Joan Schexnayder, Terrebonne Parish Consolidated Government Sgt. Matt Trahan, LA State Police Troop C Floyd Benoit, Lafourche Parish School Board Vivian Aucoin, LDEQ Tim Bergeron, LDEQ Dennis Hebert, LADOTD Shalanda Cole, LADOTD Emery Chauvin III, LADOTD Vickie Larke, Rep. Joe Harrison Terri Dupre, Meyer Engineers Henry Richard, Richard Development Jacob Loeske, Buchart Horn Alan Krouse, Buchard Horn Theresa Ellender, Resident Kermit Kraemer Harvey Chauvin

Lunch and Learn

At 11:45 a.m., L. Marretta introduced Vivian Aucoin and Tim Bergeron from Louisiana Department of Environmental Quality to give some updates on Ozone air quality standards. While everyone enjoyed lunch, V. Aucoin delivered her talk. She mentioned that President Obama announced on September 22, 2011 that EPA ozone air quality standards set by Bush Administration should remain, which is at 75 ppb. This is good news for Houma-Thibodaux community as its current value is at 74 ppb. She also gave updates on the national air quality standards for SO2 (Sulfur Dioxide). She finished by encouraging everyone to visit LDEQ's website as well as EPA's websites for Ozone and SO2. L. Marretta expressed appreciation for LDEQ's efforts in keeping HTMPO up-to-date. V. Aucoin pointed out that for Houma-Thibodaux (H-T) to be such a small community, it has been very proactive. Discussion ensued on how to keep our area below the air quality standards.

Call to Order

C. Voisin called the meeting to order at 12:15 p.m.

Invocation

J. Pizzolatto led the invocation.

Pledge of Allegiance

T. Arabie led the Pledge of Allegiance.

Roll Call and Introductions

C. Voisin announced that proxies have submitted their proxy letters. L. Marretta called roll. A quorum is reached. C. Voisin asked everyone to introduce themselves.

Agenda Item # 1

Approval of Meeting Notes from the July 14, 2011 Policy Committee Meeting

L. Marretta referred the committee members to Tab #1 of the meeting packet to review the draft version of the meeting minutes proposed for approval.

It was motioned by J. Pizzolatto to approve the minutes from the July 14, 2011 meeting. T. Arabie seconded. Motion carried unanimously.

Agenda Item # 2

Public Comment/Public Hearing

Chairman Voisin asked if there were any public comments.

Hearing none from the public, L. Marretta informed that he had a conversation with Mr. Mark Atzenhoffer from Lafourche Parish who requested that we take a look at the intersection on Valhi and St. Charles. Concerns have been raised about waiting for two cycles of the signal light to be able to turn left onto St. Charles. P. Gordon said he would pass the concern on the actuators of the signal light to the Public Works Department of TPCG.

No further comments. No actions necessary.

Agenda Item # 3
DOTD Safe Routes to School (SRTS) Grant Program
Shalanda Cole, Program Coordinator

S. Cole said that SRTS encourages more kids to walk and bike to school. Funds are available to create a safer environment around the schools (from Grades K to 8, not high schools unless they include 8th Grade). Funds are broken down into 5E's which are set into two components of the program: infrastructure and non-infrastructure improvement. Infrastructure covers the engineering E, which may include crosswalks, sidewalks, speed limit signs and warning signs. Non-infrastructure covers the 4 E's: education, encouragement, enforcement and evaluation. She gave examples of eligible items covered in the SRTS program. It's a cost-reimbursable program, not a grant. Applications will be available during the first week of January 2012 and deadline is the last week of February 2012. Two schools in our area have been funded in this program, that being Napoleonville Middle School and Lockport Elementary School. S. Cole said DOTD is looking forward to getting more applications for the upcoming funding cycle. Each project has a maximum funding amount of $250,000 for infrastructure and $50,000 for non-infrastructure. A parish can have more than one application in an area, not more than one per school though. SRTS is something that the Policy Committee members should recommend to their parish councils and school boards. R. Capone is SCPDC's regional contact for this program.

P. Gordon asked about the distance of improvements and S. Cole explained that the proposed improvements must be within a 2-mile radius of an eligible school. Application information is found on DOTD website. T. Arabie mentioned about the possibility of including Alidore Community School and two others in Raceland (Upper & Middle Schools). R. Capone will follow up with T. Arabie and F. Benoit. S. Cole announced that her team was willing to come down to our area until end of the year to assist the parishes in conducting initial assessments of schools identified to be potential candidates for funding. J. Robinson raised a question if it was reimbursable and if a local match was needed; S. Cole responded it's reimbursable but no local match is required.

No further questions. No action necessary.

Agenda Item # 4
South Central Planning and Development Commission's Transportation Division
Quarterly Activity Reports & Sub-Committee Reports, Transportation Division Staff

Regional Transportation Safety Program Update (Rudynah Capone, Safety Planner)

R. Capone reported there are three upcoming opportunities that all jurisdictions in our area can participate in and benefit from, namely:

(1) Road Safety 365 Workshop organized by the Local Technical Assistance Program (LTAP). R. Capone encouraged stakeholders to attend or send a representative to the one scheduled on October 25, 2011 at the Terrebonne Library- North Branch on East Park Avenue. It's a whole day class that teaches engineers, designers, planners and safety folks to identify and correct road safety problems in practical ways. Contact LTAP to pre-register.

(2) South Central Regional Transportation Safety Plan (SCRTSP) – Stakeholders Meeting. R. Capone invited safety partners and interested parties to attend the meeting on October 26, 2011 at 10:00 a.m. The

SCRTSP has drafted Action Plans on four areas (seatbelt, alcohol, young drivers and infrastructure). She expressed hopes that concerned agencies in all six parishes will be able to attend.

(3) Local Road Safety Program by LTAP. R. Capone encouraged everyone to take advantage of this opportunity for local road safety improvements. She suggests agencies begin the program application process with Marie Walsh and LTAP by completing the Intersection Nomination Form or Roadway Departure Nomination Form distributed at this meeting.

R. Capone was asked to speak a little about another DOTD program called the Transportation Enhancement Program (TEP). She specified that TEP is similar to SRTS except that the improvements don't have to be done around schools. They can be implemented on local and state roads. The funding cycle for 2011 has just closed. HTMPO assisted TPCG in applying for sidewalk improvements for both Downtown Houma and Evergreen Junior High connecting through HL Bourgeois sidewalks. The HTMPO also assisted the City of Thibodaux in applying for pedestrian walkway on Acadian Road corridor and the Town of Lutcher for 5th Street sidewalks and bike lane restriping. There's no official word yet on which projects have been approved. L. Marretta assured that everyone will be kept posted.

Regional Transit Program Update

L. Marretta reported that as per Wendell Voisin of Good Earth Transit the new Thibodaux Loop transit line implementation was progressing nicely. He and SCPDC have also been evaluating alternative bus routes to accommodate some low-income or single-car household families in the Levy Town area. SCPDC is also working with GET in relationship to their Title VI compliance, public outreach and Limit English Proficiency (LEP) requirements. The state DOTD Public Transportation Section, the local Association of Retarded Citizens (ARC) and local Councils on Aging (COA) meet quarterly here at SCPDC and have been working to coordinate regional transit services and demand.

Active Transportation Subcommittee Update

L. Marretta announced that the Active Transportation Subcommittee has been meeting quarterly here at SCPDC. He referred everyone to Tab #11 to see the meeting schedules. He encouraged interested parties to get involved in an effort to develop a Regional Bike and Pedestrian Plan. Information on some of the work that the subcommittee has done in relationship to trails will be shared later in the meeting. Our plan is to look at gaps between routes and how to connect them (to get from one place to another by alternative mode of transportation).

No questions. No action necessary.

Agenda Item # 5
Letting Schedules & Current DOTD Projects Update
Lyle LeBlanc, DOTD Area Engineer

L. LeBlanc announced they just finished the new four-lane area in Bayou Blue on Hwy 24 in Larose. A lot of bridge projects are on schedule such as the rural lift bridge in Larose. In about a month or two, loose ends will be connected up to the Port Fourchon Levee Bridge. An overlay project on LA 24 (between Prescuille and Klondyke) is coming up within the next month. Turning

lanes will be added around Bourg Elementary School and South Terrebonne School using DOTD's safety funds. An overlay project on LA 58 is coming up in the spring. The overlay project on LA 315 is doing pretty good and should be finished in about 2 to 3 months. DOTD just awarded the next phase of ITS. They're finishing up the phase from US 90 to Hollywood, which includes upgrading the signals, fiber connections and restriping the little bridges.

Coastal Bridge Construction has just been awarded to rebuild St. Anne Bridge, and as soon as it's finished, they'll replace Bourg Bridge. L. LeBlanc shared some of the challenges they've been dealing with in relation to these bridge projects.

P. Gordon asked about the Westside Boulevard Bridge. L. LeBlanc said they're seeking out funding for it. Discussion ensued on plans for LA 182 and US 90 around the Lafourche spanning area.

R. Perque asked if DOTD had plans to repair the overlay that took place on North Canal Blvd to the North end of Thibodaux on Hwy 20. L. LeBlanc said it's something done in-house.

L. Marretta referred everyone to Tab #5 to view DOTD's letting schedules. L. LeBlanc also announced that two big overlay projects are coming up: one is US 90 for Bayou Blue to LA 182, and the other one is on LA 3235.

D. Bourg asked for any update on the elevation of LA 24 around UPS. It should be in design stage but no definite date for construction yet. Prospect Bridge is still on schedule and should be finished soon. Chairman Voisin expressed that that TPCG has received concerns on the near misses of the other end of the Westside Boulevard, where MLK intersects. Lack of lighting is to be addressed. Discussion further ensued.

No further questions. No action necessary.

Agenda Item # 6
Locally Funded Projects Updates
Parish/Municipal Staff and/or Consultants

Chairman Voisin said we've gone over the project updates pretty much. He asked if there was any other additional update. Hearing none, seeing none, he proceeded.

No action necessary.

Agenda Item # 7
North-South Connector Project Update
Jacob Loeske, Buchart Horn Inc.

L. Marretta emphasized the significance of this project, formerly referred to as the North-South hurricane evacuation corridor project. J. Loeske shared that the new name is now North-South Connectivity Project. It started in 2004, halted for a while and brought back in 2009. Buchart Horn Inc is working on the EIS portion of the project. The project's overall purpose: (1) to improve North-South system linkage within Houma-Thibodaux area; (2) to improve emergency evacuation system in the area. The project's team went through five different alternatives and

eventually narrowed it down to two alternatives, identified as a western and a central route. He showed the boundaries on the map.

The Western alternative begins at LA 311 in Hwy 90 (where BP facility is) all the way to Schriever, then to the Bypass Road and turns to the North, bringing up to Hwy 1 and Hwy 308. He further showed the boundaries of the Western alternative route.

The Central alternative (east of Thibodaux), on the other hand, would tie in Hwy 90 @ Bayou Blue (LA 316). They would improve LA 316 into the Water Plant Road/Low Land area and tie it in to Hwy 1 and cross to Hwy 308, east of Lafourche crossing. This runs back to Kraemer and heads to the North. A public agency meeting was held in March 2011 where they received comments. The traffic study was revised in August 2011. From there, they eliminated the East-West alternative and the other two alternatives. Additional information was shared by participating agencies such as DOTD, SCPDC/HTMPO, FHWA, WLF, US Corps, etc. Final versions were submitted to DOTD and FHWA; comments were addressed and submitted for final approval in September 2011.

L. Marretta pointed out that the process that J. Loeske is going through is a pre-engineering study to determine the environmental impacts of the proposed alternative routes. Upon approval of the EIS, further examination of the other engineering aspects will be required to determine feasibility of the proposed alignments.

P. Gordon and T. Arabie raised a few questions. Discussion ensued.

No further questions. No action necessary.

Agenda Item # 8
Transportation Improvement Program (TIP) Projects Report
Joshua Manning, SCPDC Transportation Planner II

J. Manning explained two proposed amendments to the TIP.

First is the Acadian Road Project amended to include the roundabout at the LA 20 and Canal Street intersection in the environmental and engineering phases of this project ($190,000).

The second is to add the recently awarded grant projects - Southdown Trail System ($125,000) and Acadian West Trail ($144,709) to our TIP.

R. Perque made a motion to add the Acadia Road amendment to the TIP. It was seconded by T. Arabie. P. Gordon made a motion to add the Southdown and Acadian West trails projects to the TIP. It was seconded by J. Pizzolatto.

J. Robinson asked if HTMPO got a notice to proceed from M. Domingue of FHWA for the Acadian West Trail project. There was none yet. A preliminary work is yet to be done such as ROW and engineering.

No further questions. Motion passed.

Agenda Item # 9
Policies and Procedures for the Employment of Consultants
Leo Marretta, SCPDC Transportation Division Director/HTMPO Administrator

L. Marretta said this matter has been ongoing. HTMPO is trying to get the policies for hiring traffic engineering consultants to prepare DOTD's "Stage O" project feasibility studies approved and implemented. This would allow us to prepare to implement small, meaningful projects (typically for intersection improvements) that we can insert into the budget in the event that funds are left on the table at the end of the budget year. That would allow the MPO to spend those funds locally rather than having to return them to DOTD.

An initial document on the policies and procedures was already adopted, however, FHWA requested the three changes which are up for Policy Committee approval today.

P. Gordon made a motion to approve the FHWA changes regarding the policies and procedures on hiring consultants. It was seconded by T. Arabie.

No further question. Motion passed.

Agenda Item # 10
Other Business

L. Marretta referred everyone to Tab # 10 which contains new policies with regards to roundabouts and complete streets for HTMPO to consider. He encouraged the local jurisdictions to consider including these polices in their project review process as well.

It was also announced that HTMPO will have a Technical Advisory Committee Meeting on December 8, 2011. At this meeting DOTD will work with us to prepare an update to the MPO's project budget for the new TIP. The MPO receives an approximate $3.5 million annual allocation from the "STP less than 200k" federal funding category each year to apply to local projects of the MPO Policy Committee's choosing.

No further questions. No action necessary.

Agenda Item # 11
Next HTMPO Policy Committee Meeting – Thursday January ~~12~~ 26, 2012 and presentation of the 2012 Calendar

C. Voisin announced that the next HTMPO Policy Committee Meeting is scheduled on Thursday, January ~~12~~ 26, 2012. L. Marretta referred everyone to Tab # 11 to see all the schedules of other subcommittees. The date for the Active Transportation Committee Meeting is not November 7, 2012 but Nov. 14, 2012.

P. Gordon addressed the Chairman to make a motion that HTMPO should never have a meeting on the same day as the SCPDC Board Meeting is held. C. Voisin said he expected to get a unanimous decision on this one. Hence, he made such motion and P. Gordon seconded it.

Moreover, P. Gordon also made a motion to add the SCPDC Board Meeting schedule of meetings to the HTMPO Calendar. It was seconded by D. Bourg.

No further comments. Motion passed.

Agenda Item # 11
Adjournment

The motion to adjourn the meeting at 1:45 p.m. was made by J. Pizzolatto, seconded by T. Arabie. Motion carried unanimously.

Date: ***January 23, 2012***

Copies to: ***MPO Policy Committee, MPO Interested Parties List, file***

SCPDC Board Meeting - Project Update

Location: Belle Terre Country Club, 111 Fairway Drive, Fairway, LA 70068
Date: 10/13/2011

MEETING NOTICE
for
South Central Planning and Development Commission

DATE: October 13, 2011

TIME: 10:30am

LOCATION: Sugarland Country Club
812 40-Arpent Road
Raceland, LA

A G E N D A

Call to Order
Pledge of Allegiance
Roll Call
Introduction of Guests

1. Acceptance of Minutes of June 17, 2011 regular meeting
2. Review and Approve Un-Audited Financial Statement ending June 30, 2011
3. Ratification of new member(s) to the RLF/RFC Boards
   - Robert Ross, Official Proxy for Jim Sublett, Terrebonne Parish
   - Stephen Baudoin, Advisory Board Nominee, Lafourche Parish
4. Acceptance of 2011 Comprehensive Economic Development Strategy (CEDS)
   (May be viewed on our website at www.scpdc.org
5. What is Happening at Our Ports and What the Future May Hold……
   - Greater Lafourche Port Commission – Mr. Chet Chaisson, Executive Director
   - South Louisiana Port Commission – Mr. Joel Chaisson, Executive Director
   - Terrebonne Port Commission – Mr. David Rabalais, Executive Director
6. North/South Corridor EIS Update – Jacob Loeske, Buchart-Horn
7. **Announcements:** Building Expansion • NADO
8. **Corporate Sponsors:** Greater Lafourche, South Louisiana, & Terrebonne Port Commission's
9. Agency Activity Report
10. **RESOLUTION:** To support LA 1 Coalition in applying for Tiger Grant fund to the FHWA
11. Other Business
12. Next meeting date, **January 12, 2012** – Terrebonne - Adjournment

MINUTES

SOUTH CENTRAL PLANNING AND DEVELOPMENT COMMISSION
BOARD OF COMMISSIONERS MEETING

Thursday, October 13, 2011

A regular meeting of the Board of Commissioners for South Central Planning and Development Commission was called to order at approximately 10:45 a.m. on Thursday, October 13, 2011 at Sugarland Country Club, Raceland, La.

Chairman Claudet called the meeting to order and lead the forum in saying the Pledge of Allegiance.

Members present or represented by proxy were E. Watson representing M. Triche, W. Reed, M. Atzenhoffer, T. Eschete, R. Champagne, E. Alexander, W. Bendetto, G. Williamson, N. Robottom, A. Tregre, H. Hardy, D. Hymel, M. Claudet, L. Charles, G. Large representing A. Williams, J. Rogers, M. Marmande, Jr., and A. Badeaux. Members absent were C. James, R. Animashaun, C. Randolph, J. Bouziga, V. J. St. Pierre, J. Wagner, K. Brass, M. Guillot, Jr., T. Borne, R. Scott, and D. Pothier. Staff members present were K. Belanger, J. Boudreaux, and E. Bergeron. Guests in attendance were: J. Loeske and A. Krouse of Buchart Horn, Inc., M. Maggio, L. Sposito of City of Thibodaux, C. Chaisson of Greater Lafourche Port Commission and L. Prudhomme of South Louisiana Port Commission.

K. Belanger introduced the guest and SCPDC staff members present.

First item on the agenda was the acceptance of minutes of June 17, 2011 regular meeting. It was motioned by M. Atzenhoffer, seconded by R. Champagne to accept minutes of the June 17, 2011 regular meeting. Motion carried.

Next on the agenda was the review and approval of the un-audited financial statement ending June 30, 2011. K. Belanger reviewed and briefed the Commissioners on the un-audited financial statement. It was motioned by N. Robottom, seconded by M. Marmande, Jr. to accept the un-audited financial statement ending June 30, 2011. Motion passed.

Ratification of new members to the RLF/RFC Boards was item three on the agenda. It was motioned by A. Badeaux, seconded by M. Marmande, Jr. to ratify R. Ross, official proxy of J. Sublett, and ratify S. Baudoin, Advisory Board nominee, to the RLF/RFC Boards. Motion passed.

Item four on the agenda was the acceptance of 2011 Comprehensive Economic Development Strategy (CEDS). It was motioned by J. Rogers, seconded by W. Reed to accept the 2011 CEDS. Motion passed.

The fifth item on the agenda was an update from the ports within the Region. C. Chaisson, of Greater Lafourche Port Commission, spoke to the Board first. He briefed the Board on the Port's impact on the local economy and reviewed upcoming projects and plans. L. Prudhomme, of the South Louisiana Port Commission, gave an update on the expansion dock project in St. Charles Parish, the upgrading of the St. John the Baptist Parish airport, as well as, the rail spur, funded through SCPDC. M. Claudet reviewed D. Rabelais' report from the Terrebonne Port Commission. Discussion ensued.

Next was the North/South Corridor EIS Update by J. Loeske. J. Loeske informed the Commissioners the North/South Corridor is still a project under development. After many meetings held, revised alignments have been submitted to DOTD in September and currently, waiting on concurrence from DOTD on the revised alignments. Discussion ensued.

Under Announcements, K. Belanger informed the Commissioners that EDA has approved a financial assistance award for $1.5million to be used for facilities expansion of SCPDC.

K. Belanger thanked the Ports for sponsoring the meeting.

It was agreed upon by all Members to read the Agency Activity Report at their leisure.

Item ten of the revised agenda was the resolution to support LA 1 Coalition in applying for Tiger Grant fund to the FHWA. It was motioned by M. Marmande, Jr., seconded by D. Hymel to accept the resolution to support LA 1 Coalition in applying for Tiger Grant fund to the FHWA. Motion passed.

The next meeting date will be set for January 12, 2012 in Terrebonne Parish.

Under Other Business, K. Belanger presented D. Hymel with a plaque in grateful recognition for the 20years of dedicated service he has provided SCPDC.

Tentative 2012 meeting dates were discussed.

There being no other business to discuss, it was motioned by R. Champagne, seconded by A. Badeaux to adjourn. Motion carried.

As duly authorized officers of South Central Planning and Development Commission, Board of Commissioners, we do hereby certify that the above and foregoing is the official version of the minutes of the meeting of the Board of Commissioners held on October 13, 2011.

Michel Claudet, Chairman
South Central Planning & Development Commission

Mark Atzenhoffer, Secretary
South Central Planning & Development Commission

Agency Coordination Meeting

Location: South Central Planning and Development
Date: 3/27/2012

Memorandum

To: **Buchart Horn, Inc.**
Alan Krouse, Jacob Loeske, Stephanie Phillips

From: **Providence**
Kerry Oriol, Monica Herrera

Date: **April 10, 2012**

Re: **Houma-Thibodaux to LA 3127 Connection EIS**
Agency Coordination Meeting Minutes
State Project No. 700-99-0302; FAP No. HP-9902(518)

An Agency Coordination Meeting for the Houma-Thibodaux to LA 3127 Connection Environmental Impact Statement (EIS) was held on Tuesday, March 27, 2012 at the offices of the South Central Planning and Development Commission (SCPDC) in Houma, Louisiana. The meeting presentation had been made available on the project FTP site the week prior to the meeting. A hard copy of the slide presentation was also provided to all attendees present. Agencies that were unable to attend in person participated on a conference line and included the U.S. Army Corps of Engineers (USACE), the U.S. Fish and Wildlife Service (USFWS), the U.S. Environmental Protection Agency (USEPA), Louisiana Department of Wildlife and Fisheries (LDWF), and project team member, Earth-Search. A sign-in sheet is attached to these meeting minutes and includes those individuals participating via the conference line.

Mr. Alan Krouse of Buchart Horn (BH) started the meeting with introductions of attendees (both physically present and over the phone) and then of the project team and roles. He then initiated the meeting presentation.

The presentation started with a project recap dating back to 2006. Mr. Krouse reviewed the activities that occurred after the May 2006 Agency Coordination Meeting through the 2008 Alternatives Screening Study. During this time-frame, Purpose and Need was refined, alternatives and traffic were reduced, an east/west alignment along the Bayou Lafourche ridge was added and summaries of the Traffic and Toll Studies were provided. From 2008 through 2010, the east/west alternative was studied, a concept to widen LA 20 was studied, Purpose and Need was further refined, and the other studies were updated. Purpose and Need is focused on system linkage and secondarily, improved access to hurricane evacuation routes. Alternatives were evaluated against the Purpose and Need using multiple screening criteria as defined below.

System Linkage Criteria

- Improves North/South connectivity
- Provides North/South system redundancy
- Improves North/South highway capacity
- Improves access to I-10 and future I-49

Hurricane Evacuation Criteria

- Improves hurricane evacuation from the study area
- Uniformly distributes traffic between the Sunshine Bridge, Gramercy-Wallace Bridge and the Luling Bridge
- Maximizes efficient use and operation of hurricane evacuation routes

The east/west alternative did not demonstrate traffic benefits and did not meet the Purpose and Need, therefore, it was removed from further study. LA 20, as a stand-alone alternative, was also removed during the screening process because it failed to meet the screening criteria. However, some portions of the existing LA 20 alignment could be incorporated into the Western and Central Build Alternatives that continued past the screening process.

Mr. Krouse provided a quick overview of the traffic results and then brought the group back to today and where the team is in the NEPA process. We are at Coordination Point 3, which is the last agency coordination point before preparing the draft EIS, where we are together to review the results of the alternatives screening and alternatives selected to move forward. Mr. John Mettile (CDM Smith) added that the use of existing infrastructure was incorporated into the remaining two alternatives to the extent possible to avoid and minimize impacts. Mr. Krouse reminded the group that the roadway would not have full control of access and would be elevated from Vacherie to the south.

Questions were entertained.

Dr. James Barlow (USACE) asked how much tweaking of the alternatives remains? Can alternatives move one way or the other? Will there be another meeting? Several people responded indicating the some movement in the alternative alignments is possible, but not a new alternative and that this meeting is the last one and materials were provided in advance and the schedule changed to try to allow for maximum attendance.

Dr. Barlow continued to comment that the western alternative should push to the red line (on the map) to the north toward Chackbay just behind existing development. Maybe there could be a partial interchange. Dr. Barlow does not support the road tying in to 3213. He is also not supportive of turning south of Thibodaux after crossing LA 20 where it turns north. Dr. Barlow supports the red line.

Mr. Robert Mahoney of Federal Highway Administration (FHWA) responded to Dr. Barlow indicating that the routes have been designed to avoid and minimize impacts by moving

alternatives as close to existing impacted areas as possible and placing the route on structure.

Dr. Barlow responded that it would be easier for him to permit the red lines. Mr. Krouse and Ms. Stephanie Phillips (BH) responded that the red lines on the map indicated constraints and not alignments, they do not meet Louisiana Department of Transportation and Development's (DOTD) geometric standards for the roadway.

Ms. Noel Ardoin (DOTD) asked Dr. Barlow if he is stating that putting the roadway inside the levee (north and west of Schriever) is not less impact. Dr. Barlow related that the land inside the levee is still wet.

Mr. Mahoney asked/stated that Dr. Barlow would like to see another option/alternative that moves the yellow line (western alignment) toward the west to the red line. Mr. Mahoney also asked about the red line to the south of LA 304 to confirm if Dr. Barlow wanted the alignment closer to that as well. Dr. Barlow confirmed that he wants the red constraints line.

Relative to the northern tie-in, North Option A or B Dr. Barlow is in favor using LA 20 to LA 3127 (A) over a tie-in to LA 3213 at LA 3127 (B). The team is also supporting Dr. Barlow's position, as impacts will be further minimized.

Mr. Mahoney requested comments from others.

Ms. Jeanine Peckham (USEPA) essentially agreed with all comments from Dr. Barlow. Mr. Mahoney stated he would appreciate comments (either now or in writing after the meeting). Mr. Seth Bordelon (USFWS) also supports Dr. Barlow's comments and has more comments to provide later in the call.

Dr. Barlow indicated that based on information provided, he is supportive of the western alternative over the central, but he is not sure that the east/west should have been removed. Mr. Mahoney summarized what would be done moving forward to address the concerns. Mr. Krouse indicated that they can look at the impact table and see where routes may be tweaked. Ms. Ardoin indicated that the contract with the team did not allow for more engineering design (line and grade), which would be necessary for any extensive "tweaking".

Mr. Leo Marretta (SCPDC) offered an observation that it appeared the project was moving backward, is this new information? Mr. Jacob Loeske (BH) and Ms. Ardoin responded that the alternatives were refined based on the 2010 meeting and that what had been requested had been done.

Ms. Ardoin told Dr. Barlow that it seems the USACE does not support any options despite the efforts taken by the project team to comply with the agency's requests. Dr. Barlow indicated that USACE comments on Purpose and Need were not incorporated and that it is

difficult to support as they don't know that enough work has been done to show the alternatives are the least damaging and most practical.

Mr. Loeske indicated that the Purpose and Need had been revised and incorporated Dr. Barlow's comments and is posted on the website in the revised form. Dr. Barlow wants reference to Assumption and Ascension Parishes removed and that the Purpose and Need is covering too large an area.

Ms. Ardoin advised that we are not looking at the same version of the Purpose and Need.
Mr. Mahoney stated that the team will look at more ways to minimize impacts, can make some changes to Purpose and Need, and the decision matrix will be further refined.

Mr. Bordelon asked about the need for evacuation and less time getting to I-10 and I-49 (Lafayette). Why would people want to get to I-10 fast, it's a parking lot and will not solve the problem. He does not feel the project improves overall evacuation. Mr. Krouse responded that the primary project purpose is to provide system linkage, the secondary purpose is to provide an alternative route. Mr. Mahoney added that the project (in the beginning) was primarily supporting hurricane evacuation. Since then, it has become a federal aid project whereby the hurricane evacuation was determined to be of lesser importance. The project improves the overall network and supports future development. The FHWA will take USFWS comment under consideration.

Ms. Peckham stated the USEPA has not provided concurrence on the project Purpose and Need. She also asked why is NEPA pursued before the Section 404 permit, and why is there a decision on federal funding – there should be no funds until the project is permitted? Ms. Ardoin responded that FHWA must follow their NEPA process prior to seeking funding. There must be a Preferred Alternative in order to provide a permit application to the USACE.

Dr. Barlow furthered the explanation indicating that the agencies are involved to ensure the project follows NEPA so that it can receive a permit. The USACE is acting as a "cooperating" agency, which means it is supporting both processes. Dr. Barlow said he needs more information before he can agree – he is not entirely satisfied with the Purpose and Need. He sees it as a north/south corridor to connect Houma/Thibodaux to the Gramercy Bridge. LA 1 and US 90 are currently hurricane evacuation routes and are seeing development. Is quicker access to I-10 really getting people where they need to go? Is there travel and time savings? The Purpose should be to build a road to I-10 and the need should be time savings.

Mr. Krouse asked Dr. Barlow if he was leaning support toward the western alternative over the central. Dr. Barlow responded that of the two, yes, he supports the western alternative, but with changes. He does not feel all alternatives have been reasonably considered and thinks the east/west remains viable. There may be more tweaking in the permit process.
Mr. Mahoney asked if there were any more comments or items to discuss.

At that time, the conference line participants dropped out of the meeting.

HOUMA-THIBODAUX TO LA 3127 CONNECTION EIS
Agency Coordination Meeting

March 27, 2012
SIGN IN SHEET

NAME	AGENCY	EMAIL	PHONE NO.
STEPHANIE PHILLIPS	BH	SPHILLIPS@BH-BA.COM	225-755-2120
JACOB LOESKE	BH	JLOESKE@BH-BA.COM	"
ALAN KROUSE	BH	AKROUSE@BH-BA.COM	"
Kerry Ordoñez	Providence	Kerryord@providenceeng.com	225-764-7400
Monica Herrera	Providence	monicaherrera@providenceeng.com	225-768-5901
Noel Ardoin	DOTD	noel.ardoin@la.gov	225 242 4502
JOAN SCHEXNAYDER	TPCG	jschex@tpcg.org	985-873-6720
BOB MAHONEY	FHWA	robert.mahoney@dot.gov	225-757-7624
Carl Winter	DOTD	carl.winter@la.gov	225 242 4506
Cory Thompson	Shaw E&I	cory.thompson@shawgrp.com	225-987-7177
Nicole Stewart	USI	nhstewart@urbansystems.com	(504) 523-5511
CHRIS PULASKI	TPCG	cpulaski@tpcg.org	(985) 873-6568
LEO MARRETTA	HTMPO - SCPDC	LEO@SCPDC.ORG	(985) 851-2900
JILL KAREN YAKUBIK	EARTH SEARCH	via phone	
JACQUELINE	CORPS ENGR	via phone	
FARABEE			

NAME	AGENCY	EMAIL	PHONE NO.
JAMES BARLOW	CORPS ENGR	via phone	
JEANENE PECKHAM	EPA	via phone	
Timmy Roussel	ST JAMES PARISH		
James Brazon	" " " "		
SHANE LANDRY	St. James Parish	Shane.Landry@StJamesla.com	
SETH BORDELON	FWS - FEDERAL	SETH_BORDELON@FWS.GOV	- via phone
CHRIS DAVIS	FWS - STATE	via phone	
KEITH HAYDEN	EPA	via phone	
John McHic	Wilbur Smith/CDM		

Mr. Landry: He does not necessarily agree with the WLF's statement that the hurricane evacuation as a need would not be considered appropriate for this project. He stated his reasons. New Orleans has only been evacuated twice in his lifetime and when it does, I-10 may be blocked up….But if the hurricane hits the La Rose area (a lot lower ground) and you are trying to get to higher ground (and they are not evacuating New Orleans) then I-10 would definitely be an evacuation route and would be plausible to use an evacuation route. So to say that I-10 could not be used isn't appropriate. If you talk about not crossing the bridge, East/West Bank, it depends on the direction and size of the storm. But the La Rose/ Galliano people have different ideas of what they consider to be a bad storm. People tend to want to leave a little earlier and the interstate isn't being completely blocked up. Any road that can be used an evacuation route has a lot better chance of getting through and to say it wouldn't be an evacuation route can be misconstrued. He definitely thinks it can be used an evacuation route.

Mr. Mahoney: This is one of the important parts of having a good network of roadways to be to adapt that network to whatever situation comes along. If we have an improved N/S connectivity network, it can be used for lots of things including hurricane evacuation.

Mr. Landry: Another route will get people out quicker and earlier so that they are not congested on the interstate.

Mr. Mahoney: The sooner they can get out, the better. The earlier they get out, the better.

Mr. Loeske: Asks Dr. Barlow…. Does he have any further comments or "buy-in" by stating that the recommended preferred being the Western?

Mr. Krouse: Asks Dr. Barlow… you are pretty much leaning towards the western alternative? From your comments, it seems that the central is probably not feasible with your agency. So, with a few modifications, your preferred is the western. Is that correct?

Dr. Barlow: States that with the two alternatives presented, yes. But, there are other alternatives that are floating around out there that we haven't been involved with. The Bayou Lafourche "ridge" is one of those.

Mr. Mahoney: States that we've gone through a screening process and we are down to these two right now. The reasons for eliminating or screening out other alternatives will be presented in the document.

Dr. Barlow: Says that is fine, but in order to get an Environmental Impact Statement, you have to consider all practical alternatives at some point in time and screen those out. Now if you can screen out Bayou Lafourche based on unavoidable impacts and that it does not meet the project purpose, then maybe can buy off on that.

Mr. Mahoney: says that sounds good.

Dr. Barlow: says that when we come to the perfect process, we could further "tweak" the alternatives to reduce impacts even further.

Dr. Mahoney: says understood.

Ms. Ardoin advised that we are not looking at the same version of the Purpose and Need.

Mr. Mahoney stated that the team will look at more ways to minimize impacts, can make some changes to Purpose and Need, and the decision matrix will be further refined.

Mr. Bordelon asked about the need for evacuation and less time getting to I-10 and I-49 (Lafayette). Why would people want to get to I-10 fast, it's a parking lot and will not solve the problem. He does not feel the project improves overall evacuation. Mr. Krouse responded that the primary project purpose is to provide system linkage, the secondary purpose is to provide an alternative route. Mr. Mahoney added that the project (in the beginning) was primarily supporting hurricane evacuation. Since then, it has become a federal aid project whereby the hurricane evacuation was determined to be of lesser importance. The project improves the overall network and supports future development. The FHWA will take USFWS comment under consideration.

Mr. Landry of St. James Parish indicated that he is not in agreement with Mr. Bordelon's assessment. He indicated that it's rare for New Orleans to be evacuated, and if so, there would be heavy traffic. However, if the evacuation is south and west of New Orleans (not involving mandatory evacuation of New Orleans), I-10 is a viable and necessary route for residents attempt ground. He believes the route would and could definitely be used ion.

Mr. Mahoney indicated that this is one of the points of having a good road network.

Ms. Peckham stated the USEPA has not provided concurrence on the project Purpose and Need. She also asked why is NEPA pursued before the Section 404 permit, and why is there a decision on federal funding – there should be no funds until the project is permitted? Ms. Ardoin responded that FHWA must follow their NEPA process prior to seeking funding. There must be a Preferred Alternative in order to provide a permit application to the USACE.

Dr. Barlow furthered the explanation indicating that the agencies are involved to ensure the project follows NEPA so that it can receive a permit. The USACE is acting as a "cooperating" agency, which means it is supporting both processes. Dr. Barlow said he needs more information before he can agree – he is not entirely satisfied with the Purpose and Need. He sees it as a north/south corridor to connect Houma/Thibodaux to the Gramercy Bridge. LA 1 and US 90 are currently hurricane evacuation routes and are seeing development. Is quicker access to I-10 really getting people where they need to go? Is there travel and time savings? The Purpose should be to build a road to I-10 and the need should be time savings.

Mr. Loeske and Mr. Krouse asked Dr. Barlow if he was leaning support toward the western alternative over the central. Dr. Barlow responded that of the two, yes, he supports the western alternative, but with changes. He does not feel all alternatives have been ply considered and thinks the east/west remains viable. There may be more in the permit process.

oney asked if there were any more comments or items to discuss.

me, the conference line participants dropped out of the meeting.

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245
www.dotd.la.gov
(225) 242-4502

BOBBY JINDAL
GOVERNOR

SHERRI H. LEBAS, P.E.
SECRETARY

August 31, 2012

State Project No. 700-99-0302
F.A.P. No. HP-9902(518)
SAP Number H.005257
Houma-Thibodaux to LA 3127 Connection
Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles & St. Mary Parishes

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Mr. Pete Serio – Chief
Regulatory Branch
Corps of Engineers, New Orleans District
Post Office Box 60267
New Orleans, Louisiana 70l60-0267

Attn: Furcy Zeringue

SUBJECT: Response to Agency Comments (March 27, 2012 Meeting Minutes)

On March 27, 2012 an Agency Coordination meeting was held at South Central Planning and Development Commission for the referenced project. The purpose of this meeting was to present: (1) the refined alternatives to be carried forward in the Draft Environmental Impact Statement (Draft EIS) and (2) comparison matrix on the human and natural environment for these alternatives. On March 30, 2012 we received (via e-mail) the Corps' comments on this meeting. The Corps provided clarification of its earlier e-mail comments through a memo to the Federal Highway Administration (FHWA) on May 9, 2012. We have carefully considered these comments and provide the following responses. Please note that **bold** text below identifies a specific Corps comment made in its March 30, 2012 e-mail transmittal.

1. **At this point in the process, the Corps is neither an opponent nor proponent of the project and therefore, does not support any alternative. A Department of the Army permit can only be issued for the least damaging practicable alternative. Therefore, any alternative that is considered practicable must be carried though the evaluation until it can be determined that it is (1) not practicable or (2) determined not to be the least damaging through careful evaluation of the environmental consequences. The environmental consequences to be considered are outlined in the 404(b)(1) evaluation (40 CFR 230 Subparts C through F).**

As part of the NEPA process, a wide range of alternatives have been evaluated to ensure the reasonable and practical alternatives proposed will limit impacts to both the human and natural environments while still meeting the project's stated purpose and need. The project team believes it has exercised due diligence in its consideration of a reasonable range of practicable alternatives.

2. **While the Western alignment looks better than the others that were discussed at this meeting it is not the only alternative that should be considered in your evaluation to determine the least damaging practicable alternative.**

The Western and Central alignment, along with the North A and North B options, will be objectively evaluated and documented in the alternatives section of the Draft EIS. The Draft EIS will identify the project alternatives that were considered, determined not to be practicable, and subsequently eliminated from further evaluation. A comprehensive discussion as to why the eliminated alternatives were not carried forward for further evaluation will be provided in the Draft EIS.

Tweaking the central alternative as we did the western alternative may result in minimizing impacts to an extent that this alternative may be the least environmentally damaging.

The current alignment of the proposed Central Alignment is due to a number of factors including engineering constraints, safety factors, and to efforts to reduce impacts to both the human and natural environment. Further changes in the proposed alignment would likely would compromise the overall feasibility of the alignment and result in additional impacts. These factors include:

- The location where the proposed Central Alignment crosses Bayou Lafourche, LA 1 and LA 308 is due to several constraints:

  - A large mitigation bank north of the Central Alignment at the crossing
  - A rail line and rail bridge over Bayou Lafourche
  - Large residential areas

- To avoid impacting the mitigation bank and to cross Bayou Lafourche west of the currently proposed Central Alignment, the alignment would have to cross LA 1, LA 308 and Bayou Lafourche at a major skew angle. This realignment to the west would cause several displacements along LA 1 and LA 308 and significantly impact the large subdivision just south of LA 1.

- Continuing north, the realignment would be in close proximity to plantation property where a large historical area and archaeological sites listed on the NRHP are located.

- Also, the realignment of the Central alternative would impact additional residential areas where the alignment would crosses LA 20.

Based on the significance of these factor and the consideration of potential impacts, it was determined more practicable to place this Alternative's crossing at its current location and continue north on the east side of the mitigation bank.

One of the issues seems to be how to balance natural, physical and social impacts. Least damaging alternative must balance impacts; it can't be one-sided. You have associated cost with impact. Cost affects the practicability of an alternative and is not considered as an impact.

Although cost does not play a part in an impact analysis, it is considered to determine if an alternative is reasonable and practical to construct. The documentation will provide a full and balanced discussion of all environmental consequences, including natural, physical, social impacts, and associated cost for each alternative.

3. In avoiding impacts you need to focus more clearly on reducing wetland impacts by avoiding and minimizing.

In the development of the alternatives, wetlands were viewed as an important resource and were avoided to the extent possible. As the alternatives evolved, further modifications and adjustments were made to the alternative alignments to minimize potential wetland impacts. Additionally, adjustments were made to the alternative alignments following previous Agency meetings. Some of these modifications include the use of existing roadway corridors in places where it is possible, and the placement of the alternatives in upland agricultural fields for the majority of the alternatives. Furthermore, the portions of alignment in the wetlands be elevated; and a portion of existing at-grade roadway in wetlands will be removed and replaced with elevated structure as a portion of the remaining alignments.

Some of the lines shown in red on the KEY MAP would offer less wetland impacts to your proposal.

The red lines shown on the key map reflect an initial effort to generate corridors avoiding a wide range of constraints identified in existing GIS databases. In the process of developing alternatives, the lines were adjusted to comply with DOTD road design guidelines and to take both human and natural impacts into consideration. To further minimize wetland impacts, the project team has adjusted the western alignment to approximate the location of the red lines for a greater portion of the alignment. Please see the attached exhibit.

4. **You stated that you focused on the human aspect when looking at impacts. However wetlands provide many benefits to the human population as well as habitat for other species. You need to focus on the importance of the wetland functions to public interest.**

In the development of the alternatives, wetlands were viewed as an important resource and were avoided as much as practicable. As required under NEPA, impacts to both the human and natural environments are considered and addressed during the environmental documentation process. To the extent practicable, the project team has developed the alternative alignments to minimize impacts to wetlands and other facets of the human and natural environment.

5. **Our position is purely advisory to assure that the EIS provides sufficient information relative to our jurisdiction (Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act) so as to make an informed permit decision. FHWA has the responsibility of assuring that the NEPA process adequately addresses the needs of the federal cooperating and coordinating agencies including a reasonable Purpose and Need statement. Again, the Corps defines the basic purpose for establishing water dependency and the overall project purpose to evaluate the applicant's needs relative to the public interest. The purpose and need are still not clearly defined in your documentation. The purpose and need should not be defined as one category, but as singular and separate entities. Without a well-established and justified purpose and need statement for your project it makes evaluation of the alternatives as presented difficult. If we are unable to establish the reasonability of these alternatives then it could bring us back to the no-build alternative as a viable alternative. While the need should focus on the transportation problem it should not be so narrowly defined that it constrains the range of reasonable alternatives. What is the purpose of your project? What is the need that drives that purpose?**

The Purpose and Need statement should:

- Be concise
- Easy to read
- Focus on the essential needs and goals of the proposed project such as mobility, capacity, etc.
- Include data for justification

The purpose of the Houma-Thibodaux to LA 3127 Connection is to improve north-south system linkage between the Houma-Thibodaux area and the Mississippi River Corridor and improve emergency and hurricane evacuation within Louisiana's bayou region through the establishment of a functional north-south transportation facility. The project is proposed to accomplish the following objectives:

- Improve north-south connectivity and mobility between US Highway 90 and LA 3127 through an increase in the number of north-south links;
- Provide north-south system redundancy by identifying alternatives that provide additional options for north-south travel when LA-20 fails;
- Provide improved north-south highway network capacity in the project area;
- Provide a direct, limited access route between the Houma-Thibodaux area and the Mississippi River Corridor to improve access to and from the Houma-Thibodaux area;
- Maximize the efficient use and operation of hurricane evacuation routes by improving system redundancy; decreasing travel time; and providing facility access, capacity, and balanced distribution of evacuation traffic among critical Mississippi River crossings.

The need for the proposed project is to remove the following deficiencies in the Study Area:

- Inadequate north-south transportation system linkage
    - Existing north-south system linkage between the Houma-Thibodaux area and the Mississippi River Corridor is limited to LA 20, a narrow, winding arterial without access management.

- Inadequate capacity in the roadway network in the Thibodaux area due to existing unmet travel demand in the north-south direction;
    - Existing roadway network has current peak-period congestion and Level of Service (LOS) deficiencies.
    - Portions of existing LA 20 show a LOS of E during both peak hours, along with three additional primary roadways (LA 308, LA 1, and LA 70) that have sections currently operating at LOS D.
- Lack of a north-south emergency evacuation route and north-south rerouting opportunities in the Thibodaux area.
    - In times of evacuation, the traffic volumes push the roadways far beyond their capacity.

6. Consideration of which alternatives are reasonable, prudent and practicable requires a well defined project and need statement. For the Corps the project purpose is used for evaluating practicable alternatives under the Section 404 (b)(1) Guidelines. The Section 404 (b)(1) Guidelines requires the Corps to determine if there are alternatives to first avoid, and then to minimize adverse impacts to aquatic resources, ultimately selecting the least environmentally damaging, practicable alternative.

As part of the NEPA process, a wide range of alternatives are evaluated to ensure potential impacts to both the human and natural environments are appropriately considered. In its identification and evaluation of potential alignments, the project team believes due diligence has been exercised and a thorough consideration of practicable alternatives has been achieved. The Draft EIS will further refine and document the purpose and need. The Draft EIS will provide a detailed accounting of the alternatives development, explaining the processes followed to progress from a tangled collection of many potential alternate routes to the reasonable and practicable alternatives currently considered for inclusion in the Draft EIS.

We appreciate the Corps' comments and trust that you find our responses helpful and appropriate. We look forward to advice and assistance from the U.S. Department of Army, Corps of Engineers during the Draft EIS process, and the continuation of collaborative efforts that will lead to the completion of this important and necessary project.

If we can be of further assistance or if you have any questions or comments related to these matters, please feel free to contact Carl Winter at (225) 242-4506.

Sincerely,

Noel Ardoin
Environmental Engineer Administrator

NA/caw
Attachments: Alternative Alignments
cc: Bob Mahoney (FHWA)
Jacqueline Farabee (Corps)
Loong Tsai

LA 1 Coalition- Project Update

Date: 5/14/2012

Loeske, Jacob

Sent:
To:
Subject:

I understand. Will comply. Thanks and have a good one.
Henri

Sent from my Windows Phone

From: Loeske, Jacob
Sent: Monday, May 14, 2012 4:47 PM
To: Henri Boulet
Cc: Jane Arnette
Subject: Re: two sentences for tomorrow meeting

Henri,
Pleasereplace the second sentence with this:
"Shortly after the completion of the Draft EIS, they will hold another agency meeting and public hearing to get vital input on the recommended alternatives."

Thanks for the open communication as requested. Without having input from the Corp on our updated exhibit alignment at this time, still weary to actually put in dates to the public.

Thanks again!

Jacob M. Loeske, PE
Buchart Horn, Inc
(985) 665-2262

On May 14, 2012, at 4:17 PM, "Henri Boulet" <henri.boulet@nicholls.edu> wrote:

> Jacob,
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> Many thanks.
> Henri

LA 1 Coalition- Project Update

Date: 7/16/2012

Loeske, Jacob

Sent:
To:
Subject:

Thanks Jacob!

Sent from my Windows Phone

From: Loeske, Jacob
Sent: Monday, July 16, 2012 4:49 PM
To: Henri Boulet
Subject: RE: two sentences for tomorrow meeting

Henri,
See below in BOLD for an update. We are working with LADOTD and the Corps at the moment so do not want to announcea timeline.
Thanks,
Jacob

From: Henri Boulet [mailto:henri.boulet@nicholls.edu]
Sent: Monday, July 16, 2012 4:18 PM
To: Loeske, Jacob
Subject: RE: two sentences for tomorrow meeting

Jacob,
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From: Loeske, Jacob [mailto:jloeske@BH-BA.com]
Sent: Monday, May 14, 2012 4:52 PM
To: Henri Boulet
Subject: Re: two sentences for tomorrow meeting
Thanks again and I will be in touch. Please feel free to call at anytime.

Jacob M. Loeske, PE
Buchart Horn, Inc
(985) 665-2262

On May 14, 2012, at 4:50 PM, "Henri Boulet" <henri.boulet@nicholls.edu> wrote:

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Sent from my Windows Phone

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> Many thanks.
> Henri

LA 1 Coalition- Project Update

Date: 8/26/2012

Loeske, Jacob

Sent:
To:
Subject:

Thank you very much Jacob for this very thorough update. And, thanks for your work on the project!
Henri

From: Loeske, Jacob [mailto:jloeske@BH-BA.com]
Sent: Monday, August 26, 2013 5:31 PM
To: Henri Boulet (henri.boulet@nicholls.edu)
Cc: Phillips, Stephanie; Krouse, Alan
Subject: RE: brief update request on North South Corridor

Henri,

Good afternoon. Please see below.

The Houma-Thibodaux to LA 3127 Connection Project has made some headway over the last eight months. Below is a brief recap of the progress:

- Addressed comments regarding the reasoning for the location of alternatives
- Shifted one portion of an alternative to avoid more wetlands
- Addressed agency comments on the Purpose and Need and provided a more concise version for review
- Received NTP from LADOTD to proceed with the established alignments and received approval from DOTD on Purpose and Need
- Buchart Horn, Inc. gave a PowerPoint presentation for the Statewide Transportation Plan Update assisting the Houma-Thibodaux MPO
- Developed the history of alternatives and GIS mapping
- Held multiple team meetings
- Currently working on Draft EIS.

The path forward includes the submission of the Draft EIS for review and comment; address comments to the Draft EIS and publish the document; conduct an Open House Format Public Hearing to interact with stakeholders, agencies, and the public; and determine a preferred alternative for the Final EIS document.

If you have any questions or concerns, please do not hesitate to contact me. Have a great evening.

Thanks,
Jacob

Jacob M. Loeske, P.E., L.S.I.
Regional Operations Manager

Buchart Horn, Inc.
Strengthening Communities
18163 E. Petroleum Drive, Suite A, Baton Rouge, LA 70809
T (225) 755-2120 II F (225) 755-2404 II C **(985) 665-2262**

www.bh-ba.com

From: Henri Boulet [mailto:henri.boulet@nicholls.edu]
Sent: Monday, August 26, 2013 3:38 PM
To: Loeske, Jacob
Subject: brief update request on North South Corridor

Jacob,

Would you kindly have a 4 to five sentence update on the North-South Corridor Project? I would like to include this in a report I will write late tonight or early tomorrow morning for the SCIA's Board Retreat.

Thanks so very much. I hope things are going well for you!

Sincerely,

Henri

Henri Boulet
Executive Director
LA 1 Coalition

LA 1 Coalition- Project Update

Date: 9/18/2012

Loeske, Jacob

Sent:
To:
Subject:

Thanks Jacob!
Henri

Sent from my Windows Phone

From: Loeske, Jacob
Sent: Tuesday, September 18, 2012 9:54 AM
To: Henri Boulet
Cc: Phillips, Stephanie; Krouse, Alan
Subject: RE: two sentences for tomorrow meeting

Henri,
Please see below. No timeline/schedule of completioncan be established at this time.
Within the last month,LA DOTD's consultant on the North-South Corridor Project, Buchart Horn,continued coordination with the user agency andcooperating agenciesyielding a collaborated effort towards the project's Draft EIS.The project teamis awaiting a response from the said agenciesbefore moving forward."
Hope all has been well and that you weathered Isaac with no damage. My parents and family in Thibodaux did fine (few downed trees, but no significant damage). Have a good one.
Jacob

From: Henri Boulet [mailto:henri.boulet@nicholls.edu]
Sent: Tuesday, September 18, 2012 7:34 AM
To: Loeske, Jacob
Subject: RE: two sentences for tomorrow meeting

Jacob,
Good morning. Today the South central industrial Association meets, and I was wondering if you might be able to provide me a two sentence update on the North-South Corridor Project.
If possible, I would need it by 10am.
Below is the last update I received from you.
Many thanks Jacob!
Henri
Henri Boulet
Executive Director
LA 1 Coalition
PO Box 2048-NSU
Thibodaux, LA 70310
(985) 448-4485
Cell: (985) 258-1399

From: Loeske, Jacob [mailto:jloeske@BH-BA.com]
Sent: Monday, July 16, 2012 4:50 PM
To: Henri Boulet
Subject: RE: two sentences for tomorrow meeting

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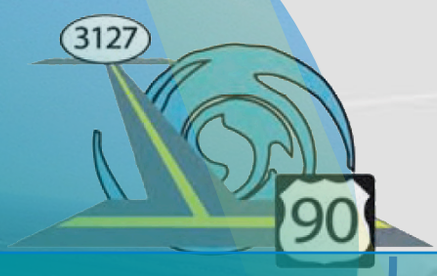
Appendix O.
Public Involvement



NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Public Involvement

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

Public Meeting No. 1

Location: Nicholls State University - Gouaux Auditorium (Houma, LA)
Date: 7/15/2004

HOUMA-THIBODAUX TO LA 3127
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE
PUBLIC OFFICIALS MEETING
JULY 15, 2004
SIGN IN SHEET - PLEASE PRINT

NAME				E-MAIL
Ed Gabsewics	BUCHART-HORN, INC.	Suite 201 3330 W. Esplanade Ave. Metairie, LA 70002	504-831-2251	egabsewics@bh-ba.com
Katie Wingerd	BUCHART-HORN, INC.	Suite 201 3330 W. Esplanade Ave. Metairie, LA 70002	504-831-2251	kwingerd@bh-ba.com
Herb Miller	CTE ENGINEERS	Suite 1895 1555 Poydras New Orleans, LA 70112	504-592-2833	herb.miller@cte-eng.com
Bill Farr	FHWA	Suite A 5304 Flanders Drive Baton Rouge, LA 70808	225-757-7615	William.farr@fhwa.dot.gov
Bob Mahoney	FHWA	Suite A 5304 Flanders Drive Baton Rouge, LA 70808	225-757-7624	robert.mahoney@fhwa.dot.gov
Jeanne Fritsche	GSE ASSOCIATES	991 Grand Caillou Road Houma, LA 70363	985-876-6380	jeanne@gulf-south.com
Carl Jakob	GSE ASSOCIATES	991 Grand Caillou Road Houma, LA 70363	985-876-6380	carl@gulf-south.com
Michele Deshotels	LADOTD	Room 201 G 1201 Capitol Access Road PO Box 94245 Baton Rouge, LA 70804-9425	225-242-4506	micheledeshotels@dotd.louisiana.gov
Tony Dorsa	LADOTD-Access Management	1201 Capitol Access Road Baton Rouge, LA 70802	225-379-1938	tonydorsa@dotd.louisiana.gov

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NAME	AFFILIATION	ADDRESS	PHONE #	E-MAIL
Lei Jin	LADOTD	Room 201 J 1201 Capitol Access Road PO Box 94245 Baton Rouge, LA 70804-9425	225-242-4510	ljin@dotd.louisiana.gov
Jason Lacombe	LADOTD	PO Box 94245 Baton Rouge, LA 70804-9425	225-379-1046	
Chad Winchester	LADOTD	PO Box 94245 Baton Rouge, LA 70804-9425	225-379-1048	
Mohan Menon	SHAW COASTAL, INC.	197 Elysian Drive Houma, LA 70360	985-868-3434	mohan.menon@shawgrp.com
Glen Graham	URBAN SYSTEMS, INC.	Suite C 7732 Goodwood Blvd Baton Rouge, LA 70806	225-928-4447	ggraham10@bellsouth.net
Charlotte Randolph	President, Lafourche Parish	PO Drawer 5548 Thibodaux, LA 70302	985-446-8427	parishpresident@lafourchegov.org
Kermit Kraemer	Public Works Director, Lafourche Parish	PO Box 5814 Thibodaux, LA 70302	985-446-2223	
Dale Hymel, Jr.	President St. James Parish	PO Box 106 Convent, LA 70523	225-562-2260	
Elton Arbert	St. James Parish	2740 S. Bank Lane Vacherie, LA 70090	225-265-2577	

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NAME	AFFILIATION	ADDRESS	PHONE #	E-MAIL
James Byer	St. James Parish	PO Box 219 Vacherie, LA 70090	225-265-4801	

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NAME	ADDRESS	PHONE #	E-MAIL
Ed Gabsewics – Buchart-Horn, Inc.	Suite 201 3330 W. Esplanade Ave. Metairie, LA 70002	504-831-2251	egabsewics@bh-ba.com
Doug Maiden – Buchart-Horn, Inc.	Suite 201 3330 W. Esplanade Ave. Metairie, LA 70002	504-831-2251	dmaiden@bh-ba.com
Kathryn Lintott – ESI	PO Box 770336 New Orleans, LA 70177-0336	504-947-3747	
Bill Farr – FHWA	Suite A 5304 Flanders Drive Baton Rouge, LA 70808	225-757-7615	William.farr@fhwa.dot.gov
Bob Mahoney – FHWA	Suite A 5304 Flanders Drive Baton Rouge, LA 70808	225-757-7624	robert.mahoney@fhwa.dot.gov
Carl Jakob – GSE ASSOCIATES, INC.	991 Grand Caillou Road Houma, LA 70363	985-876-6380	carl@gulf-south.com
Michele Deshotels – LADOTD	Room 201 G 1201 Capitol Access Road PO Box 94245 Baton Rouge, LA 70804-9425	225-242-4506	micheledeshotels@dotd.louisiana.gov
Paul M. Charron – LADOTD		504-465-3468	
Lei Jin – LADOTD	Room 201 J 1201 Capitol Access Road PO Box 94245 Baton Rouge, LA 70804-9425	225-242-4510	ljin@dotd.louisiana.gov

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NAME	ADDRESS	PHONE #	E-MAIL
Chad Winchester	PO Box 94245 Baton Rouge, LA 70804-9425	225-379-1048	
Katina Gaudet – THE DAILY COMET	PO BOX 5038 Thibodaux, LA	985-448-7814	katina.gaudet@dailycomet.com
Senator Reggie Dupre	PO Box 3893 Houma, LA 70361	985-876-9902	
Jacob Giardina – President South LA Economic Council	1575 Highway 304 Thibodaux, LA 70301	985-209-3827	jag@honiron.com
Jane Arnette South Central Industrial Association	PO Box 2143 Houma, LA 70361	985-851-2201	scindustrial@bellsouth.net
Kandy Theriot – Terrebonne Chamber of Commerce	6133 Highway 311 Houma, LA 70360	985-876-5600	
Lt. James Hogue Lafourche Parish Sheriff's Dept.	805 Crescent Ave. Lockport, LA 70374	985-532-4343	james-hogue@lpso.net
Jeff Donner	Donner Real Estate	985-447-7207	
Barry Blackwell – Terrebonne Parish	204 Barrios Ave. Houma, LA 70360	985-851-4923	bblackwell@TPCG.gov
Jude Gravois	PO Box 67 Vacherie, LA 70090	225-265-3923	jgravois@eatel.net

HOUMA-THIBODAUX TO LA 3127
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NAME	ADDRESS	PHONE #	E-MAIL
Boland Bourgeoi	581 Highway 308 Thibodaux, LA	985-447-7422	
L. Knight	Thibodaux, LA	985-447-3731	
Pete Olivier	114 Menard Road Thibodaux, LA 70301		pete.olivier@wsnelson.com
Clay Breaud	302 Ashland Drive Thibodaux, LA 70301		
Roy Francis	PO Box 2048 NSU Thibodaux, LA 70301	985-448-4485	
Chris Hebert	106 Ashland	580-4122	
Frank Gamorf??	106 Ashland	580-4122	
Herb Toups	315 Tetreau Thibodaux, LA 70301	985-447-4121	
Dennis Lassore	104 Bayou Onion Thibodaux, LA	985-633-9634	
Beryl Kraemer	112 Legendre Drive Thibodaux, LA	985-633-2565	
Allen J. Bourgeos	581 Highway 308 Thibodaux, LA 70301	985-448-1150	

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NAME	ADDRESS	PHONE #	E-MAIL
C. Lindy Hoffmann	625 Lagarde St. Thibodaux, LA	985-633-9793	
Nelson Kraemer	2776 Highway 307 Thibodaux, LA	985-633-9793	
Odel P. Zeringue	PO Box 201 Labadieville, LA 70372	985-526-4529	
Wayne Rodrigue	2216 N. Bank Lane Vacherie, LA 70090	225-265-4284	wjrmrod@patel.net
Debbie Blackwell	204 Barrios Ave. Houma, LA 70360	985-851-4923	
Greg Torres	302 Holiday Drive Thibodaux, LA 70301	985-446-8764	
Aubrey J. Gravois	19391 Lilly Street Vacherie, LA 70090	225-265-4251	
Mary Gravois	19391 Lilly Street Vacherie, LA 70090	225-265-4251	
Jackie Badeaux	213 Lynwood Drive Houma, LA 70360	985-876-1797	
Al Badeaux	213 Lynwood Drive Houma, LA 70360	985-857-2642?	albadeaux@hibernia.com
Dee Richard	416 Plater Thibodaux, LA	985-447-6033	

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SIGN IN SHEET - PLEASE PRINT

NAME	ADDRESS	PHONE #	E-MAIL
Roland Caillouet	PO Box 5608 Thibodaux, LA 70301	985-532-4300	Roland-Caillouet@LPSU.net

LADOTD

U.S. Department of Transportation
Federal Highway Administration

RECEIVED
AUG 06 2004
BUCHART-HORN, INC.

SURVEY QUESTIONNAIRE
JULY 15, 2004

HOUMA-THIBODAUX TO LA 3127 CONNECTION
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE
LADOTD STATE PROJECT NO. 700-99-0302
FEDERAL AID PROJECT NO. HP-9902(518)

The purpose of this questionnaire is to solicit input from local residents, travelers through the area, and other interested parties to establish areas of concern. Public concerns and input are one of the major factors the Department will consider in the decision-making process.

Please complete the questionnaire and place it in the return box located at the sign-in desk, or return by mail by July 30, 2004 to:

Ed Gabsewics,C.E.P., Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Ave.
Metairie, LA 70002

The results of this questionnaire will be compiled and made available.

1. Do you think the project area resources have been adequately identified and mapped so far?

   Yes_____ ? No_____

   Please explain NOT FOR ASSUMPTION PARISH

2. What environmental features or other resources are most valued in your community?

   Please describe SAVING LIVES

3. Has the information developed to date, the project's progress and the remaining steps to project completion been presented in a clear and timely fashion?

   Yes X No_____

   Please explain

4. Are the project displays helpful to understand the project and the project area? Do you have any suggestions to improve our graphics?

Yes_____ No X

Please explain _____

5. Why do you feel this project is important for the region?

TO SAVE LIVES

Additional Comments: _____

If you would like to be added to the Department's mailing list for this project, please provide your name and address below. Results of the survey will be made available on the project web site.

Name: ODEL P. ZERINGUE

Address: P.O. BOX 201

City or Town: LABADIEVILLE State: LA. Zip Code: 70372

THANK YOU FOR COMPLETING THIS SURVEY!

For information on project progression, visit the project web site at **www.northsouthhurricane.com**

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1. Do you think the project area resources have been adequately identified and mapped so far?
   Yes_____ No ✓

   Please explain I Have Property That Will Very Likely Be Affected. Just Waiting For More Specifics. Note: I, Missed The Public Meeting

2. What environmental features or other resources are most valued in your community?

   Please describe In My Opinion There Is No Environmental Features That Would Be Harmed By The Project.

3. Has the information developed to date, the project's progress and the remaining steps to project completion been presented in a clear and timely fashion?
   Yes_____ No ✓

   Please explain Please See Answer One.

4. Are the project displays helpful to understand the project and the project area? Do you have any suggestions to improve our graphics?

Yes_____ No_____

Please explain N/A I missed The Meeting.

5. Why do you feel this project is important for the region?

If Nothing Is Going To Happen For Coastal Erosion, At least It Will Help Us Get Out For A Storm.

Additional Comments: My Biggest Concern Is That Due To The Project It May In Some Way Affect Drainage Of Some Property That Has No Flooding Problems Currently. Some Input On This Would Be Welcomed.

If you would like to be added to the Department's mailing list for this project, please provide your name and address below. Results of the survey will be made available on the project web site.

Name: Wade Mike

Address: 162 Bayou Blue Bypass Rd.

City or Town: Coray State: La. Zip Code: 70359

THANK YOU FOR COMPLETING THIS SURVEY!

For information on project progression, visit the project web site at **www.northsouthhurricane.com**

7/26/04

Extremely Necessary NORTH/SOUTH CORRIDOR

(1) Gramercy/Wallace Mississippi River Bridge (what a joke, the State ought be ashame, a bridge to where?)

(2) Nicholls State University, and the new Technology/911 Center to be built.

(3) Thibodaux Regional Hospital

(4) TOURISM, oldest working plantation "Laurel Valley", Bayou Lafourche, Jean Lafitte Historical Center, etc.

(5) City of Thibodaux and newly developed suburbs on the north side. * Population? way up I'm sure

(6) city of Houma and newly developed suburbs and commerical development on the Rise. * Population?

(7) La State Hwy 1 and Hwy 308 runs parrelel with Bayou Lafourche (Longest street in La, where's the interstate

(8) La State Hwy 3127 runs from Sunshine Bridge to Luling Bridge, Wallace Bridge connection would be midway point.

(9) Employment at the plants on the Miss. River are a large amount from the 6 Ward + Thibodaux area

(10) Hwy 20, from the River into Thibodaux + pass is in drastic need of a parrell Road. Hwy 20 is 2 lane no shoulders, the Thibodaux stretch has been turned into a city street with red lights and turning lanes. People comuting to work or school are very frustrated. * Contact La. State Police concerning wrecks and fatalities on Hwy 20, when this occurs traffic anywhere between Vacherie + Thibodaux must be diverted either to Hwy 307 or the shelled Laurel Valley Road * Contact Laurel Valley Plantation on Records concerning the amount of tour buses commuting [illegible] Road.

over →

(11) Land in this region is sinking at a Rate of an inch a year, An Elevated interstate is extremely neccessary, People's lives are at stake here. If this Road is not built soon the residents of this region will be trapped, there cannot be an evacuation without this road. As it is now there is not enough highway to accomodate the amount of vechicles that would be trying to escape to higher ground.

Please take this seriously,

Susan Deluth
985-653-9902

2999 Choctaw Road
Thibodaux, La.
70301

What makes sense is a road (elevated Instrate) constructed from the Gramercy/Wallace Bridge south through Ward Eight south/east of Thibodaux into Houma meeting with the proposed future I 49. A straight interstate paraallel to Hwy 90 on the East Side.

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Metairie, LA 70002

The results of this questionnaire will be compiled and made available.

1. Do you think the project area resources have been adequately identified and mapped so far?
   Yes ✓ No ____

   Please explain I would like to see Alt. 7 included in the study

2. What environmental features or other resources are most valued in your community?

   Please describe As a community, we value all types of natural terrain including wetlands, agricultural & waterways. However, not to the extent that we would stop development of an necessary Hurricane evacuation

3. Has the information developed to date, the project's progress and the remaining steps to project completion been presented in a clear and timely fashion?
   Yes ✓ No ____

   Please explain I would like more discussion on Alt. #7.

4. Are the project displays helpful to understand the project and the project area? Do you have any suggestions to improve our graphics?

Yes ✓ No _____

Please explain _____

5. Why do you feel this project is important for the region?

Evacuation route in the event of either a natural or man made disaster

Additional Comments: _____

If you would like to be added to the Department's mailing list for this project, please provide your name and address below. Results of the survey will be made available on the project web site.

Name: Mark J Roy III MD

Address: 2198 Hwy. 20

City or Town: Vacherie State: LA Zip Code: 70090

THANK YOU FOR COMPLETING THIS SURVEY!

For information on project progression, visit the project web site at **www.northsouthhurricane.com**

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Metairie, LA 70002

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1. Do you think the project area resources have been adequately identified and mapped so far?

Yes ✓ No _____

Please explain YES, EXCEPT THE AREA SOUTH OF HWY 90. AT HWY 311. MAJOR EXPANSION OF THE AREA OCCURS THERE AS THE POPULATION EXPANDS. PLAN FOR NOW AND THE FUTURE HOWEVER, DO NOT SIDE-TRACK COMPLETION OF WHAT YOU HAVE PRESENTLY IDENTIFIED.

2. What environmental features or other resources are most valued in your community? (PEOPLE

Please describe A WESTERLY ROUTE ALONG 311 GOING NORTH TO 3127 IS THE MOST ELEVATED LAND AND CAUSES THE LEAST ENVIRONMENTAL IMPACT. BY TERMINATING AT ST. JAMES ALONG 3127 EQUAL ACCESS IS OBTAINED TO THE SUNSHINE BRIDGE AND THE GRAMMERCY WALLACE BRIDGE

3. Has the information developed to date, the project's progress and the remaining steps to project completion been presented in a clear and timely fashion?

Yes ✓ No _____

Please explain PARTICULARLY YOUR COMPUTER GENERATED ROUTE FAVORING A ROUTE WEST OF THIBODAUX AS THE EAST SIDE IS ALREADY CONGESTED W/TRAFFIC AND WOULD RESULT IN MUCH MITIGATION DUE TO THE EXTREME AMOUNT OF WETLANDS.

4. Are the project displays helpful to understand the project and the project area? Do you have any suggestions to improve our graphics?

Yes ✓ No _____

Please explain _____

5. Why do you feel this project is important for the region? WITH THE RATE OF SUBSIDANCE, EROSION FROM NATURAL CAUSES (RAIN) AND COASTAL EROSION FROM WAVE ACTION AND SALT WATER INTRUSION DESTROYING VEGITATION, TIDAL WAVE HEIGHT IN A CATEGORY 3, 4 OR 5 REQUIRES A RAPID, ADEQUATE EXIT FROM THE REGION.

Additional Comments: VARIOUS BUSINESS AND GOVERNMENTAL ENTITIES ARE VIEWING THIS MORE AS ECONOMIC DEVELOPMENT, NOT HURRICANE EVACUATION. USE COMMON SENSE, STICK TO YOUR PLAN FOR 'HUREVAC' AND BUILD THE N/S EVAC. ROUTE TO THE WEST OF THIBODAUX.

If you would like to be added to the Department's mailing list for this project, please provide your name and address below. Results of the survey will be made available on the project web site.

Name: C. LINDY HOFFMANN

Address: 625 LAGARDE ST.

City or Town: THIBODAUX State: LA. Zip Code: 70301

THANK YOU FOR COMPLETING THIS SURVEY!

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Metairie, LA 70002

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1. Do you think the project area resources have been adequately identified and mapped so far?
   Yes ✓ No_____

   Please explain I also believe ALT. 7 needs to be included in the study and area resources applicable to ALT 7 need to be identified and mapped.

2. What environmental features or other resources are most valued in your community?

   Please describe Our community greatly values its wetlands, waterways and farmlands, but not to the extent as impede progress, economic development and hurricane protection and evacuation.

3. Has the information developed to date, the project's progress and the remaining steps to project completion been presented in a clear and timely fashion?
   Yes ✓ No_____

   Please explain Except that ALT 7 was apparently eliminated from consideration without enough public input and awareness, although a majority of the speakers at the 1999 public hearing favored ALT 7.

4. Are the project displays helpful to understand the project and the project area? Do you have any suggestions to improve our graphics?

Yes ✓ No_____

Please explain Well done and easy to understand

5. Why do you feel this project is important for the region?

① Evacution in both directions: a) Hurricane From south to North b) Nuclear + plant evacuation From north to south

② Economic development and commerce From Gulf to I-10 + vice versa.

③ Replaces substandard and dangerous main highway between Thibodaux + Vacherie (LA 20) which is used by thousands of vehicles on a daily basis.

~~Additional Comments:~~

④ Tourism + cultural benefits to entire region

⑤ In order to achieve all of the above benefits and at the same time be fiscally responsible with the taxpayer's monies, I feel ALT 7 is the only reasonable route choice.

If you would like to be added to the Department's mailing list for this project, please provide your name and address below. Results of the survey will be made available on the project web site.

Name: Wayne J. Rodrigue

Address: 2216 North Bank Ln.

City or Town: Vacherie State: La Zip Code: 70090

THANK YOU FOR COMPLETING THIS SURVEY!

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3330 West Esplanade Ave.
Metairie, LA 70002

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1. Do you think the project area resources have been adequately identified and mapped so far?

   Yes ✓ No_____

   Please explain _____

2. What environmental features or other resources are most valued in your community?

   Please describe Our entire area has many natural and cultural resources that should be preserved.

3. Has the information developed to date, the project's progress and the remaining steps to project completion been presented in a clear and timely fashion?

   Yes ✓ No_____

   Please explain Not enough advance notice of meeting to the general public

4. Are the project displays helpful to understand the project and the project area? Do you have any suggestions to improve our graphics?

Yes ✓ No ____

Please explain ____

5. Why do you feel this project is important for the region?

1) Evacuation

2) Better roads to and from Thibodaux.

Additional Comments: I feel that this road should enter Highway 3127 as close to LA 20 in Vacherie as possible. This will be the best route for evacuation, and also for the road to be more accessible to as many area residents as possible.

If you would like to be added to the Department's mailing list for this project, please provide your name and address below. Results of the survey will be made available on the project web site.

Name: Francis Rodrigue

Address: 2221 Highway 20

City or Town: Vacherie State: LA Zip Code: 70090

THANK YOU FOR COMPLETING THIS SURVEY!

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1. Do you think the project area resources have been adequately identified and mapped so far?
   Yes ✓ No ____

   Please explain ____

2. What environmental features or other resources are most valued in your community?

   Please describe Downtown area of Thibodaux

3. Has the information developed to date, the project's progress and the remaining steps to project completion been presented in a clear and timely fashion?
   Yes ____ No ✓

   Please explain I don't think the public had enough notice as to what the DOTD has been doing in regards to this project.

4. Are the project displays helpful to understand the project and the project area? Do you have any suggestions to improve our graphics?

Yes ✓ No _____

Please explain Well Done

5. Why do you feel this project is important for the region?

1) Evacuation route to the North (I-10)

2) Help economic Development

Additional Comments: I think the best route for this road would be an easterly route, since this is the fastest way to I-10 for the majority of the residents in our area.

If you would like to be added to the Department's mailing list for this project, please provide your name and address below. Results of the survey will be made available on the project web site.

Name: _____

Address: _____

City or Town: _____ State: _____ Zip Code: _____

THANK YOU FOR COMPLETING THIS SURVEY!

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JUDE G. GRAVOIS
ATTORNEY AT LAW
P. O. Box 67 (mailing)
21336 Highway 20 (physical)
Vacherie, Louisiana 70090
TEL. (225) 265-3923
FAX (225) 265-4853
jgravois@eatel.net

July 27, 2004

Mr. Ed Gabsewics, C.E.P., Project Manager
Buchart-Horn, Inc.
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, LA 70002

Re: State Project No. 700-99-0302
Hurricane Evacuation Route Study

Dear Mr. Gabsewics:

Please let this letter be a supplement to and summary of the comments I made at the public hearing held concerning the above-referenced project in Thibodaux on July 15, 2004.

As you may know, I participated in the 1999 public hearing held in Thibodaux concerning the Hurricane Evacuation Study that was done at that time and realize that said study was done strictly for hurricane evacuation purposes. I also realize that the scope of said report only took into consideration utilizing the Veterans Memorial and Sunshine Bridges for hurricane evacuation purposes and not the Hale Boggs Bridge. Under the circumstances and within strictly those parameters, I can understand, but do not agree with, as hereinafter set forth, how the study ultimately recommended Alternates 6, 6-A and 7-A as the optimum hurricane evacuation routes from the Houma-Thibodaux area to Highway 3127 on the west bank of St. James Parish.

Another route, designated as Alternate 7, was also considered. Alternate 7 begins at Highway 3052 near its intersection with Highway 316 north of Houma, then runs in a south to north direction passing just east of the City of Thibodaux, then crosses Bayou Lafourche and continues northerly crossing Highway 307 near its intersection with Highway 20, then follows along Highway 20 north to South Vacherie, where said route continues directly north to intersect with Highway 3127 about a quarter mile or so west of the intersection of Highways 3127 and 20. Unfortunately, as many of us found out for the first time at the public hearing held on July 15, Alternate 7 possibly may not be part of the environmental impact study that your firm is now conducting.

For the reasons hereinafter set forth, I, along with many other people from my area, including most, if not all, of the public officials from my area, strongly feel that it would be a huge mistake for the State not to seriously consider and ultimately accept Alternate 7 as the preferred route for this new road.

Alternate 7 should be chosen as the route for this new road not only because it will serve as a very highly effective route for hurricane evacuation purposes, but also because of all of the ancillary benefits a new road at this location will bring to all of the areas affected thereby, as hereinafter set forth, as compared to Alternates 6, 6-A and 7-A.

First of all, Alternate 7 should be considered a very highly effective hurricane evacuation route for the following non-exclusive reasons:

- Alternate 7 results in a shorter route overall to get across the Mississippi River than Alternates 6, 6-A and 7-A. If the goal is to get evacuees from the Houma-Thibodaux area across the Mississippi River, it is clear that Alternate 7 will get them there quicker and easier.

- The initial study done shows that Alternate 7 will cost from $64.7 million to $144.0 million less to build than Alternates 6, 6-A and 7-A, thereby resulting in much wiser and better use of our tax dollars.

- The Veterans Memorial Bridge will soon be connected to Highway 3127 approximately 2.5 miles east from where Alternate 7 enters Highway 3127. This will allow evacuees quick and easy access across the Mississippi River to Gramercy. From there, evacuees can choose four very reliable routes to continue their evacuation, depending on traffic conditions and the direction from which the hurricane is approaching:

  - Continue straight to Interstate 10 then continue their evacuation on Interstate 10 in either an easterly or westerly direction.

  - Take Highway 61 (Airline Highway) north to Interstate 10 or continue on Highway 61 to Baton Rouge and beyond.

  - Take Highway 61 east to LaPlace then proceed north to Interstate 55.

  - Take Highway 3125 in Gramercy to Highway 70 and proceed north to Sorrento and Interstate 10 from there.

- Alternates 6 & 7-A enter Highway 3127 approximately 7 miles west of where Alternate 7 enters Highway 3127. If Alternate 7 is chosen, in times of hurricane evacuation, traffic entering Highway 3127 on Alternate 7 can easily be diverted westward on Highway 3127 in the direction of the Sunshine Bridge if necessary. Since there are no major streets or roads entering Highway 3127 between where Alternate 7 enters Highway 3127 and where Alternates 6 and 7-A enter Highway 3127 (except for Highway 3219 which enters Highway 3127 near St. James), any hurricane evacuation traffic diverted westward on Highway 3127 from Alternate 7 should not be seriously hindered in efforts to evacuate in a westward direction towards the Sunshine Bridge merely because Alternate 7 enters Highway 3127 a few miles east of where Alternates 6 and 7-A enter Highway 3127. There should be little or no interference with traffic flow in a westerly direction on Highway 3127 from Alternate 7 so as to allow a smooth, continuing flow of traffic west from where Alternate 7 enters Highway 3127.

- Alternate 6-A enters Highway 3127 approximately 3 miles further west of where Alternates 6 & 7-A enter Highway 3127. This will encourage evacuees to continue

their evacuation west towards Highway 70 leading to a big bottleneck of traffic where Highway 3127 meets Highway 70. Don't forget, this traffic will be competing with traffic coming north on Highway 70 from Highways 1 and 308. Unless Highway 3127 is extended west and north to completely bypass Donaldsonville, or unless a more direct route is built from Highway 3127 to the Sunshine Bridge, I can envision it being very difficult getting across the Sunshine Bridge in times of evacuation.

- Alternate 7 enters Highway 3127 almost midway between the three Mississippi River crossings that service the River Parishes and Lafourche/Terrebonne Parishes, (the Hale Boggs Bridge, the Veterans Memorial Bridge, and the Sunshine Bridge). Depending on which direction the hurricane is approaching the Louisiana coast, Alternate 7 allows traffic to be diverted over several or all of these river crossings. If the hurricane is approaching the Houma area from the southeast, traffic can easily be diverted to the Veterans Memorial Bridge and the Sunshine Bridge. If the hurricane is approaching the Houma area from the southwest, then traffic can easily be diverted to the Veterans Memorial Bridge and the Hale Boggs Bridge. If the hurricane is approaching the Houma area directly from the south, then traffic can be directed to all three of these bridges. Alternate 7 thus allows a more efficient use of all three Mississippi River crossings for hurricane evacuation purposes.

- Alternate 7, once it leaves Bayou Lafourche, runs nearer to more populated areas than do Alternates 6, 6-A and 7-A, which will allow for better evacuation capabilities of residents living in the following communities:

  - Choctaw – from Choctaw Road.
  - Bayou Boeuf and Kraemer – from Highway 307 and Highway 20.
  - Chackbay and Choupic areas – from Highway 20 and Choctaw Road.
  - South Vacherie – from Highway 20 in South Vacherie.

  Conversely, upon leaving Bayou Lafourche, Alternates 6, 6-A & 7-A appear only to service mainly the hurricane evacuation needs of the residents of the Choupic area and western Chackbay. The many residents of Bayou Boeuf, Kraemer, eastern Chackbay and South Vacherie may still be required to evacuate to Highway 3127 via Highway 20, which is obviously a very substandard hurricane evacuation route, since said route will be much shorter to Highway 3127 than using Alternates 6, 6-A & 7-A.

- We all know that funding for a project of this magnitude will be one of the biggest obstacles to be faced by the State in making this road a reality. Mention has been made of the possibility of this road being a toll road. If either of Alternates 6, 6-A or 7-A are chosen over Alternate 7, I'm sure that your traffic studies will indicate that significantly fewer commuters and travelers will use this road on a daily basis, mainly because this road will intersect with Highway 3127 somewhat far away from Vacherie (6 to 9 miles) and the Veterans Memorial Bridge (approximately 8 additional miles), thereby possibly eliminating one of the main viable alternative sources of funding needed for construction of this road (tolls).

Secondly, please take into consideration other ancillary benefits and reasons Alternate 7 has over Alternates 6, 6-A & 7-A, including:

- Alternate 7 will serve more populated areas for all purposes than Alternates 6, 6-A & 7-A, including North Vacherie, South Vacherie, Chackbay/Choupic, Bayou Boeuf/Kraemer, Choctaw, Raceland and Central and Lower Lafourche, Thibodaux, Schriever, Gray, and Houma, and also including communities on the east bank of St. James and St. John the Baptist Parishes (Lutcher/Gramercy and other East St. James Parish communities, and Reserve, LaPlace and other East St. John the Baptist Parish communities) and the west bank of St. John the Baptist Parish (Wallace, Edgard and Lucy).

- Alternate 7 will serve as a better evacuation route from north to south from the River Parishes in times of need for nuclear and/or petro-chemical evacuation purposes.

- Alternate 7 provides easier access from the River Parishes area to Nicholls State University, Thibodaux General Hospital, Thibodaux/Houma area businesses, schools, churches, etc., and vice versa.

- Alternate 7 allows for easier flow of tourism between the River Parishes area and Lafourche/Terrebonne Parishes.

- Alternate 7 provides the best location for easier flow of traffic between the River Region and the Lafourche/Terrebonne Region which will allow for greatly enhanced economic development of the River Region area and Lafourche/Terrebonne area.

- Hundreds and hundreds of commuters and travelers, if not thousands, use Highway 20 between Thibodaux and Vacherie, in both directions, on a daily basis, for employment, healthcare, educational, shopping, social, and other personal needs. Alternate 7 will replace Highway 20 as the main commuter route between Thibodaux and Vacherie, especially the substandard and dangerous section of Highway 20 between Vacherie and Chackbay. Alternate 7 will greatly enhance the already strong economic, social, personal and other ties between the River Parishes and the Lafourche/Terrebonne region.

- The St. James Parish Council and the St. James Parish President's Office, and many area citizens have publicly endorsed Alternate 7 over Alternates 6, 6-A & 7-A.

Thirdly, please consider the disadvantages of Alternates 6, 6-A & 7-A, including:

- These alternates will have a much higher cost, mainly because of the need for more elevated highways on these alternates.

- These alternates will possibly cause greater environmental impact, i.e., possibly will pass through more wetlands.

- These alternates do not service as many populated areas as Alternate 7.

- These alternates connect to Highway 3127 in a relatively remote area – an area not as prone to economic development as compared to Alternate 7.

The state and federal government will be spending hundreds of millions of dollars on this project. We need to be sure that this new road is built in the best possible location so that this road will serve not only as a very effective hurricane evacuation route, but will also service the future transportation needs for the most number of people in our entire area, both in a south to north direction and in a north to south direction.

In summary, choosing Alternates 6, 6-A or 7-A over Alternate 7 will result in us having a road that will be very useful for hurricane evacuation purposes, but, in practicality, will not be very useful for hardly any other purposes.

In light of the above, it is respectfully submitted that Alternate 7 is the best possible location for the new road in question. Please be sure to include Alternate 7 in the environmental assessment study that you are conducting.

Thank you for allowing me to express my views on this issue.

Please contact me if you have any questions.

Sincerely,

Jude G. Gravois
JGG:me
c: Ms. Michelle M. Deshotels (DOTD)

Gabsewics, Edward

From: Jude Gravois [jgravois@eatel.net]
Sent: Thursday, August 05, 2004 10:19 AM
To: Gabsewics, Edward
Cc: Glenn Graham; Gerald Falgoust
Subject: State Project No. 700-99-0302 - Hurricane Evacuation Road

Ed, it was a pleasure meeting you at the public hearing held in Thibodaux on July 15. As we discussed after the meeting, I would like to invite you and Glenn Graham to meet with me and Gerald Falgoust, St. James Parish Director of Emergency Preparedness, and possibly one or two other local citizens, for a discussion of the advantages and disadvantages of Alternate 7 and for a quick on-the-ground tour of this area so as to give you a better feel of where the Veterans Memorial Bridge connector road will enter Highway 3127, and where Alternates 7, 7-A, 6 and 6-A will enter Highway 3127. This will enable you to have more usable and pertinent information for the study that you are currently conducting.

My schedule is not crowded over the coming weeks. We will work around your and Glenn's schedules, but pretty much any Thursday would probably be best for us. I suggest that we meet at my office in Vacherie around 10:00 a.m. for a half-hour or so of discussion, then plan a one-hour or so tour of the area, followed by lunch at a local restaurant.

Please let me know your and Glenn's availability at your earliest convenience and then I'll confirm with Gerald.

Any questions or comments, please do not hesitate to contact me.

Thanks,

Jude

Jude G. Gravois
Attorney at Law
P. O. Box 67 (mailing)
21336 Highway 20 (physical)
Vacherie, LA 70090
(225) 265-3923
(225) 265-4853 (fax)
jgravois@eatel.net

Public Meeting No. 2

Location: Nicholls State University - Gouaux Auditorium (Houma, LA)
Date: 11/18/2004

LADOTD

U.S. Department of Transportation
Federal Highway Administration

HOUMA-THIBODAUX TO LA 3127
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE
PUBLIC MEETING
NOVEMBER 18, 2004 – 7:00 PM
SIGN IN SHEET - PLEASE PRINT

NAME	ADDRESS	PHONE #	E-MAIL
michele deshotels		225.242.4506	
Lei Jin	CADOTD	225 242 4510	
TONY DORSA		225 379 1938	
Bill Farr	FHWA	225-757-7615	
Susan Duet	130 Aselane St Gray, LA, 70359	851-5778	—
BOB MAHONEY	FHWA	225 757-7624	
KEN PERRET	LA DOTD	(225) 375-1248	
Leland Robichaux	SCIA.	8680630	
Patricia Reno	PO Box 526 DeZ Allemands, LA 70030	985-758-7075	
Al BADEAUX	P.O. Box 2167 Houma, LA. 70361 Houma/Terrebonne Chamber	985-879-2642	

LADOTD

U.S. Department of Transportation
Federal Highway Administration

HOUMA-THIBODAUX TO LA 3127
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE
PUBLIC MEETING
NOVEMBER 18, 2004 – 7:00 PM
SIGN IN SHEET - PLEASE PRINT

NAME	ADDRESS	PHONE #	E-MAIL
CARL JAKOB	991 GRAND CAILLOU RD. HOUMA, LA.	985-876-6380	
PAUL M. CHARROU	DOTD REAL ESTATE	(504) 465-3468	
Jeanne Fritsche	GSE	985 876-6380	
Mike Godzinski Katie Lintott	ESI	504 947 0737	
Roy Francis	PO Box 2048 - NSU Thibodaux LA 70301	985-448 4485	
Kandy Therriot Houma Chamber	6133 Hwy 311	985-876-5600	
Charlotte Randolph	PO Box 5548 Thibodaux	985 4468427	
Peter Duffrene	2629 Aerolokt Morgan City	985 3802433	
Gregg Lapeyrouse	PO Box 3873 Houma LA 70361	985 876-9702	
BILL BARBEC	CTE	512 861 4199 x4383	
Roy Quezaire	P.O. Box 269 DONALDSONVILLE, LA. 70346	(225) 474-2025	

LADOTD

U.S. Department of Transportation
Federal Highway Administration

HOUMA-THIBODAUX TO LA 3127
(NORTH-SOUTH CORRIDOR/HURRICANE EVACUATION) STATEWIDE
PUBLIC MEETING
NOVEMBER 18, 2004 – 7:00 PM
SIGN IN SHEET - PLEASE PRINT

NAME	ADDRESS	PHONE #	E-MAIL
WAYNE RODRIGUE	VACHERIE, LA. 2216 N. BANK LANE	225-265-2330	WSRMrod@eatel.net
[illegible]	2999 Choctaw Road	985 633-9902	
TED FRIDIRICI		1-800 274-2224	tfridirici@bh-ba.com
Jude Gravois	P.O. Box 67 Vacherie, LA 70090	225 265-3923	jgravois@eatel.net
Mike DeLatte	2999 Choctaw Road Thibodaux LA. 70301	985 633-9902	
Nelson Kraemer	2776 Hwy. 307 Thibodaux, La. 70301	985 633-9793	
Alexis Duval	202 Oak Alley Houma LA 70360	985 872-9036	alexis@teche.net
Pierre Ancoin	134 Goodwill Pt Rd Vacherie	225 265 7906	
DAN WALKER	501 ROUSSELL ST Houma, LA 70360	985 868 2333	danwalker@wwalaw.com
Jason A. Emery	P.O. Box 661 Charenton, LA 70523	(337) 923-9923	jemery@chitimacha.gov

MEETING MINUTES
AGENCY MEETING #2
November 18, 2004

LADOTD State Project No. 700-99-0302
Federal Aid Project No. HP-9902(518)
Houma-Thibodaux to LA 3127 Connection
(North-South Corridor/Hurricane Evacuation)
Statewide

Agency Meeting #2 was held at the South Central Planning Commission Conference Room in Houma, Louisiana at 10:00 AM on Thursday November 18th. The purpose of the meeting was to provide information on the progress of the Hurricane Evacuation Route EIS project and to receive input from the agency representatives. The sign-in list is attached.

After some brief introductions and opening comments a powerpoint presentation was provided by Buchart Horn, Inc. to update the attendees on the progress of the project since the Agency Scoping Meeting in July. The presentation included details regarding the use of QUANTM Route Optimization software and the initial results from the use of the software. The presentation also included an overview of the NEPA process and a description of the engineering and cost assumptions used for the initial QUANTM runs. Numerous display boards were provided. After the powerpoint presentation the group took a break and the attendees were encouraged to view the display boards and to draw a line on the overall constraints map representing where they thought the alignment should go. The comment and question and answer session that followed the break is summarized below.

- It was asked if different starting points on the south end of project would be considered. In response it was noted that a QUANTM run starting on 90 to the west of LA 24 has already been initiated but the results have not yet been received. A brief review of the QUANTM process regarding how requests for evaluations of new starting points or other modifications was provided.

- The US ACOE representative asked if "avoid all wetlands" can be entered into the optimization program. It was noted that, in theory, that was possible. However, regarding total avoidance of wetlands, given the expansive wetland areas, total avoidance of this valuable resource appears to be unlikely. It was noted that the DOTD appreciates the need to try to avoid wetland impacts, and, if impacts cannot be avoided to minimize impacts to wetlands. Finally, whatever impacts cannot be avoided or minimized, impacts need to be mitigated.

- The US Army Corps of Engineers representative noted that they have pushed for an alternative that follows Bayou Lafourche ridge and have not deviated from that position. This route extends beyond the project area. By following the west side of the Mississippi River, the route avoids Baton Rouge. It was noted that the basis

for our project is the 1999, Hurricane Evacuation Corridor Study prepared by URS Greiner. The URS study set the project boundaries for the Houma-Thibodaux to LA 3127 Connection, Hurricane Evacuation Route project. The URS study also provides a feasibility study of alternative corridors for hurricane evacuation and was intended to provide the DOTD with recommendations for future study. The URS report will be reviewed and a formal response will be provided to the US ACOE.

- It was asked if we need an interstate grade highway for evacuation. In response it was noted that the DOTD sets the criteria for what the roadway will look like including if it will meet interstate standards. The present proposed route is designated as an F-3 highway which is a 4 lane freeway having a right-of-way of 300 ft. wide. The highway and structures are proposed to be at or above storm surge height.
-
- The US Corps of Engineers representative noted that they will assess impacts of height during the permitting process.

- The US Corps of Engineers representative noted that they are revising methods of wetland mitigation. Direct and indirect impacts will be considered. 3:1 is a better potential reality ratio to use for high quality wetlands. 5 or 6:1 would be a ratio to use for secondary impacts. The Mobile, Alabama District uses a ratio method. No Net Loss is the goal. Bottomland hardwood mitigation bank is approximately $5000/acre. Almost all wetland sin the project area can be considered high quality.

- It was asked if there is a mechanism for recording why people want a certain route when drawing lines on the constraint maps provided for that purpose. It was noted that the team will note in the margins who drew which line but that the reasons for why would need to be recorded on survey forms or by other means.

- Regarding the southern termini, it was asked how the LA. Highway 1 project tied into this project. Does the LA. 1 project have to tie-in to the southern terminus of the North-South project? It was noted that LA. 1 must link to US 90, not specifically to the North-South project and that each project has independent utility.

- The US ACOE representative noted that here is an existing 200 acre mitigation bank in the direct path of the Prospect Street extension (Gremillion Land Bank). The US Corps of Engineers representative also noted that there are 3 other mitigation banks in the project area;-Lafourche Crossing, Greenwood Plantation and one other. The team requested that the US ACOE provide details including a map showing the location of these new mitigation banks so they can be incorporated in our constraints mapping.

- The US ACOE representative requested detail regarding when the Scoping meeting would be held. It was noted that the meeting was held on July 15, 2004. He wants a copy of the minutes. A copy of the minutes will be provided.

- The US Corps of Engineers representative expressed his opinion that a transportation link should be the primary purpose as that is what it will be used for 99% of the time. Hurricane evacuation has too many alternatives.

  An individual involved with access management asked if sharing gas or oil line right of way was a possibility. A DOTD representative noted that there regulations say that that is not allowed for lines over 250 psi.

  An individual asked how people in Larose get to the evacuation routes. It was noted that people in Larose need to get to US 90 and then can access the evacuation route from US 90 by either traveling to the east or west to wherever the evacuation route starts from.

The meeting concluded at approximately 11:45 AM.

MEETING MINUTES
PUBLIC OFFICIALS MEETING #2
November 18, 2004

LADOTD State Project No. 700-99-0302
Federal Aid Project No. HP-9902(518)
Houma-Thibodaux to LA 3127 Connection
(North-South Corridor/Hurricane Evacuation)
Statewide

Public Officials Meeting #2 was held at the South Central Planning Commission Conference Room in Houma, Louisiana at 3:00 Pm on Thursday November 18th. The purpose of the meeting was to provide information on the progress of the Hurricane Evacuation Route EIS project and to receive input from the public officials. The sign-in list is attached.

After some brief introductions and opening comments a powerpoint presentation was provided by Buchart Horn, Inc. to update the attendees on the progress of the project since the Public Officials Meeting in July. The presentation included details regarding the use of QUANTM Route Optimization software and the initial results from the use of the software. The presentation also included an overview of the NEPA process and a description of the engineering and cost assumptions used for the initial QUANTM runs. Numerous display boards were provided. After the powerpoint presentation the group took a break and the attendees were encouraged to view the display boards and to draw a line on the overall constraints map representing where they thought the alignment should go. A comment and question and answer session followed the break.

- A question was raised regarding the use of LA 309 on the west side of the project area as an evacuation route since there is an existing 2-lane road through the wetlands. Can it be included in the study? In response, it was noted that a full range of alternatives will be considered as part of the process and use of QUANTM route optimization software but that there are no plans to expand the project area to the west.

- In informal conversation, Sheriff Jerry Larpenter of Terrebonne Parish expressed his views that evacuation for the area should remain on the west bank of the Mississippi River generally following a route to Donaldsonville, then Port Allen, then Simmesport, then to Alexandria. He marked this path on a state highway map. No specific response was provided to Sheriff Larpenter however as noted there are no plans to expand the project area to the west.

The meeting concluded at approximately 4:45 pm.

SCIA South Central Industrial Association

Neil Suard
President
Suard Companies

Chet Morrison
Exec. Vice President
Chet Morrison
Contractors

Kenneth Smith
Vice President
T. Baker Smith & Son

Eric Bollinger
Secretary
Bollinger Shipyards

Charles Theriot
Treasurer
Charles Theriot, CPA

Leland Robichaux
Past President &
Director
Oil States
Skagit/Smatco

Bobby Barthel
Past President &
Director
Quality Shipyards

Don Hingle
Director
Whitney Bank

C.J. Domangue
Director
Domangue Lafont
Investments

Stephanie Hebert
Director
Stephanie Hebert
Insurance Agency

Otis T. Logue
Past President &
Managing Director
Southern Technology
& Services

Jane Arnette
SCIA
Executive Director

November 19, 2004

Ed Gabsewics, Project Manager
Buchart-Horn, Inc
Causeway Plaza III, Suite 201
3330 West Esplanade Avenue
Metairie, LA 70002

Dear Mr. Gabsewics:

The SCIA Board of Directors, representing approximately 200 member firms with over 35,000 employees in the bayou region, unanimously voted in support of Alternate 7 as a preferred route for the North South Access Highway Project.

Logistically, Alternate 7 would provide the best evacuation route for Terrebonne and Lafourche parish residents. This route would provide a direct link from US 90 to the Veteran's Memorial Bridge in Vacherie/Gramercy, thus providing access to Interstate 10 and Interstate 55.

We are pleased that alternative alignments will be evaluated in conjunction with financial, environmental and social constraints. It is obvious the LA DOTD is diligently working to provide the best possible solution for the protection of so many lives in south Louisiana.

We encourage your continued work and look forward to being informed of the progress you are making regarding the North South Access Highway Project.

Please see the enclosed SCIA resolution in support of this project.

Sincerely,

Neil Suard

Neil Suard
President

RECEIVED
NOV 26 2004
BUCHART-HORN, INC.

CC: Johnny Bradberry, Secretary
Kenneth A. Perret, P.E., LA DOTD, Assistant Secretary
Michele Deshotels, LA DOTD Project Manager
Bayou Elected Delegation

7910 Main Street, Suite 224 • Post Office Box 2143 • Houma, Louisiana 70361-2143
Phone: (985) 851-2201 • Fax: (985) 851-2202 • Email: scindustrial@bellsouth.net

SCIA South Central Industrial Association

RESOLUTION NO. 111604
North South Access Highway Project
North South Corridor/Hurricane Evacuation Route

The South Central Industrial Association (SCIA) representing approximately 200 member firms and 35,000 employees, strongly requests further review by the Louisiana Department of Transportation and Development (LA DOTD) with regards to the North South Access Highway Project.

WHEREAS, the South Central Industrial Association appeals to the LA DOTD to expand and modify the current study for the North South Access Highway Project;

WHEREAS, the South Central Industrial Association requests the purpose and need be expanded to include transportation links;

WHEREAS, the South Central Industrial Association encourages the study of the inclusion of Alternative Route 7, which is the most direct route from LA Highway 90 to the Veterans Memorial Bridge near Vacherie/Gramercy;

WHEREAS, the South Central Industrial Association believes Alternate 7 is the most cost effective route;

WHEREAS, the South Central Industrial Association believes Alternate 7 will provide less wetland impact by construction;

WHEREAS, the South Central Industrial Association encourages the limits of the study area be expanded to Interstate-10;

WHEREAS, the long term safety and essential general welfare of the Bayou and River Regions are critically dependent upon future improvements to the transportation system, specifically the most cost effective and direct route of the North South Corridor/Hurricane Evacuation Route to the Interstate-10 system, and

BE IT RESOLVED, that the South Central Industrial Association requests the Louisiana Department of Transportation & Development take immediate action to include transportation links and expansion of the limits of study to Interstate-10 for the North South Corridor/Hurricane Evacuation Route project.

THEREFORE, BE IT FURTHER RESOLVED, that the Board of Directors of the South Central Industrial Association on November 16, 2004 unanimously acknowledged, adopted and supported this resolution of transportation links and expansion limits to Interstate-10 for the North South Corridor Hurricane Evacuation Route as set forth above.

Neil Suard
SCIA President

Leland Robichaux
SCIA Board Member/Infrastructure Chair

7910 Main Street, Suite 224 • Post Office Box 2143 • Houma, Louisiana 70361-2143
Phone: (985) 851-2201 • Fax: (985) 851-2202 • Email: scindustrial@bellsouth.net

Public Informational Meeting

Location: Nicholls State University - Gouaux Auditorium (Houma, LA)
Date: 03/09/2010

U.S. Department of Transportation
Federal Highway Administration

LADOTD

HOUMA-THIBODAUX TO LA 3127 CONNECTION EIS

PUBLIC INFORMATIONAL MEETING

March 9, 2010
SIGN IN SHEET

NAME	PARISH	CONTACT (EMAIL)
Noel Ardoin	DOTD	
Kerry Uriol	GSE	
Phillip Parker	GSE	
Josh Munning	SCPDC/ [redacted]	josh@scpdc.org
Richard Abbie	LAF.	RICHARD ABBIE@ATT.NET
Earl J. Gunding	Lafourche	
Jeffery Pier	SHAW	
Naomi King - The Daily Comet/Courier	Terrebonne	naomi.king@houmatoday.com
Terry Hanks	Laf. Parish Gov't	terryh@lafourchegov.org
Judy Badeaux	Lafourche	—
Pat Clement	Lafourche	
Ronnie Clement	Lafourche	
Maryal Mauhantz	Lafourche / Terrebonne	Biscomaryal@Yahoo.com
Ted Falgout	Lafourche	tmf@tmfassociates.net
Joe Robinson	Lafourche	
Joe Robinson	Lafourche	joe.Robinson@yahoo.com

U.S. Department of Transportation
Federal Highway Administration

LADOTD

HOUMA-THIBODAUX TO LA 3127 CONNECTION EIS

PUBLIC INFORMATIONAL MEETING

March 9, 2010

SIGN IN SHEET

NAME	PARISH	CONTACT (EMAIL)
CLAY BREAUD	LAFOURCHE	CLAY@GULF-SOUTH.COM
Luke Ford	LAFOURCHE	LUKEFORD@ATT.NET
CHARLES LINDY HOFFMANN	"	NONE
Michael Cobb	Terrebonne	michael.cobb@la.gov
Addis LANDRY, JR.	LAFOURCHE	AKLANDRY BELLSOUTH.COM.
Bonnie Bradshaw	E. Baton Rouge	bonnie.bradshaw@shawgrp.com
ALAN KROUSE	EBR	ALAN.KROUSE@SHAWGRP.COM
BOB MAHONEY	EBR	robert.mahoney@DOT.GOV
MARK STINSON	EBR	mark.stinson@dot.gov
SEAN AUTIN	LAFOURCHE	johnboybyu@yahoo.com
Rhonda L. Smith	—	rlsmith@earth-search.com
Kevin Ghirardi	Terrebonne	ghirardi.d@gmail.com
LEO MARRETTA	HTMPO/SCPDC	LEO@SCPDC.org
CHRIS PULASKI	TERREBONNE	pulaskic@nwf.org
LESLIE LOUP	ST JAMES	loupl@bellsouth.net
WAYNE RODRIGUE	ST JAMES	Wsrmrod@bellsouth.net

U.S. Department of Transportation
Federal Highway Administration

LADOTD

HOUMA-THIBODAUX TO LA 3127 CONNECTION EIS

PUBLIC INFORMATIONAL MEETING

March 9, 2010
SIGN IN SHEET

NAME	PARISH	CONTACT (EMAIL)
LYLE LEBLANC	TERREBONNE	LYLE.LEBLANC@LA.GOV
Elton Aubert	St. James	eltmaubert@yahoo.com
[illegible]	Lafourche	
Jeff Messina	Jefferson	jmessina@urbansystems.com
MICHAEL G. DAVIS	NICHOLLS STATE	MIKE.DAVIS@NICHOLLS.EDU
Renee Brinkley	Lafourche Parish SO	renee-brinkley@lpso.net
Dea Richard	LAF.	
AF "Bob" Blair Jr	LAFOURCHE	SELF
[illegible] Kramer		[illegible]@hotmail.com
Kenneth [illegible]	Terrebonne	
Chip BADEAUX	LAFOURCHE	ChipBadeaux@Hotmail

U.S. Department of Transportation
Federal Highway Administration

LADOTD

HOUMA-THIBODAUX TO LA 3127 CONNECTION EIS

ELECTED OFFICIALS

PUBLIC INFORMATIONAL MEETING
March 9, 2010
SIGN IN SHEET

NAME	PARISH	CONTACT (EMAIL)
* James Brazan	St James Parish	JBRAZAN@Bellsouth.net
* Ken Brass	St. James Parish Council	Ken.brass@stjamesla.com
Roland Clement	Laf.	
[illegible]		
Blaise Gravois	St James Parish Exec Dep	blaisegravois@bellsouth.net

COMMENT FORM

What is your opinion about a north-south corridor within the expanded study boundary to improve system linkage and hurricane evacuation?

Houma-Thibodaux to LA 3127 Connector
Assumption, Lafourche and Ascension Parishes
LADOTD STATE PROJECT NO. 700-99-0302
FEDERAL AID PROJECT NO. HP-9902(518)

You can help us better understand your views on the project by providing comments or questions regarding transportation needs, problems, issues, and potential impacts of the proposed north-south corridor within the newly expanded project boundary.

Please return this form before leaving the meeting, or by mail no later than ten days after the meeting date in order to have your comments included in the transcription of this meeting.

Date: 3-09-2010

Your Name: Nelson A. Kraemer

Address/City/State/Zip Code: 2776 Hwy. 307
Thibodaux, La. 70301

Parish: ☐ **Assumption** ☑ **Lafourche** ☐ **Ascension** ☐ **Other:**

I would like to get additional information before making a remark about which location to use. Please keep me informed

Please complete your comment form and place it at the sign-in desk or send any written comments or questions to the address below by mail by March 19, 2010.

Darius Bonton
Asst. Project Manager
Buchart Horn, Inc.
9100 Bluebonnet Centre
Ste 502
Baton Rouge, LA 70809

COMMENT FORM

What is your opinion about a north-south corridor within the expanded study boundary to improve system linkage and hurricane evacuation?

Houma-Thibodaux to LA 3127 Connector
Assumption, Lafourche and Ascension Parishes
LADOTD STATE PROJECT NO. 700-99-0302
FEDERAL AID PROJECT NO. HP-9902(518)

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Please return this form before leaving the meeting, or by mail no later than ten days after the meeting date in order to have your comments included in the transcription of this meeting.

Date: 3/16/10

Your Name: TED HOFFMANN

Address/City/State/Zip Code: 402 OAK ST THIBODAUX, LA 70301

Parish: ☐ Assumption ☑ Lafourche ☐ Ascension ☐ Other:

THE ROUTE OF THE NEW HIGHWAY SHOULD BEGIN AT 308 - FOLLOW HWY 304 AND EXTEND IT TO 3127.

THIS IS THE SHORTEST ROUTE. IT WOULD BE MOST COST EFFECTIVE AND HAVE LESS INTERUPTION TO THE ENVIROMENT.

Please complete your comment form and place it at the sign-in desk or send any written comments or questions to the address below by mail by March 19, 2010.

Darius Bonton
Asst. Project Manager
Buchart Horn, Inc.
9100 Bluebonnet Centre
Ste 502
Baton Rouge, LA 70809

COMMENT FORM

What is your opinion about a north-south corridor within the expanded study boundary to improve system linkage and hurricane evacuation?

Houma-Thibodaux to LA 3127 Connector
Assumption, Lafourche and Ascension Parishes
LADOTD STATE PROJECT NO. 700-99-0302
FEDERAL AID PROJECT NO. HP-9902(518)

You can help us better understand your views on the project by providing comments or questions regarding transportation needs, problems, issues, and potential impacts of the proposed north-south corridor within the newly expanded project boundary.

Please return this form before leaving the meeting, or by mail no later than ten days after the meeting date in order to have your comments included in the transcription of this meeting.

Date: March 17, 2010

Your Name: Judith M. Badeaux

Address/City/State/Zip Code: 612 Fairway Drive
Thibodaux, LA. 70301

Parish: ☐ **Assumption** ☑ **Lafourche** ☐ **Ascension** ☐ **Other:**

I would favor a N/S route linking Hwy. 90 to Hwy. 3127 somewhere near the Gramercy/Wallace Bridge – thus giving traffic 3 options:

1) North – over Gramercy/Wallace Bridge
2) West – over Sunshine Bridge
3) East – over Boggy Bridge

This would prevent overload on any one bridge at hurricane evacuation time.

Why is hurricane evacuation not priority #1??

Thanks!

Please complete your comment form and place it at the sign-in desk or send any written comments or questions to the address below by mail by March 19, 2010.

Darius Bonton
Asst. Project Manager
Buchart Horn, Inc.
9100 Bluebonnet Centre
Ste 502
Baton Rouge, LA 70809

COMMENT FORM

What is your opinion about a north-south corridor within the expanded study boundary to improve system linkage and hurricane evacuation?

Houma-Thibodaux to LA 3127 Connector
Assumption, Lafourche and Ascension Parishes
LADOTD STATE PROJECT NO. 700-99-0302
FEDERAL AID PROJECT NO. HP-9902(518)

You can help us better understand your views on the project by providing comments or questions regarding transportation needs, problems, issues, and potential impacts of the proposed north-south corridor within the newly expanded project boundary.

Please return this form before leaving the meeting, or by mail no later than ten days after the meeting date in order to have your comments included in the transcription of this meeting.

Date: 03/18/10

Your Name: Earl J. Guidry

Address/City/State/Zip Code: 253 Hwy 304
Thibodaux, La. 70301

Parish: ☐ Assumption ☑ Lafourche ☐ Ascension ☐ Other:

Build a four lane highway from Houma to La. 3127 by a Northern direction as much as possible, by-passing Thibodaux, but near enough to Highway 1 La 20 to help relieve this over capacity road. This road should be a limited access highway with intersections to Hwy 90, 24 308, 1, 20, 314 only. To meet Corp of Eng. & EPA environmental concerns of least impact, it should be built elevated thru the swamp areas. West of Thibodaux would be good, but East would be better. The primary need for this highway is for moving people and goods from north to south & south to north and hurricane evacuation. Land developement should play no part. For financing it, it may be required to built only 2 lanes first, with the remaining lanes built later, however the entire right of way should be acquired first.

Please complete your comment form and place it at the sign-in desk or send any written comments or questions to the address below by mail by March 19, 2010.

Darius Bonton
Asst. Project Manager
Buchart Horn, Inc.
9100 Bluebonnet Centre
Ste 502
Baton Rouge, LA 70809

Appendix P.
Project Newsletters

NORTH
SOUTH
CONNECTOR

Houma-Thibodaux to LA 3127 Connection

Project Newsletters

Prepared for:

Louisiana Department of Transportation and Development

State Project No. H.005257
FAP No. H.005257

Houma Thibodaux to LA 3127 Connection
C/o GSE Associates
991 Grand Caillou Road
Houma, LA 70363

Houma Thibodaux to LA 3127 Connection Newsletter

State Project No. 700-99-0302
FAP No. HP 9902(518)

Houma Thibodaux to LA 3127 Connection

OPPORTUNITIES FOR YOUR INPUT

Your participation is vital to ensuring that decisions on the proposed project reflect the needs of the people affected by the project. There are several ways to be informed and heard. If you have questions, comments or concerns, or want to be placed on the Houma Thibodaux to LA 3127 Connection mailing list, you can do one of the following:

Call: (985) 876-6380
Email: houmathibodaux@gulf-south.com

Write to:

Houma Thibodaux to LA 3127 Connection
c/o GSE
991 Grand Caillou Road
Houma, LA 70363

NAME: _____

ADDRESS: _____

_____

DAYTIME PHONE: _____

EVENING PHONE: _____

E-MAIL ADDRESS: _____

Comments:

_____

U.S. Department of Transportation
Federal Highway Administration

LADOTD

Houma /Thibodaux to LA 3127 Connection Newsletter

State Project No. 700-99-0302
FAP No. HP 9902(518)

January 2010
Volume 1,
Number 1

Introduction

This newsletter provides an information source for development of the Environmental Impact Statement (EIS) to support the Houma Thibodaux to LA 3127 Connection route in Lafourche, Terrebonne, Assumption, Ascension, St. Mary, St. James, St. Charles, and St. John the Baptist Parishes. Additional newsletters will be created as the project progresses to keep the interested public informed.

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Project History

A Notice of Intent (NOI) to prepare an EIS for the North-South Hurricane Evacuation Route Houma Thibodaux to LA 3127 was published in the Federal Register on June 7, 2004. In 2006, development of the EIS was put on hold by the Louisiana Department of Transportation and Development (LDOTD) due to concerns raised by resource agencies (including the U. S. Army Corps of Engineers, the U. S. Environmental Protection Agency, and the U. S. Fish and Wildlife Service). These concerns were associated with the alternatives analysis and whether all possible alternatives were explored.

LDOTD expanded the study boundary to the west incorporating the Bayou Lafourche Ridge northwest to the Sunshine Bridge and initiated a screening study of the new study area in July 2007. The objective of the screening study was to determine if a corridor following LA 1/LA 308 would meet the EIS's Purpose and Need of enhancing north/south connectivity in addition to providing functional hurricane evacuation.

Based on the recommendations of the screening study, the study area was officially expanded to include the Sunshine Bridge and the northernmost east/west alternative considered would be carried forward into the EIS.

Current Actions

- Issue a Revised NOI indicating the expansion of the EIS study area
- Re-initiate the EIS
  - Update all GIS layers
  - Reassess environmental, cultural, and industrial resources in the original project area
  - Define and document environmental, cultural, and industrial resources in the expanded project area
- Re-engage the public

What's next?

2nd Quarter 2010 – Public and Public Officials Meeting to discuss alternative alignments

U.S. Department of Transportation
Federal Highway Administration

LADOTD

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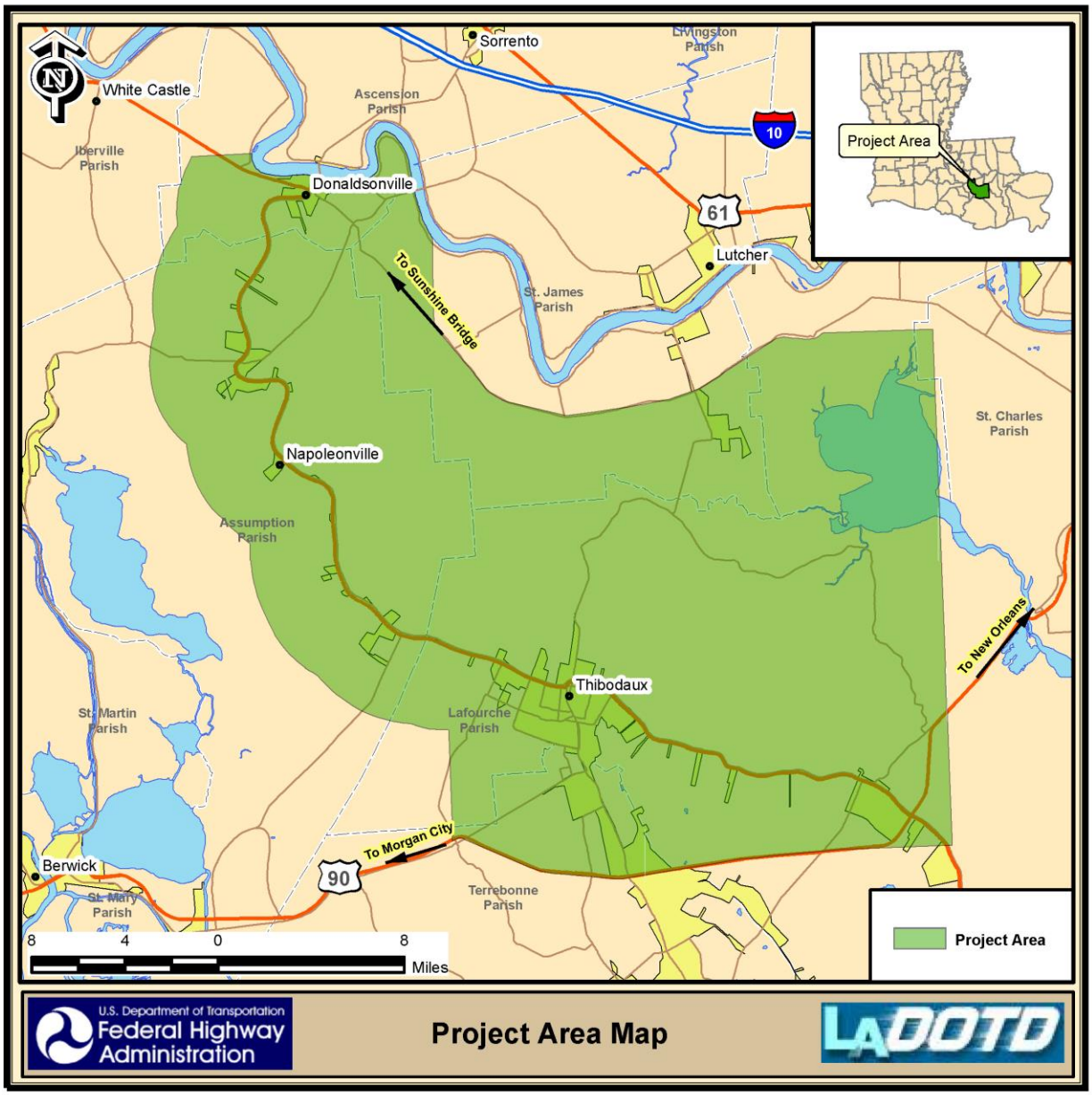
January 2010
Volume 1, Number 1

Project Team

Buchart Horn	Project Management	**GSE Associates**	Public Outreach/Environmental
Urban Systems	Traffic	**Shaw Group**	Noise/Wetlands
Wilbur Smith Associates	Environmental/Alternatives/Tolling	**Earth Search, Inc.**	Cultural Resources

Location



costs are completed the software program runs can generate as many as 50 preliminary alternatives layered onto the constraints map, color-coded by cost from red (most expensive) to green (least expensive).

QUANTM® , a route planning system to assist in the planning and environmental process, does not replace CAD or GIS systems for detailed design, documentation and presentation, but it does provide a great start for the engineers and planners addressing the alternative analysis phase of the project. Figure 1 (page 2) shows preliminary QUANTM® runs for the eastern terminus point. *Please note:* Only the eastern terminus point is presented here, as an example. QUANTM® runs completed for a more middle and western terminus point on LA 3127as well as lines drawn by the public can be reviewed on our website at www.north-southhurricanecorridor.com.

Environmental Impact Statement (EIS)

As mentioned, we will be producing an EIS to document the decision-making process by which a preferred alternative is selected. The project team has been busy writing those portions of the Draft EIS we can while proceeding with other required tasks.

Input from the public and public officials at the 11/18/2004 public meeting is a critical component of the project. Comments received from the public and public officials during these meetings, including revisions to the purpose and need, are the basis for ongoing updates to the project.

By receipt of this newsletter the Louisiana Department of Transportation and Development, on behalf of the Federal Highway Administration (FHWA), is offering the opportunity for you or your organization to participate in consultation regarding historic resources pursuant to the Advisory Council on Historic Preservation (ACHP) 36 CFR Part 800 regulations implementing Section 106 of the National Historic Preservation Act. For additional information, please contact Ted Fridirici at 800 274-2224, extension 559.

The Project Team

Louisiana Department of Transportation & Development

Federal Highway Administration

Buchart-Horn, Inc.

Buchart-Horn, Inc. is working in association with these specialty consulting firms:

- Consoer Townsend Envirodyne Engineers, Inc.
- EarthSearch, Inc.
- GSE Associates, Inc.
- Shaw Coastal, Inc.
- Urban Systems Associates, Inc.

Where Do We Go From Here

The project team will continue refinement of what we know about the project area and the use of the QUANTM® Route Optimization process including possible elimination of costly, high impact alternatives. At the same time the team will continue development of the Draft EIS and continue the public outreach efforts culminating in our next Public Meetings in the Spring of 2005 where we hope to present a reduced range of alternatives being considered.

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ADDRESS CORRECTION REQUESTED

Mailing Label Here

U.S. Department of Transportation
Federal Highway Administration

Houma-Thibodaux to LA 3127 Connection Environmental Impact Statement

State Project No. 700-99-0302
Federal Project No. HP 9902(518)

Volume 2 *PROJECT UPDATE* *Winter 2005*

Substantial progress has been made since the first public meeting for the project in July 2004 and the last newsletter (Autumn 2004). The work being completed has been presented to the public through additional meetings, both on November 18th at Nicholls State University's Gouaux Auditorium and at a community information meeting on December 9th in Vacherie at the St. James Parish Westbank Reception Hall. In addition, prior to meeting with the public, the project team met with resource agency representatives and public officials. Comments received by the project team at these meetings are being considered.

The project team has been busy….

- Collecting information and creating maps to define and describe existing conditions in the project area, or finding out "what's out there"
- Revising the Purpose and Need to include a Transportation Link based on substantial input from the public and public officials
- Evaluating traffic and evacuation issues in light of Hurricane Ivan
- Developing a Scope of Work for a Preliminary Toll Study to evaluate funding options for construction
- Developing QUANTM® costing data, establishing engineering assumptions, and creating maps that reflect the initial QUANTM®-generated alternatives
- Developing portions of the Draft Environmental Impact Statement (DEIS)

Collection of Information

Evaluation and mapping of existing conditions in the project area is a critical initial step in complying with the National Environmental Policy Act (NEPA). NEPA examines the impact of the proposed project on valuable environmental, cultural, and community resources such as wetlands, historic sites, and homes, among others.

NEPA is a decision-making process. The document that will be produced is an Environmental Impact Statement (EIS). The EIS can be thought of as a tool used by the Federal Highway Administration (FHWA) to make a decision on a preferred alternative, balancing impacts, costs, and ability to meet project need. Based on the evaluations completed to date, it is apparent that there are a wide variety of valuable resources in the project area. The information is compiled into a "Constraints Map." The map serves as the background onto which the engineers and planners, using the QUANTM® Route Optimization software, will try to place preliminary alternatives while avoiding impacts on the resources mentioned above. Figure 1 shows the constraints that the project team is considering as they start to develop preliminary alternatives.

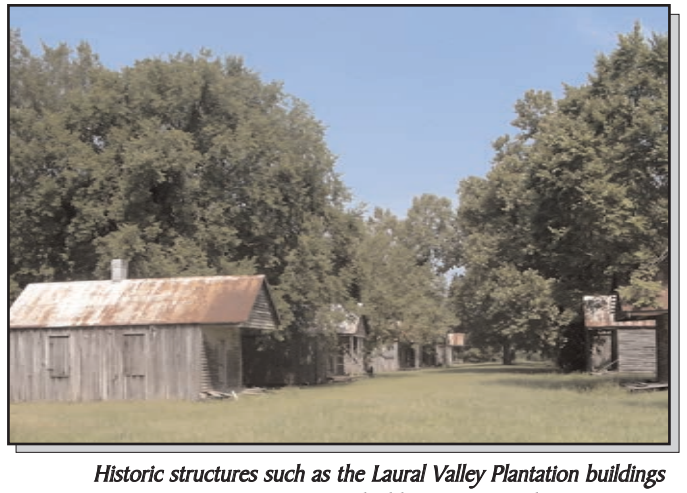
Purpose and Need

As the project team is starting to collect information about the resources in the project area, they are also developing and refining the Purpose and Need for the project. One criteria by which alternatives are evaluated is how well they meet the purpose and need for the project. The purpose and need for this project is as follows:

Purpose

The purpose is to establish improved hurricane evacuation and provide a north-south functional transportation link to the roadway network including the interstate system in the South Central Planning and Development District servicing the Parishes of Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary.

to page 3 column 1



Historic structures such as the Laural Valley Plantation buildings are a valuable resource in the project area

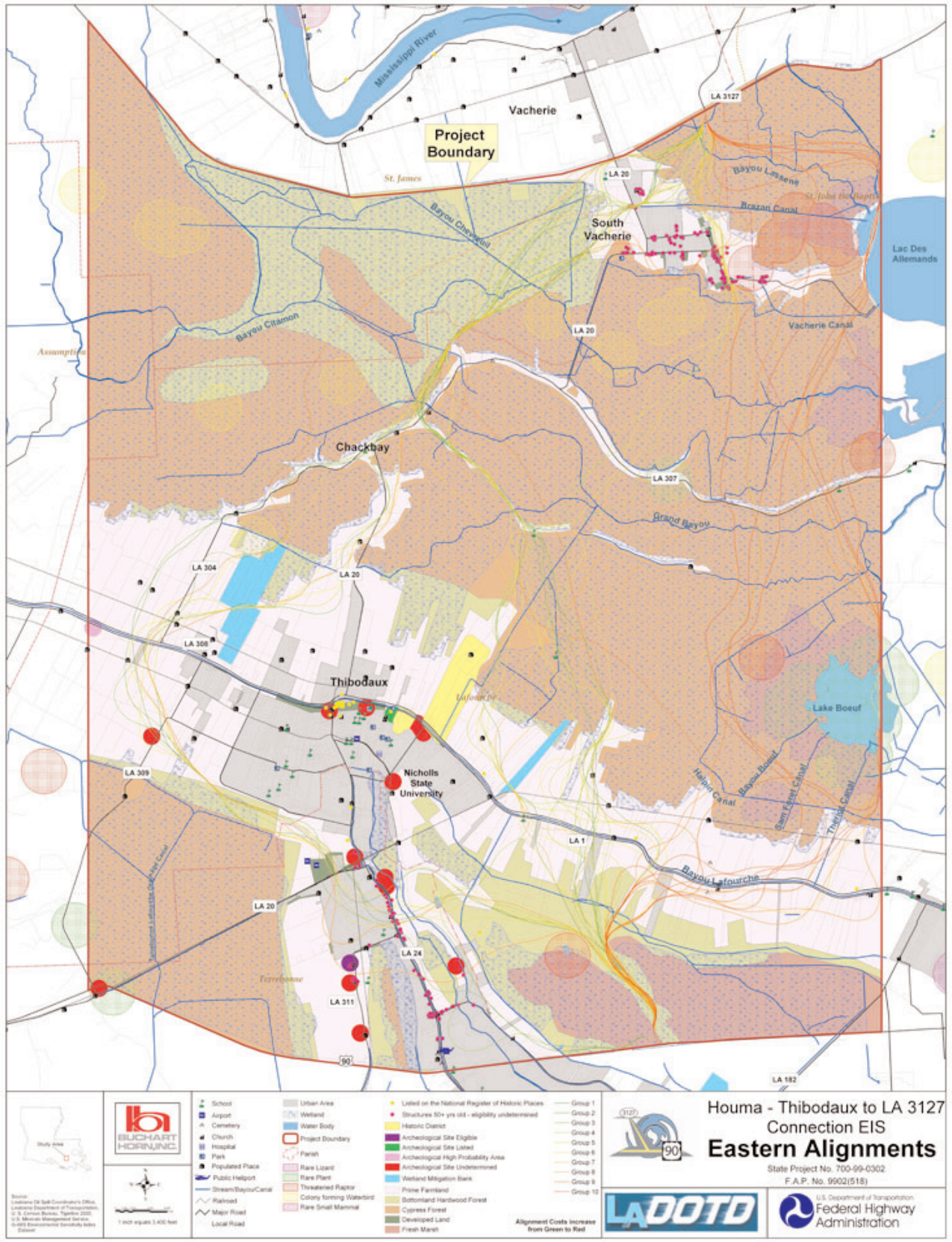
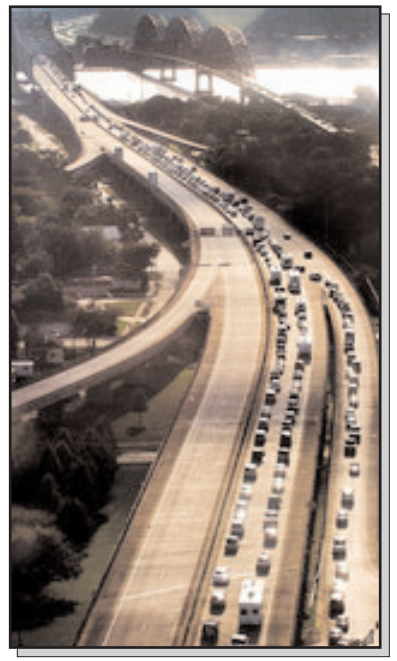


Figure 1: Constraints Map and Preliminary Eastern Alignments

Please note: Only the eastern terminus point is presented here, as an example. QUANTM® runs completed for a more middle and western terminus point on LA 3127 can be reviewed on our website at www.north-southhurricanecorridor.com.

Need

Access between the Houma/Thibodaux urban area and the north including the community of Vacherie and the westbank of the Mississippi River is circuitous and generally over two-lane roadways with multiple access points, creating transportation inefficiencies.



Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary Parishes are all subject to catastrophic storm damage due to surge inundation as well as wind and rain. This generates the need for major evacuation of the area under certain storm scenarios. Existing evacuation routes generally travel east and west, not directly to the north.

The only four-lane route on the west bank of the Mississippi River providing direct connection to the interstate system is US 90 (future I-49) extending east to New Orleans and west to Lafayette. Accessing LA 3127 would provide linkage to an existing roadway network that includes crossing(s) of the Mississippi River to more directly access I-10 and the interstate system to the North.

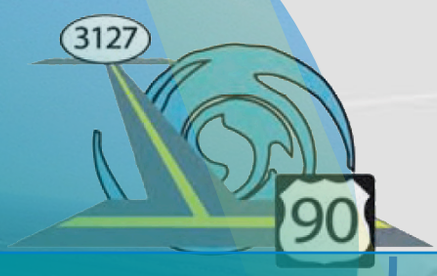
Corps of Engineers estimates of the time necessary to clear evacuating vehicles for the seven parishes varies from 14 hours (Lafourche Parish) to 30 hours (St. John the Baptist, St. James, and St. Charles Parishes). These times require early evacuation decisions that are difficult to make because of the unpredictability of storms.

The project team is using the NEPA/404 merger process on this project. "404" refers to Section 404 of the Clean water Act which, briefly, is the process by which the US Army Corp of Engineers (COE) issues a permit to impact wetlands or "Waters of the United States." Receipt of the Section 404 permit is needed before construction of the project can start. By using the NEPA/404 merger process the project team can be assured that the COE is fully aware of and agrees to all the decisions that have been made as the project evolves. By "partnering" with the COE and keeping them fully informed about the project, the DOTD and FHWA hope that the permit will be issued quickly and easily when the time comes.

Traffic Issues

The traffic analysis for the north-south corridor study is designed to determine how the proposed corridor will function in the overall transportation system in the Houma/Thibodaux region north to LA 3127. The purpose of the corridor is to support evacuation and to serve as a transportation link in the regional roadway system. The goal of the traffic analysis will be to maximize the effectiveness of the corridor in meeting these purposes.

Appendix Q.
1999 Hurricane Evacuation Corridor Study



HURRICANE EVACUATION CORRIDOR STUDY

State Project No. 700-99-0132
Terrebonne, Lafourche, Assumption, St. James, St. John, St. Charles, and St. Mary Parishes

June 1999

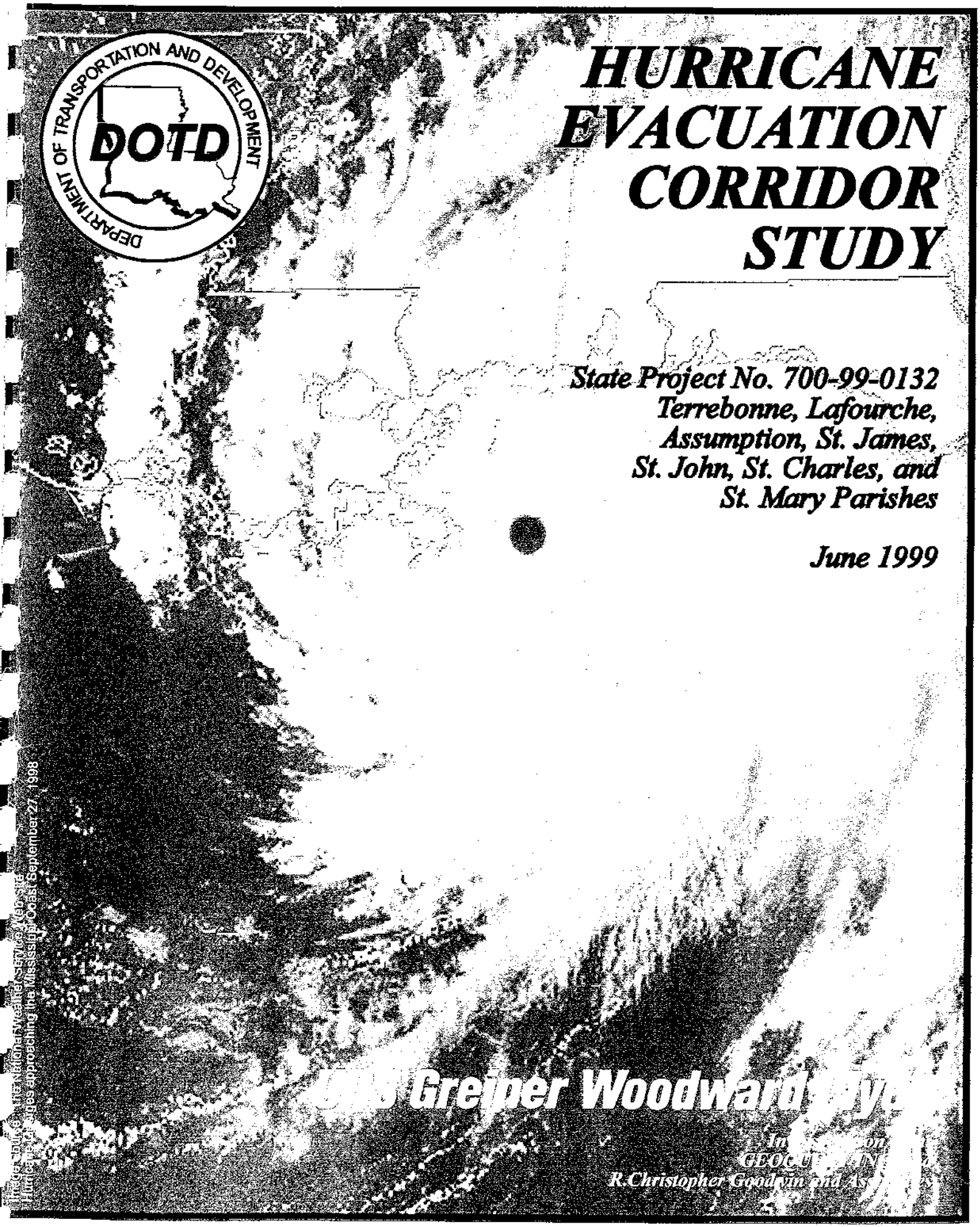


Image Source: National Weather Service Weekly Satellite Image of Hurricane Georges approaching the Mississippi Coast September 27, 1998

HURRICANE EVACUATION CORRIDOR STUDY TO CONNECT RELOCATED US 90 TO LA 3127

State Project No. 700-99-0132
Terrebonne, Lafourche, Assumption, St. James,
St. John the Baptist, St. Charles, and St. Mary Parishes

Prepared for:

Louisiana Department of Transportation and Development

Prepared by:

URS Greiner Woodward Clyde
3500 N. Causeway Blvd., Suite 900
Metairie, Louisiana 70002
(504) 837-6326

In Association With:

GeoQuery, Inc. and
R. Christopher Goodwin & Associates

JUNE 1999

Executive Summary

EXECUTIVE SUMMARY

The proposed project is the establishment of a new or improved hurricane evacuation alternative to serve Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary parishes in southeastern Louisiana. The need for a new or improved route to provide hurricane evacuees a safe and reliable route to safety is underscored by many instances of inundation of portions of roadways and traffic congestion along existing hurricane evacuation routes. The primary purpose of this project is to improve hurricane evacuation efficiency by providing improved traffic flow and reduced congestion and delay in the event of a hurricane evacuation. The proposed project may have secondary benefits such as enhancing the efficiency of goods movement and improving access into and out of the region thus promoting economic development and facilitating the tourism industry; however, the analysis presented in this study was performed based solely on the purpose and need of improving hurricane evacuation efficiency within the defined service area.

The primary objective of this corridor feasibility study is to identify environmental issues for consideration and to develop reasonable and feasible alternatives for improving hurricane evacuation efficiency (construction and other) while avoiding where practicable and minimizing where unavoidable impacts to sensitive resources and ambient standards. The result of the study is the identification of alternative corridors that appear to be both reasonable and feasible and worthy of further consideration as the preferred alternative to address the stated purpose and need for the project.

The methodology for this study focused on the collection of existing geo-referenced data for use in large-scale, constraints-mapping exercises. However, effort was first expended in collecting and organizing data that support the purpose and need for the project. The first of two public meetings was held in October 1997. Comments from these meetings were used in tandem with agency comments, both written and verbal, to expand the study limits, develop alternatives for consideration and to initiate quantitative transportation analysis that provides more refined, supportive data for use in comparing alternative proposals.

Environmental issues of concern were identified using knowledge of potentially significant issues for the area. Geographic Information System (GIS) data were obtained and developed for the project area. Environmental constraints on development were then mapped on a satellite image of the study area, which was used to develop reasonable and feasible alternative segment corridors. These alternative segments were aggregated into composites that evolved into the currently evaluated alternatives. After composite alternatives were identified, a transportation hurricane evacuation model (customized TRANPLAN model) was then prepared for the hurricane evacuation service area consistent with similarly prepared evacuation models for other coastal areas. Preliminary alternatives were then simulated as future, built transportation routes. Relative congestion among the alternatives was determined and compared. The transportation analysis resulted in the following conclusions and recommendations: 1) The evacuation time is controlled by the critical links; 2) A connection to the Gramercy-Wallace Bridge

is needed; 3) The alternatives that best meet the hurricane evacuation purpose and need are those that uniformly distribute traffic between critical links and maximize the efficient utilization of other hurricane evacuation corridors; and 4) improvements to the US 90 east of Raceland would not substantially benefit hurricane evacuation efforts within the study area because such improvements would attract westbound trips from New Orleans and eastbound trips from the Thibodaux-Houma area. Therefore, improvements to US 90 East must be accompanied by improvements to US 90 West in order to improve hurricane evacuation efficiency.

Costs of each alternative were then prepared by applying design assumptions and costs, by section type, per embankment mile and per elevated mile costs. Other cost related issues such as right-of-way acquisition and mitigation, were estimated using per acre assumptions and information obtained from Federal and State agencies.

The alternatives were then reviewed in relation to the identified constraints on development, with estimations of probable effects of final alternative corridor alignments for the identified alternative corridors for consideration. Table S-1 provides a summary of the constraints and evaluation issues that were taken into consideration for the alternative corridor evaluation.

Alternatives were then evaluated to determine which alternatives if any, most effectively met the stated project purpose and need and could be considered both reasonable and feasible. Alternatives that clearly did not meet the intended project purpose and need and/or were determined not to be reasonable or feasible were eliminated from further consideration. Alternatives that were eliminated from further considerations included Alternatives 1, 1A, 2, 3, and 5. These alternatives were eliminated from further consideration for future study mainly because they did not meet the primary transportation objective of improving hurricane evacuation efficiency. Several alternatives (e.g., Alternatives 2 and 3) also had potentially high numbers of relocations and/or potential impacts to listed or eligible for listing historic properties and potentially hazardous sites.

Based on the stated primary purpose and need of improving hurricane evacuation efficiency, and the documented evaluation considerations, Alternative Corridors 6, 6A and 7A appear to be the most effective and reasonable. All three of these alternative corridors are on new location.

The estimated total project costs including construction, engineering, administrative, right-of-way, mitigation and contingencies for these three alternatives range from $313 million to $404 million. However, it should be noted that these are total project costs for a network extending from Relocated US 90 to I-10, which includes a vast array of improvements including constructing a new approach connector to the Gramercy-Wallace Bridge from LA 3127, widening LA 641 to I-10, upgrading LA 3127 between the Sunshine Bridge and the Gramercy-Wallace Bridge and building a new four-lane facility from Relocated US 90 to LA 3127.

Table S.1. Summary of Alternative Corridors Considerations

	Units	1	1A	2	3	4	5	6	6A	7	7A
Facility Descriptions											
Add Shoulders to Existing Roadway[1]	miles	57.7	57.7	0.0	23.4	0.0	0.0	0.0	0.0	0.0	0.0
Add Two New Lanes to Existing Roadway	miles	12.8	12.8	38.5	50.8	22.1	6.7	43.4	40.2	51.4	54.0
New At-Grade Roadway	miles	2.6	2.6	2.6	2.6	28.8	6.1	9.7	12.4	9.9	2.8
New Elevated Roadway	miles	0.0	0.0	0.0	0.0	2.9	16.7	10.4	11.5	4.1	7.4
Total Project Length	miles	73.1	73.1	41.1	76.8	53.8	29.5	63.5	64.1	65.4	64.2
Project Cost											
Construction Cost	$millions	$ 54.4	$ 54.4	$ 81.7	$ 82.9	$ 175.4	$ 349.2	$ 294.1	$ 302.5	$ 181.1	$ 231.6
Engineering, Administrative, and Contingency	$millions	16.3	16.3	24.6	24.9	52.6	104.8	88.2	90.8	54.3	69.5
Right-of-way Cost	$millions	0.1	0.1	13.3	11.6	6.7	0.8	4.7	4.8	7.8	6.9
Wetland Mitigation Preservation	$millions	0.7	0.7	2.6	1.9	2.5	2.8	5.4	5.6	5.2	5.1
Estimated Total Cost	$millions	$ 71.5	$ 71.5	$ 122.2	$ 121.3	$ 237.2	$ 457.6	$ 392.4	$ 403.7	$ 248.4	$ 313.1
Facility Requirements											
New Intersections/Interchanges	each	1	1	3	1	8	4	8	7	6	11
New Railroad Crossings	each	1	1	2	1	4	3	4	4	2	2
New Waterway Crossings	each	0	0	0	0	1	2	3	2	5	5
Pipeline Crossings	each	27	27	26	27	29	20	54	48	59	59
Hurricane Evacuation Efficiency											
Improved System Efficiency from Base Case	H/M/L/No	No	No	Moderate	No	Low	Low	High	High	Moderate	High
Distributes Traffic Evenly to Critical Links	H/M/L	Low	Low	Low	High	Moderate	Low	High	High	Moderate	High
Community Facilities Within Corridor											
Oil Fields	each	1	1	1	0	0	1	0	0	0	0
Communication Towers	each	1	1	1	0	0	0	0	0	0	0
Schools	each	4	4	1	3	0	0	0	0	0	0
Churches	each	6	6	1	0	0	0	0	0	0	0
Cemetaries	each	2	2	1	0	0	0	0	0	0	0
Total Community Facilities	each	14	14	5	3	0	1	0	0	0	0
Cultural Resources Within Corridor											
Historic Standing Structures	each	174	174	13	163	2	11	12	12	14	12
Archeological Sites	each	20	20	1	12	5	0	5	5	6	6
National Register of Historic Property Sites	each	17	17	6	9	0	3	3	3	6	8
Total Cultural Resources	each	211	211	20	184	7	14	20	20	26	26
Environmental Sites Within Corridor											
Underground Storage Tanks	each	10	10	11	6	0	0	1	1	2	1
Industrial / Potentially Hazardous Sites	each	13	13	5	11	4	0	4	4	6	6
Prime and Unique Farmlands	acres	1,685	1,685	1,090	1,085	1,365	305	1,215	1,290	1,390	1,380
Wetlands Impacted by Construction	acres	50	50	170	125	175	250	400	415	360	365
Recommendations											
Recommended for further Study	Yes/No	No	No	No	No	No[2]	No	Yes	Yes	No[2]	Yes

Note: [1]Distances along shoulders do not reflect that shoulders would be added for both LA 1 and LA 308 for Alternatives 1 and 1A. This would increase the actual distance for cold-mill and overlay to approximately 80 miles, representing overlay along LA 1 (40 miles) and overlay along LA 308 (40 miles). This linear distance of improvement is misleading and is not provided in the table for comparison.
[2]Denotes corridor may prove to be a reasonable and feasible alternative pending consideration of modified purpose and need.

Source: URS Greiner Woodward Clyde, 1999.

Each of the three identified preferred hurricane evacuation alternative corridors was evaluated for logical phasing options to determine the most beneficial segments (projects) and a logical sequence for implementation. Also, with a phased implementation, full capital funding to implement the entire project is not required initially, and phases can be scheduled and programmed more consistent with anticipated funding resources availability. The results of this evaluation revealed that there are "Interim Alternative Concepts" that could potentially provide significant hurricane evacuation benefits while minimizing initial costs.

These "Interim Alternative Concepts" are similar and are comprised of partially implementing the three most critical segments of the preferred alternative corridors including:

1) Construction of a new connector roadway from LA 3127 to the Gramercy-Wallace Bridge.
2) Implementation of a new two-lane roadway from LA 3127 to LA 1 (substantial portion will be elevated).
3) Implementation of a new two-lane roadway from LA 1 to Relocated US 90.

These three segments would need to be implemented with reasonable control of access, to operate an outbound reversible lane facility with minimal manpower requirements. By utilization of reasonable control of access measures, intelligent transportation systems technology, and proper planning, a Traffic Management Plan can be devised that minimizes manpower requirements and allows for implementation and operation of the reversible facility concept for hurricane evacuation events.

The following is a listing of each preferred alternative corridor with costs by interim alternative critical segments.

Table S.2. Interim Alternative Program Cost for Preferred Hurricane Evacuation Alternatives corridors

Alternative	Improvement Description	Project Legnth (mi.)	Total Project Cost minus Mitigation ($Millions)
6	LA 3127 and G-W Bridge: New 4-Lane Road	3.5	22.5
6	LA 308 to LA 3127: Elevated New 2-Lane Road	7.6	86.0
6	LA 308 to LA 3127: New 2-Lane Road	3.3	8.6
6	US 90 to LA 308: Elevated New 2-Lane Road	2.9	33.0
6	US 90 to LA 308: New 2-Lane Road	7.0	25.4
Total			**175.5**
6.A	LA 3127 and G-W Bridge: New 4-Lane Road	3.5	22.5
6.A	LA 308 to LA 3127: Elevated New 2-Lane Road	8.7	92.1
6.A	LA 308 to LA 3127: New 2-Lane Road	2.8	8.1
6.A	US 90 to LA 308: Elevated New 2-Lane Road	2.9	33.0
6.A	US 90 to LA 308: New 2-Lane Road	7.0	25.4
Total			**181.1**
7.A	LA 3127 and G-W Bridge: New 4-Lane Road	3.5	22.5
7.A	LA 1/LA 308 to LA 3127: Elevated 2-Lane New Road	7.6	86.0
7.A	LA1/LA 308 to LA 3127: New 2-Lane Road	4.6	6.3
7.A	US 90 to LA1/LA 308: New 2-Lane Road	9.3	22.4
Total			**137.2**

Notes: Projects listed comprise the Interim Alternative Concept of the fully-envisioned alternatives as described in Section 2.0 of this report. Full Alternative costs are described in Section 2.0 of the report.

Source: Original cost calculation data sources on tables 2.2 through 2.5 of this report.

Estimated costs to implement these "Interim Alternative Concepts" vary from approximately $137 million to $181 million, approximately 40 percent of the estimated total project costs. Based on the transportation modeling analysis the following priority phasing is recommended:

1) Construction of a new connector roadway from LA 3127 to the Gramercy-Wallace Bridge.
2) Implementation of a new two-lane roadway from LA 3127 to LA 1.
3) Implementation of a new two-lane roadway from LA 1 to Relocated US 90.

Ultimately, additional phases of the chosen Alternative can be implemented over time consistent with available funding levels until the full scope of the project is completed.

The following is a summary of the primary reasons that Alternative Corridors 6, 6A and 7A were identified as the preferred hurricane evacuation alternative corridors:

1) These alternatives most effectively meet the stated purpose and need of improving the efficiency of the hurricane evacuation transportation network and generally the efficiency of hurricane evacuation events within the defined service area.

2) Considering the two defined northbound hurricane evacuation critical links (the Sunshine and Gramercy-Wallace Bridges), these alternatives provide a relatively uniform distribution of hurricane evacuation traffic demand, maximizing the efficient utilization of these critical links.

3) Each of these Alternative Corridors effectively utilize the upland natural ridge system within the study area to minimize impacts to wetland areas. When expansive wetland areas are traversed, elevated roadway sections are assumed in order to minimize impacts to wetland areas.

4) Each of these Alternative Corridors primarily entails construction on new location in undeveloped or sparely developed corridors resulting in minimization of impacts to community and cultural resources.

5) Good access and proximity to population centers within the service area are provided by each of these alternative corridors.

6) They provide options and good flexibility in accessing designated hurricane evacuation shelter zones to the north as well as other primary hurricane evacuation routes to the north of the study area.

7) Each of these alternatives provide the opportunity for a phased implementation approach in which defined interim alternatives could be developed which could potentially provide significant hurricane evacuation benefits while greatly minimizing initial costs.

Other Considerations

The primary purpose and need for this study was defined as hurricane evacuation. When evaluating all of the alternative corridors developed for consideration solely based on the hurricane evaculation purpose and need for this project, Alternative Corridors 6, 6A and 7A rate similarly and better than the other alternative corridors and are, therefore, considered the preferred alternative corridors. However, there are other secondary purpose and need issues that local community governments, agencies and other stakeholders have expressed and may want considered in future evaluations. If the purpose and need for this project is modified, the preferred alternative corridor recommendations in this study may need to be modified to be consistent with changes in the stated purpose and need for the project.

Two of the alternative corridors (Alternatives 4 and 7) considered in this analysis were not explicitly eliminated from consideration in Section 5.2, nor were they included as preferred alternative hurricane evacuation corridors. Because modifying the documented purpose and need of the project is a consideration, these alternatives are noted for further consideration, contingent on this potential modification of the project purpose and need.

Summary of Study Conclusions

In summary, the study supports the following conclusions:

1) Hurricane evacuation time is controlled by critical surface transportation links;

2) Connection to the Gramercy-Wallace Bridge is the most important critical surface transportation link;

3) Evenly distributing traffic between the Sunshine Bridge and the Gramercy-Wallace Bridge is the primary objective to efficiently utilizing hurricane evacuation corridors in the study area;

4) Improvements to the US 90 east of Raceland would not substantially benefit hurricane evacuation efforts within the study area because such improvements would attract westbound trips from New Orleans and eastbound trips from the Thibodaux-Houma area. Therefore, improvements to US 90 East must be accompanied by improvements to US 90 West in order to improve hurricane evacuation efficiency.

5) An "Interim Alternative Concept" comprised of the most beneficial elements of the preferred alternative could substantially benefit hurricane evacuation at a reduced cost and implementation time;

6) Alternative Corridors 6, 6A, and 7A are preferred alternative corridors because a) they most effectively meet the purpose and need for hurricane evacuation, b) they most evenly distribute traffic between the Sunshine and Gramercy-Wallace bridges, c) they minimize impacts to wetlands with use of elevated sections and alignments through upland areas, d) they have minimum impacts to established communities and cultural resources, e) they provide options and flexibility in accessing shelter areas north of the project area, and f) they provide good opportunities for the phased approach or "Interim Alternative Concept"; and

7) Should the purpose and need of the study be expanded to include other objectives than hurricane evacuation, Alternatives 4 and 7 should be revisited as potential, preferred alternative corridors.

Details regarding these conclusions are addressed in Sections 4 (Alternative Corridor Constraints) and 5 (Conclusions) of this report.

Public Response to Study Conclusions

The second and last public meeting for the project was held in April 1999. The study results and conclusions were presented at this meeting, followed by a question and answer session. Details regarding this meeting are contained in Section 2 (Alternatives Development) of this report. Three resolutions in support of an eastern alignment for the project (i.e., Alternative 7 or 7A) were received, with one of the resolutions in specific support of Alternative 7. Verbal statements of the public were also in support of an eastern alignment rather than a western alignment for the project (i.e., Alternatives 7 or 7A rather than Alternatives 6 or 6A). Written statements were likewise in support of Alternative 7 as well as 7A. However, one written statement from a resident opposed the alignment of Alternative 7 and Alternative 7A south of LA 1. Among the requests of the public to LDOTD was the request to revise the purpose and need of the project from solely hurricane evacuation to include other objectives such as goods movement and daily utility. It was also requested that the project objective of Hurricane Evacuation not be changed and that the criterion of providing the best hurricane evacuation continue to be the only criterion for selection. It was explained in the public meeting that the purpose and need for this project will not be revised because of the study funding purpose; however, should future funds be made available for further project development for purposes other than hurricane evacuation, LDOTD would consider modifying the purpose and need for the project. Responses to other public requests are provided in Section 2 of this report. No other public meeting or involvement opportunities are scheduled for the corridor phase of this project, which is complete with the production of this final report.

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Section 1

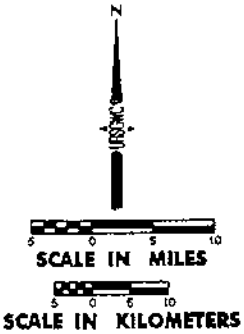
1.0 INTRODUCTION

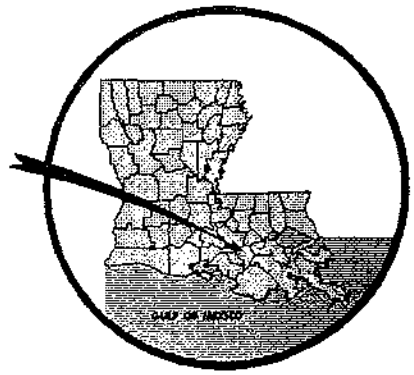
1.1 Purpose and Need

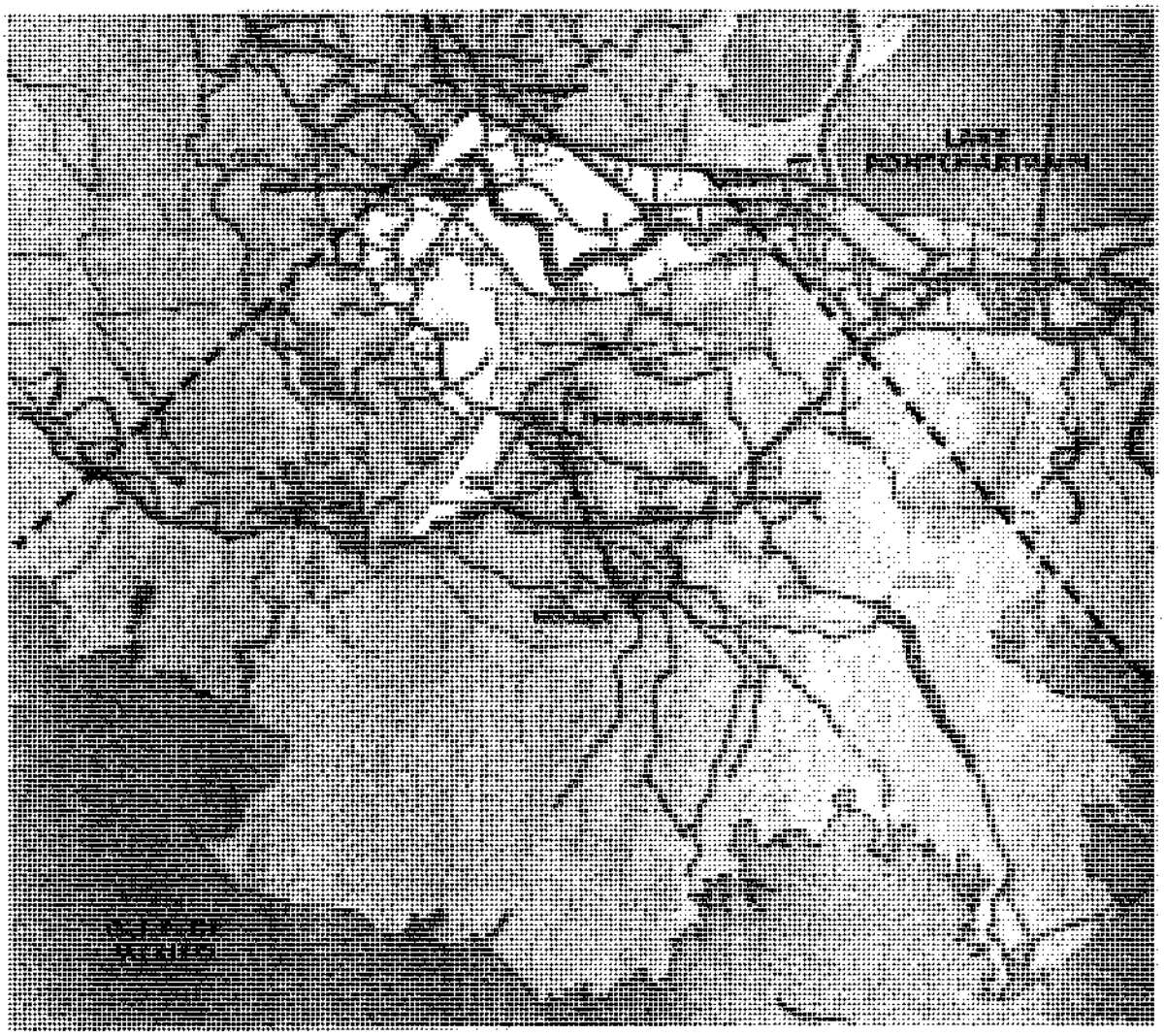
1.1.1 Project Location and Description

The proposed project is the establishment of a new or improved hurricane evacuation alternative to serve Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, St. Charles, and St. Mary parishes in southeastern Louisiana. The study area is traversed by numerous natural ridges associated with rivers and bayous. The ridges are typically long and relatively narrow with expansive wetlands areas in-between. Population is typically concentrated along these natural ridges, with highest population concentrations along the Mississippi, Terrebonne and Lafourche ridges. The largest population center within the study area is the municipality of Thibodaux. There are numerous other smaller communities located within the study area.

Figure 1.1 displays the location of the original and expanded study area (discussed in Section 2.0 of this report) in relation to the State of Louisiana. The project study area spans from Relocated US 90 in south-central Louisiana to I-10, north of the Mississippi River. The western study limits are generally composed of the upper segment of the Lafourche ridge extending south to relocated 90 along the Lafourche, Terrebonne and St. Mary Parish line. The eastern boundary is a north-south line between relocated US 90 and I-10, east of Thibodaux, from approximately Raceland to Reserve.







LEGEND

- ORIGINAL STUDY AREA
- EXPANDED STUDY AREA
- POTENTIAL CORRIDOR SERVICE AREA

HURRICANE EVACUATION STUDY

LOCATION MAP
FIGURE 1.1

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JANUARY 1999

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1.1.2 Hurricane Evacuation Network

Existing System

Terrebonne, Lafourche, Assumption, St. James, St. Mary, St. John the Baptist, and St. Charles parishes are located in south central Louisiana. The only primary arterial access to the parishes of Terrebonne, Lafourche, Assumption, and St. Mary is US 90 from the east and west and LA 1 from the north and west. The westbanks of St. John, and St. James parishes are serviced by LA 3127. While transportation access to the region has been somewhat limited, with no direct interstate access, substantial population and employment growth has been experienced in the region. In the 1960's, 70's and early 80's, the region saw explosive economic growth related to the oil and gas industry. Significant increases in population and employment were recorded over this period. Between 1960 and 1990 the population in the seven parish area including Lafourche, Terrebonne, Assumption, St. Mary, St. Charles, St. James and St. John parishes increased by over 125,000 persons or approximately 55 percent. While growth slowed during the mid and late 1980's due to a recession in the oil and gas industry, the economy once again began to improve in the 1990's due to diversification and improvements in the oil and gas sectors, resulting in substantial population and employment growth. The most significant transportation improvements over the last 40 years relative to accessing the region and hurricane evacuation has been improvements to US 90 to the east (upgraded from a two- to a four-lane facility) and ongoing improvements to US 90 to the west. As noted in Figure 1.2, the only designated evacuation routes for area residents are LA 1/LA 308 and US 90, which generally travels east to west. LA 70, a circuitous two-lane route

also provides some evacuation capacity north to Interstate 10 and US 61 for St. Mary and Assumption parishes; however, no other designated north-south evacuation route exists to serve this area.

LA 1 and LA 308 are two-lane arterials that parallel both the east and west banks of Bayou Lafourche from lower Lafourche to the Mississippi River. With unlimited access and heavy commercial and residential development associated with numerous small and mid-sized municipalities, unimpeded travel is difficult along these arteries. Additionally, the numerous access points along these roadways renders temporarily operating the facility as a two-lane northbound facility during evacuations very difficult to implement.

US 90 is a principal arterial and the major east-west corridor in southern Louisiana. US 90 is a four-lane divided arterial to the east; however, improvements to upgrade US 90 to the west to four lanes are not complete. Documented closures of US 90 between Raceland and Des Allemand caused by inundation greatly reduce the utility of this roadway for hurricane evacuation. US 90 connects Lafourche, Terrebonne, Assumption and St. Mary Parishes with I-310 and I-10 toward New Orleans to the east and Lafayette, I-10 west and I-49 to the west. Presently, this corridor is heavily traveled with uncontrolled access and at-grade signalized intersections along certain segments between New Orleans and Lafayette that result in substantial delay and inefficiencies. LA 70 provides access to the Sunshine Bridge from LA 1 and LA 308 and also services portions of Assumption and St. Mary Parishes. Critical segments of this portion of LA 70 are

only two lanes, which greatly reduce the capacity to service hurricane evacuation traffic between LA 1 and the Sunshine Bridge.

Needed System Improvements

The low elevations of the southeastern Louisiana terrain render it highly susceptible to flooding during heavy precipitation events, high tides, and storm surges. With the passage of time, better record keeping on past storms, and the readily disseminated storm damage reports through television, the computer, and the newspaper, hurricanes are beginning to be taken more seriously by the public. Where once evacuations were often ignored by the public, who chose instead to "ride-out" the storm, the public is now reacting more positively and quickly to hurricane evacuation warnings.

Although Louisiana has experienced many strong hurricanes during historic times, more recently, two hurricanes have provided evidence of much needed access and capacity improvements along evacuation corridors: Hurricane Andrew, which struck the south-central coast of Louisiana in 1992; and Hurricane Georges, which impacted the coastline in 1998. The combination of susceptibility to flooding, improved public education of the effects of hurricanes, and significant increases in coastal populations have resulted in the need for improved hurricane evacuation.

Hurricane Andrew (September 1992). During Hurricane Andrew, it was estimated that 1,250,000 people evacuated from the parishes located in southeastern Louisiana. It is interesting to note that there was not much lead time between the first official posting of a

hurricane *watch* for south central Louisiana and Hurricane Andrew actually making landfall; 43 hours. Only 24 hours spanned between the first hurricane *warning* advisory and landfall, and according to some accounts, many travelers were stranded in their vehicles on the roadways when Andrew made landfall.

Hurricane Georges (September 1998) On September 17, 1999, a tropical system in the Atlantic Ocean reached hurricane status and was issued the name Georges. Two days later Hurricane Georges had become a Category 4 on the Saffir-Simpson scale, with a maximum wind speed of 146 knots. It then moved on a northwesterly track through the Caribbean, crossing many of the Caribbean islands, Puerto Rico, the Dominican Republic, Haiti, and Cuba before taking a more north-northwesterly track into the Gulf of Mexico. Weakening of the storm due to numerous landfalls throughout the Caribbean caused Hurricane Georges to be downgraded to a Category 2 by the time it entered the Gulf of Mexico. During September 26 and 27, the forward speed of Hurricane Georges gradually decreased. The hurricane narrowly missed a direct hit of southern Louisiana, finally making landfall to the east in Biloxi, Mississippi on September 28, 1999, having an estimated maximum sustained one-minute winds of 90 knots and a minimum central pressure of 964 mb.

The first hurricane *watch* to include southern Louisiana was issued at 3:00 P.M. on September 25, 1998 for the areas on the Gulf Coast from Morgan City, Louisiana to St. Marks, Florida. At 3:00 P.M. on September 26, 1999, a hurricane *warning* was issued for areas east of Morgan City, Louisiana to Panama City, Florida. At the same time a

hurricane watch was put in place for areas west of Morgan City, Louisiana to Intracoastal City, Louisiana. The National Hurricane Center (NHC) downgraded the hurricane warning to a tropical storm warning for the areas between Grand Isle, Louisiana and Morgan City, Louisiana on September 28, 1998 at 3:00 P.M. Six hours later at 9:00 P.M. the NHC changed the hurricane warning to a tropical storm warning for the areas of Grand Isle, Louisiana to Destin, Florida, in addition to discontinuing the tropical storm warning for the areas between Grand Isle and Morgan City, Louisiana. On September 29, 1998, at 3:00 A.M. the tropical storm warning was discontinued for Grand Isle, Louisiana to the mouth of the Mississippi River. The next update from the NHC discontinued the tropical storm warning for the mouth of the Mississippi River to Pascagoula, Mississippi.

Preliminary estimates on the storm surge for areas along the central and eastern gulf coast range from 5 – 9 feet in Louisiana and Mississippi to 5 – 12 feet in Alabama. A maximum storm surge of 8.9 feet was recorded in Point-a-la-Hache, Louisiana. The eastern portion of Lake Pontchartrain, at the Rigolets, recorded a storm surge of 5.8 feet, while the mid (Pontchartrain Causeway) and western (Frenier) portions of the lake experienced surges of 4.7 feet.

It is estimated that during the time that Hurricane Georges was due to make landfall along the Louisiana/Mississippi Gulf Coast, one third of Orleans and Jefferson Parish residents evacuated to places outside of both parishes. Most of the 33 percent of people who evacuated, waited until 24 – 30 hours before the storm's projected landfall to leave

the area. This delay by residents loaded southeastern Louisiana's highway system to capacity, creating tremendous traffic problems and delays. An unusually wet September also caused problems during the Hurricane Georges evacuation. Large amounts of rain and high tides from Tropical Storm Francis inundated portions of US 90, making the primary east-west evacuation route virtually impassible. Prior to Hurricane Georges threatening southeastern Louisiana, Governor Foster ordered sandbags and pumps placed along US 90 in an effort to free the roadway from water and open it to traffic.

1.1.3 Summary of Project Need and Project Purpose

The need for a new or improved route to provide hurricane evacuees within the designated service area a safe and reliable route to safety is underscored by many instances of inundation of portions of roadways and traffic congestion along the limited number of existing hurricane evacuation routes. The primary purpose of this project is to improve hurricane evacuation efficiency by providing improved traffic flow and reduced congestion and delay in the event of a hurricane evacuation. The proposed project may have secondary benefit such as enhancing the efficiency of goods movement and improving access into and out of the region, thus promoting economic development and facilitating the tourism industry; however, the analysis presented in this study was performed based solely on the purpose and need of improving hurricane evacuation efficiency within the defined service area.

1.2 Study Objectives

The primary objective of this corridor feasibility study is to identify environmental issues for consideration and to develop reasonable and feasible alternatives for improving hurricane evacuation efficiency (construction and other) while avoiding where practicable and minimizing where unavoidable impacts to sensitive resources and ambient standards. The result of the study is the identification of alternative corridors that appear to be both reasonable and feasible and worthy of further consideration as the preferred alternative to address the stated purpose and need for the project.

1.3 Study Approach

It was recognized that the study is a corridor feasibility study, early in its conception. The methodology for this study focused on the collection of existing geo-referenced data for use in large scale constraints-mapping exercises. Effort was first expended in collecting and organizing data that support the purpose and need for the project. The general project study area in need of the facility was then identified, with general borders drawn that provided reasonable areas within which new location construction alternatives could be located. A public and agency involvement plan was prepared that included two Public Meetings and other agency meetings. The first of these Public Meetings was scheduled and held in October 1997. At this meeting, the general proposal and purpose and need statement for the project was introduced with a presentation of the study approach. Comments from this meeting were used in tandem with comments from an associated resource agency meeting to expand the study limits, develop alternatives for

consideration and to initiate quantitative transportation analysis that provides more refined, supportive data for use in comparing alternative proposals.

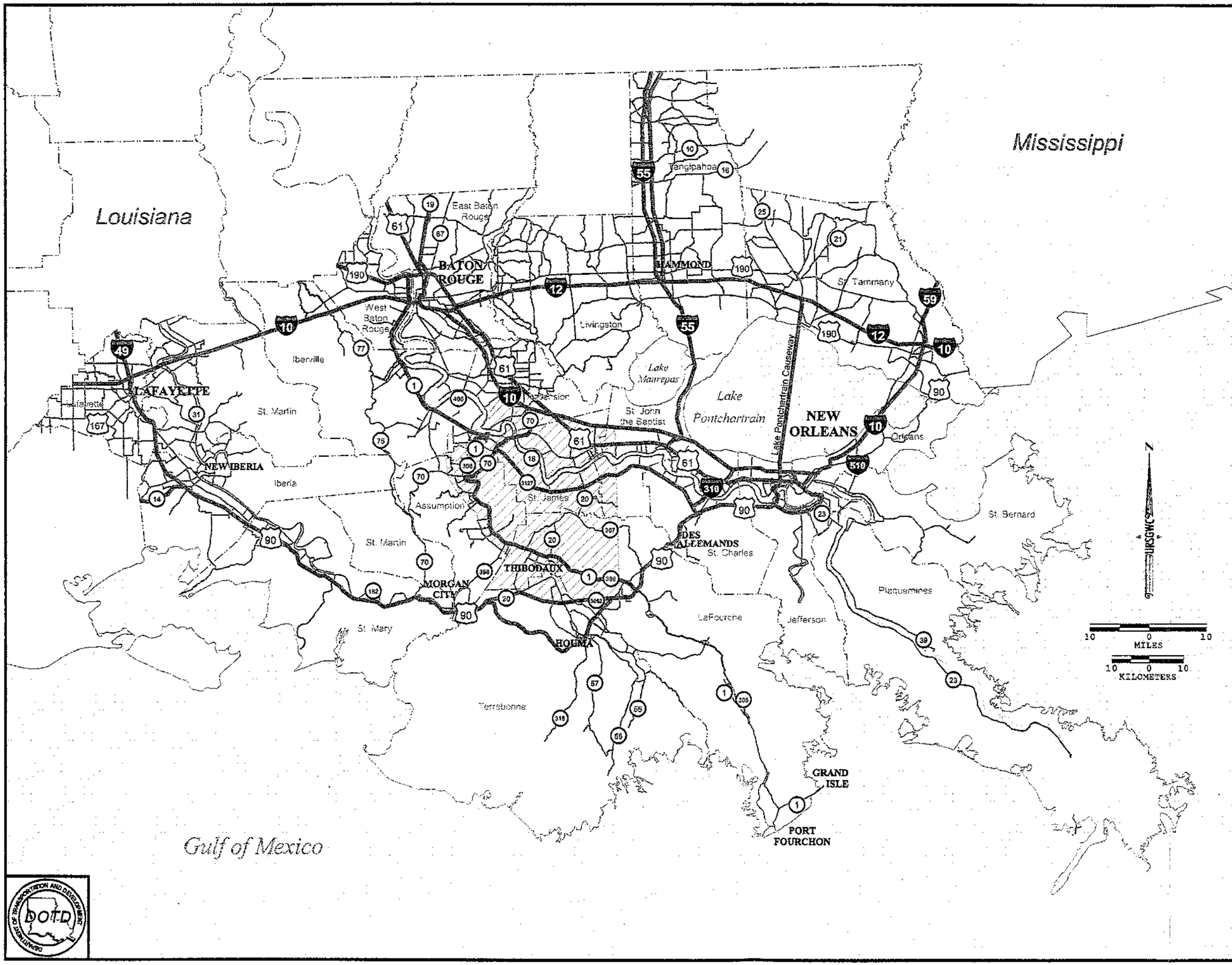
Environmental issues of concern were identified using knowledge of potentially significant issues for the area. Geographic Information System (GIS) data were obtained and developed for the project area. GIS resources and issues that were reviewed include the locations of development and communities, public lands, sensitive structures, archaeological sites and historic structures, prime and unique farmland soils, coastal zone boundaries and floodplains, recorded hazardous waste handling and storage/disposal sites, surface waters, wetlands, and Louisiana Natural Heritage Program sensitive sites. Environmental constraints to development were then mapped on a satellite image of the study area, which was used to develop reasonable and feasible alternative segment corridors for consideration consistent with stakeholder comments, environmental constraints, and the stated project purpose and need. These alternative segments were aggregated into composites that evolved into the currently evaluated alternatives (1, 1A, 2, 3, 4, 5, 6, 6A, 7, and 7A).

After composite alternative corridors were identified, a transportation demand model (customized TRANPLAN model) was then prepared for the hurricane evacuation project consistent with similarly prepared evacuation models for other coastal areas (See Section 3.0 for a summary of this transportation analysis). Preliminary alternatives developed using least-impact corridors within the project area were then simulated as future, built

transportation routes. Relative efficiency and congestion among the alternatives was determined and compared.

Costs of each alternative were then prepared by applying design assumptions and costs, by section type, per embankment-mile and per elevated-mile costs. Other costs (i.e., right-of-way costs and wetlands mitigation preservation costs) were estimated using per acre assumptions and information obtained from Federal and State agencies.

After alternatives' costs were estimated and effects projected, the study team used the traffic modeling results and impacts of each alternative to subjectively evaluate which alternatives met the intended project purpose, were reasonable and feasible and should be further considered in future project development phases. Alternatives were ranked based on several criteria. Opportunities to phase-in the alternatives in an interim and long range concept were also investigated. The results of the final evaluation were then provided in a conclusion section.



LEGEND

- Existing Hurricane Evacuation Route
- Other Route
- Parish Boundary
- Transportation Model Study Area
- Expanded Project Study Area

SOURCE: Louisiana Department of Transportation and Development

HURRICANE EVACUATION STUDY

DESIGNATED HURRICANE EVACUATION ROUTES
FIGURE 1.2

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JANUARY 1999

Section 2

2.0 ALTERNATIVES DEVELOPMENT

2.1 Public and Agency Involvement

The first public meeting for the project was held at the Nicholls State University Campus Ballroom in the Student Union at 6:30 P.M. on Tuesday, October 28, 1997. This meeting was attended by LDOTD, FHWA, and consultant staff, as well as over 60 citizens. A brief summary of the study's objectives was provided, followed by a technical presentation regarding the evaluation that had been conducted to date. Fourteen individuals made statements regarding the project at the meeting. All acknowledged the evacuation and safety need for the facility, and most recognized the potential economic, induced benefits from such a facility. Representatives from several communities, however, had concerns regarding community impacts with different alternative corridors. Twenty-five individuals responded with written comments. All commentors were in support of a north-south corridor to facilitate evacuation. Commentors were divided regarding whether a new location route should be either east or west of Thibodaux, Louisiana. Citing commerce shipping needs, most commentors, who had local industrial interests, noted that an alignment east of Thibodaux that connects with the Gramercy-Wallace bridge would be desirable. In addition to these general comments, several commentors noted that the study should include routing traffic over the Mississippi River to US 61 and I-10 rather than only evaluating evacuation to LA 3127, which was noted to be only part of the evacuation problem.

An interagency meeting was held November 20, 1997, with the U.S. Army Corps of Engineers, the Louisiana Division of Coastal Zone Management, the U.S. Fish and Wildlife Agency, the Louisiana Wildlife and Fisheries, and the National Marine Fisheries Service. In concurrence with the comments made in the Public Meeting, the agencies requested that the study area be expanded to include the area north to I-10 and US 61 and west to include LA 1, and LA 308, the corridor along the Lafourche ridge to the Sunshine Bridge. The agencies also requested that Transportation System Management (TSM) alternatives be considered. Additional analysis on this expanded study area was initiated in June 1998, which included a quantitative transportation modeling analysis to provide for more objective alternative comparisons. Details regarding the transportation modeling that was initiated for this project are contained in Section 3.0 of this document.

The second and last public meeting for the study was also held at the Nicholls State University Campus, in the Powell Hall Auditorium at 6:00 P.M., Thursday, April 29, 1999. The meeting was attended by LDOTD, consultant staff, and over 100 citizens. A brief summary of the study's analysis and conclusions was followed by a question and answer session. Thirteen persons made statements, and several others asked questions regarding the study's assumptions, considerations, and conclusions. The Greater Lafourche Port Commission and the LA 1 Coalition each submitted a resolution into the record supporting an alternative alignment parallel to LA 316 (Alternatives 7 or 7A). The St. James Parish Council submitted a resolution in support of Alternative 7. All verbal statements were in support of an eastern alternative alignment parallel to LA 316 (i.e., Alternatives 7 or 7A rather than Alternatives 6 or 6A). Most verbal statements were in

specific support of Alternative 7. However, notably, the City of Thibodaux is in support of Alternative 7A primarily because of its access to Nicholls State University and the Thibodaux Regional Hospital Complex and the additional evacuation access it would provide to the northeastern portion of the City. Twelve written comments were received. Five of the twelve comments specifically supported Alternative 7. Two of these commentors specifically supported Alternative 7A. Most acknowledged the need for this roadway. Commentors in support for Alternative 7 emphasized that Alternative 7 had a lower cost, served more populated areas, and would provide better daily utility than other alternatives. Two commentors who supported Alternative 7 also suggested that it would provide the safest and shortest evacuation route for the Waterford III nuclear power plant located in Kilona, near the junction of LA 3127 and LA 3141. Additionally, most commentors supporting Alternative 7 suggested that it was the best evacuation route because it provides the most direct route to the presently underutilized Gramercy-Wallace Bridge. One resident opposed the alignment of Alternative 7 and 7A south of LA1 because it may traverse her property along LA 316.

Considerations that were requested of the public and officials included 1) both revising the purpose and need to include daily traffic operations and goods movement, and retaining hurricane evacuation as the only objective purpose and need for the study; 2) considering the effect of the Hale Boggs Bridge to hurricane evacuation efficiency; 3) considering the effectiveness of I-10 east of LA 641 in providing evacuation during storm surge events; 4) considering parallel routes that would serve the populated areas of Terrebonne and Lafourche; 5) providing information on the project schedule; 6)

reviewing conclusions regarding the effectiveness of Alternative 7 to provide hurricane evacuation; 7) and reviewing modeling assumptions regarding the existing network, especially the adequacy of LA 20. Responses to these requests are provided below.

1) *Both revising the purpose and need to include daily traffic operations and goods movement, and retaining hurricane evacuation as the only objective purpose and need for the study.* The purpose and need for this study is solely hurricane evacuation and will not be revised; however, should future funds be made available for further project development for purposes other than hurricane evacuation, LDOTD would consider modifying the purpose and need for the project.

2) *Considering the effect of the Hale Boggs Bridge to hurricane evacuation efficiency.* Because of the location of both the Sunshine Bridge and the Gramercy-Wallace Bridge to users in the modeled study area, the Hale Boggs Bridge would have little attraction to evacuees within this study area.

3) *Considering the effectiveness of I-10 east of LA 641 in providing evacuation during storm surge events.* I-10 east of Airline Highway is located only several feet above sea level. It is possible that hurricane storm surges may inundate portions of I-10, causing congestion and delay. However, it should be emphasized that the project's purpose and need is hurricane evacuation, and hurricane evacuation typically would take place in advance of the primary storm surge. Minor tidal flooding in advance of the hurricane is

not anticipated to affect I-10. Airline Highway (US 61) and I-10 Westbound are still viable options if I-10 East is closed due to inundation.

4) *Considering parallel routes that would serve the populated areas of Terrebonne and Lafourche.* Separate, parallel routes were not considered as a single alternative because of excessive cost and travel demand.

5) *Providing information on the project schedule.* The corridor feasibility study is complete. No other study, meetings, or public involvement opportunities are scheduled for this study. Should additional funding be identified for further project development, the LDOTD would prepare a scope of service consistent with the funding source and stated objectives. The time frame for the next phase of project development will be dependent on funding and the specified scope. If federal funds are to be utilized for project development, further environmental documentation, such as an EIS and the accompanying Record of Decision (ROD) from the Federal Highway Administration will ultimately be required prior to beginning preliminary and final design.

6) *Reviewing conclusions regarding the effectiveness of Alternative 7 to provide hurricane evacuation.* The travel demand modeling input and output were reviewed. It is apparent that Alternatives 7A, 6, and 6A provide greater hurricane evacuation efficiency than Alternative 7, primarily because these alternatives do not route the vast majority of south-central originating traffic over the Gramercy-Wallace Bridge. Rather,

Alternatives 6, 6A, and 7A uniformly distribute traffic flow between the two bridges, thereby more efficiently utilizing the existing roadway capacity.

7) *Reviewing modeling assumptions regarding the existing network, especially the adequacy of LA 20.* Although the adequacy of LA 20 is currently under review, capacity assumptions used in the travel demand modeling efforts for this study incorporated the existing substandard conditions of this roadway and existing urban development along this corridor. Therefore, no revisions to the model are needed.

2.2 Traffic Management Alternatives

The objective of hurricane evacuation rendered consideration of typical transportation management alternatives such as ride-share/car-pooling and others unreasonable. Evacuation-related traffic operations are already managed by the Office of Emergency Preparedness, which has issued hurricane evacuation route information to area residents and coordinates evacuations in the most efficient manner possible. Alternative 1 considered overlaying and adding shoulders to critical segments on LA 1, LA 308 and LA 70 to US 61 and to I-10 in order to improve the efficiency of the system. One operational alternative was considered in this study. Alternative 1A proposes to operate LA 308 and two lane segments of LA 70 as northbound only, during hurricane evacuations from the LA 308/Thibodaux Bypass junction to the Sunshine Bridge. These alternatives are explained more fully in Section 2.4.

2.3 No Action Alternative

The No Action, or No Build Alternative, is an alternative that must be evaluated as a reference alternative to which build alternatives are compared in the environmental documentation prepared under the National Environmental Policy Act. The No Action Alternative would not be associated with any improvements or additions to the existing hurricane evacuation transportation system. With the projected increases in population, employment and commercial activity in the south-central area of Louisiana, it is reasonable to assume that current transportation deficiencies associated with both daily and emergency travel along these southern arteries will only continue to worsen. Although this alternative would be evaluated under future environmental documentation, it should be noted that this alternative does not appear to meet the purpose and need for this project and would be associated with degraded driving conditions in the future.

2.4 Preliminary Alternative Segments

Environmental constraints (e.g., wetlands, historic properties, community facilities, and others) were provided on area maps to enable conceptual designs of alternative new construction corridors to be drawn that avoided where practicable and minimized where unavoidable, impacts to sensitive resources. Design criteria for new construction for this project included development of a principal arterial with design speeds of 55 to 70 mph; elevated sections through wetland areas and over water; and at-grade sections for upland construction. Preliminary Alternative segments were labeled and aggregated to develop section composites. Segments are displayed in Figure 2.1. Table 2.1 displays the

resulting preliminary alternatives overlain on the GIS and satellite image base maps, respectively.

Table 2.1. Alternatives' Segment Lengths

Segment	Length (Miles)
1	9.3
2	4.2
3	18.0
4	11.3
5	4.1
6	2.8
7	39.4
8	19.3
9	9.9
10	4.1
11	5.8
12	2.1
13	9.3
14	3.2
15	4.5
16	12.6
17	9.0
18	11.5
19	7.6
20	20.2
21	2.0
22	3.2
23	2.5

Note: Segment distances should be aggregated to determine distances of composite alternatives, refer to Figures 2.2 and 2.3 to illustrate which segments comprise such alternative.

Source: URS Greiner Woodward Clyde, 1999

2.5 Improvement Construction Alternatives.

In response to the Public Meeting held in October 1997, the project team began to investigate the feasibility and reasonableness of upgrading existing alignments within the hurricane evacuation corridor. Several roadways were studied, including, LA 1, LA 308, and LA 20, which provided the best opportunities for improvement options. LA 1 and LA 308 are heavily-traveled, full-access, two-lane facilities that lead to the Sunshine Bridge via US 70. These roads parallel Bayou Lafourche on each side in south-central Louisiana from the sonth to its junction with LA 3127. LA 20 is a two-lane facility that leads from Thibodaux to the Gramercy-Wallace Bridge via River Road, north of LA 3127. No other roadway and corresponding route was considered a feasible option to meet the evacuation needs of this project. A detailed description of each of the improvement construction alternatives follows.

2.5.1 Alternative 1

Alignment. The alignment of Alternative 1 is denoted in yellow on all figures with alternatives. Alternative 1 begins at its southern terminus at the junction of LA 24 with Relocated US 90/LA 3052. No improvements to LA 24 would be proposed through to its junction with LA 3185. This alternative would include adding a paved shoulder to either side of LA 3185 where not existing from this junction to its intersection with LA 1/LA 308 in an attempt to add some capacity with minimal improvements along these corridors. LA 308 and LA 1 would be overlayed and paved shoulders added where not existing between this juncture and the LA 70 spur to the Sunshine Bridge, I-10 and US 61. The design speed and operational characteristics of this roadway would remain

unchanged, and the entire alignment would remain largely uncontrolled access except on existing controlled-access sections of LA 70. Alternative 1 would also include a project to connect existing LA 3127 to the Gramercy-Wallace Bridge approach, which is proposed for all alternatives as a critical link improvement.

Intersections/Interchanges. Although Alternative 1 would involve improving associated roadways through overlay with paved shoulders, no other improvements or signal phasing changes would accompany this alternative along the affected segments of LA 311, LA 1 and LA 308. A new intersection would be required at the proposed junction of LA 3127 and the new Gramercy-Wallace connector road.

Railroad and Surface Water Crossings. The number of railroad and waterway crossings would not change between the No Build and Alternative 1. Seven existing railroad crossings along the LA 311/LA 1/308 corridor would be maintained, and one new railroad crossings would be required for the connector project for the road between LA 3127 and the Gramercy-Wallace Bridge. This crossing would require an overpass as would all new railroad crossings. Alternative 1 would maintain existing major waterway crossings, which include Bayou Lafourche and the Mississippi River.

2.5.2 Alternative 1A.

Alignment. The alignment of Alternative 1A is also denoted in yellow on all figures with alternatives. This alternative is actually an operational option of Alternative 1. Under this option, all of the improvements noted for Alternative 1 are proposed.

However, in addition to these construction improvements, the two-lane LA 308 facility from the junction with LA 3185 to Spur 70 would be operated as a two-lane northbound facility during hurricane evacuations. LA 1 would continue to operate in both (north and south) directions. Operation of LA 308 as a two-lane northbound facility would continue through the LA 70 spur onto the connection with LA 70 south of the Sunshine Bridge. With this operational change, southbound left turns would be eliminated, and signal delays would be greatly reduced, as well. It was envisioned that emergency personnel including State and Local Police would operate and enforce this one-way outbound operation. Like Alternative 1, Alternative 1A and the other alternatives would include a project to connect existing LA 3127 to the Gramercy-Wallace Bridge approach.

Intersections/Interchanges. Like Alternative 1, Alternative 1A would not involve any additional improvements other than the overlay and shoulder improvements on LA 3185 and LA 308, and Spur 70; however, operational changes at LA 308 intersections would be imposed and governed by emergency personnel during emergencies. Likewise, the Gramercy-Wallace Bridge connector project would require an additional intersection at its junction with LA 3127.

Railroad and Surface Water Crossings. Like Alternative 1, only one additional railroad overpass would be required for Alternative 1A (i.e., a new intersection on LA 3127 for the Gramercy Wallace Bridge connector project). No new waterway crossings would be required with Alternative 1A; however, the two primary existing waterway crossings would be maintained under this alternative.

2.5.3 Alternative 2

Alignment. The alignment of Alternative 2 is denoted in light blue on all figures with alternatives identified. Alternative 2 primarily utilizes existing alignment but contains some new location alignment. It begins to the south at the junction of Relocated US 90/LA 3052 and LA 24. LA 24 would continue to operate as a four-lane couplet system bordering Bayou Terrebonne through to its LA 3185 (Thibodaux Bypass) junction. From this point, LA 3185 would be widened to four lanes to its junction with LA 308. A new location section would be required between LA 308 and LA 20, spanning approximately 20,900 feet (4.0 mi). The LA 20 corridor would be widened from two to four lanes between its junction with the new location construction segment and LA 3127. East of this junction, LA 3127 would be widened from two to four lanes to the proposed new Gramercy-Wallace Bridge approach, which is proposed for all alternatives as a critical link improvement. LA 654 would also be widened from two to four lanes on the north side of the Gramercy-Wallace bridge though to the junction of LA 654 and US 61, located north of I-10. Largely utilizing uncontrolled access existing roadways, the entire alignment for Alternative 2 would remain uncontrolled access.

Intersections/Interchanges. Generally on existing alignment, Alternative 2 would only require additional intersections at either end of the new location construction segment between LA 308 and LA 20 and for the Gramercy-Wallace Bridge connector project (i.e, on LA 3127).

Railroad and Surface Water Crossings. Like the other alternatives, Alternative 2 would include the critical link project that connects LA 3127 with the Gramercy-Wallace Bridge approach, which requires the construction of one new railroad overpass. Another new railroad overpass would be required for the railroad crossing along the new location segment between LA 308 and LA 20. Additionally, five existing railroad crossings would be maintained, and five existing major waterway crossings would be maintained under this alternative.

2.5.4. Alternative 3

Alignment. The alignment of Alternative 3 is denoted in green on all figures with alternatives. Alternative 3 is very similar to Alternative 1; however, under Alternative 3, travel lanes would be added along LA 311 between Relocated US 90 and the Thibodaux Bypass (LA 3185), along LA 308, and between Spur 70 and LA 70, where necessary to widen these facilities from two to four lanes. This would create a continuous four-lane facility from Relocated US 90/LA 3052 to I-10 and US 61. No operational changes, as proposed under Alternative 1A, would be proposed under Alternative 3. As with the other alternatives, a connection between LA 3127 and the Gramercy-Wallace Bridge and improvements to LA 3127 and beyond the Bridge on LA 641 to US 61 would also be included. Utilizing uncontrolled access existing roadways, the entire alignment for Alternative 3 would remain uncontrolled access.

Intersections/Interchanges. Alternative 3 would make improvements to existing LA 311, LA 308, Spur 70 and LA 70. Therefore, no new intersections would be required for

this alternative except for the new intersection at the LA 3127/Gramercy-Wallace Bridge connector road.

Railroad and Surface Water Crossings. The number of railroad and waterway crossings would not change between Alternatives 1/1A and Alternative 3. Seven existing railroad crossings along the LA 311/LA 1/308 corridor would be maintained, and one new railroad overpass would be required for the connector project for the road between LA 3127 and the Gramercy-Wallace Bridge. Two existing major waterway crossings would also be maintained.

2.6 New Location Construction Alternatives

As described in Section 2.4, composite segments evolved into alternatives. Five new location construction alternatives were evaluated. Except for Alternative 4, all five alternatives lead north to LA 3127 through identified wetlands between the Lafourche and Mississippi ridges. Alternative 4 ties into US 70 and the Sunshine Bridge. A detailed description of each of the new location construction alternatives follows.

2.6.1. Alternative 4

Alignment. The alignment of Alternative 4 is denoted in orange on all figures with alternatives. Alternative 4 begins at Relocated US 90/LA 3052, extending north, northwest parallel and west of the Little Bayou Black ridge. This alternative would be on new location, located generally between the western wetlands interface and the agriculture and residential development along LA 311. A few small residential

subdivisions are located in close proximity to this corridor as is an unofficial waste site and the Thibodaux General Aviation airport, approximately 4,600 feet south of the Thibodaux Bypass Road. The current conceptual alignment for this alternative avoids the airport by passing through the northeastern edge of the bordering wetlands. At the airport, this new location alignment would take a westerly turn, paralleling the Thibodaux Bypass and eventually turning northward and intersecting with LA 1/LA 308 west of the existing intersection of LA 1/LA 308 and the Thibodaux Bypass (LA 3185). The alignment would continue west, northwest along the Lafourche Ridge in a corridor bordered to the northeast by wetlands and development along the LA 308 corridor to the southwest. The corridor would continue along its west, northwesterly alignment, generally paralleling LA 308 to its junction with Spur 70. Spur 70 and LA 70 would be widened where necessary to four lanes through the Sunshine Bridge to I-10. As noted with the other alternatives (both improvement and new location construction alternatives), a connection between LA 3127 and the Gramercy-Wallace Bridge and improvements along LA 3127 and extending between the bridge and US 61 would be provided with this alternative. New location construction would be all uncontrolled access.

Intersections/Interchanges. Because Alternative 4 would be largely new location construction, new intersections would be required at crossings of existing roadways. Based on the locations of major arterials in the study area, at least eight new intersections would be required. South of LA 1/LA 308, at-grade intersections would be required at the junctions with the following roadways: Relocated US 90, LA 20, LA 3107, and LA 1.

North of the proposed intersection with LA 1 would be an intersection with LA 308. West of this intersection, the alignment would take a northwesterly path that would require intersections at LA 304 and LA 1014 and the new roadway's terminus at its junction with Spur LA 70. The junction of the new Gramercy-Wallace Bridge connector road would also require a new intersection.

Railroad and Surface Water Crossings. The new alignment of Alternative 4 would require new crossings of three sets of railroad tracks, two of which are located south of the new alignment's proposed junction with LA 1/LA 308 and all of which would require construction of overpasses. The third crossing is located north of LA 308. A new railroad overpass would also be required for the LA 3127/Gramercy-Wallace Bridge connector road, which is included with all alternative proposals as a critical link project.

A new crossing of Bayou Lafourche, west of the existing LA 3185 crossing, would be required with the implementation of Alternative 4, as well as new crossings of other small canals and drainage swales.

2.6.2. Alternative 5

Alignment. The alignment of Alternative 5 is denoted in dark turquoise on all figures with alternatives. Alternative 5 begins near Raceland at Relocated US 90/LA 3052. Its alignment extends north, northwest along a straight path through the western edge of the Lac Des Allemands wetlands. The new location alignment would be largely controlled access and connect with LA 3127 at its proposed intersection with the Gramercy-Wallace

Bridge approach. Improvements beyond the bridge on LA 641 to I-10 would also be included in this alternative.

Intersections/Interchanges. Alternative 5 would be almost wholly on new location, with at-grade intersections required for its junctions with US 90, LA 307, LA 643 and LA 3127.

Railroad and Surface Water Crossings. The alignment of Alternative 5 also traverses two additional sets of railroad tracks located north of its junction with US 90, as well as the additional railroad crossing required for the LA 3127/Gramercy-Wallace Bridge connector project. Both of these railroad crossings would require overpasses. Alternative 5 would also require the crossing of Grand Bayou and Bayou Chevreuil, both located near Lac Des Allemands; however, the locations of the crossings are within an area assumed to be elevated for the purpose of avoiding wetland impacts. Therefore, additional structural costs for these crossing may not be required.

2.6.3. Alternative 6 and 6A

Alignment. The alignments of Alternative 6 and 6A are denoted in red on all figures with alternatives, with a separate, common segment denoted in purple. Alternatives 7 and 7A also share this segment along LA 3127 denoted in purple. Alternatives 6 and 6A are slight variations of the same general new location alignment. They begin at Relocated US 90 at the same location proposed for Alternative 4. Like Alternative 4, the alignment for Alternatives 6 and 6A would parallel the western edge of the Little Bayou Black

ridge. At the junction of this new location alignment and LA 308, Alternatives 6 and 6A would depart from Alternative 4's alignment and lead north. Alternative 6 would follow a more direct alignment to LA 3127, having a junction with LA 3127 approximately equidistant from the Sunshine Bridge and the proposed new Gramercy-Wallace Bridge approach. Alternative 6A would follow along a more westward path to LA 3127, intersecting LA 3127 closer to the Sunshine Bridge than to the proposed new Gramercy-Wallace Bridge approach. Both alternative options (Alternative 6 and 6A) would include improvements to LA 3127 between the Sunshine Bridge and the new Gramercy-Wallace Bridge, and between the Gramercy-Wallace Bridge to I-10. Controlled access sections of proposed Alternatives 6 and 6A would be limited to elevated sections within large wetland crossings.

Intersections/Interchanges. South of LA 1/LA 308, this new roadway would follow the same alignment as Alternative 4, which would require at-grade intersections at the junctions with the following roadways: Relocated US 90, LA 20, and LA 3107, and LA 1. North of the proposed intersection with LA 1 would be an intersection with LA 308, LA 304, and the new roadway's terminus at its junction with LA 3127. The junction of the new Gramercy-Wallace bridge connector road with LA 3122 would also require a new intersection.

Railroad and Surface Water Crossings. Like Alternative 4, Alternatives 6 and 6A would require new crossings of two sets of railroad tracks south of the proposed junction with LA 1/LA 308. North of LA 1, this alternative would require one new railroad

crossing north of Bayou Lafourche and one new railroad crossing for the LA 3127/Gramercy Wallace Bridge connector project. All new railroad crossings would require the construction of overpasses. Several other existing railroad crossings would be maintained for improvements to LA 70 and the LA 641. Alternative 6 and 6A's alignment would also require a new crossing of Bayou Lafourche at the LA 1/LA 308 junction and of Bayous Citanon and Chevreuil, located south of the new roadway's terminus at LA 3127. Other small canals and drainage swales would also be traversed.

2.6.4. Alternatives 7 and 7A

Alignment. The alignments of Alternative 7 and 7A are denoted in dark blue on all figures with alternatives, with a separate, common segment denoted in purple. Alternatives 6 and 6A also share this segment along LA 3127 denoted in purple. Alternatives 7 and 7A are also slight variations of the same general alignment; however, the southern terminus of these alternatives is located east of Bayou Terrebonne, approximately 25,000 ft (4.7 mi) east of the proposed terminus for Alternatives 6 and 6A. Alternatives 7 and 7A begin on Relocated US 90 on the eastern edge of the Bayou Blue Ridge. This new location alignment follows this ridge between the wetland interface located east of the alignment and residential land use adjacent to LA 316 west of the alignment, traversing mostly agricultural lands. The alignment would cross undeveloped land between Nicholls State University and residential land use to the east before crossing Bayou Lafourche and LA 1/LA 308. North of this junction, the new location alignment would extend northward along one of two alignments. The more direct alignment (Alternative 7) would follow the existing Laurel Valley Plantation Ridge as

much as possible to the west and north of Laurel Valley Plantation. North of the Laurel Valley Plantation, Alternative 7 would cross some wetlands south and north of the Choctaw community through to its proposed juncture with existing LA 20. From LA 20, the new location alignment of Alternative 7 would follow the same alignment as Alternative 2, along existing LA 20 to a location just south of LA 3127, where the alignment would be straightened and depart from existing LA 20. This new location alignment would then intersect with LA 3127, approximately 0.25 mile west of the existing intersection of LA 3127 and LA 20. Like Alternative 2, Alternative 7 would include improvement of LA 3127 between this new junction and the proposed, new approach to the Gramercy-Wallace Bridge. Likewise, Alternative 7 would include improvements to LA 641 north of the Gramercy-Wallace Bridge and widening of LA 3127 west to the junction with LA 70, near the Sunshine Bridge. Alternative 7A would follow the same alignment as Alternative 7 from Relocated US 90 through to its intersection with LA 1/LA 308. From this point, the alignment would take a west, northwesterly alignment to LA 3127, converging with Alternative 6's alignment south of its proposed junction with LA 20, between the communities of Choupic and Chackbay. North of this junction, the alignment would follow along the same alignment as Alternative 6 through to its intersection with LA 3127. Like Alternatives 6, 6A, and 7, Alternative 7A would include improvements to LA 3127, the Gramercy-Wallace Bridge connector, and LA 641 between the Gramercy-Wallace Bridge to I-10. Controlled access sections of proposed Alternatives 7 and 7A would be limited to elevated sections within wetland crossings.

Intersections/Interchanges. Alternatives 7 and 7A would be located on new alignment south of its junction with LA 1/LA 308. The only primary new at-grade intersections would be located at the junctions of US 90 and LA 1; however, there are a few local roads that would also be bisected. North of LA 1, Alternative 7 would require intersections at LA 308, LA 307, LA 20, and at the new road's terminus at LA 3127. Alternative 7A, however, would take a more northwesterly tract along the proposed corridor of Alternative 6. This alignment would require intersections at LA 308, LA 20, LA 304, and LA 3127 (the new roadway's northern terminus). Like with the other alternatives, Alternatives 7 and 7A would also require a new intersection at the junction of LA 3127 and the Gramercy-Wallace Bridge connector road.

Railroad and Surface Water Crossings. The alignments of Alternatives 7 and 7A would require only one new railroad overpass south of Bayou Lafourche and the one new railroad overpass associated with the Gramercy-Wallace Bridge connector road. New waterway crossings would be required for both alternatives. New, waterway crossings for Alternative 7 would include from south to north the following waterways: Bayou Blue, Bayou Cutoff, Bayou Lafourche, a major canal that connects with Lake Bouef, and Grand Bayou. A crossing of Bayou Chevreuil would be maintained for the improvement of the section of LA 20 between the new location construction sections of Alternative 7. New, waterway crossings for Alternative 7A would include from south to north the following waterways: Bayou Blue, Bayou Cutoff, Bayou Lafourche, Bayou Citanon, and Bayou Chevreuil.

2.7 Critical Link Projects

The traffic analysis conducted for this project resulted in the identification of several critical links to the evacuation network. These critical links are discussed in detail in the Traffic Analysis conducted for this project summarized in Section 3.0 of this document. Two of these links are already listed projects on the State Transportation Improvement Program: 1) improvement of LA 70 between the Sunshine Bridge and I-10, and 2) new construction of a connector road between LA 3127 and the Gramercy-Wallace Bridge. Improvement of LA 70 is underway; however, the connector road between LA 3127 and the Gramercy-Wallace Bridge is currently unfunded. It was assumed that the provision of this connector road would be included in all build alternatives because of the relative importance of this improvement to hurricane evacuation.

Alignment. This connector project would span from LA 3127 and connect with LA 18 and the Gramercy-Wallace Bridge approach.

Intersections/Interchanges. The new connector road between LA 3127 and the Gramercy-Wallace Bridge would tie into an existing interchange at LA 18 for the approach to the Bridge. No other intersections or interchanges would be required for this project.

Railroad and Surface Water Crossings. The LA 3127/Gramercy Wallace Bridge connector road would traverse one railroad line in route to the approach to the Bridge,

requiring construction of an overpass. However, no substantial waterways would be crossed by this project.

2.8 Cost Analysis

2.8.1. Construction Costs

Improvements identified for each alternative are either 1) improvements to the existing roadway network, or 2) roadway construction on new locations. Roadway construction on new locations can be separated into 1) at-grade or 2) elevated roadway construction.

Each alternative was broken into segments that fall into one of the following four categories:

1. Improvements to existing roadway through cold milling, overlaying, and the addition of shoulders;
2. Improvements to existing roadway by adding two travel lanes;
3. Construction of four lanes of elevated roadway on new locations;
4. Construction of four lanes of at-grade roadway on new locations.

Where possible, the existing roadway network was assumed to be utilized, improving upon current conditions for the TSM alternatives (i.e., Alternatives 1 and 1A). Alternatives that call for additional capacity acquire the increase through the addition of two new travel lanes. In an effort to minimize the impacts to the wetlands, it was assumed that an elevated roadway section would be used in new locations traversing

substantial wetland areas. Elsewhere, at-grade sections were assumed to be preferred for new location construction.

Although the fully-constructed alternatives were evaluated in the impact and cost analysis for this project, costs for four-lane facilities were also segmented into costs for two two-lane facilities for incremental phasing of all alternatives considered as discussed in Section 5.0 of this document. Costs for elevated, at-grade, railroad, and substantial waterway crossings were estimated for two and four-lane crossings to provide for this greater planning flexibility.

Assumptions for Existing Roadway Widening

Improvements to the existing roadway through cold milling, overlaying and the addition of shoulders would require:

1. Removal of a minimum of 2 inches of asphaltic concrete material
2. 2 inches of an asphaltic concrete wearing course (for overlaying purposes)
3. A minimum of 6 inches of a base course for new shoulders
4. 2 ½ inches of asphaltic concrete binder course for new shoulders
5. 1 ½ inches of asphaltic concrete wearing course for new shoulders
6. Additional striping

It was estimated that these improvements would cost approximately $242,800 per mile.

The addition of two new travel lanes to an existing roadway necessitates that any existing shoulder is to be removed and the following be put in place for each travel lane:

1. 8-12 inches of a sub-base material
2. 6 inches of an aggregate base course
3. 3 ½ inches of an asphaltic concrete binder course
4. 2 inches of an asphaltic concrete wearing course

Construction of new shoulders, as previously described in the milling and overlay section, is required. Per mile, the actions needed to construct two additional travel lanes would result in a cost of approximately $967,700. This cost assumed an open ditch drainage system.

Assumptions for Construction On New Locations

Construction of a new four-lane roadway is required wherever an alternative calls for a new alignment location. There are two possible types of construction for new location of roadway: 1) construction of at-grade roadway, and 2) elevated roadway.

At-grade roadway construction in new locations is similar to an option discussed earlier: additions of two travel lanes. New construction of an at-grade roadway differs from the earlier option in the number of lanes that are built. The general fabrication of the roadway is identical, except for the width of construction. Because the number of lanes increases, the overall width for construction is larger. This additional width is reflected in the per

mile cost, which is approximately $1,935,400; twice that of the additional travel lanes option. Figure 2.4 displays the typical improved 2-lane and 4-lane roadway assumed for this study.

The determination of the construction costs for the elevated section of roadway were based on the following assumptions. The width is based on two 12-foot lanes with a 10-foot outside and a 6-foot inside shoulder. Two separate 2-lane structures would comprise the four-lane facility. Span lengths for AASHTO P.P.C. Type IV girders were used. Circular columns on pile-supported footings using pre-cast concrete piles were also assumed to be used. At $17,500,000 per mile, the four-lane elevated sections (two two-lane sections) were the most expensive segments on new location construction. Figure 2.5 displays the typical section and elevation of the new location elevated 4-lane roadway assumed for this study.

Assumptions for Railroad and Waterway Crossings

Crossings of railroads and substantial surface waters will require bridged structures. For the alternative cost estimates, a generic crossing cost was developed for both a railroad and a surface water crossing. The railroad crossing was assumed to require a horizontal clearance of 50 feet and a vertical clearance of 23.5 feet. The surface water crossing was assumed to be 30 feet wide and require a vertical clearance of 16.5 feet. A design speed of 70 mph was used for the structures, and the structures were assumed to be two lanes wide, requiring two separated structures for a four-lane section. The structure depth was assumed to be 5.5 feet. The allowable embankment height of 18 feet and an embankment

slope of 3:1 was likewise used in the estimate, and costs calculated for at-grade roadway and elevated roadway were assumed for the section roadway. The resulting costs for two-lane railroad crossings and two-lane surface water crossings were estimated to be approximately $3,224,000 and $300,000, respectively. These costs were applied independently to segments, and aggregated into alternatives to develop total construction costs of these crossings, by alternative. Figure 2.6 displays the typical sections and elevations of the railroad and waterway crossings assumed in this study.

Construction Cost Calculations

Individual alternative alignments were divided into a series of smaller segments based upon the proposed action to be taken. These smaller segment lengths were used to obtain the individual segment improvement costs by applying corresponding improvement costs, per mile. Base construction costs were then increased by 30 percent to account for engineering services, administration costs, and contingencies. These adjusted construction costs were then summed for each alternative, resulting in a total estimated cost of construction for each alternative as displayed in Table 2.2.

Table 2.2. Construction Mileage and Costs Matrix, by Alternative

Alternative	Distance (miles)			Construction Costs ($millions)		
	New Location Elevated Construction	New Location At-Grade Construction	Improvements to Existing Alignment (Widening or adding shoulders)	Base	Adjustments	Total Estimate
1	0.0	2.6	70.5	54.4	16.3	70.7
1A	0.0	2.6	70.5	54.4	16.3	70.7
2	0.0	2.6	38.5	81.7	24.6	106.3
3	0.0	2.6	74.2	82.9	24.9	107.8
4	2.9	28.8	22.1	175.4	52.6	228.0
5	16.7	6.1	6.7	349.2	104.8	454.0
6	10.3	9.7	43.4	294.1	88.2	382.3
6A	11.5	12.4	40.2	302.5	90.8	393.3
7	4.1	9.9	51.4	181.1	54.3	235.4
7A	7.4	2.8	54.0	231.6	69.5	301.1

Note: All costs are rounded to the nearest $100,000. Base construction costs refer to unadjusted construction costs of full alternatives as envisioned. Adjustments refer to costs to account for engineering design services and contingencies.

Sources: URS Greiner Woodward Clyde. Quantities calculations per embankment mile, elevated section mile, and railroad and waterway crossings. 1999.

2.8.2. Right-Of-Way Costs

Each alternative requires that some right-of-way be acquired. Right-of-way required will differ along the many segments of each of the alternatives. Because the great expanse of the project and the many alternatives that are under consideration, detailed right-of-way estimates, by alternative, was imprudent and impractical. Rather, a generalized approach was used to estimate right-of-way costs. Unit cost assumptions for different land uses were obtained from the LDOTD Real Estate office. These assumptions are listed below in Table 2.3.

Table 2.3. Per Unit Cost Assumptions for Right-of-Way Estimates

Land Use/Property Type	Unit Cost
Developed Urban	$1 / sf
Cropland/Agriculture	$1,500 / ac
Undeveloped Upland (Fallow Ag. Land)	$800 / ac
Undeveloped Wetland	$400 / ac
Commercial	$3 / sf
Industrial River Front	$15,000 / ac
Industrial Backland	$6,000 / ac
Campsites	$2,000 / ac

Note: "sf" refers to square-foot; "ac" refers to acre.

Source: LDOTD, Property Valuation Factors. Received from Real Estate Office in a letter dated January 11, 1999.

A satellite image was overlain with the preliminary alternative alignments for the project. Linear distances, by segment, were calculated for contiguous land uses, and right-of-way requirements were estimated for section types. Right-of-way widths ranged from 115 feet in areas where elevated sections would be used through wetlands or within developed urban areas to 250 feet in rural areas where few if any constraints are present. In general, 115-foot and 150-foot right-of-way widths were used for this analysis. The difference between existing and proposed right-of-way widths was calculated, by segment and multiplied by the linear distance of the segment. Per unit values were then applied to determine the estimated costs of right-of-way on the subject segments. Segments' costs were then aggregated for alternatives to develop total estimated alternative right-of-way costs. These total alternative right-of-way costs were then adjusted to incorporate the administrative costs associated with administration, acquisition, relocation, and utilities work. A multiplier of 1.75 was used for this purpose as suggested by the LDOTD Real Estate Office. Resulting estimates are displayed in Table 2.4.

Table 2.4. Total Estimated Right-of-Way Land, Relocation, Administration, and Utilities Relocation Costs

Alternative	Base Right-of-Way Costs ($millions)	Adjustment to Base Right-of-Way Costs to Account for Administration, Utilities Relocation, and others ($millions)	Total Right-of-Way Cost Estimate ($millions)
1	0.08	0.06	0.1
1A	0.08	0.06	0.1
2	7.60	5.70	13.3
3	6.60	5.00	11.6
4	3.80	2.90	6.7
5	0.50	0.30	0.8
6	2.70	2.00	4.7
6A	2.70	2.10	4.8
7	4.40	3.40	7.8
7A	4.00	2.90	6.9

Note: All costs are rounded to the nearest $100,000 except for Alternatives 1 and 1A. Adjustment factor of 1.75 was provided by the LDOTD Real Estate Office and was used as a multiplier to base right-of-way costs. This adjustment is intended to account for the additional residential and business relocation expenses, administration, utilities relocation, and other costs of right-of-way acquisition.

Source: LDOTD, Property Valuation Factors. Received from Real Estate Office in a letter dated January 11, 1999; Braud, DeWitt H. Jr. 1997. Satellite View of Louisiana from the Merge of Landsat Thematic Mapper and Spot Imagery. Louisiana Department of Environmental Quality and the Department of Natural Resources: Baton Rouge, La. In association with the U.S. Geological Survey's National Wetlands Research Center in Lafayette, LA; URS Greiner Woodward Clyde, 1999.

2.8.3. Other Costs

Highway construction costs include many cost items, of which some are difficult to estimate. Standard cost factors such as construction materials, labor, administrative, design services and property acquisition are regularly estimated and can therefore be accurately estimated. Other costs factors are either difficult to foresee and/or estimate. Of the reasonably foreseeable costs that may result from the construction or improvement of a hurricane evacuation route are the costs associated with the mitigation of wetland impacts. While heavily dependent upon the functions and values of impacted wetlands and the type of mitigation proposed for these impacts, a cost estimate for wetland impacts, by alternative, was prepared for this project. Inquiries to the U.S. Army Corps of Engineers (USACE) suggest that the impacts to productive cypress/tupelo gum

swamps would result in mitigation ratios between 2 and 3 to one; that is, the USACE would likely require between 2 and 3 acres of wetlands be provided for each acre that is adversely affected (taken for use or disturbed) by the project. Replacement of wetlands can be accomplished by the following methods in decreasing preference of the USACE and EPA: restoration, creation, enhancement, and preservation. Restoration, creation, and enhancement plans and costs are site-specific, depending upon the functions of the existing hydrological and habitat conditions of the land. For the wetland mitigation cost estimates prepared for this study, it was assumed that wetland mitigation would be provided solely through preservation at prevalent wetland banking rates. Wetland banking rates in the south Louisiana area range between $4,000 and $5,000 an acre. Per acre wetland banking costs were applied to the estimated number of wetland mitigation acres that would be impacted required by the USACE (i.e., impacted acreage x 3), by alternative (See section 4.3.2 for discussion of wetland impacts.). Resulting estimates are displayed in Table 2.5. No other mitigation or other costs were estimated for the alternatives considered in this study.

Table 2.5. Total Estimated Wetland Mitigation Preservation Costs

Alternative	Cost ($millions)
1	0.7
1A	0.7
2	2.6
3	1.9
4	2.5
5	2.8
6	5.4
6A	5.6
7	5.2
7A	5.1

Note: All costs are rounded to the nearest $100,000. Wetland impact costs based solely on the costs associated with 100 percent preservation mitigation. An acceptable wetland mitigation plan for any of the proposed alternative corridors would likely include restoration, enhancement, and/or creation components. However, estimation of these costs depends upon site characteristics, impossible to predict at this early planning stage.

Sources: USACE, Discussion with Environmental Specialist regarding wetland banking per acre costs and replacement ratios for productive cypress-tupelo swamp impacts; Braud, DeWitt H., Jr. 1997. Satellite View of Louisiana from the Merge of Landsat Thematic Mapper and Spot Imagery. Louisiana Department of Environmental Quality and the Department of Natural Resources: Baton Rouge, La. In association with the U.S. Geological Survey's National Wetlands Research Center in Lafayette, LA; URS Greiner Woodward Clyde, 1999.

2.8.4. Total Alternative Costs

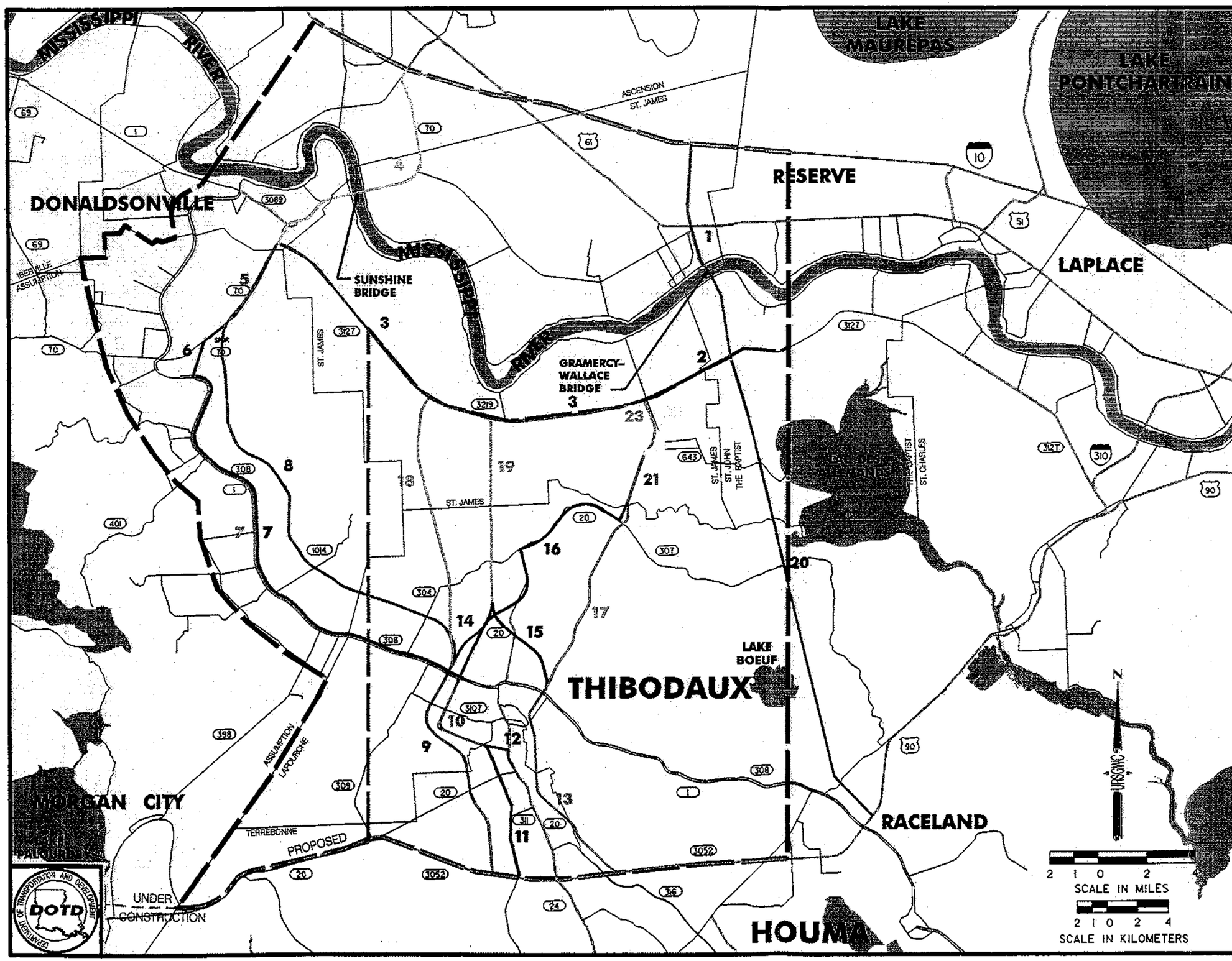
Total costs, by alternative, were developed by aggregating component costs (i.e., construction, right-of-way, and wetlands mitigation [i.e., wetland preservation banking cost estimates]), for each alternative considered. Table 2.6 below summarizes the costs of each alternative, by component, providing an estimated cost comparison matrix.

Table 2.6. Total Estimated Costs Comparison Matrix

Alternative	Construction ($millions)	Right-of-Way ($millions)	Other ($millions)	Total ($millions)
1	70.7	0.1	0.7	71.5
1A	70.7	0.1	0.7	71.5
2	106.3	13.3	2.6	122.2
3	107.8	11.6	1.9	121.3
4	228.0	6.7	2.5	237.2
5	454.0	0.8	2.8	457.6
6	382.3	4.7	5.4	392.4
6A	393.3	4.8	5.6	403.7
7	235.4	7.8	5.2	248.4
7A	301.1	6.9	5.1	313.1

Note: All costs are rounded to the nearest $100,000. Alternative 1A would also include costs associated with the operation of LA 308 as a controlled-access facility during hurricane evacuation events. These operational costs were not estimated.

Sources: Specific sources noted in source tables 2.2 through 2.5 of this document; URS Greiner Woodward Clyde, 1999.



LEGEND

- EXPANDED STUDY AREA BOUNDARY
- ORIGINAL STUDY AREA BOUNDARY
- PARISH BOUNDARY
- PARISH

NOTE:
COLOR CHANGE DENOTES SEGMENT CHANGE AND DOES NOT RELATE TO COLORS USED FOR ALTERNATIVES ON OTHER EXHIBITS.

SEGMENT No.	LENGTH (MILES)
1	9.3
2	4.2
3	18.0
4	11.3
5	4.1
6	2.8
7	39.4
8	19.3
9	9.9
10	4.1
11	5.8
12	2.1
13	9.3
14	3.2
15	4.5
16	12.6
17	9.0
18	11.5
19	7.6
20	20.2
21	2.0
22	3.2
23	2.5

SOURCE:
URS GREINER WOODWARD CLYDE - 1999.

HURRICANE EVACUATION STUDY

PRELIMINARY ALTERNATIVE SEGMENTS

FIGURE 2.1

MAP PREPARED BY:
URS Greiner Woodward Clyde
3500 N. Causeway Blvd.
Metairie, Louisiana 70002
(504)837-4523
AND
GeoQuery, Inc.
977 Carlo Kirk Dr.
Baton Rouge, Louisiana 70808
(504)767-7019

JANUARY 1999

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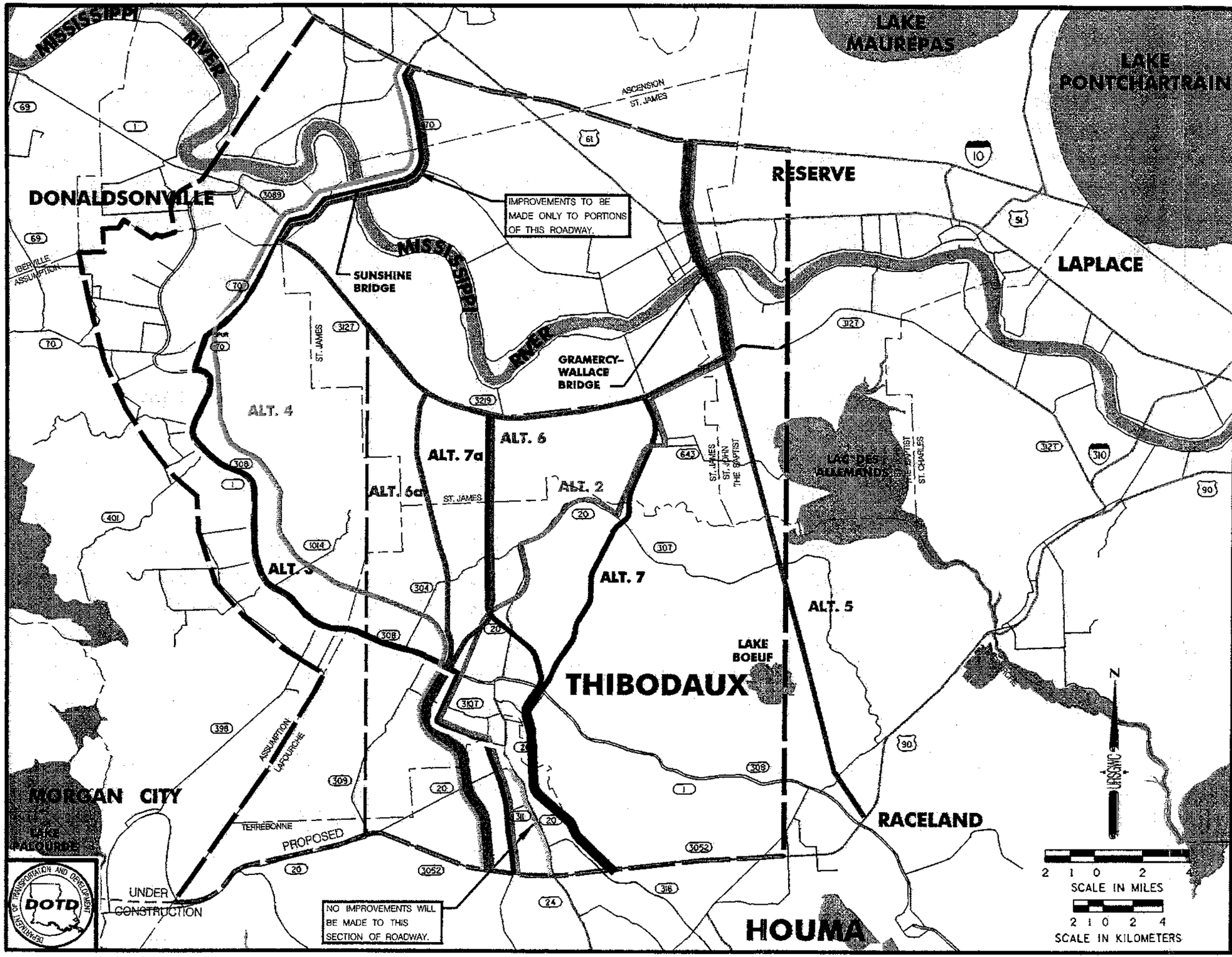

LEGEND

- EXPANDED STUDY AREA BOUNDARY
- ORIGINAL STUDY AREA BOUNDARY
- PARISH BOUNDARY
- PARISH

NOTE:
ALTERNATIVES THAT APPEAR TO BE LOCATED DIRECTLY ADJACENT TO EACH OTHER SHARE A COMMON ALIGNMENT.

HURRICANE EVACUATION STUDY

PRELIMINARY ALTERNATIVES

FIGURE 2.2

MAP PREPARED BY:

URS Greiner Woodward Clyde

3500 N. Causeway Blvd.
Metairie, Louisiana 70002
(504)833-6326

AND

GeoQuery, Inc.

977 Castle Kirk Dr.
Baton Rouge, Louisiana 70808
(504)767-7919

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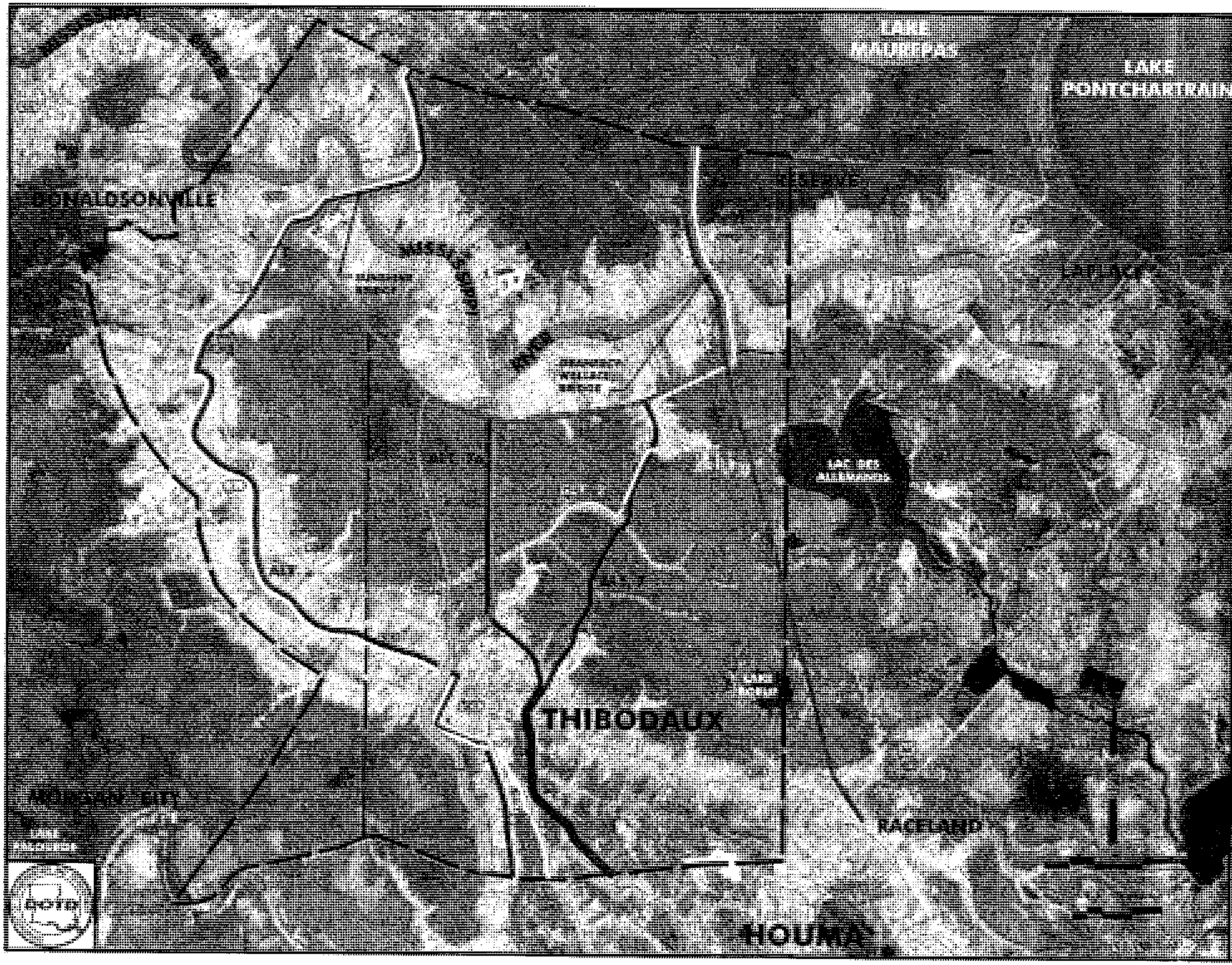


LEGEND

EXPANDED STUDY AREA BOUNDARY

ORIGINAL STUDY AREA BOUNDARY

PARISH BOUNDARY

NOTE:
ALTERNATIVES THAT APPEAR TO BE LOCATED DIRECTLY ADJACENT TO EACH OTHER SHARE A COMMON ALIGNMENT.

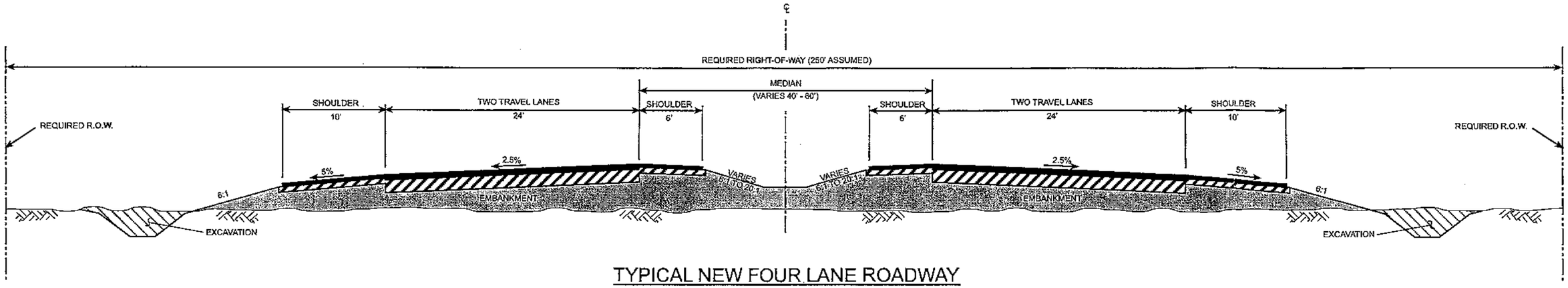
SOURCE:
SCOTT A. BRAUD, JR. 1991, SATELLITE TIME OF LOUISIANA FROM THE MOSAIC OF LANDSAT THEMATIC MAPPER AND SPOT IMAGERY. LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE DEPARTMENT OF NATURAL RESOURCES, BATON ROUGE, LA, AND THE U.S. GEOLOGICAL SURVEY'S NATIONAL WETLANDS RESEARCH CENTER, LAFAYETTE, LA.

HURRICANE EVACUATION STUDY

PRELIMINARY ALTERNATIVES WITH SATELLITE IMAGE
FIGURE 2.3

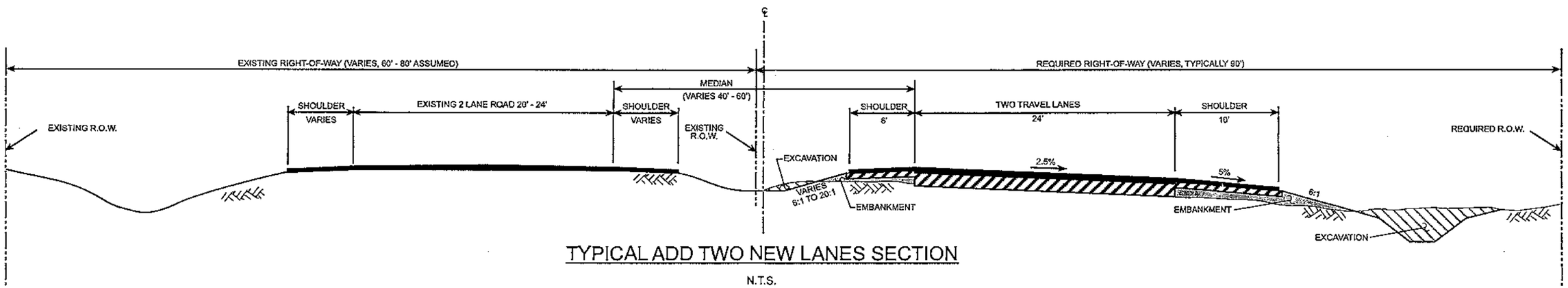
URS Grainer Woodward Clyde

GeoQuest, Inc.



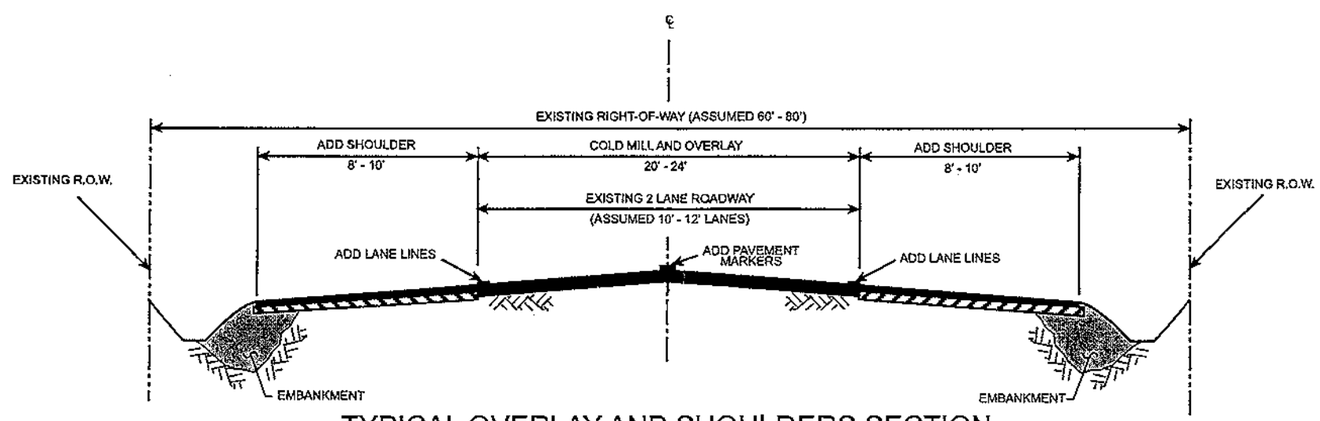
TYPICAL NEW FOUR LANE ROADWAY

N.T.S.



TYPICAL ADD TWO NEW LANES SECTION

N.T.S.



TYPICAL OVERLAY AND SHOULDERS SECTION

(ALL WORK WITHIN EXISTING RIGHT-OF-WAY)

N.T.S.

HURRICANE EVACUATION STUDY

TYPICAL SECTIONS
AT GRADE IMPROVEMENTS
FIGURE 2.4

MAP PREPARED BY:

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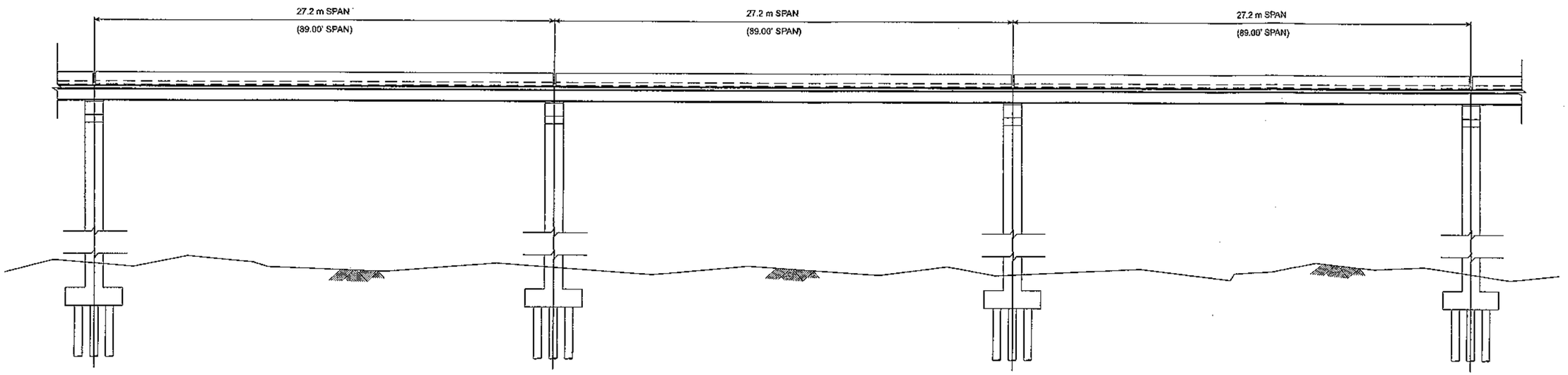
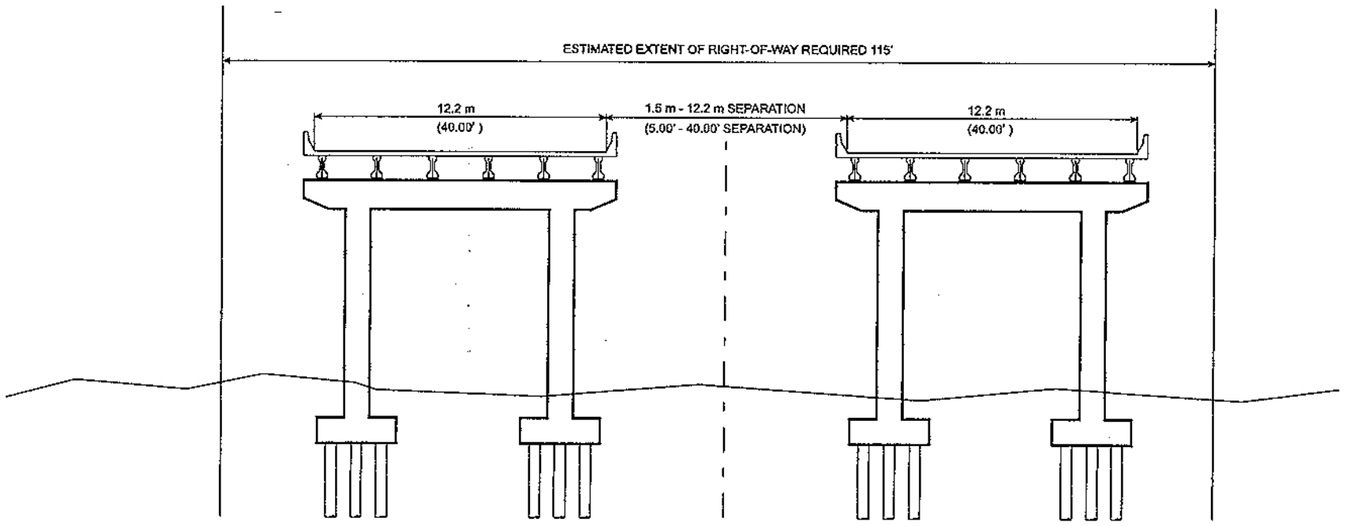
January 1999



ELEVATION

N.T.S.



FOUR LANE ELEVATED ROADWAY SECTION

N.T.S.

NOTES:

ELEVATED ROADWAYS ASSUMED FOR ALL SUBSTANTIAL WETLAND CROSSINGS. WHERE WATERWAY CROSSINGS ARE LOCATED ALONG ASSUMED ELEVATED SECTIONS, NO ADDITIONAL CROSSING OR ASSOCIATED COST WAS CALCULATED. END-ON CONSTRUCTION TECHNIQUE WAS ASSUMED TO BE EMPLOYED FOR ALL SUBSTANTIAL DISTANCES OF ELEVATED SECTION CONSTRUCTION, REQUIRING MINIMUM RIGHT-OF-WAY.

HURRICANE EVACUATION STUDY

TYPICAL SECTIONS
ELEVATED ROADWAY
FIGURE 2.5

MAP PREPARED BY:

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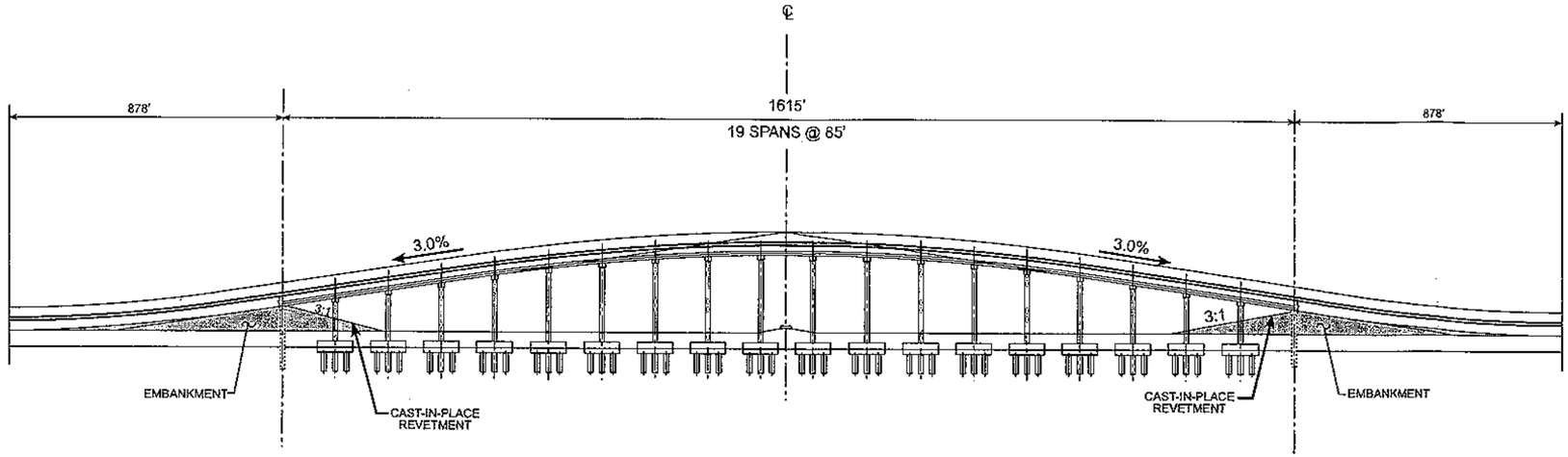
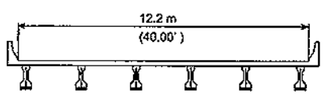
(225) 767-7019

January 1999



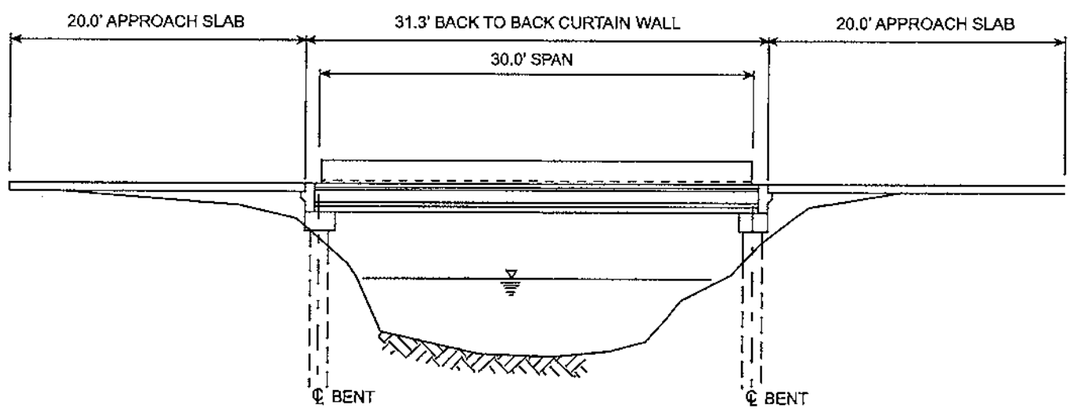
RAILROAD CROSSING ELEVATION

N.T.S.



TYPICAL BRIDGE SECTION

N.T.S.



NON NAVIGABLE WATERWAY CROSSING ELEVATION

N.T.S.

HURRICANE EVACUATION STUDY

TYPICAL SECTIONS
RAILROAD & WATERWAY CROSSINGS
FIGURE 2.6

MAP PREPARED BY:

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January 1999

Section 3

3.0 TRANSPORTATION ANALYSIS

After preliminary alternatives were developed, these alternatives were evaluated with respect to how they would benefit the network in a hurricane evacuation. This analysis was conducted with the use of a customized TRANPLAN transportation demand model. This transportation analysis utilized a long range transportation model for the evaluation of potential corridors under hurricane evacuation conditions. As part of this effort, travel patterns were analyzed to develop a modeling methodology that allowed the evaluation of the corridor alternatives based on their ability to 1) move traffic out of the service area, 2) balance the traffic between critical links, and 3) utilize available capacity. The full transportation analysis report (URS Greiner Woodward Clyde 1999) is incorporated by reference into this document. Excerpts and data summaries are reproduced in this section.

The TRANPLAN model was developed using available GIS data, previous hurricane evacuation analyses, and behavioral studies. Figure 3.1 displays the TRANPLAN model area and expanded project study area. As a precursor to running the model, assumptions were made, socioeconomic data were analyzed, and a simulated road network was created. Given the various assumptions and input data, the number of evacuating vehicles was determined. These vehicles were distributed to various evacuation zones and then assigned to the roadway network. Using the model, each of the various corridor alternatives was tested for both the existing year (1997) and on a long range basis (2020). The existing plus committed network based on LDOTD's proposed letting

schedule was incorporated into the 2020 network; however, only funded projects were included. As a measure of effectiveness, volume to capacity (V/C) ratios were used to identify where critical links were located and to determine how the various alternatives affected the roadway network. Tables 3.1 and 3.2 provide comparisons of V/C ratios in 1997 and 2020, respectively, under the different alternative scenarios.

Table 3.1. 1997 Alternative Volume to Capacity Ratio Comparison Matrix

Alternative	Sunshine Bridge	Gramercy -Wallace Bridge*	US 90 West	Sum	Maximum	Standard Deviation	Subjective Ranking**
Base Capacity	15.62	21.91	16.59	54.12	21.91	2.77	
2	10.17	19.12	18.68	47.97	19.12	4.12	1
3	19.10	19.34	16.12	54.56	19.34	1.46	2
1A	16.23	23.25	15.19	54.67	23.25	3.58	3
1	15.38	25.87	15.81	57.06	25.87	4.85	4
New Arterials							
6A	16.54	13.36	18.03	47.93	18.03	1.95	1
6	14.84	16.56	17.90	49.30	17.90	1.25	2
7A	12.88	18.25	17.09	48.22	18.25	2.31	3
4	20.47	15.13	16.92	52.52	20.47	2.22	4
7	10.93	20.99	17.53	49.45	20.99	4.17	5
New Freeways							
6A-F	16.79	15.18	19.68	51.65	19.68	1.86	1
6-F	14.25	15.52	19.31	49.08	19.31	2.15	2
7A-F	11.71	15.41	19.69	46.81	19.69	3.26	3
4-F	20.09	15.11	16.59	51.79	20.09	2.09	4
5	9.53	18.32	20.88	48.73	20.88	4.86	5
7-F	9.76	23.04	17.76	50.56	23.04	5.46	6

* Indicates V/C ratio of bridge or approaches leading to the bridge, whichever is greater. The critical links are as follows:
LA 20 south of LA 3127 - Base and Alts. 1, 1A, 3, and 4.
Gramercy-Wallace Bridge - Alts. 2,5,6,6A,7 and 7A

** The ranking for each group was based on an evaluation and comparison of the sum, maximum, and standard deviation of the V/C ratios for each alternative.

Table 3.2. 2020 Alternative Volume to Capacity Ratio Comparison Matrix

Alternative	Sunshine Bridge	Gramercy-Wallace Bridge*	US 90 West	Sum	Maximum	Standard Deviation	Subjective Ranking**
Base Capacity	17.77	25.13	18.14	61.04	25.13	3.39	
2	11.68	21.51	18.35	51.54	21.51	4.10	1
3	19.68	21.74	16.28	57.70	21.74	2.25	2
1A	19.46	25.15	17.40	62.01	25.15	3.28	3
1	16.38	29.31	16.80	62.49	29.31	6.00	4
New Arterials							
7A	16.81	14.93	18.38	50.12	18.38	1.41	1
6A	19.99	14.36	18.05	52.40	19.99	2.34	2
6	14.73	20.21	20.25	55.19	20.25	2.59	3
4	22.12	18.36	16.52	57.00	22.12	2.33	4
7	13.16	22.83	18.73	54.72	22.83	3.96	5
New Freeways							
6-F	15.94	19.92	19.69	55.55	19.92	1.82	1
5	10.36	19.84	20.71	50.91	20.71	4.69	2
7A-F	16.29	18.60	21.90	56.79	21.90	2.30	3
6A-F	20.62	15.27	21.27	57.16	21.27	2.69	4
4-F	24.05	17.78	16.87	58.70	24.05	3.19	5
7-F	11.97	24.25	20.34	56.56	24.25	5.12	6

* Indicates V/C ratio of bridge or approaches leading to the bridge, whichever is greater. The critical links are as follows:
LA 20 south of LA 3127 - Base and Alts. 1, 1A, 3, 4, and 7
Gramercy-Wallace Bridge - Alts. 2, 5, 6 ,6A, and 7A

** The ranking for each group was based on an evaluation and comparison of the sum, maximum, and standard deviation of the V/C ratios for each alternative.

This analysis was not intended to provide the definitive answer which alternative is best. Rather, the intent of the study was to evaluate the transportation issues so that they can be considered in conjunction with environmental, development, costs, and other considerations. The analysis resulted in the following conclusions and recommendations:

The evacuation time is controlled by the critical links. The critical links were locations where the highest V/C ratios exist and served as the control points for any vehicle desiring to exit the study area. The critical links were identified as the Sunshine

Bridge, Gramercy-Wallace Bridge (or approaches to the bridge such as LA 20 south of LA 3127 and River Road), and US 90 West of Morgan City.

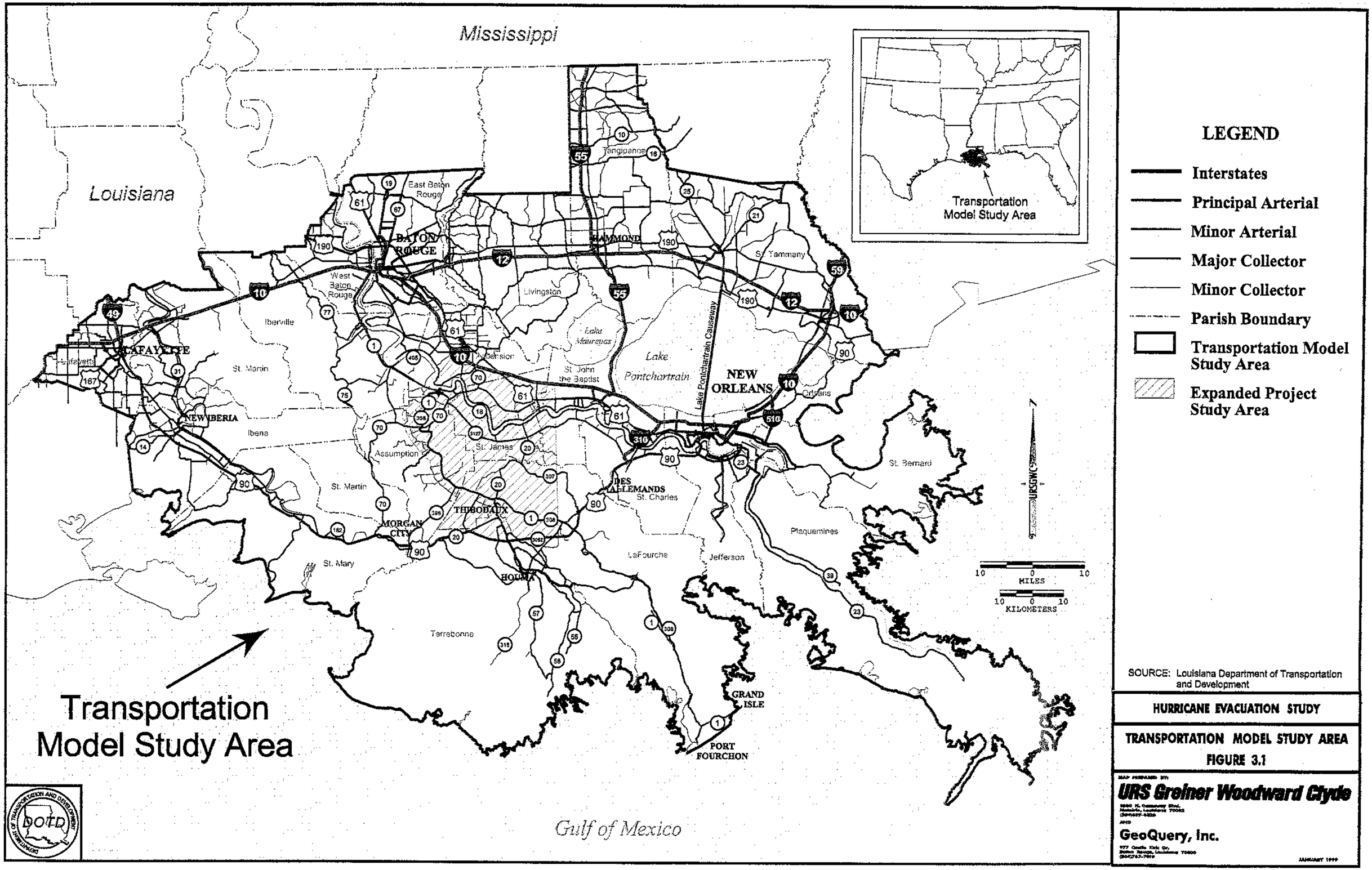
A connection to the Gramercy-Wallace Bridge is needed. The Gramercy-Wallace Bridge currently is a four-lane bridge accessed by River Road which is a circuitous two-lane road with a capacity much lower than that of the bridge. If this bridge were to be used as an evacuation route, there must first be adequate access to the bridge. A connection between LA 3127 and the bridge would provide the necessary access.

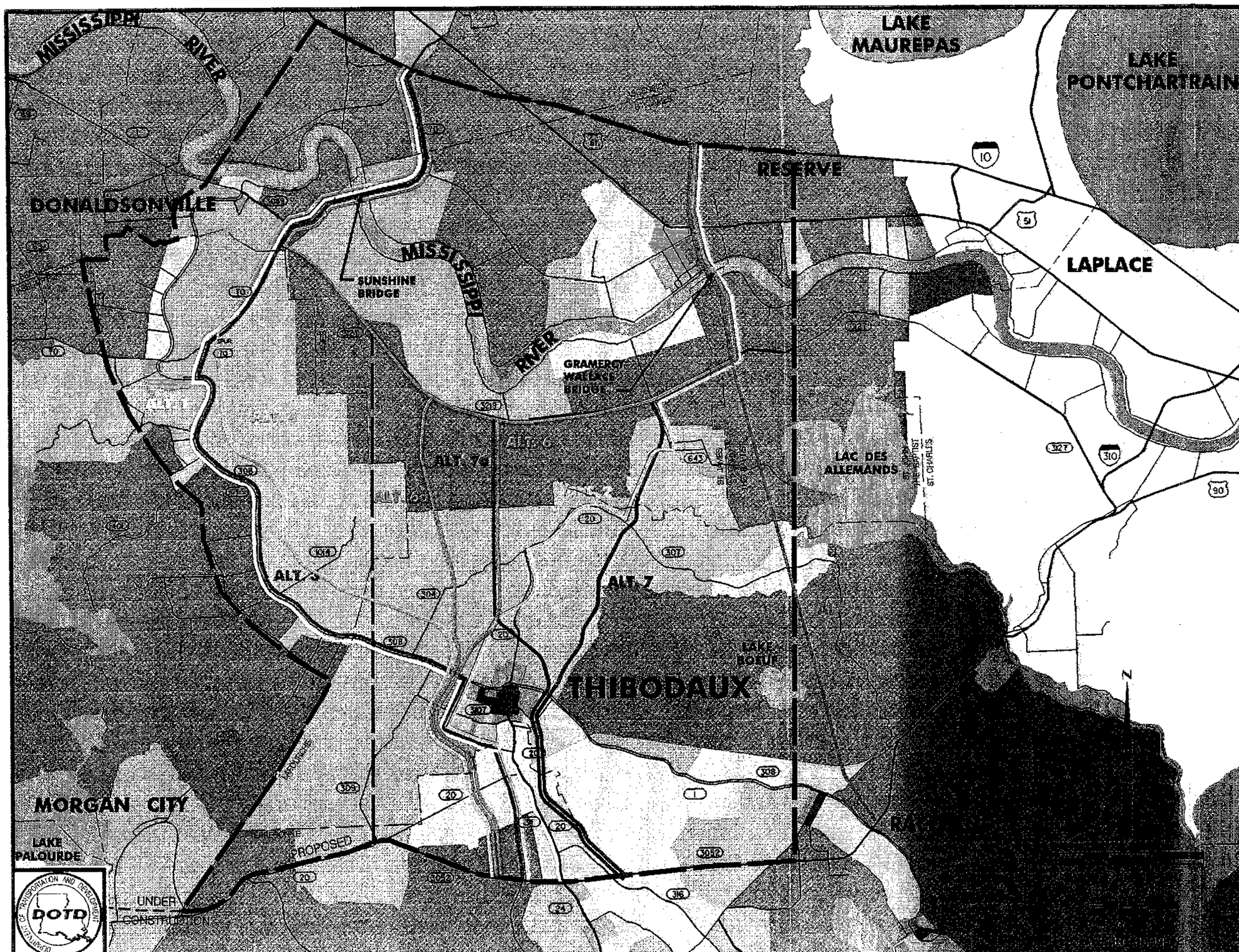
The alternatives that best meet the hurricane evacuation purpose and need are those that split traffic evenly between critical links. Because the critical links control the amount of time it takes to evacuate the area, the best alternatives are those that are able to provide a balance between the critical links so that the overall time to clear the area is reduced. The V/C ratio analysis on the critical links indicates that Alternatives 7A, 6, and 6A provide the best balance between critical links over and above the base condition, as well as any other alternatives. Further, these alternatives were found to provide a better balance between critical links if constructed as arterials rather than as freeways.

The use of US 90 to the east of Raceland would adversely affect US 90 west of Morgan City. One of the original assumptions of this analysis is that US 90 from LA 307 to Des Allemands becomes inundated during the event of a hurricane and is, therefore, not an option as a hurricane evacuation route although it is designated as such. An analysis was performed to determine what would happen if this facility were

improved. Results indicate that the facility would attract westbound trips from New Orleans through to US 90 West towards Lafayette in addition to the eastbound evacuating traffic from the Thibodaux-Houma area. The result is that US 90 west of Morgan City would become even more congested and would need improvement in order to accommodate the additional westbound traffic.

Construction of partial alternatives (i.e., Interim Alternative Concepts as defined and proposed in Section 5.0 of this report) may be a lower-cost feasible option to the fully-envisioned alternatives. TRANPLAN model runs were completed, simulating only a portion of the full alternatives. Two-lane sections were assumed for new location construction between Relocated US 90 and LA 308, between LA 308 and LA 3127, and a four-lane road was assumed for the LA 3127 to Gramercy-Wallace Bridge connector road. Two-lane sections between Relocated US 90 and the Gramercy-Wallace Bridge connector road were modeled as northbound only, reversible facilities. No other improvements were modeled. Preliminary V/C calculations suggest that some benefits can be captured with the Interim Alternative Concepts; however, detailed analysis of these benefits, phasing and costs need to be conducted.


Mississippi
Louisiana
Transportation Model Study Area
East Baton Rouge
BATON ROUGE
West Baton Rouge
Iberville
LAFAYETTE
Lafayette
St. Martin
NEW IBERIA
Iberia
Assumption
St. James
St. Mary
MORGAN CITY
THIBODAUX
HOUMA
Terrebonne
Livingston
Lake Maurepas
Lake Pontchartrain
Lake Pontchartrain Causeway
St. John the Baptist
Tangipahoa
HAMMOND
St. Tammany
NEW ORLEANS
Orleans
St. Bernard
DES ALLEMANDS
St. Charles
LaFourche
Jefferson
Plaquemines
GRAND ISLE
PORT FOURCHON
Gulf of Mexico
MILES
KILOMETERS
LEGEND
Interstates
Principal Arterial
Minor Arterial
Major Collector
Minor Collector
Parish Boundary
Transportation Model Study Area
Expanded Project Study Area
SOURCE: Louisiana Department of Transportation and Development
HURRICANE EVACUATION STUDY
TRANSPORTATION MODEL STUDY AREA
FIGURE 3.1
URS Greiner Woodward Clyde
GeoQuery, Inc.
JANUARY 1999



LEGEND

- EXPANDED STUDY AREA BOUNDARY
- ORIGINAL STUDY AREA BOUNDARY
- PARISH BOUNDARY
- PARISH
- 0 - 39 PEOPLE / SQ. MILE
- 40 - 115 PEOPLE / SQ. MILE
- 116 - 440 PEOPLE / SQ. MILE
- 441 - 1140 PEOPLE / SQ. MILE
- 1141 - 3510 PEOPLE / SQ. MILE
- 3511 - 76,000 PEOPLE / SQ. MILE

NOTE:

ALTHOUGH NEARLY 10 YEARS OLD, 1990 POPULATION DENSITY DATA PROVIDE SOME INDICATION OF THE LOCATION OF RESIDENTIAL AREAS.

SOURCE:

U.S. DEPARTMENT OF COMMERCE, 1990. TIGER/LINE FILES FOR LOUISIANA BASED ON SUMMARY TAPE FILE 3 ON CD-ROM. PREPARED BY THE BUREAU OF CENSUS - WASHINGTON: THE BUREAU, 1992.

HURRICANE EVACUATION STUDY

1990 POPULATION DENSITY

FIGURE 4.1

MAP PREPARED BY:

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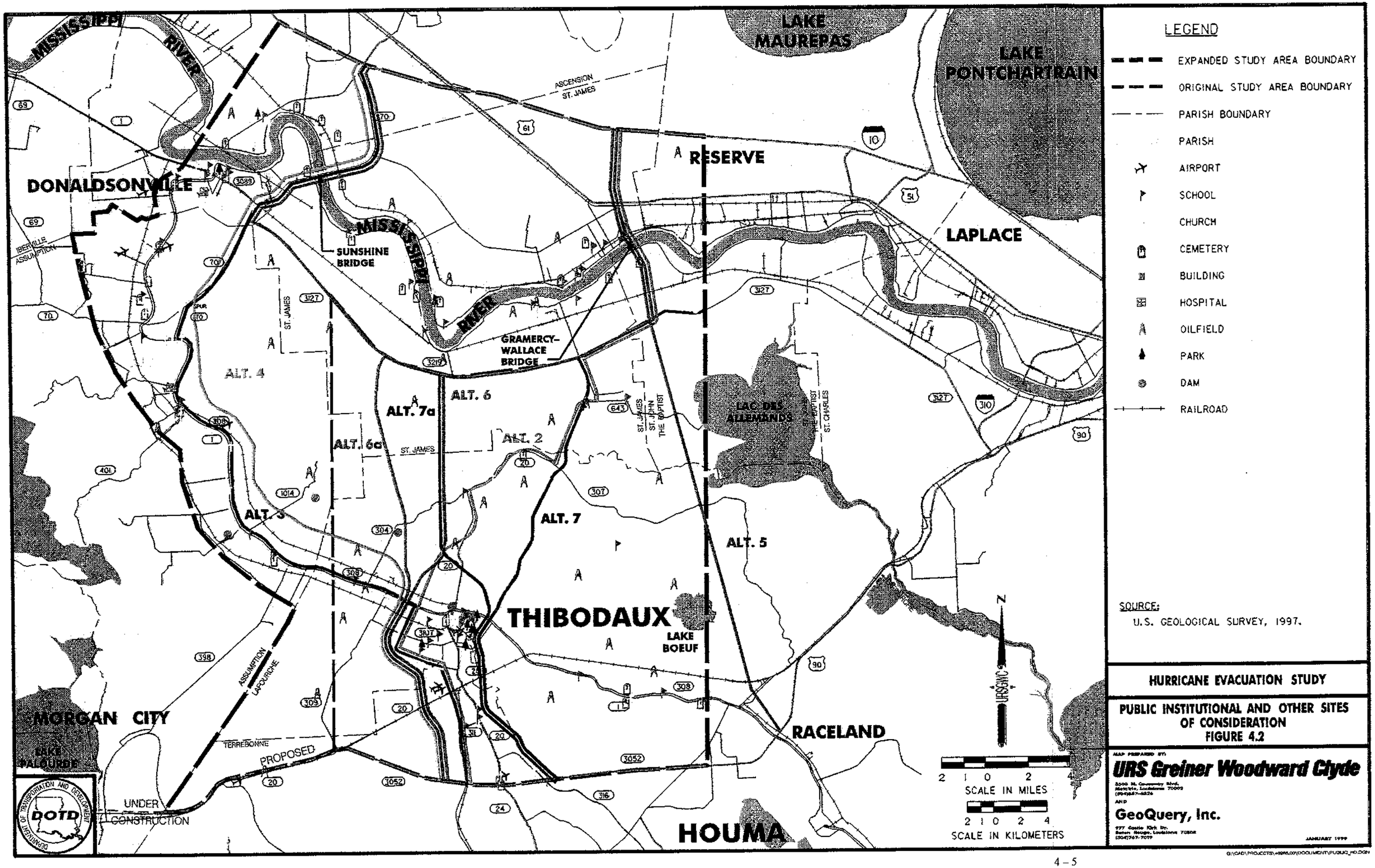
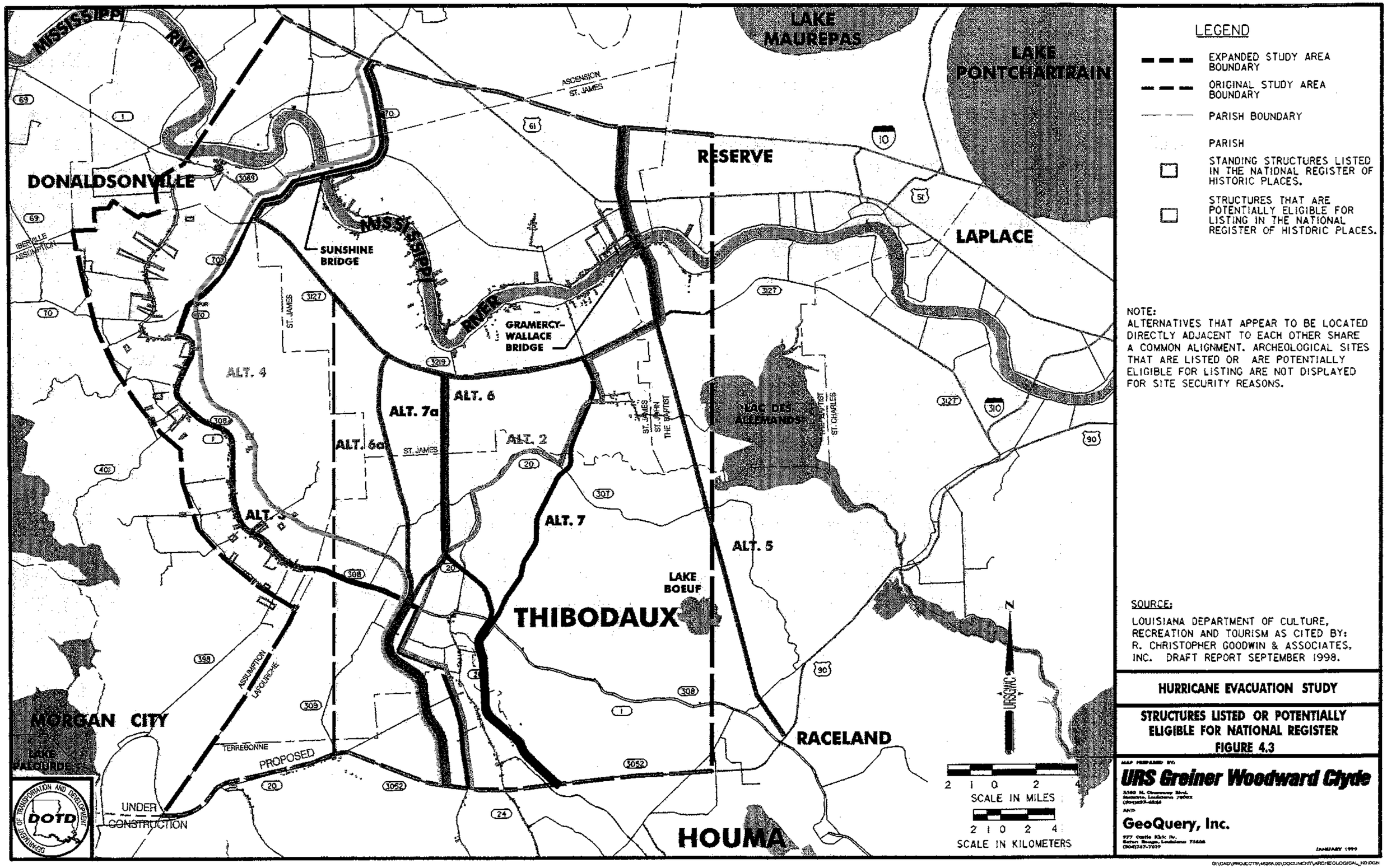
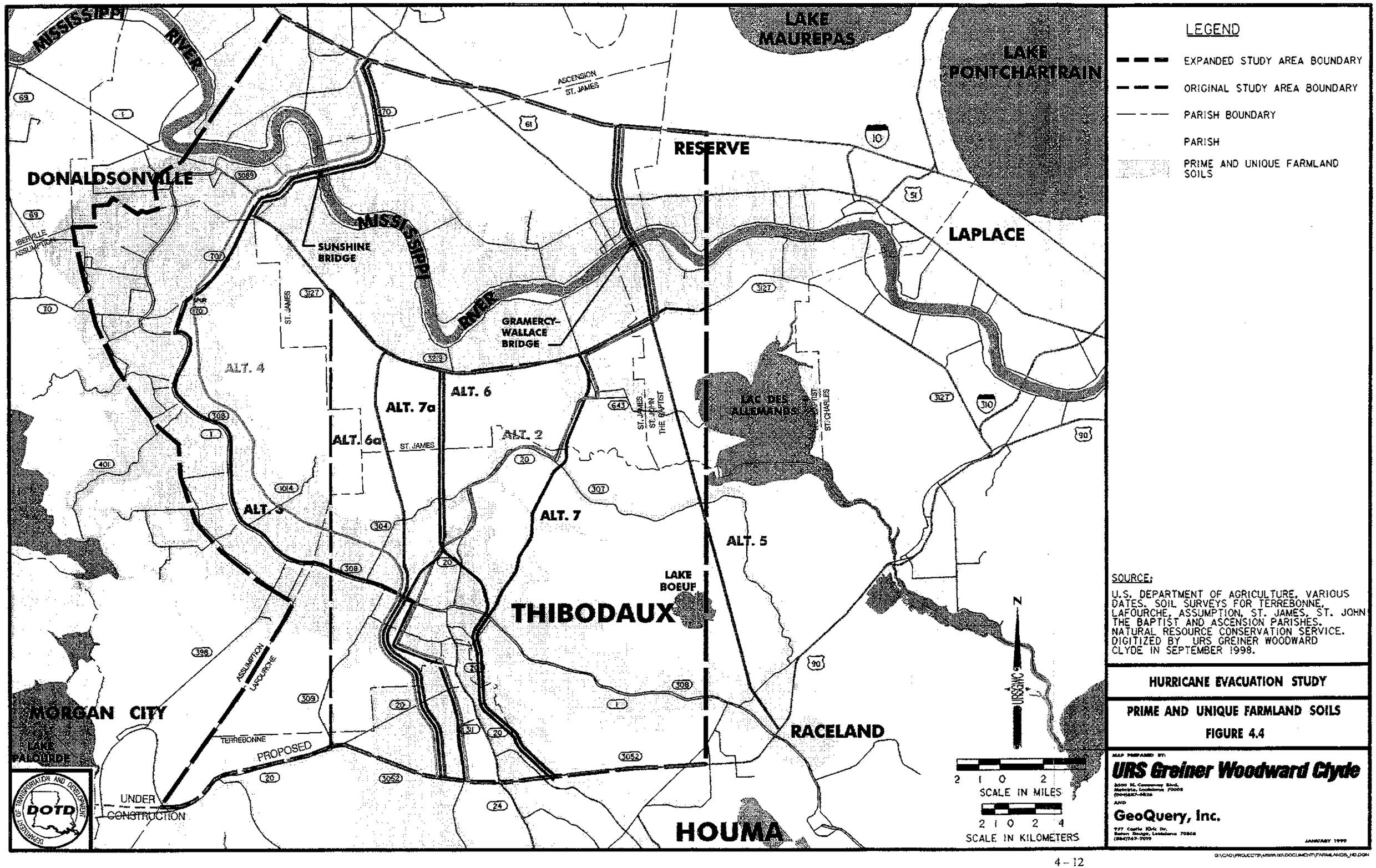
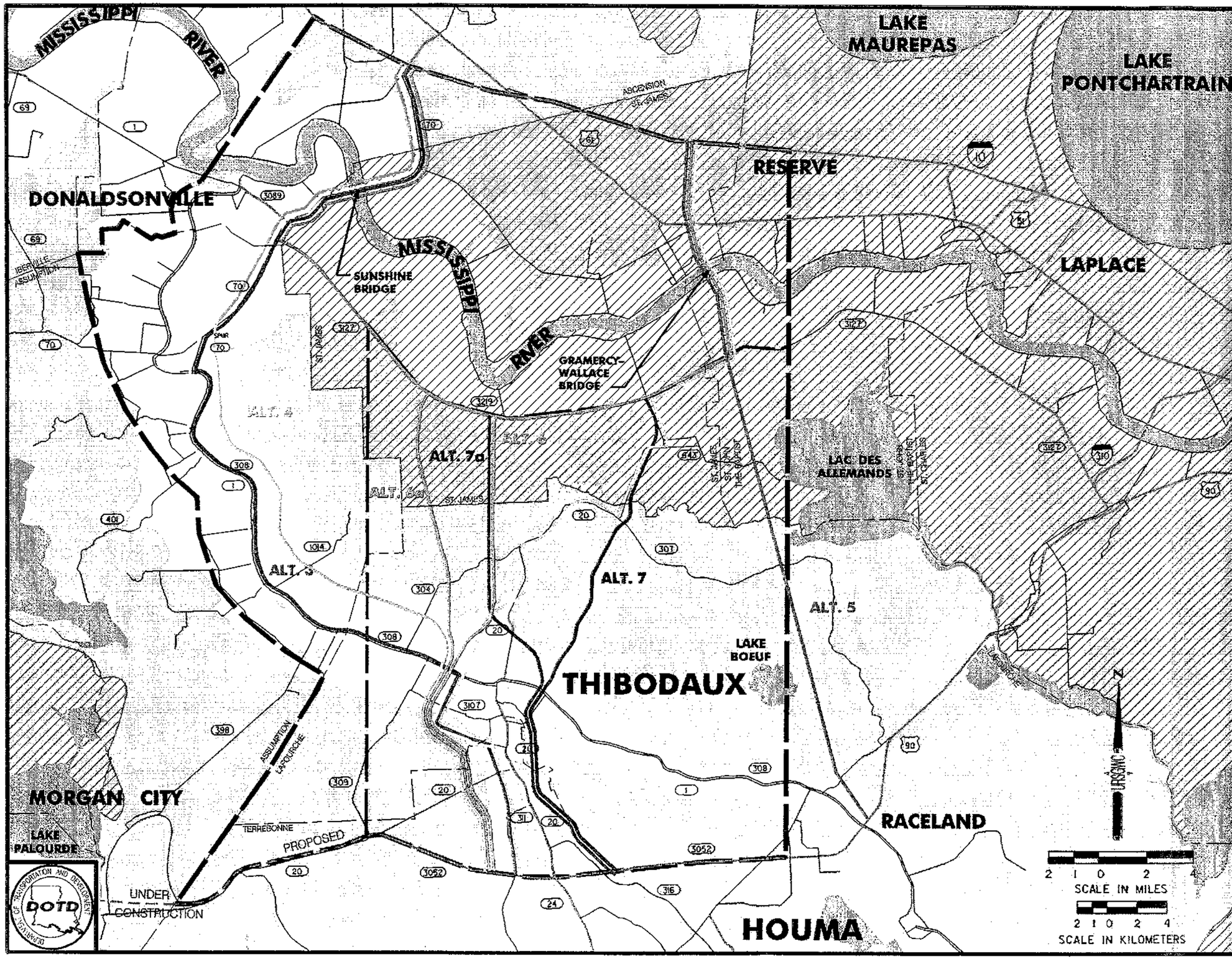

MISSISSIPPI RIVER
LAKE MAUREPAS
LAKE PONTCHARTRAIN
ASCENSION
ST. JAMES
RESERVE
DONALDSONVILLE
IBERVILLE
ASSUMPTION
SUNSHINE BRIDGE
MISSISSIPPI RIVER
LAPLACE
GRAMERCY-WALLACE BRIDGE
ALT. 4
ALT. 6
ALT. 7a
ALT. 6a
ALT. 2
ALT. 3
ALT. 7
ALT. 5
LAC DES ALLEMANDS
THIBODAUX
LAKE BOEUF
MORGAN CITY
LAKE PALOURDE
ASSUMPTION
LAFOURCHE
TERREBONNE
PROPOSED
UNDER CONSTRUCTION
RACELAND
HOUMA
ST. JOHN THE BAPTIST
ST. CHARLES
DOTD
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
N
URSGWC
2 1 0 2 4
SCALE IN MILES
2 1 0 2 4
SCALE IN KILOMETERS
LEGEND
EXPANDED STUDY AREA BOUNDARY
ORIGINAL STUDY AREA BOUNDARY
PARISH BOUNDARY
PARISH
AIRPORT
SCHOOL
CHURCH
CEMETERY
BUILDING
HOSPITAL
OILFIELD
PARK
DAM
RAILROAD
SOURCE:
U.S. GEOLOGICAL SURVEY, 1997.
HURRICANE EVACUATION STUDY
PUBLIC INSTITUTIONAL AND OTHER SITES OF CONSIDERATION
FIGURE 4.2
MAP PREPARED BY:
URS Greiner Woodward Clyde
AND
GeoQuery, Inc.
JANUARY 1999


MISSISSIPPI RIVER
LAKE MAUREPAS
LAKE PONTCHARTRAIN
ASCENSION
ST. JAMES
RESERVE
DONALDSONVILLE
IBERVILLE
ASSUMPTION
SUNSHINE BRIDGE
MISSISSIPPI RIVER
GRAMERCY-WALLACE BRIDGE
LAPLACE
ST. JAMES
ALT. 4
ALT. 6
ALT. 7a
ALT. 6a
ALT. 2
ALT. 3
ALT. 7
ALT. 5
LAC DES ALLEMANDS
ST. JOHN THE BAPTIST
ST. CHARLES
LAKE BOEUF
THIBODAUX
ASSUMPTION
LAFOURCHE
MORGAN CITY
LAKE PALOURDE
TERREBONNE
PROPOSED
UNDER CONSTRUCTION
RACELAND
HOUMA
DOTD
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
N
URS/GWC
2 1 0 2 4
SCALE IN MILES
2 1 0 2 4
SCALE IN KILOMETERS
LEGEND
EXPANDED STUDY AREA BOUNDARY
ORIGINAL STUDY AREA BOUNDARY
PARISH BOUNDARY
PARISH
STANDING STRUCTURES LISTED IN THE NATIONAL REGISTER OF HISTORIC PLACES.
STRUCTURES THAT ARE POTENTIALLY ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES.
NOTE:
ALTERNATIVES THAT APPEAR TO BE LOCATED DIRECTLY ADJACENT TO EACH OTHER SHARE A COMMON ALIGNMENT. ARCHEOLOGICAL SITES THAT ARE LISTED OR ARE POTENTIALLY ELIGIBLE FOR LISTING ARE NOT DISPLAYED FOR SITE SECURITY REASONS.
SOURCE:
LOUISIANA DEPARTMENT OF CULTURE, RECREATION AND TOURISM AS CITED BY: R. CHRISTOPHER GOODWIN & ASSOCIATES, INC. DRAFT REPORT SEPTEMBER 1998.
HURRICANE EVACUATION STUDY
STRUCTURES LISTED OR POTENTIALLY ELIGIBLE FOR NATIONAL REGISTER
FIGURE 4.3
MAP PREPARED BY:
URS Greiner Woodward Clyde
AND
GeoQuery, Inc.
JANUARY 1999


LEGEND
EXPANDED STUDY AREA BOUNDARY
ORIGINAL STUDY AREA BOUNDARY
PARISH BOUNDARY
PARISH
PRIME AND UNIQUE FARMLAND SOILS
SOURCE:
U.S. DEPARTMENT OF AGRICULTURE, VARIOUS DATES. SOIL SURVEYS FOR TERREBONNE, LAFOURCHE, ASSUMPTION, ST. JAMES, ST. JOHN THE BAPTIST AND ASCENSION PARISHES. NATURAL RESOURCE CONSERVATION SERVICE. DIGITIZED BY URS GREINER WOODWARD CLYDE IN SEPTEMBER 1998.
HURRICANE EVACUATION STUDY
PRIME AND UNIQUE FARMLAND SOILS
FIGURE 4.4
MAP PREPARED BY:
URS Greiner Woodward Clyde
AND
GeoQuery, Inc.
JANUARY 1999
MISSISSIPPI RIVER
LAKE MAUREPAS
LAKE PONTCHARTRAIN
DONALDSONVILLE
RESERVE
LAPLACE
SUNSHINE BRIDGE
GRAMERCY-WALLACE BRIDGE
ALT. 4
ALT. 6
ALT. 7a
ALT. 6a
ALT. 2
ALT. 3
ALT. 7
ALT. 5
LAC DES ALLEMANDS
LAKE BOEUF
THIBODAUX
MORGAN CITY
LAKE PALOURDE
RACELAND
HOUMA
ASCENSION
ST. JAMES
ST. JOHN THE BAPTIST
ST. CHARLES
IBERVILLE
ASSUMPTION
LAFOURCHE
TERREBONNE
PROPOSED
UNDER CONSTRUCTION
DOTD
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
N
SCALE IN MILES
SCALE IN KILOMETERS



LEGEND

- EXPANDED STUDY AREA BOUNDARY
- ORIGIANL STUDY AREA BOUNDARY
- PARISH BOUNDARY
- PARISH
- COASTAL ZONE
- 100-YR FLOODPLAIN
- 500-YR FLOODPLAIN

NOTE:

AREAS NOT SHADED ARE LOCATED OUTSIDE OF THE 100-YEAR AND 500-YEAR FLOODPLAINS. ALSO, THE AREA COMPRISING THE 100-YEAR FLOODPLAIN INCLUDES SEVERAL RELATIVELY SMALL AREAS FOR WHICH THEIR STATUS IS UNKNOWN.

SOURCES:

LOUISIANA DEPARTMENT OF NATURAL RESOURCES, 1998, COASTAL BOUNDARY MAP.

FEDERAL EMERGENCY MANAGEMENT AGENCY. DATE UNKNOWN. VECTORIZED FLOOD INSURANCE RATE MAPS ON CD-ROM FOR SELECTED PARISHES IN LOUISIANA, 1996.

HURRICANE EVACUATION STUDY

FLOODPLAINS AND COASTAL ZONE

FIGURE 4.5

MAP PREPARED BY:

URS Greiner Woodward Clyde

3500 N. Causeway Blvd.
Metairie, Louisiana 70002
(504)837-6325

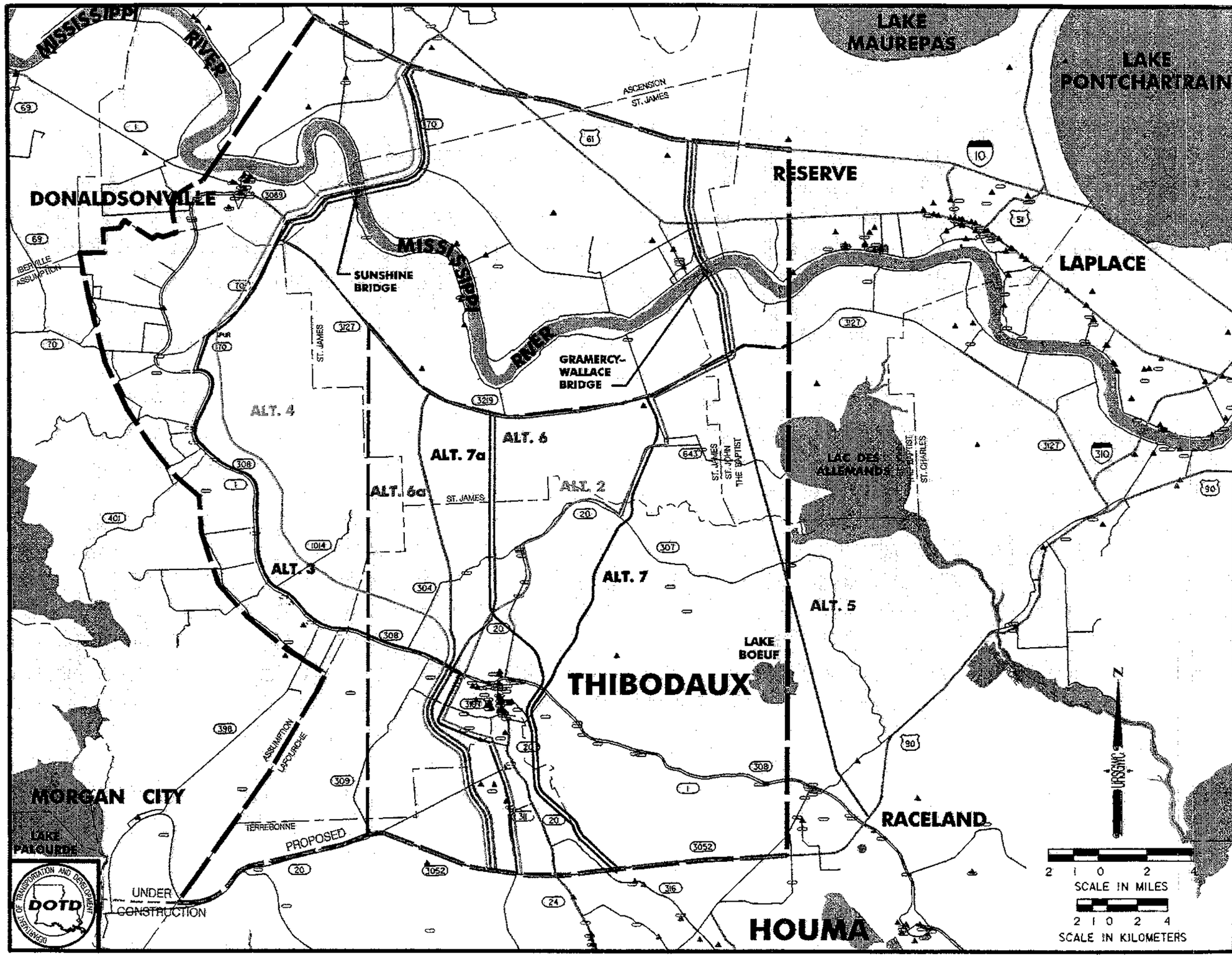
AND

GeoQuery, Inc.

977 Castle Kirk Dr.
Baton Rouge, Louisiana 70808
(504)767-7019

JANUARY 1999

G:\CADD\PROJECTS\4125180\DOCUMENT\COASTAL_HD.DGN



LEGEND

- EXPANDED STUDY AREA BOUNDARY
- ORIGINAL STUDY AREA BOUNDARY
- PARISH BOUNDARY
- PARISH
- RESOURCE CONSERVATION & RECOVERY ACT INFORMATION SYSTEM; TEMPORARY STORAGE FACILITIES, GENERATORS AND TRANSPORTERS OF HAZARDOUS WASTE.
- HAZARDOUS WASTE SITES ON THE COMPREHENSIVE ENVIRONMENTAL RESOURCE CLEANUP LIABILITY INFORMATION SYSTEM LIST.
- UNDERGROUND STORAGE TANKS

NOTE:
THE SITE SEARCH CONDUCTED FOR THIS PROJECT DID NOT CONSTITUTE A FULL ENVIRONMENTAL PHASE I ASSESSMENT. LEAKING UNDERGROUND STORAGE TANKS, SITES RECORDED ON THE ENVIRONMENTAL RESPONSE NOTIFICATION SYSTEM, AND OTHERS WERE NOT INVENTORIED AND ARE THEREFORE NOT DISPLAYED ON THIS GRAPHIC.

SOURCE:

U.S. ENVIRONMENTAL PROTECTION AGENCY, 1997. DATA FROM THE EPA REGULATED FACILITY POINT LOCATIONS FROM ENVIROFACTS FOR THE COTERMINOUS US DOWNLOADED AT FTP FTP.EPA.GOV/PUB/SPDATA/EF.

METADATA REFERENCE SITE:
HTTP://NSDI.EPA.GOV/NSDI/PROJECTS/NAT ENVIRO.HTM

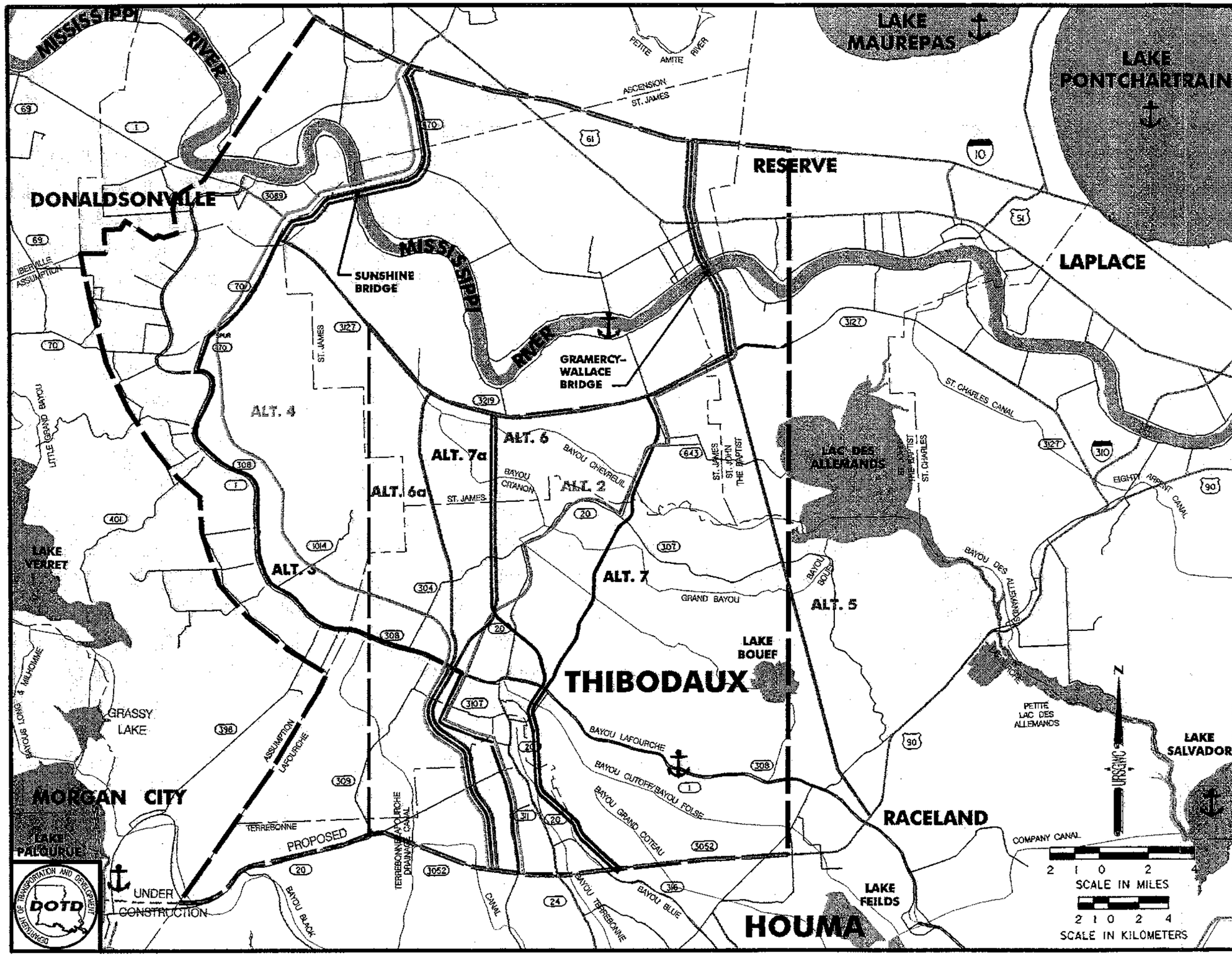
HURRICANE EVACUATION STUDY

UNDERGROUND STORAGE TANKS & POTENTIALLY HAZARDOUS SITES
FIGURE 4.6

MAP PREPARED BY:
URS Greiner Woodward Clyde
5000 N. Causeway Blvd.
Metairie, Louisiana 70002
(504)837-6226
AND
GeoQuery, Inc.
977 Castle Rock Dr.
Baton Rouge, Louisiana 70808
(504)767-7519

JANUARY 1999

G:\CAD\PROJECTS\48265.00\DOCUMENT\HAZARDMAT HZ.DGN



LEGEND

- EXPANDED STUDY AREA BOUNDARY
- ORIGINAL STUDY AREA BOUNDARY
- PARISH BOUNDARY
- PARISH
- SUBSTANTIAL SURFACE WATERS
- NAVIGABLE WATERWAYS WITHIN STUDY AREA RECOGNIZED BY LDOTD:

  MISSISSIPPI RIVER
  LAKE PONTCHARTRAIN
  LAKE MAUREPAS
  LAKE SALVADOR
  INTRACOASTAL WATERWAY
  BAYOU LAFOURCHE

NOTE:

ADDITIONAL SURFACE WATERS LOCATED THROUGHOUT STUDY AREA. SELECTED SURFACE WATERS BASED ON AVAILABLE GIS DATA.

SOURCES:

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT.
DEWITT H. BRAUD, JR. 1997. SATELLITE VIEW OF LOUISIANA FROM THE MERGE OF LANDSAT THEMATIC MAPPER AND SPOT IMAGERY. LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE DEPARTMENT OF NATURAL RESOURCES. BATON ROUGE, LA, AND THE U.S. GEOLOGICAL SURVEY'S NATIONAL WETLANDS RESEARCH CENTER, LAFAYETTE, LA. PORTIONS DIGITIZED BY URS GREINER WOODWARD CLYDE, INC. IN JANUARY 1999.

HURRICANE EVACUATION STUDY

SURFACE WATER & NAVIGABLE WATERWAYS

FIGURE 4.7

MAP PREPARED BY:

URS Greiner Woodward Clyde

3500 N. Causeway Blvd.
Metairie, Louisiana 70002
(504)837-4220

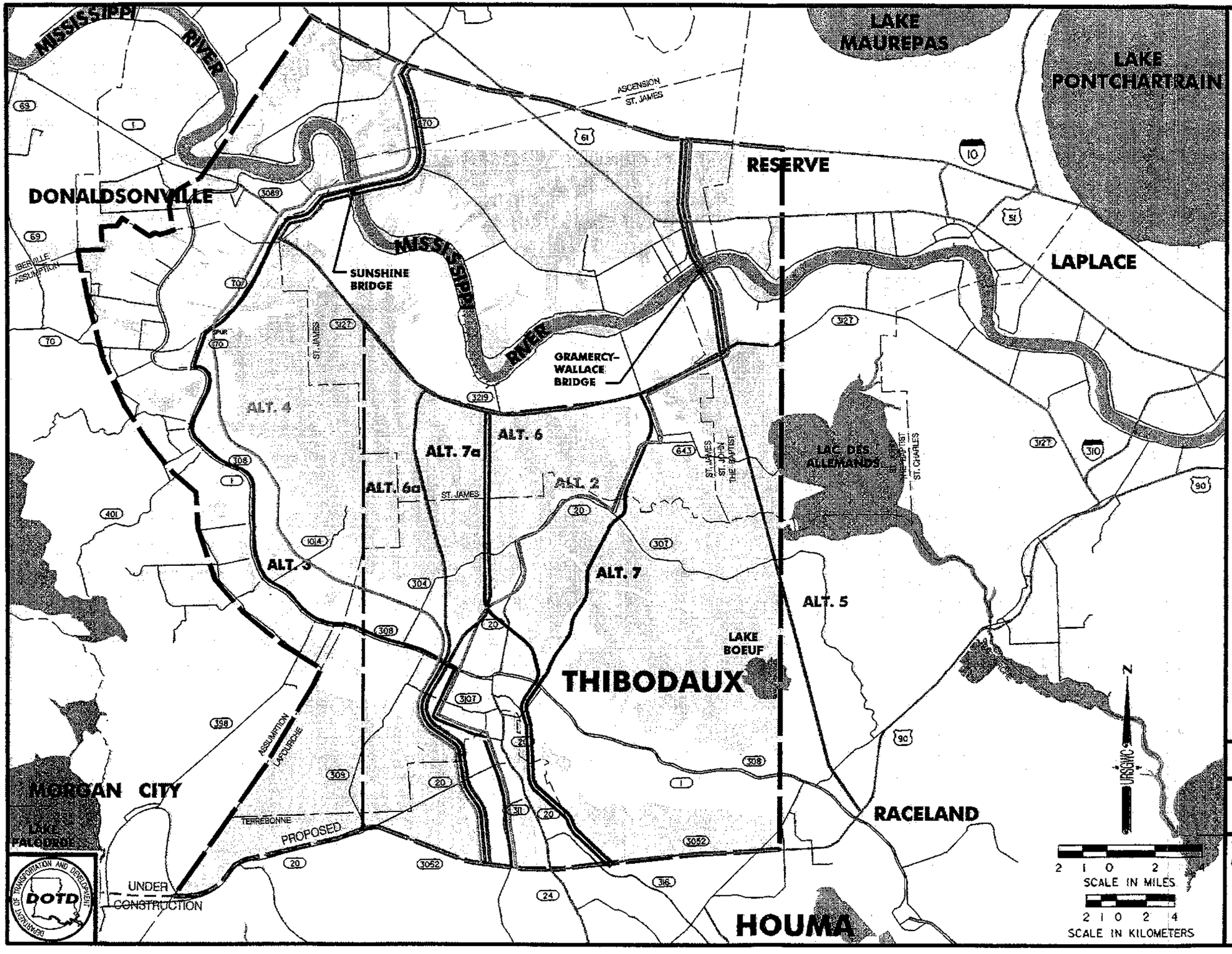
AND

GeoQuery, Inc.

777 Corrie Kirk Dr.
Baton Rouge, Louisiana 70808
(504)767-7019

JANUARY 1999

G:\CAD\PROJECTS\M288.00\DOCUMENT\NAVIGABLEWATER_HD.DGN



LEGEND

- EXPANDED STUDY AREA BOUNDARY
- ORIGINAL STUDY AREA BOUNDARY
- PARISH BOUNDARY
- PARISH
- WETLANDS

NOTE:
WETLAND BOUNDARIES OUTSIDE OF THE PROJECT STUDY AREA ARE NOT PROVIDED.

SOURCES:

DEWITT H. BRAUD, JR. 1997. SATELLITE VIEW OF LOUISIANA FROM THE MERGE OF LANDSAT THEMATIC MAPPER AND SPOT IMAGERY. LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE DEPARTMENT OF NATURAL RESOURCES. BATON ROUGE, LA, AND THE U.S. GEOLOGICAL SURVEY'S NATIONAL WETLANDS RESEARCH CENTER, LAFAYETTE, LA. LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT. AERIAL PHOTOGRAPHS OF SOUTHEASTERN LOUISIANA. DEPARTMENT OF PHOTOGRAMMETRY. FLOWN IN 1995 DIGITIZED BY URS GREINER WOODWARD CLYDE, INC. IN SEPTEMBER 1998.

HURRICANE EVACUATION STUDY

WETLANDS

FIGURE 4.8

MAP PREPARED BY:

URS Greiner Woodward Clyde

3500 N. Causeway Blvd.
Metairie, Louisiana 70002
(504)837-4326

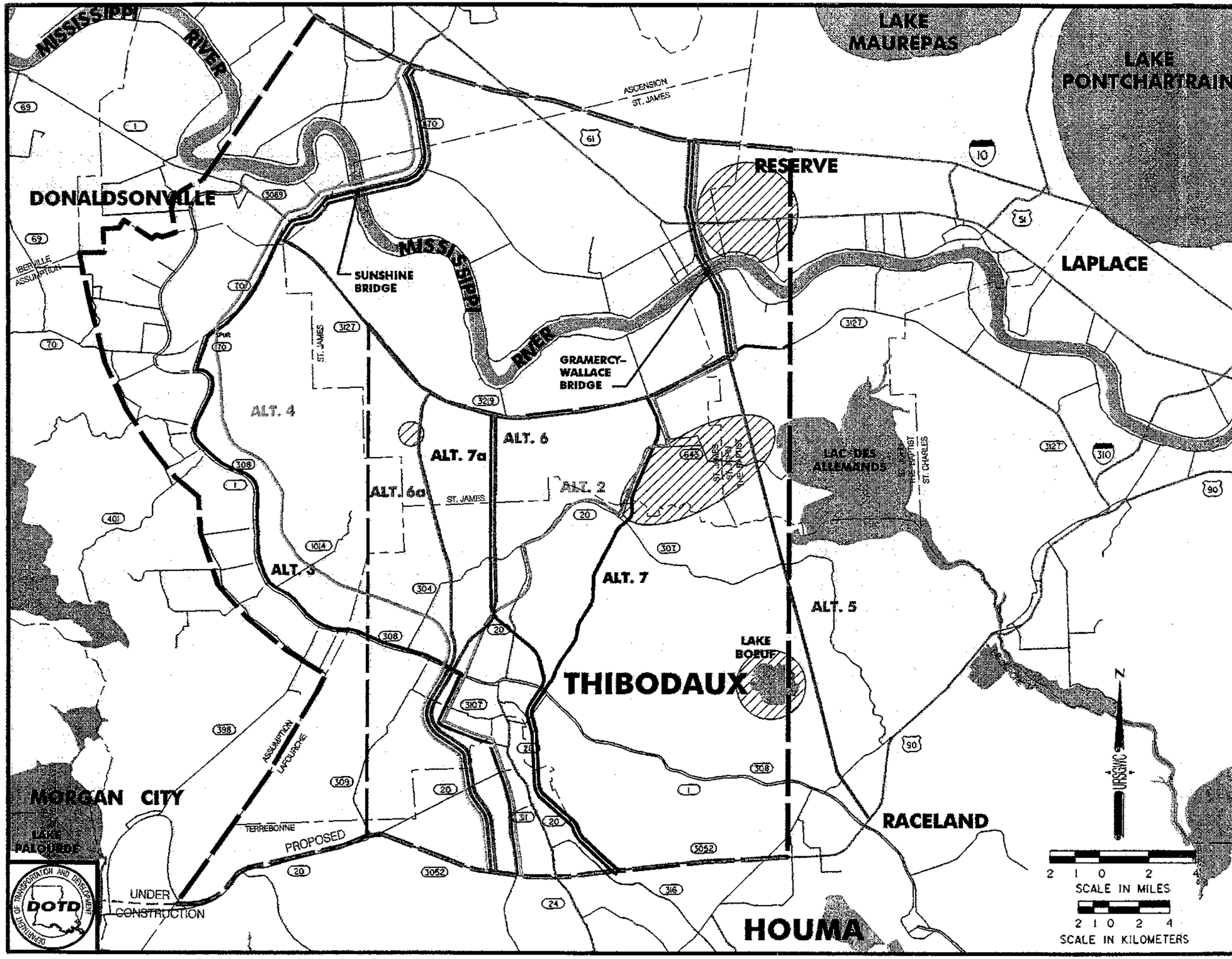
AND

GeoQuery, Inc.

977 Gonzales Dr.
Baton Rouge, Louisiana 70808
(504)767-7079

JANUARY 1999

G:\CAD\PROJECTS\46268.00\DOCUMENT\WETLANDS_HD.DGN



LEGEND

- EXPANDED STUDY AREA BOUNDARY
- ORIGINAL STUDY AREA BOUNDARY
- PARISH BOUNDARY
- PARISH
- AREAS OF RELATIVELY HIGH CONCENTRATION OF LOUISIANA NATURAL HERITAGE PROGRAM SENSITIVE SITES.

NOTE:
SITES INCLUDE CONCENTRATIONS OF COLONIAL WATERBIRD NESTING AREAS AS WELL AS PROTECTED SPECIES.
A VARIETY OF ISOLATED OCCURANCES ARE LOCATED ELSEWHERE IN THE STUDY AREA. NO WILDLIFE MANAGEMENT AREAS OR OTHER SIGNIFICANT NATURAL AREAS ARE LOCATED WITHIN THE STUDY AREA.

SOURCE:
LOUISIANA NATURAL HERITAGE PROGRAM, 1998. OCCURENCES IN LOUISIANA.

HURRICANE EVACUATION STUDY

SENSITIVE BIOLOGICAL RESOURCES
FIGURE 4.9

MAP PREPARED BY:
URS Greiner Woodward Clyde
3500 N. Causeway Blvd.
Metairie, Louisiana 70002
(504)837-6620
AND
GeoQuery, Inc.
977 Castle Kirk Dr.
Baton Rouge, Louisiana 70808
(504)767-7059
JANUARY 1999

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Section 4

4.0 ALTERNATIVE CORRIDOR CONSTRAINTS

Alignment constraints were developed through the use of GIS data layers collected from various sources. Data layers that were not available in a GIS format were obtained in their original format and then processed to become GIS compatible. Once all data layers were in a GIS-compatible format, they were then applied to the expanded study area. In order to provide realistic planning projections of alignment effects, unique 1,000-foot corridors around each proposed alternative alignment were created in the GIS as part of the alternative development process. Queries were then made on the newly created 1,000-foot corridors to assess how each proposed alignment would impact an individual data layer. Corridor widths were reduced for wetland impact estimates and other effects in order to provide more accurate estimates of the probable magnitude of final alternative alignments. Sections 4.1 through 4.3 provide discussions of the existing conditions within the study area and the results of these effect analyses.

4.1 Socioeconomic Environment

4.1.1. Population and Development

Much of the study area is comprised of rural residential and agricultural development; however, several more densely populated areas are located within the study area. Figure 4.1 displays 1990 population density from the U.S. Bureau of the Census. Areas of higher population density correlate to communities displayed in the satellite image of the study area in Figure 2.3. The most densely developed region in the area is the City of Thibodaux.

Other more densely populated areas are located on LA 643 south of LA 3127 and along the existing ridges lined by LA 1/LA 308, LA 20, LA 24, and LA 311.

Based on right-of-way land use assessments, land use acreage by type was estimated and is displayed in Table 4.1.

Table 4.1. Total Estimated Land Use within Alternative Corridor Right-of-Ways

Alternative	Developed Land (Acres)	Agricultural Use (Acres)	Undeveloped Upland (Acres)	Undeveloped Wetland (Acres)
1	0	210	0	50
1A	0	210	0	50
2	280	390	15	170
3	480	515	0	125
4	65	985	15	195
5	5	250	0	290
6	50	750	15	435
6A	50	725	15	450
7	85	920	10	375
7A	70	945	0	380

Notes: Estimated Acreage based on minimum right-of-way requirements (i.e, between 115 and 150 feet in most cases, and up to 250 feet in rural areas that do not traverse substantial tracts of wetlands. Land uses were estimated based on inspection of a satellite image of the affected area. Developed urban and industrial land uses were aggregated into the *Developed* acreage category, and wetlands were aggregated with camp sites to account for the fact that all possible camp site areas are located in wetlands. Acreages are rounded to the nearest 5 acres. Wetlands acreage in this table refers to the acreage of wetlands underlain by the existing right-of-way and not the necessarily equal to the amount of wetlands that would be impacted by the alternative corridors. Estimated wetland impacts are discussed in Section 4.3 of this report.

Sources: LDOTD, Categories of properties provided by the Real Estate Office. 1998; URS Greiner Woodward Clyde, 1999.

All alternative alignment corridors bypass the most densely developed Census blocks of Thibodaux; however, several of the alternatives (i.e., Alternatives 1, 1A, and 3) are located on the developed existing corridor of LA 1/LA 308. Although not apparent in Figure 4.1, new right-of-way acquisition along this corridor would displace the most residences and businesses of any alternative corridor. Because Alternatives 1 and 1A do not require new right-of-way acquisition along this corridor, these alternatives would not

impose the same social impacts as Alternative 3, which would require additional right-of-way along LA 308 to accommodate a four-lane roadway section.

All new location construction corridors (Alternatives 4, 6, 6A, 7, and 7A) would displace fewer residences and businesses than any of the alternatives that would require widening of the existing alignment (i.e., Alternatives 2, and 3).

4.1.2 . Public Sites and Services

Public sites were identified from U.S. Geological Survey topographic maps and provided in digital form on a GIS layer. Sites of consideration for alignment placement are denoted in the legend of Figure 4.2. Sites include public lands such as schools, parks and other parcels, as well as other noted public sites such as hospitals, churches, cemeteries, and transportation facilities. Oil fields are also noted on this figure.

Identified improvement construction alternatives that would require additional right-of-way would have a greater potential impact to noted sites than alternatives that would not require additional right-of-way along existing roads (e.g., Alternative 1 and 1A along LA 1/LA 308). Among the improvement alternatives (Alternatives 1, 1A, 2, and 3), Alternative 3, which would require additional right-of-way to accommodate a four-lane section on LA 308, would have the greatest potential to affect public sites and services. New location alternatives (e.g, Alternatives 4, 6, 6A, 7, and 7A) will largely avoid these sites of concern. Table 4.2 displays the numbers of potentially affected public sites and structures of concern for each alternative corridor.

Table 4.2. Total Estimated Public Facilities and Other Sites of Consideration within Alternative Corridors

Alternative	Industrial Facilities	Schools	Oil Fields	Churches	Cemeteries	Communication Towers
1	13	4	1	6	2	1
1A	13	4	1	6	2	1
2	5	1	1	1	1	1
3	11	3	0	0	0	0
4	4	0	0	0	0	0
5	0	0	1	0	0	0
6	4	0	0	0	0	0
6A	4	0	0	0	0	0
7	6	0	0	0	0	0
7A	6	0	0	0	0	0

Notes: The numbers of facilities and sites of concern by alternative was determined from GIS queries that aggregated the number of like sites within each alternative corridor. For planning purposes, corridor width was assumed to be 1,000-feet wide; however, based on estimates, the actual required right-of-way will range between 115 feet in areas where wetlands or development is a concern to approximately 250 feet in rural areas where there are no alignment constraints.

Sources: U.S. Geological Survey. GNIS GIS data layer based upon topographic maps. Various dates of map sources. Obtained 1997; URS Greiner Woodward Clyde, 1999.

4.1.3. Cultural Resources

A preliminary records review was made of recorded archaeological sites and historic standing structures on file with the Louisiana Department of Culture, Recreation, and Tourism. National Register listings were also reviewed. No reconnaissance to identify and record new or verify existing sites was completed for this study. A total of 4,380 historic standing structures and 180 archaeological sites have been recorded within the expanded study area. Nearly all of the structures and archeological sites are located adjacent to the major waterways in the study area, i.e., the Mississippi River, Bayou Lafourche, and Bayou Terrebonne. The areas adjacent to these waterways have proven attractive as habitation sites for both the Native American and European settlers of the area. These water courses provided a means of transportation and access to rich agriculture land and abundant floral and faunal resources. In contrast, most of the central part of the study area is comprised of uninhabitable wetlands. Previously recorded

historic standing structures and historic archaeological sites within the study area are clustered along waterways and in the small river towns.

Based on this archival review, there are 53 sites listed in the National Register located within the expanded study area. St. James, Ascension, and Lafourche parishes have the largest number of sites listed in the National Register. Most of the recorded historic structures in the study area (i.e., structures older than 50 year of age), however, have not had their eligibility status evaluated under the National Registrar of Historic Places Criteria for evaluation (36 CFR 60.4 [a-d]).

Figure 4.3 displays the locations of historic standing structures that are listed in the National Register or are potentially eligible for listing but which have not been evaluated under the National Registrar of Historic Places Criteria for evaluation (36 CFR 60.4 [a-d]). The alternative corridors that encompass the greatest number of listed standing structures and those potentially eligible for listing are the corridors located on existing roadways, where development has been historically located. These alternatives include Alternatives 1, 1A, and 3. Table 4.3 summarizes the number of listed and potentially eligible standing structures, by alternative.

For site security reasons, locations of archaeological sites that are listed in the National Register or are potentially eligible for listing but which have not been evaluated, are not displayed on Figure 4.3. Table 4.3, however, also summarizes the numbers archaeological sites located within each alternative corridor, by type (i.e., listed or potentially eligible for listing in the National Register).

Like standing structures, the alternative corridors that encompass the greatest number of listed archaeological sties and those potentially eligible for listing are the corridors located on existing roadways, where development has been historically located. However, there are archaeology sites located within each alternative corridor, unlike standing structures. Because of the absence of a graphic for this effect analysis, the following discussion is provided.

Table 4.3. Total Estimated Cultural Resources Sites Within Alternative Corridors

Alternative	Sites Listed in the National Register		Sites for which National Register Eligibility Status is Unknown	
	Standing Structures	Archaeological Sties	Standing Structures	Archaeological Sites
1	11	6	174	20
1A	11	6	174	20
2	1	5	13	1
3	3	6	163	12
4	0	0	2	5
5	0	3	11	0
6	0	3	12	5
6A	0	3	12	5
7	0	6	14	6
7A	0	8	12	6

Notes: Data based solely on archival research. No reconnaissance surveys completed specifically for this project. Numbers reflect the total number of sites, by type, that are located within the 1,000-foot alternative corridor.

Sources: Louisiana Department of Culture, Recreation, and Tourism as cited by R. Christopher Goodwin's draft report (September 1998).

The corridor for the Gramercy-Wallace Bridge connector project includes several archaeological sites that are potentially eligible for listing located directly along the centerline of the corridor. One listed archaeological site is located east and within close proximity to this project's corridor. These sites must be considered for all alternatives because this project is a critical link project, which is included in each alternative considered.

Alternatives 1, 1A and 3 use the same corridor, except for the southern connection to Relocated US 90. Two listed sites are located west of LA 1, and two are located east of LA 308. Because no additional right-of-way would be required along LA 1, no effects to LA 1 sites are anticipated; however, the need for additional widening on LA 308 with Alternative 3, suggests that these sites may be affected by Alternative 3. One listed and several potentially eligible archaeology sites included in the number encompassed by the corridor for Alternative 1 and 1A are located along LA 24, where no improvements are proposed. Several other sites (one listed and several other potentially eligible sites) are located along the western side of LA 311, which would likely limit widening only to areas east in these locations.

The new location corridors for Alternative 6 and 6A do not contain any listed or recorded potentially eligible archaeology sites; however, the new location corridors for Alternative 7 and 7A include several listed archaeological sites associated with the Laurel Valley Plantation. However, recorded boundaries provide up to a 1,000-foot clearance between

sites. Other recorded potentially eligible archaeological site boundaries along the Alternative 7 and 7A corridors appear to be avoidable, as well.

4.2 Physical Environment

4.2.1. Prime and Unique Farmland Soils

The Farmland Protection Policy Act (7 CFR Part 658) establishes criteria for identifying and considering the effects of federal programs on prime, unique, or farmlands of local or statewide importance. Farmlands are defined by the presence of specific prime, unique, and local or statewide important farmland soil types, the location of the parcel in relation to municipal limits, and the size of the tract of land. Figure 4.4 displays the locations of lands underlain by prime and unique farmland soils. Largely undeveloped and contiguous, many parcels are considered prime farmlands. Table 4.4 displays the acreage of prime and unique farmland soils, by corridor.

Table 4.4. Prime and Unique Farmland Soil Acreage by Alternative

Alternative	Prime and Unique Farmland Soils (Acres)
1	1,685
1A	1,685
2	1,090
3	1,085
4	1,365
5	305
6	1,215
6A	1,290
7	1,390
7A	1,380

Notes: Acreage estimates based on conservative 300-foot right-of-way assumption and are rounded to the nearest 5 acres. Actual right-of-way requirements should range between 115 and 250 feet, depending upon the local alignment constraints and the planned roadway section.

Sources: U.S. Department of Agriculture. Various dates. Soil Surveys for Terrebonne, Lafourche, Assumption, St. James, St. John the Baptist, and Ascension parishes. Natural Resources Conservation Service (formally the Soil Conservation Service). Digitized by URS Greiner Woodward Clyde in September 1998.

4.2.2. Coastal Zone and Floodplains

The Coastal Area Management Act requires that all coastal areas develop a coastal zone management plan that delineates areas of environmental concern. Coastal zone boundaries in the project area are located on Figure 4.5, which also displays the locations of the 100-year and 500-year floodplains. These coastal zones signify areas within which coastal development permits would be required for minor or major developments. All alternatives traverse Louisiana's coastal zone; however, Alternatives 1, 1A, 3, and 4 encroach the coastal zone less than the alternatives that traverse the wetland area south of LA 3127. Alternatives that include improvements to LA 3127 (i.e., Alternatives 6, 6A, 7, and 7A) would traverse the greatest linear distance of coastal zone because LA 3127 is located wholly within St. James Parish, a parish in the coastal zone.

The elevations of lower southeastern and south central Louisiana hover near sea level. Consequently, a large portion of the study area is susceptible to flooding during storms of average 100-year recurrence (i.e., the 100-year storm), which is the storm that has a one percent chance of being equaled or exceeded in any given year. Areas outside of the 100-year storm event are typically located in the higher elevations along the upland ridges as displayed in Figure 4.5. Efforts to utilize existing upland ridges were made where possible with all alternatives. As illustrated in Figure 4.5, alternatives that follow existing upland ridges traverse the fewest linear feet of 100-year floodplain. These alternatives include Alternatives 1, 1A, and 3. Alternative 2 is likewise located on an upland ridge and is largely outside of the 100-year floodplain. The only new location construction alternative that would not traverse substantial lengths of the 100-year floodplain is

Alternative 4, which follows the northern edge of the Bayou Lafourche ridge, north-northeast of LA 308. However, between Relocated US 90 and LA 1/LA 308, this alternative also traverses a portion of the 100-year floodplain. Alternative 5 crosses the greatest distance of 100-year floodplain.

Although the 100-year floodplain covers most of the project area that is not located along the upland ridges, most of the wetland areas that are located in the 100-year floodplain would be bridged with an elevated facility as assumed and discussed in Section 2.0 of this report. Therefore, that an alternative's alignment is located within the 100-year floodplain should not preclude the alternative from further consideration. Furthermore, any at-grade section located within the 100-year floodplain would be raised above the floodplain as part of the project.

4.2.3. Industrial and Potentially Hazardous Sites

A limited environmental inventory was conducted for the study area to determine the locations of underground storage tanks; hazardous waste generators, storers, transporters; and hazardous waste sites that have been identified for cleanup. This limited site search did not constitute a full Phase I Environmental Assessment. Several databases were not readily available in GIS format but should be reviewed during additional analysis of the reasonable and feasible alternatives in future study. Databases that were not reviewed include the Leaking Underground Storage Tank database, the Environmental Response Notification System database, and others.

The Underground Storage Tank database, the Resource Conservation and Recovery Act Information System List (RCRIS) and the Comprehensive Environmental Resource Cleanup Liability Act Information System List (CERCLIS) were accessed through the EPA's database, Envirofacts. Figure 4.6 displays the locations of these sites within the study area. As expected, the concentrations of underground storage tanks reflect the concentrations of service stations and convenience stores throughout the study area, with the highest concentrations located along existing routes within developed communities. Similarly, RCRIS sites are also located along these corridors. Only one CERCLIS site is located near the study area. Actually located south of Relocated US 90 and outside of the expanded study area, this site is outside of the alternative corridors but in proximity to the Alternative 5 corridor.

Based on the locations of these recorded sites, new location construction alternatives (Alternatives 4, 6, 6A, 7, and 7A) would pose the least potential for encroaching unrecorded hazardous waste sites and leaking underground storage tanks. Alternative 3, which would require new right-of-way along LA 308 to accommodate a four lane section, would have the greatest potential for affecting such sites.

4.3 Natural Environment

4.3.1. Surface Waters

As illustrated in Figure 2.3 (Preliminary Alternatives with Satellite Image) located in Section 2.0 of this document, the study area is woven with streams, bayous, rivers, wetlands, canals, and lakes. Figure 4.7 displays the locations of substantial surface waters and waters recognized as navigable waterways.

The most prominent surface water features in the study area are the Mississippi River, Bayou Lafourche, Lake Des Allemands, and Lake Bouef. Alternatives 1, 1A, and 3 maintain existing waterway crossings and would not require additional crossings. The greatest number of new waterway crossings would be required for Alternatives 7 and 7A, which each require four new crossings.

Table 4.5. Crossings of Substantial Surface Waters and Navigable Waters

Alternative	Total New Surface Water Crossings	Navigable Waterway Crossings of Total New Surface Water Crossings
1	0	0
1A	0	0
2	0	0
3	0	0
4	1	1
5	2	0
6	3	1
6A	2	1
7	4	1
7A	4	1

Notes: Navigable waters are waters that are used for commerce and are regulated by the United States Coast Guard. Waters that are not currently recognized as navigable can be declared navigable by the U.S. Coast Guard with evidence supporting that the waterbody is used for commerce. Surface water crossings noted in the table above refer to crossings of substantial waterbodies. The number of other surface water crossings (i.e, small canals, small bayous, drainage swales, and others) is not provided. For this analysis, it was assumed that new surface water crossings would require a bridge-structure unless the crossing is located along an alternative corridor's section that is assumed to be an elevated roadway.

Sources: Louisiana Department of Transportation and Development. Surface waters recognized by the LDOTD as Navigable Waters as provided by GeoQuery , Inc. in December 1998; Braud, DeWitt H. Jr. 1997. Satellite View of Louisiana from the Merge of Landsat Thematic Mapper and Spot Imagery. Louisiana Department of Environmental Quality and the Department of Natural Resources: Baton Rouge, La. In association with the U.S. Geological Survey's National Wetlands Research Center in Lafayette, LA; URS Greiner Woodward Clyde. Digitized line drawings of surface waters in Louisiana. Obtained in December 1998 and verified for reasonable accuracy in January 1999.

4.3.2. Wetlands

Although readily available, secondary data for wetlands in southeastern Louisiana are generally inaccurate. While National Wetland Inventory maps and soil surveys were reviewed to determine approximate locations of wetlands in the study area., aerial infrared photography was the primary tool used to identify likely wetland communities and boundaries. Identified areas were digitized into a GIS layer for use with this project. Figure 4.8 displays the locations of wetlands within the study area identified by this method. It should be noted that the locations of wetlands outside of the general study area were not delineated, and are therefore not shown on Figure 4.8.

Wetlands in the area are dominated by cypress-tupelo swamps although some native bottomland hardwood forest wetlands and freshwater marshes are present in the area. Wetlands in the study area are vast and contiguous, serving many functions including, floodwater attenuation, wildlife and fisheries habitat, and surface water pollutant removal. The values of some wetlands appear high, due to their contiguous nature, size, quality, and functions.

Wetland impacts were initially determined for the entire 1,000-foot corridors. To provide a more realistic magnitude of projected impacts, by Alternative, it was determined that a realistic right-of-way requirement should be assumed for the calculation of projected wetland impacts. For most areas traversing wetlands, it was assumed that the required right-of-way would be minimized to 115 feet. In other areas, this required right-of-way was 150 feet. As noted in Section 2.0 of this report, it was assumed that substantial,

contiguous wetlands traversed by the alignments of alternatives would be crossed via an elevated roadway. This simulated, assumed roadway would have spans of approximately 89 feet long and 50 feet wide and would impact the underlying wetlands in two manners: 1) by filling and deplacing vegetation within the footprint of the span piers; and 2) by shading wetland vegetation located under the elevated roadway in areas not affected by filling from the piers. Table 4.6 provides these two estimates.

Table 4.6. Wetlands Affected by Permanent Filling and Shade

Alternative	Wetlands Affected by Filling (Acres)	Wetlands Affected by Shading of Elevated Structures (Acres)
1	50	0
1A	50	0
2	170	0
3	125	0
4	145	30
5	65	185
6	285	115
6A	285	130
7	315	45
7A	280	85

Notes: Estimates of wetland impacts are based on minimum right-of-way requirements (i.e., 115 feet in elevated sections, and 150 feet for at-grade sections). Additionally, only the footprints of elevated roadway piers were aggregated to determine fill impacts for elevated sections. Fill impacts for at-grade sections based on fill from shoulder to shoulder. Permanent shading impacts would occur only for elevated sections. It was assumed that the area located under the elevated structure that was not filled for pier footings would be affected by permanent shade. For calculation purposes, the average span length was measured to be 80 feet. Acreage estimates are rounded to the nearest 5 acres.

Sources: Braud, DeWitt H. Jr. 1997. Satellite View of Louisiana from the Merge of Landsat Thematic Mapper and Spot Imagery. Louisiana Department of Environmental Quality and the Department of Natural Resources: Baton Rouge, La. In association with the U.S. Geological Survey's National Wetlands Research Center in Lafayette, LA; URS Greiner Woodward Clyde. Digitization of wetlands based on aerial infrared photography. Completed in September 1998.

Should a new location corridor be carried through for further study and consideration as the preferred alternative to meet the project need, additional efforts would be made to identify the locations and extent of wetlands. Where possible, the alignment of the alternative would be revised to avoid wetland impacts. Where design or other considerations make avoidance of wetlands along the corridor impossible, impractical, or unsafe, the alignment would be revised to minimize the impacts to the wetlands as

practicable. Finally, impacts to wetlands that were unavoidable and minimized to the extent practicable would be mitigated by a combination of wetland restoration, creation, enhancement, and preservation.

Wetland mitigation planning is site specific and impossible to accurately plan at this early phase of a project. For this project, an attempt to account for these difficult-to-estimate costs was made by assuming that the USACE would allow mitigation to wetland impacts to be comprised of only wetland preservation. Discussion with the U.S. Army Corps of Engineers suggests that a wetland replacement ratio for such valuable wetlands could be as high as three replacement wetlands for each impacted wetland. That is, for every one acre of wetland impact affected by the project, the USACE could require up to three acres be replaced to compensate for the impacted acre's loss. Cursory wetland impact mitigation costs (comprised of preservation acreage purchases) were developed for each alternative. Discussion of the method to develop these costs and the projected costs of wetland preservation banking is provided in Section 2.0 of this report. Detailed wetland delineations and impact estimates would be provided following additional study of the alternatives.

4.3.3. Wildlife, Fisheries, and Protected Species

Louisiana Department of Natural Heritage Program digital GIS data were reviewed to determine the locations of wildlife management areas, significant natural areas, colonial waterbird nesting sites, and protected species occurrences. Review of these databases and GIS data layers revealed that there are no wildlife management areas or significant

natural areas located within the study area boundaries. For site security reasons, specific locations of waterbird nesting sites and the types and locations of protected species occurrences cannot be shown in public documents. However, based on suggestion of the Louisiana Natural Heritage Program, areas of relatively high concentration of occurrences of Louisiana Natural Heritage Program sensitive sites are identified with shaded areas in Figure 4.9. This figure displays four such areas where relatively high concentrations of waterbird nesting sites and/or protected species (flora and fauna) occurrences have been recorded. Alternatives 2, 5, 6A, and 7 all traverse the edge of one such area. Alternatives 1, 1A, 3, 4, 6 and 7A do not encroach any of these areas; however, the widening of LA 641 between the Gramercy-Wallace Bridge and I-10 (a project included in Alternatives 6, 6A, 7 and 7A) is located directly west of one of these areas of concern.

New location alternatives 5, 6, 6A, and 7A would bisect the large wetland tract located between LA 3127 and Bayou Lafourche; however, the elevated spans planned for this crossing would allow wildlife to migrate, avoiding substantial fragmentation of this contiguous habitat. Wildlife that are wary of human activity may avoid the area bordering and underlying the new elevated facility, effectively limiting their range. Large terrestrial mammals such as whitetail deer (*Odocoileus virginianus*) and black bear (*Ursus americanus*) are particularly sensitive to such habitat fragmentation or intrusion.

Alternative 4 would isolate a relatively narrow strip of agriculture and undeveloped upland between LA 308 and the new facility, which would effectively fragment this upland by providing a potential barrier or deterrent for terrestrial animals to reach these upland areas from the wetland areas north. New location alignments south of Bayou Lafourche would create similar problems, with minimal undeveloped upland in the area. Despite these potential effects, no substantial fragmentation or adverse effects to wildlife are anticipated from such a project should sufficient consideration be given to maintaining wildlife corridors.

Section 5

5.0. CONCLUSIONS

5.1 Non-Structural Alternatives

Due to the intended project purpose of hurricane evacuation, typical Travel Demand Management (TDM) alternatives such as car pooling, van pooling and transit options were not considered. However, through the evaluation, it was noted that some benefits may be derived from implementation of an upgraded motorist information system utilizing advanced technology and communications capabilities. While certain hurricane evacuation routes are in high demand and experience substantial delay, other routes may be under-utilized. Also, incidents and construction zones on evacuation routes can reduce roadway capacity and result in substantial delays and inefficiencies during evacuation events.

The ability to disseminate real time traffic and roadway information regarding designated hurricane evacuation routes could result in better utilization of the entire hurricane evacuation network and improve evacuation efficiency. Real time traffic information can be acquired through communication with law enforcement patrols, speed detection sensors and closed-circuit television surveillance at critical locations on Hurricane Evacuation Corridors. Some options for disseminating this information to the public include variable message signs, highway advisory radio, web sites with real time traffic conditions, and improved real time traffic broadcast from radio and TV stations.

5.2. Alternatives Dismissed From Further Consideration

The identified constraints and anticipated adverse and beneficial effects of all alternative corridors were compared in order to refine the scope of further study to only those alternative corridors that are evaluated as both feasible (i.e., constructable and effective in addressing the need for the project) and reasonable (i.e., potential for public consensus and environmentally responsible). Some of the alternatives developed for consideration were evaluated as either ineffective at addressing the primary transportation objective of improving hurricane evacuation efficiency or unreasonable for environmental, social or a combination of factors when compared to other less impacting alternatives.

The following is a list of key considerations for evaluating corridors for reasonableness and feasibility:

1. Improves hurricane evacuation efficiency.
2. Uniformly distributes traffic to critical hurricane evacuation links.
3. Provides options and flexibility in accessing primary hurricane evacuation routes and designated shelter zones to the north.
4. Provides access to Alternative Corridor(s) from population centers within the service area.
5. Provides reasonable project costs and capability to-phase-in alternative.
6. Avoids/Minimizes wetland impacts and utilizes of upland ridges.
7. Avoids/Minimizes impacts to cultural resources.
8. Avoids/Minimizes community facilities, residences and businesses.

Table 5.1 summarizes the results of this evaluation.

Table 5.1. Summary of Alternative Corridors Considerations

	Units	1	1A	2	3	4	5	6	6A	7	7A
Facility Descriptions											
Add Shoulders to Existing Roadway[1]	miles	57.7	57.7	0.0	23.4	0.0	0.0	0.0	0.0	0.0	0.0
Add Two New Lanes to Existing Roadway	miles	12.8	12.8	38.5	50.8	22.1	6.7	43.4	40.2	51.4	54.0
New At-Grade Roadway	miles	2.6	2.6	2.6	2.6	28.8	6.1	9.7	12.4	9.9	2.8
New Elevated Roadway	miles	0.0	0.0	0.0	0.0	2.9	16.7	10.4	11.5	4.1	7.4
Total Project Length	miles	73.1	73.1	41.1	76.8	53.8	29.5	63.5	64.1	65.4	64.2
Project Cost											
Construction Cost	$millions	$ 54.4	$ 54.4	$ 81.7	$ 82.9	$ 175.4	$ 349.2	$ 294.1	$ 302.5	$ 181.1	$ 231.6
Engineering, Administrative, and Contingency	$millions	16.3	16.3	24.6	24.9	52.6	104.8	88.2	90.8	54.3	69.5
Right-of-way Cost	$millions	0.1	0.1	13.3	11.6	6.7	0.8	4.7	4.8	7.8	6.9
Wetland Mitigation Preservation	$millions	0.7	0.7	2.6	1.9	2.5	2.8	5.4	5.6	5.2	5.1
Estimated Total Cost	$millions	$ 71.5	$ 71.5	$ 122.2	$ 121.3	$ 237.2	$ 457.6	$ 392.4	$ 403.7	$ 248.4	$ 313.1
Facility Requirements											
New Intersections/Interchanges	each	1	1	3	1	8	4	8	7	6	11
New Railroad Crossings	each	1	1	2	1	4	3	4	4	2	2
New Waterway Crossings	each	0	0	0	0	1	2	3	2	5	5
Pipeline Crossings	each	27	27	26	27	29	20	54	48	59	59
Hurricane Evacuation Efficiency											
Improved System Efficiency from Base Case	H/M/L/No	No	No	Moderate	No	Low	Low	High	High	Moderate	High
Distributes Traffic Evenly to Critical Links	H/M/L	Low	Low	Low	High	Moderate	Low	High	High	Moderate	High
Community Facilities Within Corridor											
Oil Fields	each	1	1	1	0	0	1	0	0	0	0
Communication Towers	each	1	1	1	0	0	0	0	0	0	0
Schools	each	4	4	1	3	0	0	0	0	0	0
Churches	each	6	6	1	0	0	0	0	0	0	0
Cemetaries	each	2	2	1	0	0	0	0	0	0	0
Total Community Facilities	each	14	14	5	3	0	1	0	0	0	0
Cultural Resources Within Corridor											
Historic Standing Structures	each	174	174	13	163	2	11	12	12	14	12
Archeological Sites	each	20	20	1	12	5	0	5	5	6	6
National Register of Historic Property Sites	each	17	17	6	9	0	3	3	3	6	8
Total Cultural Resources	each	211	211	20	184	7	14	20	20	26	26
Environmental Sites Within Corridor											
Underground Storage Tanks	each	10	10	11	6	0	0	1	1	2	1
Industrial / Potentially Hazardous Sites	each	13	13	5	11	4	0	4	4	6	6
Prime and Unique Farmlands	acres	1,685	1,685	1,090	1,085	1,365	305	1,215	1,290	1,390	1,380
Wetlands Impacted by Construction	acres	50	50	170	125	175	250	400	415	360	365
Recommendations											
Recommended for further Study	Yes/No	No	No	No	No	No[2]	No	Yes	Yes	No[2]	Yes

Note: [1]Distances along shoulders do not reflect that shoulders would be added for both LA 1 and LA 308 for Alternatives 1 and 1A. This would increase the actual distance for cold-mill and overlay to approximately 80 miles, representing overlay along LA 1 (40 miles) and overlay along LA 308 (40 miles). This linear distance of improvement is misleading and is not provided in the table for comparison.
[2]Denotes corridor may prove to be a reasonable and feasible alternative pending consideration of modified purpose and need.

Source: URS Greiner Woodward Clyde, 1999.

Future study of reasonable and feasible alternatives will necessarily include an evaluation of the No Action or No Build Alternative as a reference to which the effects of future action alternatives will be compared.

Alternatives that were eliminated from further consideration for future analysis are discussed below, with the reasons why each alternative was dismissed from further consideration.

5.2.1. Alternative 1

Located on existing alignment, Alternative 1 would have the least right-of-way requirements; however, this alternative would have the greatest temporary construction delays and associated inconveniences and would be ineffective at addressing the primary transportation objective of improving hurricane evacuation efficiency. Despite its lowest overall costs, this alternative was eliminated from further consideration as a feasible alternative corridor because of its ineffectiveness in addressing the primary transportation purpose and need of the project.

5.2.2. Alternative 1A

Similar to Alternative 1, Alternative 1A is also located on existing alignment, but would include operation of LA 308, and segments of LA 70 as a two-lane outbound only facility (reversible) during hurricane evacuation events, substantially increasing LA 308's capacity. While Alternative 1A would also need little additional right-of-way, this alternative is not effective in achieving the primary purpose and need for this project,

which is improving hurricane evacuation efficiency as documented in the transportation modeling results. This alternative would also require LA 308 and LA 70 be operated as a two-lane outbound reversible facility during hurricane evacuation events. Due to the uncontrolled-access characteristics of these arterials, significant manpower requirements would be needed for safe and efficient operations. In discussions with both state and local law enforcement agencies, it was noted that manpower resources were limited and in very high demand during hurricane evacuation events. It was basically implied that operating that length of LA 308 and LA 70 as a two-lane outbound reversed facility, considering the uncontrolled access nature of the roadway and the level of development along the roadway, would be virtually impossible with the limited manpower resources of both state and local law enforcement agencies during hurricane events. Therefore, Alternative 1A was also dismissed from further consideration as a feasible alternative corridor for further study.

5.2.3. Alternative 2

Alternative 2 does provide some improvements to the transportation system efficiency during hurricane evacuation events as noted in the transportation modeling analysis. However, implementation of Alternative 2 would require substantial additional right-of-way along densely populated segments of LA 20 and the Chackbay Ridge. It is likely that this alternative would result in numerous relocations of residences, businesses and potential impacts to community facilities. Given the low level of community consensus support documented for this alternative and potential community cohesion concerns to

adjacent communities along LA 20, this alternative was eliminated from further consideration as a reasonable and feasible alternative.

5.2.4. Alternative 3

Alternative 3 follows the same alignment of Alternatives 1 and 1A. The transportation model indicates that this alternative provides very minimal, if any, real transportation efficiency improvements during hurricane evacuation events. This alternative would include widening LA 308 from two lanes to a four-lane rural or urban section with substantial additional right-of-way being required, (unlike Alternatives 1 and 1A). LA 308 is generally developed throughout the project study area, with some densely developed segments. The final alignment within this corridor would likely require more residential and business relocations than any other final alternative alignment of all alternatives considered. Additionally, this alternative would have the greatest potential for adversely affecting sites listed in or eligible for listing in the National Register of Historic Places. Due to very limited community support for this alternative, the potential number of relocations and potential community cohesion concerns, Alternative 3 was omitted from further consideration as a reasonable alternative corridor to meet the primary transportation objective of this project.

5.2.5. Alternative 5

The shortest but most expensive alternative corridor under consideration, Alternative 5 spans the entire length of the wetlands between Bayou Lafourche and LA 3127 via an elevated highway. This alternative corridor passes through one and within close

proximity of another area with a relatively high concentration of federally and/or state-protected species occurrences and/or waterfowl nesting areas. This alternative also leads directly to the Gramercy-Wallace Bridge via a controlled-access elevated facility. Alternative 5 would attract and direct significant volumes of traffic directly to the Gramercy-Wallace Bridge, creating an uneven distribution of evacuation traffic between the Sunshine and Gramercy-Wallace bridges. However, due to the remote eastern point of access to the facility from population centers to the west, there is a substantial increase in congestion on US 90 westbound, rendering this alternative somewhat ineffective. Considering this and because of the relatively excessive potential environmental impacts relative to other alternative corridors under consideration, the Alternative 5 corridor was dismissed from further consideration as a reasonable alternative corridor for further study.

5.3 Preferred Hurricane Evacuation Alternative Corridor(s)

Based on the stated primary purpose and need of improving hurricane evacuation efficiency, and the documented evaluation considerations, Alternative Corridors 6, 6A and 7A appear to be the most effective and reasonable. All three of these alternative corridors are on new location as shown in Figure 5-1. Alternative Corridors 6 and 6A originate at relocated US 90 to the south and traverse the Little Bayou Black Ridge northward paralleling LA 311 to the Lafourche Ridge and LA 1 just west of the Thibodaux Bypass (LA 3185). Both Alternative Corridors 6 and 6A are identical to this point. Once north of Bayou Lafourche both alternative corridors proceed northward to

LA 3127; however, Alternative Corridor 6A intersects LA 3127 slightly to the west of Alternative Corridor 6.

Alternative Corridor 7A originates at Relocated US 90 near the LA 316 interchange and extends northward along the Bayou Blue Ridge, intersecting LA 1 just to the east of Thibodaux. From LA 308, Alternative Corridor 7A jogs slightly to the west and then extends northward bisecting LA 3127 at a mid point between the Sunshine and Gramercy-Wallace bridges.

Consistent with the previously documented Transportation Modeling Analysis in Section 3.0 of this report, these alternative corridors provide a relatively uniform distribution of traffic to critical links during hurricane evacuation events. These alternatives appear to maximize efficiency and utilization of the critical hurricane evacuation network by effectively utilizing the proposed improvements and existing routes including the LA 1 and LA 308 corridor, LA 3127, and the Sunshine and Gramercy-Wallace bridges.

The southern termini of these alternative corridors are easily accessible and in close proximity to population centers. These alternative corridors also provide hurricane evacuation options and good flexibility in accessing designated hurricane evacuation shelter zones to the north, as well as other prominent hurricane evacuation routes to the north including I-10, I-12, I-55, I-59, US 61 and US 190.

These alternative corridors reside on primarily undeveloped and/or agricultural lands. The environmental inventory analysis suggests that very minimal impacts to community and cultural resources would be incurred from these alternative corridors. Residential and business relocations associated with all three alternative corridors are also anticipated to be minimal, consistent with the environmental inventory.

Each of these alternatives also effectively utilizes the natural upland ridge system to the maximum extent possible, resulting in avoidance and minimization of impacts to wetlands resources. Alternatives 6 and 6A utilize the Little Bayou Black Ridge between relocated US 90 and the Lafourche Ridge. Alternative 7A utilizes the Bayou Blue Ridge effectively between Relocated US 90 and Bayou Lafourche. North of LA 308, these alternatives utilize the Lafourche and Chackbay Ridges to the maximum extent possible before transitioning to an elevated roadway section to minimize impacts to the vast forested wetlands between the Lafourche Ridge and LA 3127.

As documented in Section 2.8.4 the total estimated project costs including construction, engineering, administrative, right-of-way, mitigation and contingencies for these three alternatives ranges from $313 million to $404 million. However, it should be noted that these are total project costs for a network extending from Relocated US 90 to I-10, which includes a vast array of improvements including constructing a new approach connector to the Gramercy-Wallace Bridge from LA 3127, widening LA 641 to I-10, upgrading LA 3127 between the Sunshine Bridge and the Gramercy-Wallace Bridge and building a new four-lane facility from Relocated US 90 to LA 3127. It is important to note that this

"total project" can be phased over an extended period of time with critical interim phases providing the greatest benefits from the initial, crucial phases. This allows the cost of the project to be distributed over an extended period of time, increasing the potential fiscal feasibility of the project.

Each of the three identified preferred hurricane evacuation alternative corridors was evaluated for logical phasing options to determine the most beneficial segments (projects) and a logical sequence for implementation. By utilizing a phased or staged approach to implementation, the most beneficial segments of the project can be implemented first. Also, with a phased implementation, full capital funding for the entire project is not required initially, and phases can be scheduled and programmed more consistent with anticipated funding resources availability. The results of this evaluation revealed that there are "Interim Alternative Concepts" that could provide significant hurricane evacuation benefits while minimizing initial costs.

An "Interim Alternative Concept" was developed for each of the preferred hurricane evacuation alternative corridors. They are similar and are generally described by partially implementing the three most critical segments of the preferred alternative corridors including:

1) Construction of a new connector roadway from LA 3127 to the Gramercy Wallace-Bridge.

2) Implementation of a new two-lane roadway from LA 3127 to LA 1 (substantial portion will be elevated).

3) Implementation of a new two-lane roadway from LA 1 to Relocated US 90.

These three segments would need to be implemented with reasonable control of access in order to enable operation of an outbound reversible lane facility with minimal manpower requirements. Development and design of this type of facility would require close coordination with, and support of, local and state law enforcement agencies and a well developed Traffic Management Plan. By utilizing reasonable control-of-access measures, intelligent transportation systems technology, and proper planning, a Traffic Management Plan can be devised that minimizes manpower requirements from local and state law enforcement agencies and that allows for implementation and operation of the reversible facility concept for hurricane evacuation events.

Implementing these "Interim Alternative Concepts" for each of the preferred alternative corridors was evaluated using the preliminary cost estimates, by segment. Table 5.2 is a listing of each preferred alternative corridor's costs, by interim alternative critical segments.

Table 5.2. Interim Alternative Program Cost for Preferred Hurricane Evacuation Alternatives Corridors

Alternative	Improvement Description	Project Legnth (mi.)	Total Project Cost minus Mitigation ($Millions)
6	LA 3127 and G-W Bridge: New 4-Lane Road	3.5	22.5
6	LA 308 to LA 3127: Elevated New 2-Lane Road	7.6	86.0
6	LA 308 to LA 3127: New 2-Lane Road	3.3	8.6
6	US 90 to LA 308: Elevated New 2-Lane Road	2.9	33.0
6	US 90 to LA 308: New 2-Lane Road	7.0	25.4
Total			**175.5**
6.A	LA 3127 and G-W Bridge: New 4-Lane Road	3.5	22.5
6.A	LA 308 to LA 3127: Elevated New 2-Lane Road	8.7	92.1
6.A	LA 308 to LA 3127: New 2-Lane Road	2.8	8.1
6.A	US 90 to LA 308: Elevated New 2-Lane Road	2.9	33.0
6.A	US 90 to LA 308: New 2-Lane Road	7.0	25.4
Total			**181.1**
7.A	LA 3127 and G-W Bridge: New 4-Lane Road	3.5	22.5
7.A	LA 1/LA 308 to LA 3127: Elevated 2-Lane New Road	7.6	86.0
7.A	LA1/LA 308 to LA 3127: New 2-Lane Road	4.6	6.3
7.A	US 90 to LA1/LA 308: New 2-Lane Road	9.3	22.4
Total			**137.2**

Notes: Projects listed comprise the Interim Alternative Concept of the fully-envisioned alternatives as described in Section 2.0 of this report. Full Alternative costs are described in Section 2.0 of the report.

Source: Original cost calculation data sources on tables 2.2 through 2.5 of this report.

Table 5.2 indicates that the preliminary estimated costs to implement these "Interim Alternative Concepts," which vary from approximately $137 million to $181 million, approximately 40 percent of the estimated total project costs. It is important to note that each of these critical segments except for the LA 3127/Gramercy-Wallace Bridge connector project, can be phased by providing only a minimum two-lane facility in the interim, further reducing total up-front capital expenditure costs. Based on the transportation modeling analysis the following priority phasing is recommended:

1) Construction of a new connector roadway from LA 3127 to the Gramercy-Wallace Bridge.

2) Implementation of a new two-lane roadway from LA 3127 to LA 1.

3) Implementation of a new two-lane roadway from LA 1 to Relocated US 90.

Ultimately, additional phases of the chosen alternative can be implemented over time, consistent with available funding levels, until the fully-envisioned alternative is constructed. Additional analysis would be required to determine the feasibility of these Interim Alternative Concepts.

The following is a summary of the primary reasons that Alternative Corridors 6, 6A and 7A were identified as the preferred hurricane evacuation alternative corridors:

1) These alternatives most effectively meet the stated purpose and need of improving the efficiency of the hurricane evacuation transportation network and generally the efficiency of hurricane evacuation events within the defined service area.

2) Considering the two defined northbound hurricane evacuation critical links (the Sunshine and Gramercy-Wallace bridges), these alternatives provide a relatively uniform distribution of hurricane evacuation traffic demand, maximizing the efficient utilization of these critical links.

3) Each of these Alternative Corridors effectively utilizes the upland natural ridge system within the study area to minimize impacts to wetland areas.

Where expansive wetland areas would be traversed, elevated roadway sections are assumed in order to minimize impacts to wetland areas.

4) Each of these alternative corridors primarily entails construction on new location in undeveloped or sparsely developed corridors, resulting in the minimization of impacts to community and cultural resources.

5) Good access and proximity to population centers within the service area are provided by each of these alternative corridors.

6) Each provides options and good flexibility in accessing designated hurricane evacuation shelter zones to the north, as well as other primary hurricane evacuation routes to the north of the study area.

7) Each of these alternatives provides the opportunity for a phased-implementation approach in which defined interim alternatives ("Interim Alternative Concepts") could be developed that could potentially provide significant hurricane evacuation benefits while greatly minimizing initial costs.

5.4 Other Considerations

The primary purpose and need for this study was defined as hurricane evacuation. When evaluating all of the alternatives corridors developed for consideration solely based on the hurricane evacuation purpose and need for this project, Alternative Corridors 6, 6A and 7A rate similarly and better than the other alternative corridors and are, therefore, considered the preferred alternative corridors. However, there are other secondary purpose and need issues that local community governments, agencies and other

stakeholders have expressed and may want considered in future evaluations. If the purpose and need for this project is modified, the preferred alternative corridor recommendations in this study may need to be modified to be consistent with changes in the stated purpose and need for the project.

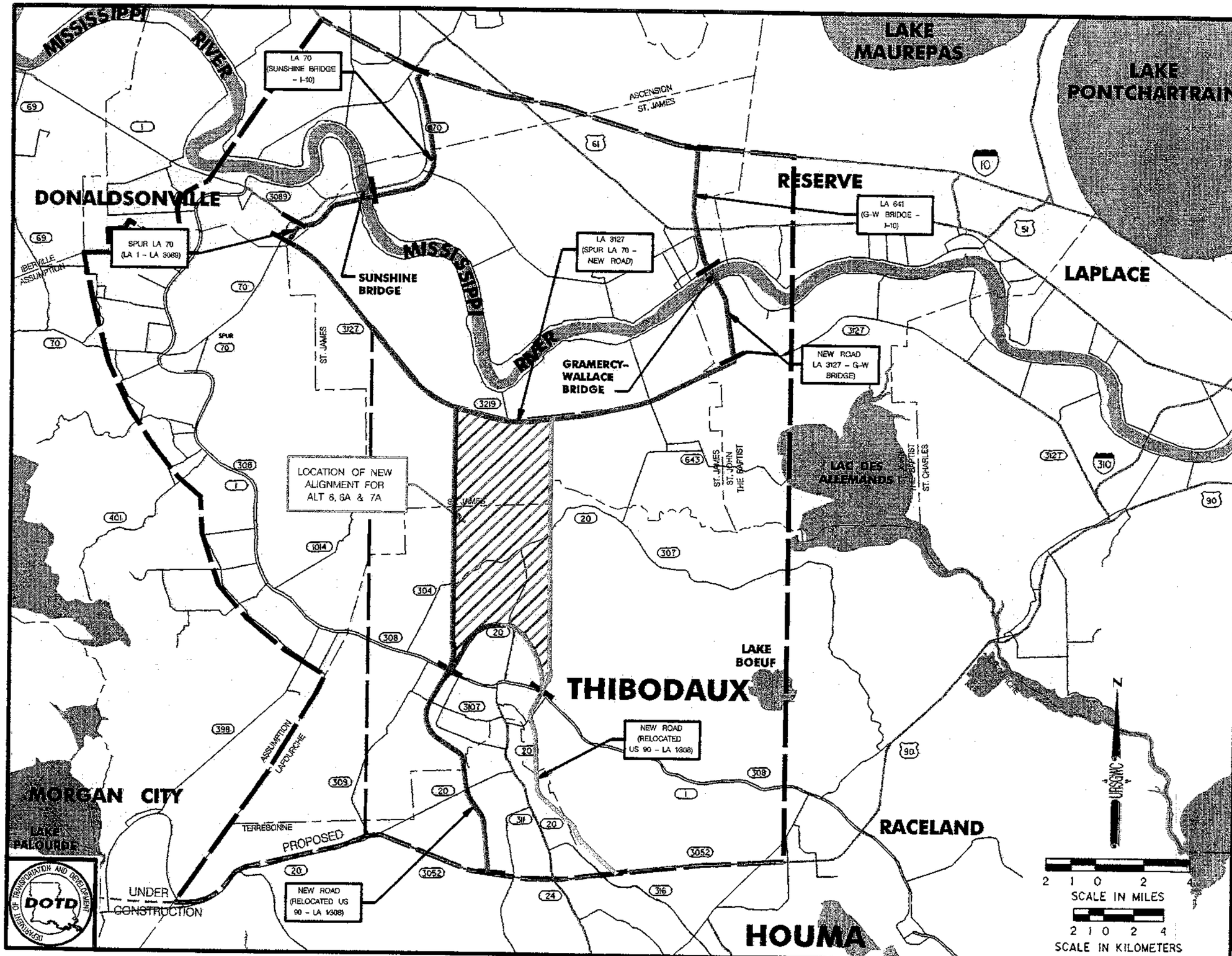
Two of the alternative corridors (Alternatives 4 and 7) considered in this analysis were not explicitly eliminated from consideration in Section 5.2 nor were they included as preferred alternative hurricane evacuation corridors. Because modifying the documented purpose and need of the project is a consideration, these alternatives are noted for further consideration, contingent on this potential modification of the project purpose and need.

Alternative Corridor 4 parallels the Little Bayou Black Ridge between Relocated US 90 and LA 1 and extends west-northwest along the northern fringe of the Lafourche Ridge to the Sunshine Bridge. This alternative corridor is on new location and would provide an efficient route toward the Baton Rouge Metropolitan Area. Comparatively, this is one of the lower cost options. It also effectively utilizes the natural upland ridges, resulting in the least wetland impacts of any new location alternative. Because of this, elevated roadway segments are greatly minimized, and project costs are reduced. Regarding hurricane evacuation efficiency, this route reduces flexibility in hurricane evacuation options by aligning a disproportionately high volume of traffic to the Sunshine Bridge, and under-utilizing the Gramercy-Wallace Bridge. In essence, both primary northbound hurricane evacuation corridors servicing the region (LA 1/308 and Alternative 4) would

lead to the same critical link, the Sunshine Bridge, reducing evacuation options and potentially creating more significant capacity problems.

Alternative 7 is identical to Alternative 7A between Relocated US 90 and LA 308. However, north of LA 308 Alternative 7 parallels the Laurel Valley Ridge, north-north eastward towards LA 20, intersecting LA 3127 well to the east of Alternative 7A, in much closer proximity to the Gramercy-Wallace Bridge. Utilizing the Laurel Valley Ridge and an existing north/south segment of LA 20 to the Vacherie Ridge reduces the distance of roadway traversing wetlands, and in-turn reduces the length of elevated roadway and associated costs. The result is a comparatively low cost alternative that minimizes community and environmental impacts.

This alternative would provide some flexibility and latitude in northbound hurricane evacuation options. It was developed in an attempt to distribute traffic evenly between northbound hurricane evacuation critical links (i.e., the LA 1/Sunshine Bridge corridor and the Gramercy-Wallace Bridge corridor). However, the hurricane evacuation transportation model has indicated that this alternative is neither as effective nor as efficient in distributing traffic between northbound critical hurricane evacuation links as alternatives that intersect LA 3127 farther west or at a more central location relative to the two Mississippi River Bridge crossings (i.e., Sunshine Bridge and the Gramercy-Wallace Bridge).



LEGEND

- EXPANDED STUDY AREA BOUNDARY
- ORIGINAL STUDY AREA BOUNDARY
- PARISH BOUNDARY
- PARISH
- PROJECT DELINEATIONS

NOTE:
ALTERNATIVES THAT APPEAR TO BE LOCATED DIRECTLY ADJACENT TO EACH OTHER SHARE A COMMON ALIGNMENT. THE HATCHED RED AND BLUE AREA DENOTED THE LOCATION OF THE CORRIDOR FOR ALTERNATIVES 6, 6A AND 7A. THE FINAL ALIGNMENT FOR THESE ALTERNATIVES WOULD BE BASED ON THE RESULTS OF AVOIDING AND MINIMIZING WETLAND IMPACTS IN THIS AREA AND CANNOT BE ACCURATELY ESTIMATED AT THIS TIME.

HURRICANE EVACUATION STUDY

PREFERRED HURRICANE EVACUATION CORRIDORS
FIGURE 5.1

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JANUARY 1999

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Section 6

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