July 22, 2015

Re: Final Environmental Impact Statement
I-12 to Bush, Louisiana Proposed Highway LA 3241
SPN H.004985 (EIS)
St. Tammany Parish, Louisiana

In regards to the following environmental impact statement (EIS) distributed on July 13, 2015, please note that according to U.S. Environmental Protection Agency (EPA) filing authority, this document should not have been termed a supplemental final EIS. The Federal Highway Administration (FHWA) is adopting the final EIS prepared by the U.S. Army Corps of Engineers (USACE). As such, this document should be referenced as an adopted final EIS. **Please disregard the term supplemental and consider the document the adopted final EIS.**

Note that the 30-day comment period has not changed, and all comments should be submitted by August 24, 2015.

Also, for reference purposes all documents published for this project by the USACE and FHWA are available online at www.I12toBush.com. This site will terminate once the environmental phase is completed. However, the information will remain available on Louisiana Department of Transportation and Development's (DOTD) project web site at http://wwwapps.dotd.la.gov/administration/public_info/projects/home.aspx?key=88. This site will remain active and be updated throughout project development, including construction.

I-12 to Bush, Route LA 3241
St. Tammany Parish, Louisiana
Supplemental Final Environmental Impact Statement
Submitted Pursuant to 42 U.S.C. 4332 (2)(c)

U.S. Department of Transportation
Federal Highway Administration
And
Louisiana Department of Transportation and Development
State Project No. H.004985.2

And Cooperating Agencies
U.S. Environmental Protection Agency, Region 6 (on FEIS)
U.S. Fish and Wildlife Service, Region 4 (on FEIS)
Louisiana Department of Wildlife and Fisheries (on FEIS)

7/2/2015 **Date of Approval** — N. Ardoin **LADOTD**
Noel Ardoin

July 2, 2015 **Date of Approval** — **FHWA**
Charles W. Bolinger

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ABSTRACT

On June 7, 2012, the U.S. Army Corps of Engineers (USACE), New Orleans District issued a record of decision under the provisions of Section 404 of the Clean Water Act regarding the Louisiana Department of Transportation and Development's proposed project to construct a 4-lane highway from Louisiana Highway 21 in Bush, Louisiana to Interstate 12 in St. Tammany Parish.

The Federal Highway Administration (FHWA) intends to adopt the approved Final Environmental Impact Statement (FEIS) in accordance with the CEQ regulations, 40 CFR 1506.3. As a result, a Supplemental Final EIS (SFEIS) has been prepared to include a noise analysis in accordance with 23 CFR part 772, a de *minimis* Section 4(f) evaluation in accordance with 23 CFR part 774, and an analysis of the effects resulting from a change in the location of Alternative Q's connection with Louisiana Highway 434.

Sections of the FEIS that are unchanged are still valid and summarized and referenced herein. Comments on this SFEIS are due by August 24, 2015 and should be sent to Noel Ardoin with the Louisiana Department of Transportation and Development at the address listed above.

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EXECUTIVE SUMMARY

The Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LADOTD) have prepared this supplemental final environmental impact statement (SFEIS) to address the proposed action of the construction of a new modern, high-speed 4-lane arterial highway from the southern terminus of the current modern 4-lane arterial portion of Louisiana Highway 21 (LA 21) in Bush, Louisiana, to Interstate 12 (I-12) in St. Tammany Parish, Louisiana.

The U.S. Army Corps of Engineers (USACE), New Orleans District (CEMVN) prepared an environmental impact statement (EIS) to evaluate the potential environmental, cultural, and socioeconomic impacts from construction of the proposed action, with the final EIS (FEIS) completed on March 9, 2012. Based on the findings in the FEIS, CEMVN issued a record of decision (ROD) on June 7, 2012, identifying Alternative Q as the least environmentally damaging practicable alternative (LEDPA). The ROD states that USACE will issue a Section 404 permit under the provisions of the Clean Water Act (CWA) for Alternative Q once LADOTD meets special conditions, including developing an approved comprehensive mitigation plan and obtaining a Section 401 Water Quality Certification issued by the Louisiana Department of Environmental Quality (LDEQ).

On November 1, 2013, FHWA issued a Notice of Intent (NOI) to adopt the existing FEIS in its entirety in accordance with the Council on Environment Quality (CEQ) regulations, Title 40 of the *Code of Federal Regulations* (CFR) part 1506.3. This SFEIS has been prepared in accordance with the policies and procedures of the FHWA for implementing the National Environmental Policy Act (NEPA) (23 CFR parts 771–772 and 774) and supplements the NEPA regulation of the CEQ (40 CFR parts 1500–1508). It is the policy of the FHWA that, to the fullest extent possible, all environmental investigations, reviews, and consultations be coordinated as a single process, and compliance with all applicable environmental requirements be reflected in the environmental review.[1]

The SFEIS addresses only changes and new information that are the basis for preparing this supplement and that were not addressed in the FEIS. Sections of the FEIS that are unchanged are still valid and summarized and referenced herein. This SFEIS was prepared to include a noise analysis in accordance with 23 CFR part 772, a section 4(f) evaluation in accordance with 23 CFR part 774, and an analysis of the effects resulting from a change in the location of the proposed highway's connection with LA 434.

BACKGROUND

The proposed I-12 to Bush highway is an effort planned by LADOTD and funded by the Transportation Infrastructure Model for Economic Development (TIMED) program (Louisiana Revised Statute 47:820.2). The stated mission of the TIMED program is to "foster economic development throughout the state of Louisiana and enhance the quality of life for its residents through an investment in transportation projects." The TIMED program, approved by the 1989

[1] FHWA has supplementary guidance on environmental documents and procedures for their program including FHWA Technical Advisory T6640.8A, October 30, 1987; "SAFETEA-LU Environmental Review Process: Final Guidance," November 15, 2006; appendix A of 23 CFR part 450, "Linking the Transportation Planning and NEPA Processes," May 2006; and 23 CFR 772 FHWA "Highway Traffic Noise: Analysis and Abatement Guidance—FHQA-HEP-10-25", December 2011. 6.

General Session of the Louisiana State Legislature, identified a 15-year construction program funded by a 4-cent fuel tax, which includes the construction of the proposed *LA 3241* highway between Bush, Louisiana, and I-12 in St. Tammany Parish. Revised Statute 47:820.2.B(1)(e) provides for a project from I-12 to Bush to be constructed as a highway of four or more lanes. The proposed highway would provide a 4-lane highway connection for Washington and northern St. Tammany Parishes to I-12, with the purported goal of providing for regional transportation needs and stimulating undefined economic growth and activity in the region.

LADOTD has stated that the proposed highway is needed as an alternate north-south connection that could reduce congestion and delays for motorists traveling from northern St. Tammany Parish and Washington Parish to I-12. As stated by LADOTD, the proposed action is needed to:

- Fulfill the legislative mandate, Louisiana Revised Statute 47:820.2B(e);
- Provide a logical, direct, modern, high-speed 4-lane arterial to I-12 from the southern terminus of the current modern 4-lane arterial portion of LA 21;
- Divert traffic from Washington and northern St. Tammany Parishes onto a 4-lane, modern, high-speed arterial to free capacity for local trips on segments of existing routes in southern suburban areas and reduce congestion during peak and some nonpeak periods; and
- Support and enhance the existing and developing economic activities in Washington and northern St. Tammany Parishes that rely on the highway network to reach their markets by providing a travel time savings.

SETTING

St. Tammany Parish is in southeastern Louisiana and is one of seven parishes in the New Orleans-Metairie-Kenner, Louisiana, Metropolitan Statistical Area as defined by the Office of Management and Budget for use in federal statistical activities (OMB 2009). It is one of the fastest growing suburban parishes in the New Orleans area and the entire state, serving as a bedroom community to the neighboring economic centers in Orleans and Jefferson Parishes (CH2MHill 2003). The parish is bordered by Washington Parish to the north; Hancock and Pearl River Counties, Mississippi, to the east; Lake Pontchartrain to the south; and Tangipahoa Parish to the west.

PROPOSED ACTION EVALUATION

The USACE issued a ROD and selected Alternative Q as the LEDPA. Alternative Q will be the alternative evaluated under FHWA NEPA guidelines. The additional alternatives that were evaluated are discussed in detail in section 2.0 of the FEIS.

Alternative Q would include new construction of a 4-lane highway following the abandoned railroad corridor from Bush to a point approximately 1.7 miles north of LA 36. From that point, the proposed route would leave the railroad corridor and connect to LA 434, which ties into I-12 at an existing interchange (Exit 74). This alternative would be approximately 19.8 miles long, with 9.8 miles using the abandoned railroad embankment, 8.7 miles on new alignment, and 1.3 miles on existing roadway. The majority of the alternative (17.2 miles) would consist of a rural arterial-3 (RA-3) typical cross section, which would have a typical right-of-way (ROW) width of 250 feet. The northern 0.7 mile of the route would have a rural arterial-2 (RA-2) cross section with a ROW width of 250 feet. Control of access to the route could be provided for the section of highway classified as RA-3 (17.3 miles), except for the segment through Talisheek,

Louisiana, (2.0 miles) and where the highway crosses LA 435 and LA 36, and connects to LA 434.

SUMMARY OF IMPACTS

Direct, indirect, and cumulative environmental, cultural, and socioeconomic effects that would likely occur upon implementation of the proposed alternative were analyzed. Cumulative effects were analyzed taking into account past, present, and reasonably foreseeable future actions in the project area. A summary of the environmental, cultural, and socioeconomic impacts is presented in section 4.0 of the FEIS.

This section provides a summary of the additional analyses required by FHWA to adopt the FEIS and a summary of the impacts associated with the change in the connection with LA 434 to avoid relocating newly constructed parish facilities.

The FEIS originally concluded that construction of Alternative Q would directly impact 305 acres of wetlands. However, moving the connection north of the alignment for Alternative Q would directly impact an additional 30 acres, but would avoid having to relocate newly constructed parish facilities.

The proposed roadway would have short- and long-term adverse effects on the noise environment. Short-term effects would be due to construction activities. Long-term effects would be due to changes in traffic noise throughout the study area, specifically increasing noise along the proposed highway. The areas are rural in nature and currently do not support high levels of through traffic; subsequently, they would have the greatest increase in noise when compared to current levels.

Alternative Q would impact one recreational feature in the area. It is anticipated that Alternative Q would have a *de minimis* impact on the Bush Recreational Center in St. Tammany Parish. The recreation center is less than one-half mile south of LA 41. The ROW for the alignment for Alternative Q is adjacent to the northwest end of the outfields of the baseball field complex, but would not directly impact use of the complex. Approximately 0.01 acre of the northwest corner of the property would be used for the proposed ROW; however, the acquired ROW would not require any alterations to the baseball fields or the facility. Fences would not require relocation.

Under the proposed alternative, cultural resources would not be directly or indirectly impacted.

The 2013 Phase I Environmental Site Assessment conducted for Alternative Q found no recognized environmental conditions that would be expected to impact the construction and operation of the proposed alignment.

A complete summary of the potential physical, natural, and social environmental consequences as a result of implementing Alternative Q as outlined in the FEIS is provided in Table ES-1.

Table ES-1.
Summary of Potential Physical, Natural, and Social Environmental Consequences

Resource Area	No Build Alternative		Alternative Q	
	Direct Impacts	***Indirect Impacts***	***Direct Impacts***	***Indirect Impacts***
Land Use	None (Section 4.2.1)	None (Section 4.2.1)	Long-term major adverse and short-term minor adverse (Section 4.2.2.4)	Long-term major adverse (Section 4.2.2.4)
Water Resources	None (Section 4.3.1)	None (Section 4.3.1)	Long-term major and moderate adverse (Section 4.3.2)	Long-term major and moderate adverse (Section 4.3.2)
Ecological Resources	Section 4.4.1	Section 4.4.1	Section 4.4.2.4	Section 4.4.2.4
Land Cover	None	None	Long-term major adverse	Long-term moderate adverse
Wildlife	None	None	Long-term major adverse	Short-term minor adverse
Sensitive Habitats	None	None	Long-term major adverse	Short-term minor adverse
T&E Species	None	None	None	Long-term minor adverse
Wetlands	None	None	Long-term major adverse	Long-term moderate adverse
	(Section 4.4.1)	(Section 4.4.1)	(Section 4.4.2.4)	(Section 4.4.2.4)
Geology and Soils	None (Section 4.5.1)	None (Section 4.5.1)	Long-term major adverse (Section 4.5.2.4)	Short- and long-term moderate adverse (Section 4.5.2.4)
Air Quality	None (Section 4.6.1)	None (Section 4.6.1)	Short- and long-term minor adverse (Section 4.6.2)	Short- and long-term minor adverse (Section 4.6.2)
Noise	None (Section 4.7.1)	None (Section 4.7.1)	Short-term minor adverse (Section 4.7.2.4)	Long-term moderate adverse (Section 4.7.2.4)
Recreational Resources	None (Section 4.8.1)	None (Section 4.8.1)	Long-term moderate adverse (Section 4.8.2.4)	Short- and long-term minor adverse (Section 4.8.2.4)

Table ES-1 (continued)

Resource Area	No Build Alternative		Alternative Q	
	Direct Impacts	***Indirect Impacts***	***Direct Impacts***	***Indirect Impacts***
Traffic and Transportation	None (Section 4.9.2)	None (Section 4.9.2)	Long-term moderate beneficial (Section 4.9.3.4.4)	Long-term moderate beneficial (Section 4.9.3.4.4)
Utilities	None (Section 4.10.1)	None (Section 4.10.1)	Short-term negligible (Section 4.10.2.4)	Long-term negligible (Section 4.10.2.4)
Socioeconomics	None (Section 4.11.1)	None (Section 4.11.1)	Short-term minor beneficial (Section 4.11.2)	Long-term minor beneficial (Section 4.11.2)
Aesthetic and Visual Resources	None (Section 4.14.1)	None (Section 4.14.1)	Short-term minor adverse and long-term major adverse (Section 4.14.2)	Short-term minor adverse (Section 4.14.2)
Cultural Resources	None (Section 4.15.1)	None (Section 4.15.1)	None (Section 4.15.2.4)	None (Section 4.15.2.4)
Hazardous & Toxic Substances	None (Section 4.16.1)	None (Section 4.16.1)	Short-term minor adverse (Section 4.16.2)	Long-term minor adverse (Section 4.16.2)

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CONTENTS

TABLES

FIGURES

APPENDICES

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SECTION 1.0
PROJECT PURPOSE AND NEED

1.1 PROJECT OVERVIEW

FHWA and LADOTD have prepared this SFEIS to address the proposed action for the new construction of a modern, high-speed 4-lane arterial highway from the southern terminus of the current modern 4-lane arterial portion of LA 21 in Bush, Louisiana, to I-12 in St. Tammany Parish, Louisiana.

The proposed I-12-to-Bush highway is an effort planned by LADOTD and funded by the Transportation Infrastructure Model for Economic Development (TIMED) program (Louisiana Revised Statute 47:820.2). The TIMED program, approved by the 1989 General Session of the Louisiana State Legislature, identified a 15-year construction program funded by a 4-cent fuel tax, which includes the construction of the proposed *LA 3241* highway between Bush, Louisiana, and I-12 in St. Tammany Parish. Revised Statute 47:820.2.B(1)(e) provides for a project from I-12 to Bush to be constructed as a highway of four or more lanes. The proposed highway would provide a 4-lane highway connection for Washington and northern St. Tammany Parishes to I-12, with the purported goal of providing for regional transportation needs and stimulating undefined economic growth and activity in the region.

The proposed I-12-to-Bush highway was originally intended to be funded under the TIMED program. However, the 4-cent fuel tax dedicated to fund the TIMED program will not produce sufficient revenue to support bonding of all the projects in the program, including I-12 to Bush in St. Tammany Parish and the Florida Avenue Bridge in St. Bernard and Orleans Parishes. Therefore, LADOTD is seeking funding for both preconstruction and construction through the state bond program and through any available and applicable federal discretionary programs. Without such funding, LADOTD will move forward with the remaining TIMED projects under the regular highway program; however, that could result in an extended project completion schedule.

The project area is located wholly within St. Tammany Parish, Louisiana. The study area for this SFEIS includes the entire 250-foot (ft) ROW for the approximately 20-mile Alternative Q alignment (Figure 1-1). Alternative Q would include new construction of a 4-lane highway beginning at the existing I-12 and LA 434 interchange (Exit 74). It would tie into LA 434, and then follow an abandoned railroad corridor from a point approximately 1.7 miles north of LA 36 to Bush. This alternative would be approximately 20.0 miles long, with 9.8 miles using the abandoned railroad embankment, 7.7 miles on new alignment, and 2.7 miles on existing roadway. The majority of the alternative (16.4 miles) consists of an RA-3 typical cross section, which would have a ROW width of 250 feet. The northern 0.7 mile of the route would have an RA-2 cross section, while the southern 2.7 miles would have a suburban arterial-1 (SA-1) cross section. Control of access to the route could be provided for the section of highway classified as RA-3 (17.3 miles), except for the segment through Talisheek (2.0 miles) and where the highway crosses LA 435 and LA 36, and connects to LA 434.

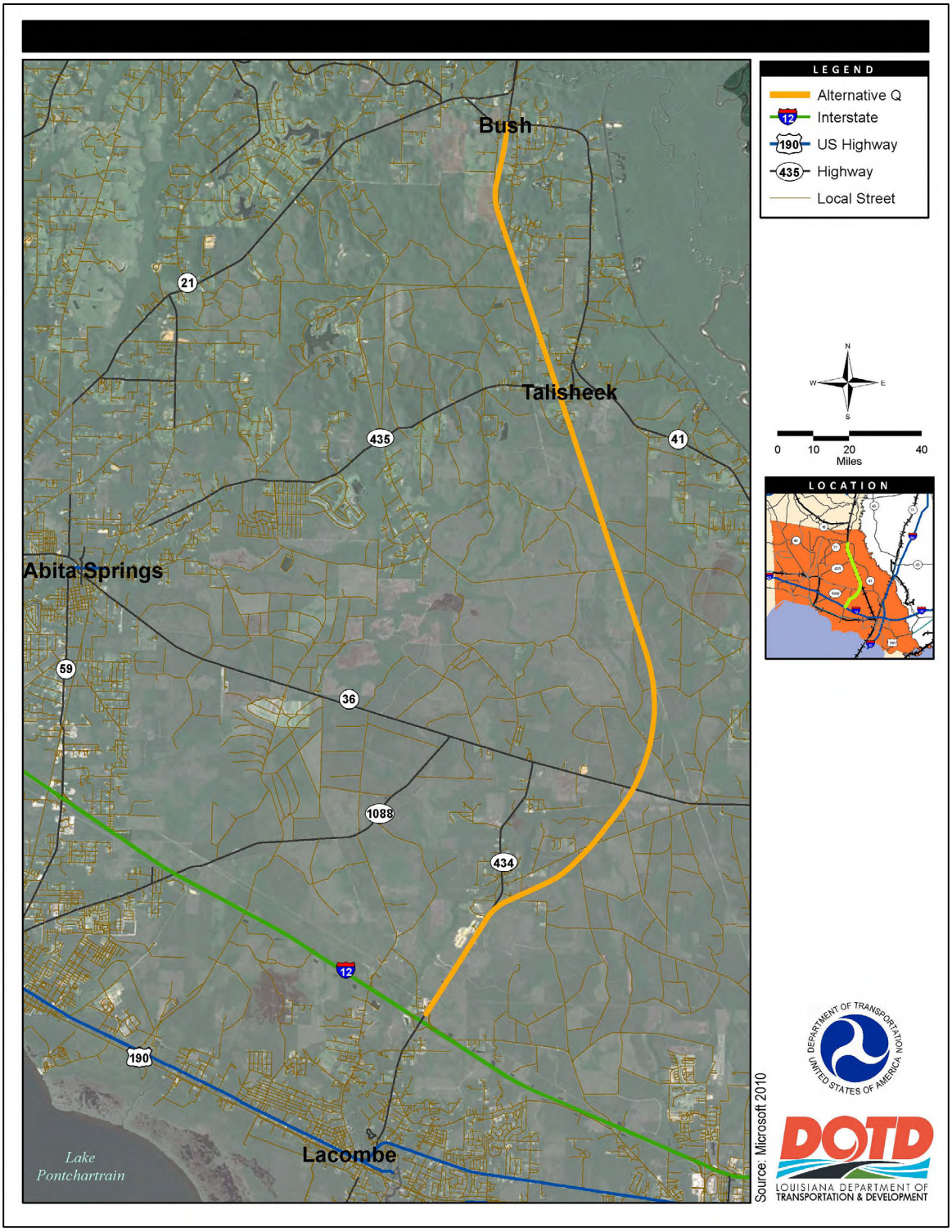

Figure 1-1. General Site Location.

Because the project proposes work in wetlands and structural crossings of various waterways in the project area, a Department of the Army (DA) permit pursuant to section 404 of the Clean Water Act (CWA) is required before any construction activities commence. USACE, New Orleans District is the regulatory agency responsible for issuing this permit. Since the proposed project involves federal agencies, it is subject to NEPA. As a result, the USACE prepared and issued an FEIS in March 2012 to disclose and analyze all significant environmental and socioeconomic impacts of the proposed highway as required under NEPA, the CEQ's regulations at 40 CFR parts 1500–1508, USACE Regulatory Program Regulations (33 CFR parts 320–332), including the USACE NEPA regulations at 33 CFR part 325, appendix B, and the requirements of the section 404(b)(1) guidelines (40 CFR part 230).

On June 7, 2012, the USACE issued a ROD under the provisions of Section 404 of the CWA regarding the LADOTD's proposed action. The USACE identified Alternative Q as the LEDPA. The ROD states that the USACE will issue a Section 404 permit for Alternative Q once LADOTD meets special conditions, including developing an approved comprehensive mitigation plan and obtaining issuance of a Section 401 Water Quality Certification from the LDEQ.

On November 1, 2013, FHWA issued an NOI to adopt the existing FEIS in its entirety in accordance with CEQ regulations, 40 CFR 1506.3. The NOI is included in appendix A. This SFEIS addresses only changes and new information that are the basis for preparing this supplement and that were not addressed in the FEIS. Sections of the FEIS that are unchanged are still valid and summarized and referenced herein. New evaluations prepared for this SFEIS include a section 4(f) evaluation in accordance with 23 CFR 774 and a phase I environmental site assessment. The highway traffic noise study was updated to be consistent with current LADOTD and FHWA noise policy according to 23 CFR 772. The cultural resources survey was updated to include the revised alignment of Alternative Q near LA 434. This SFEIS reflects an up-to-date consideration of the entire proposed action and its environmental and socioeconomic impacts.

1.2 PROJECT BACKGROUND

The project background is provided in section 1.2 of the FEIS (CEMVN 2012), and includes a detailed discussion of population trends, existing traffic demands, and a project history summary. In accordance with NEPA, in August 2008, USACE prepared a preliminary environmental assessment (EA) to evaluate the impacts to the human and natural environments that would occur as a result of the proposed highway (CEMVN 2008). The EA was prepared on the basis of the information for the project that LADOTD provided, including all the information prepared as part of the I-12-to-Bush Corridor Study. USACE completed an analysis using available information on the project and determined that a decision on the CWA section 404 permit application would be a major federal action significantly affecting the quality of the human and natural environments. That determination triggered the NEPA requirement that USACE prepare an EIS.

As part of EIS preparation, USACE held a public scoping meeting at the Abita Springs, Louisiana Town Hall on January 22, 2009. The purpose of the meeting was to solicit input into the scoping process from all interested governmental agencies, tribes, nongovernmental organizations, and individuals. On the basis of the comments received during the scoping process, USACE prepared a scoping report in March 2009 (CEMVN 2009).

1.3 PROPOSED ACTION

LADOTD proposes to construct a high-speed 4-lane arterial highway from Bush, Louisiana, to I-12 following the Alternative Q alignment. Alternative Q would include new construction of a

4-lane highway beginning at the existing I-12 and LA 434 interchange (Exit 74). It would tie into LA 434, and then follow an abandoned railroad corridor from a point approximately 1.7 miles north of LA 36 to Bush. This alternative would be approximately 20.0 miles long, with 9.8 miles using the abandoned railroad embankment, 7.7 miles on new alignment, and 2.7 miles on existing roadway. The majority of the alternative (16.4 miles) consists of an RA-3 typical cross section, which would have a ROW width of 250 feet. The northern 0.7 mile of the route would have an RA-2 cross section, while the southern 2.7 miles would have an SA-1 cross section. Control of access to the route could be provided for the section of highway classified as RA-3 (17.3 miles), except for the segment through Talisheek (2.0 miles) and where the highway crosses LA 435 and LA 36, and connects to LA 434.

As stated by LADOTD and FHWA, the rural minor arterial road system should, in conjunction with the principal arterial system, form a rural network having the following characteristics (FHWA 1989):

- Link cities and larger towns (and other traffic generators, such as major resort areas, that are capable of attracting travel over similarly long distances) and form an integrated network providing interstate and intercounty service.
- Be spaced at such intervals, consistent with population density, so that all developed areas of the state are within a reasonable distance of an arterial highway.
- Because of the two characteristics defined immediately above, provide service to corridors with trip lengths and travel density greater than those predominantly served by rural collector or local systems. Minor arterials, therefore, constitute routes the design of which should be expected to provide for relatively high overall travel speeds, with minimum interference to through movement.

The typical cross section would have two 12-ft travel lanes, an 8- to 10-ft outside shoulder, and a 4-ft inside shoulder in each direction. The median width would vary depending on highway design class used ranging between 40 and 60 feet, and a maximum ROW requirement of 250 feet. The exception to that design could be where the proposed project transitions into existing roadways (i.e., at intersections) and where alternative alignments follow the existing LA 21.

1.4 PROJECT PURPOSE AND NEED

Defining the project purpose is critical to the evaluation of any project and in evaluating project compliance with the NEPA, CEQ, and FHWA guidelines. The project purpose and need is discussed in detail in section 1.4 of the FEIS (CEMVN 2012). USACE defined the overall project purpose as to construct a 4-lane arterial highway from the southern terminus of LA 21 in Bush, Louisiana, to I-12. The need for the project is to meet a legislative mandate in Louisiana Revised Statute 47:820.2B(e), which states that "[t]he Louisiana Highway 3241 project from Interstate 12 to Bush…shall be constructed as a [four]-lane or more highway." The FEIS was prepared based on USACE's defined purpose and need, but also considered were the anticipated benefits of the proposed transportation network improvement compared to the expected detriments.

LADOTD has stated that the proposed highway is needed as an alternative north-south connection that could reduce congestion and delays for motorists traveling from northern St. Tammany Parish and Washington Parish to I-12. The proposed highway could increase safety by reducing the amount of traffic and congestion on existing routes (i.e., LA 41 and LA 21/LA 59/US 190), thereby reducing the potential for accidents. In addition, travel time savings could help support and enhance potential economic development in northern St. Tammany and

Washington Parishes. Also, LADOTD is obliged to construct a highway to comply with Louisiana Revised Statute 47:820.2B(e) as stated: "[t]he Louisiana Highway 3241 project from Interstate 12 to Bush…shall be constructed as a [four]-lane or more highway."

As stated by LADOTD, the proposed action is needed to:

- Fulfill the legislative mandate, Louisiana Revised Statute 47:820.2B(e);
- Provide a logical, direct, modern, high-speed 4-lane arterial to I-12 from the southern terminus of the current, modern 4-lane arterial portion of LA 21;
- Divert traffic from Washington and northern St. Tammany Parishes onto a 4-lane, modern, high-speed arterial to free capacity for local trips on segments of existing routes in southern suburban areas and reduce congestion during peak and some nonpeak periods; and
- Support and enhance the existing and developing economic activities in Washington and northern St. Tammany Parishes that rely on the highway network to reach their markets by providing a travel time savings.

1.5 SCOPE

This SFEIS was developed in accordance with NEPA, implementing regulations issued by the President's CEQ, and FHWA regulations for adoption of the FEIS prepared by the USACE. This SFEIS also provides information to other regulatory and commenting agencies and the general public about the likely environmental consequences of the proposed action and alternatives. This document analyzes the direct impacts (those caused by the action and occurring at the same time and place), the indirect impacts (those caused by the action and occurring later in time or farther removed in distance but still reasonably foreseeable), and the impacts from secondary actions (reasonably foreseeable actions taken by others). The potential for cumulative impacts also is addressed.

The SFEIS addresses only changes and new information that are the basis for preparing this supplement and that were not addressed in the FEIS. Sections of the FEIS that are unchanged are still valid and summarized and referenced herein. New evaluations prepared for this SFEIS include a section 4(f) evaluation and phase I environmental site assessment. The highway traffic noise study was updated to be consistent with current LADOTD and FHWA noise policy according to 23 CFR 772. The cultural resources survey was updated to include the revised alignment of Alternative Q near LA 434. This SFEIS reflects an up-to-date consideration of the entire proposed action and its environmental and socioeconomic impacts.

1.6 PUBLIC INVOLVEMENT

As part of the NEPA process, the public; stakeholders; and federal, state, and local governmental agencies have had several opportunities to comment on the proposed action.

- Public comments were solicited through a public notice mailing, media advertisement, and public scoping meeting held January 22, 2009, at the Abita Springs Town Hall.
- The USACE made the draft EIS available for public review and comment on September 9, 2011. The draft EIS was available for a period of 45 days for comments on the proposed action, the alternatives, and the adequacy of the analysis. During the 45-day comment period, USACE held a public hearing on September 28, 2011, to receive public comments on the draft EIS.
- The FEIS was made available for a 30-day public review period on March 9, 2012.

1.6.1 Relevant Public Comments Addressed in the FEIS

As a result of the public involvement process, issues relevant to the FEIS were verified and defined. Relevant issues raised during the EIS scoping are addressed under the following resource areas in the FEIS:

- *Land Use.* Land use refers to human use of the land for economic production (residential, commercial, industrial, recreational, or other purposes) and for natural resource protection. Land cover, an increasingly important attribute of land use, describes what is physically on the ground. The proposed highway will place demands on the region's resources. In the FEIS, the impacts that the proposed highway could have on existing and future land uses are analyzed. The FEIS reflects consideration of existing and proposed development, population growth, recreation resources, zoning regulations, and other issues related to how the land surrounding the proposed highway would be used.
- *Noise.* The FEIS and SFEIS have an analysis of any noise-related effects resulting from the use of heavy equipment during construction of the proposed highway and any other noise-generating activities associated with the highway after construction is complete (i.e., an increase in traffic).
- *Water Resources and Water Quality*. "Water resources" include various bodies of water residing or flowing in basins, channels, and other various natural and artificial landforms on the Earth's surface. Potential pollutant loads to be analyzed include stormwater runoff into the surrounding watershed. Water quality issues analyzed include dissolved oxygen, nutrients, heavy metals, and other pollutants. In addition, altered surface drainage patterns, changes in the subsurface water table, and impacts on wetlands and other water bodies are analyzed.
- *Ecological Communities.* NEPA requires that analyses conducted for an EIS consider ecological information. Direct and indirect impacts that result in the loss of native vegetation, populations or species of fish and wildlife, sensitive species, wetland areas, and sensitive habitats must be considered for any action involving disturbance in naturally vegetated areas. The FEIS evaluates any impacts on state or federally listed threatened or endangered species, and nonnative plant and animal management.
- *Infrastructure Systems, Utilities, and Traffic and Transportation Systems*. Analysis of infrastructure, utilities, and transportation systems related to the proposed highway includes sanitary sewers, stormwater collection and stormwater discharge, electricity, natural gas, telecommunication systems, regional road networks, traffic and congestion, and road improvements and maintenance.
- *Socioeconomic Resources.* "Socioeconomics" comprises the social, economic, and demographic characteristics of a region. The socioeconomic analysis includes an evaluation of labor force capacity, availability of housing, public services, educational facilities, and educational fiscal revenues. The FEIS provides historical data (including population, employment, personal income, and regional gross domestic product [GDP]) to describe the regional growth of the area in the vicinity of the proposed highway. The historical data provide a frame of reference for determining the significance of any impacts on the socioeconomic environment expected as a result of the proposed highway. An economic model was used to generate a forecast that simulates the expected long-term growth of the project area on the basis of past and current trends and conditions. Environmental justice and protection of children are addressed, in accordance with Executive Orders (EOs) 12898 and 13045.

1.6.2 Additional Resource Areas Addressed in the SFEIS

In addition to the resource areas on which the public commented during the scoping process, the following resource areas or issues are addressed:

- *Soils and Geology.* For this resource, the SFEIS analyzes the environmental aspects of stratigraphy, topography, soils, and sediments; engineering properties of the materials; seismic hazards; slope stability; earthworks; mineral resources; unique landforms; and geological conditions that could limit the construction of the proposed highway, influence contaminant distribution and migration, or influence ground water resources.
- *Hazardous and Toxic Materials.* This resource area contains analyses of hazardous material management and hazardous waste management.
- *Cultural Resources.* The SFEIS identifies properties in the project boundary that are on, or eligible for, the National Register of Historic Places (NRHP) or that qualify as Native American traditional cultural properties. The analyses consider impacts on any identified properties that could result from the construction and operation of the proposed highway.
- *Air Quality.* The SFEIS contains an analysis of the potential impacts the proposed highway could have on air quality in the project area. The SFEIS provides analyses of any impacts on air quality associated with road construction, and operation and maintenance activities.
- *Section 4(f) Evaluation of Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites*. The SFEIS evaluates the use of land from a publicly owned public park; recreation area; wildlife or refuge; or land of a historic or national, state, or local significance (as determined by federal, state, and local officials that have jurisdiction over such resources) to determine if there is any prudent and feasible alternative to the use of such land and if the action includes all possible measures to minimize harm in accordance with FHWA section 4(f) regulations.

1.6.3 Public Review of the SFEIS

LADOTD made the SFEIS available for public review and comment on July 24, 2015; published a notice of availability of the SFEIS in local papers; and sent copies of the SFEIS to individuals who requested copies and to state and federal agencies cooperating on the FEIS. In addition, LADOTD provided copies of the SFEIS to local and statewide libraries (Table 1-1). Agencies, organizations, and individuals were invited to review and comment on the document. The SFEIS will be available for a period of 30 days for comments on the proposed action, the alternatives, and the adequacy of the analysis. During the 30-day comment period, LADOTD will hold a public meeting to receive public comments on the *de minimis* section 4(f) finding in accordance with 23 CFR 774.5(b)(2) and on the SFEIS.

As provided for in CEQ regulations, FHWA and LADOTD will consider all comments provided by the public and governmental agencies on the SFEIS.

Table 1-1.
Public Libraries with Copies of the SFEIS

St. Tammany Parish Library – Slidell Branch 555 Robert Boulevard Slidell, LA 70458	St. Tammany Parish Library – Abita Springs Branch 71683 Leveson Street Abita Springs, LA 70420	St. Tammany Parish Library – Bush Branch 81597 Highway 41 Bush, LA 70431
St. Tammany Parish Library – Covington Branch 310 W. 21st Avenue Covington, LA 70433	St. Tammany Parish Library – Mandeville Branch 844 Girod Street Mandeville, LA 70448	St. Tammany Parish Library – Pearl River Branch 64580 Highway 41 Pearl River, LA 70452
Franklinton Library 825 Free Street Franklinton, LA 70438	Bogalusa Library 304 Avenue F Bogalusa, LA 70427	St. Tammany Parish Library – Lee Road Branch 79213 Highway 40 Covington, LA 70435
Louisiana State Library 701 North 4th Street Baton Rouge, LA 70802		

1.7 REGULATORY AUTHORITIES AND PROCESSES

For major federal actions, NEPA[2] requires federal agencies to consider the environmental impacts of proposed actions before they are implemented. NEPA mandates using a defined systematic, interdisciplinary procedure to document the evaluation of the potential environmental impacts that could result from a federal action before making a determination on how to proceed with that action. The SFEIS describes the environmental setting of the affected project area and potential adverse impacts of the proposed project, and assesses alternatives to the proposed action, as necessary, to avoid or minimize adverse environmental effects. The environmental information in the SFEIS will help decision makers, public officials, and citizens to understand the potential environmental consequences of project implementation before decisions are made. This SFEIS has been undertaken in accordance with the NEPA CEQ regulations and FHWA regulations for implementing NEPA.

This SFEIS was prepared to address section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966 (23 U.S.C. section 138 and Title 49 of the *United States Code* [U.S.C.] section 303 and implementing regulation Title 23 CFR 774). Section 4(f) permits the use of land from a publicly owned public park; recreation area; wildlife or refuge; or land of a historic or national, state, or local significance (as determined by federal, state, and local officials that have jurisdiction over such resources) only if there is no prudent and feasible alternative to the use of such land and if the action includes all possible measures to minimize harm.

1.8 RELEVANT STATUTES AND EXECUTIVE ORDERS

In addressing environmental considerations, the FHWA and LADOTD are guided by relevant statutes (and their implementing regulations) and EOs that establish standards and provide guidance on environmental and natural resources management and planning. Those sources include the Clean Air Act, CWA, Noise Control Act, Endangered Species Act (ESA), National Historic Preservation Act (NHPA), Archaeological Resources Protection Act, Resource Conservation and Recovery Act, and Toxic Substances Control Act. EOs bearing on the proposed

[2] National Environmental Policy Act of 1969, Pub. L. 91–190, 42 United States Code [U.S.C.] 4321–4347, January 1, 1970.

action include EO 11988 (*Floodplain Management*), EO 11990 (*Protection of Wetlands*), EO 12088 (*Federal Compliance with Pollution Control Standards*), EO 12580 (*Superfund Implementation*), EO 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*), EO 13045 (*Protection of Children from Environmental Health Risks and Safety Risks*), EO 13175 (*Consultation and Coordination with Indian Tribal Governments*), and EO 13186 *(Responsibilities of Federal Agencies to Protect Migratory Birds*)[3]. They are addressed in various sections throughout this SFEIS when relevant to environmental resources and conditions.

[3] The full text of the laws, regulations, and EOs is available on the Defense Environmental Network & Information Exchange Web site at http://www.denix.osd.mil.

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SECTION 2.0
PROPOSED ACTION AND ALTERNATIVES

2.1 ALTERNATIVES DEVELOPMENT AND SCREENING

A detailed discussion of the alternatives development and screening process is provided in section 2.1 of the FEIS (CEMVN 2012). In addition to the No Build Alternative, a range of reasonable alternatives to meet the purpose and need of the proposed action was formulated. Those alternatives were composed of a number of alternative alignment corridors for the proposed highway, as detailed in section 2.1.1 of the FEIS (CEMVN 2012). The alternatives screening analysis consisted of two stages. Stage I screening involved a fatal-flaws approach, as detailed in section 2.1.2.1 of the FEIS (CEMVN 2012). Any alternative that was determined to be fatally flawed was not carried forward to the second alternative screening stage. Stage II screening evaluated the remaining alternatives against screening criteria developed during the alternatives development process, as described in section 2.1.2.2 of the FEIS (CEMVN 2012).

2.2 ALTERNATIVES CARRIED FORWARD FOR IMPACTS ANALYSIS

On the basis of the information and evaluation presented in section 2.1 of the FEIS, the following alternatives were selected for detailed impacts analysis: No Build Alternative, and Alternatives B/O, J, P, and Q.

2.2.1 No Build Alternative

Under the No Build Alternative, construction of a new modern, high-speed 4-lane highway between Bush and I-12 would not occur. As a result, the existing roadway network in the region would remain in its current condition and continue to serve as the transportation network to travel between Bush and I-12. LADOTD could implement future roadway projects in the project area that would improve the transportation network, but those projects might not fully meet the purpose and need of this project. The No Build Alternative ensures that there would be no direct or indirect impacts to threatened and endangered species, wetlands, environmentally sensitive areas, aquatic resources, or historic sites. Including the CEQ-required No Build Alternative in the EIS serves as a benchmark against which build alternatives can be evaluated. If the proposed highway is not constructed, project-related impacts would be avoided. Other alternatives would have to be developed to provide anticipated project benefits.

2.2.2 Alternative B/O

Alternative B/O would widen LA 21 to a 4-lane highway from Bush to just north of Waldheim, Louisiana, then continue as a new 4-lane roadway about halfway between Alternatives B and O before capturing Alternative O just north of LA 435, terminating at LA 1088 near I-12. This alternative would use as much of the existing highway alignments and non-wetland areas as possible to minimize impacts to the human and natural environments. The alternative would be approximately 19.5 miles long, with 7.0 miles on existing alignment and 12.5 miles on new alignment. The majority of the alignment would consist of an RA-3 typical cross section, which would have a typical ROW width requirement of 250 feet. Control of access could be provided except where the highway follows existing LA 21 and highway crossings at LA 435 and LA 36, and the connection to LA 1088.

2.2.3 Alternative J

Alternative J would be new construction of a 4-lane highway following the abandoned railroad corridor from Bush to a point due north of the Slidell Municipal Airport. From that point, the proposed route would connect to Airport Road, which ties into I-12 at an existing interchange (Exit 80). This proposed route would be approximately 21.1 miles long, with 14.2 miles using the abandoned railroad embankment, 5.4 miles on new alignment, and 1.5 miles of existing roadway. The majority of the route (17.5 miles) would consist of an RA-3 typical cross section, which would have a typical ROW width of 250 feet. The northern 0.7 mile of the route would consist of an RA-2 cross section, while the southern 1.9 miles would have an SA-1 cross section. Control of access to the route could be provided for the section of highway classified as RA-3 (17.5 miles), except for the segment through Talisheek (2.0 miles) and where the highway crosses LA 435 and LA 36.

2.2.4 Alternative P

LADOTD's preferred alignment, Alternative P, would begin at the intersection of LA 41 and LA 40 in Bush and proceed southward for approximately 17.4 miles to LA 1088. The majority of the project (15.2 miles) would consist of an RA-3 typical cross section, which has a typical ROW width requirement of 250 feet. The northern 0.7 mile of the project would consist of an RA-2 cross section, which also has a ROW width of 250 feet. The exception to that design would be at the southern end of the project area. The last 1.5 miles would be designed as an SA-1 typical cross section, which has a ROW width of approximately 180 feet. The proposed route would use the abandoned railroad corridor from Bush to Talisheek, a distance of approximately 2.5 miles, before turning southwesterly for approximately 13.3 miles on a new alignment to connect with LA 1088 north of I-12. Access for this route would be provided in Bush, at LA 435, at LA 36, and at the intersection with LA 1088. Crossings of existing highways would be at grade.

2.2.5 Alternative Q

Alternative Q would include new construction of a 4-lane highway following the abandoned railroad corridor from Bush to a point approximately 1.7 miles north of LA 36. From that point, the proposed route would leave the railroad corridor and connect to LA 434, which ties into I-12 at an existing interchange (Exit 74). This alternative would be approximately 19.8 miles long, with 9.8 miles using the abandoned railroad embankment, 8.7 miles on new alignment, and 1.3 miles on existing roadway. The majority of the alternative (17.2 miles) would consist of an RA-3 typical cross section, which would have a typical ROW width of 250 feet. The northern 0.7 mile of the route would have an RA-2 cross section, with a ROW width of 250 feet. Control of access to the route could be provided for the section of highway classified as RA-3 (17.3 miles), except for the segment through Talisheek (2.0 miles) and where the highway crosses LA 435 and LA 36, and connects to LA 434. Alternative Q was identified as the LEDPA by USACE.

2.3 ALTERNATIVES NOT CARRIED FORWARD FOR FURTHER ANALYSIS

The alternatives not carried forward for further analysis on the basis of the Stage I and II alternative evaluation analyses are described in section 2.3 of the FEIS (CEMVN 2012).

2.4 SUMMARY OF ALTERNATIVES

A summary of the alternatives considered for the proposed highway between I-12 and Bush and the screening process are presented in Table 2-1.

Table 2-1.
Summary of Alternatives

	Alternatives												
Screening Criteria	A	B/O	C/D	E/F/G	H	I	J	K	L	M	N	P	Q
Fatal Flaws													
Direct effects on a wetland mitigation bank				X	X	X			X				
Direct effects on a military installation													
New interchange does not meet AASHTO[a] design criteria								X					
Alternatives Development													
Legislative mandate													
Arterial linkages													
Travel time savings	X		X							X	X		
Traffic congestion reduction													
Alternatives Carried Forward for Impacts Analysis		**B/O**					**J**					**P**	**Q**

Notes
[a] – American Association of State Highway and Transportation Officials
X – Does not meet screening criteria

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SECTION 3.0
AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This section describes environmental, cultural, and socioeconomic conditions in the project area and the surrounding region that could be affected by implementing the proposed action. It depicts conditions as they currently exist or in accordance with the most recent available data. The provided information serves as a baseline from which to identify and evaluate changes resulting from implementing the proposed action and alternatives. A general description of the regional setting, history, and climate is provided in section 3.1 of the FEIS (CEMVN 2012).

3.2 LAND USE AND LAND COVER

"Land use" refers to human use of the land for economic production (i.e., residential, commercial, industrial, recreational, or other purposes) and for natural resource protection, and it generally describes what is practiced, permitted, or planned on the land. "Land cover," an increasingly important attribute of land use, describes what is physically on the ground. It is defined as the type of material that covers the Earth's surface at a specific location at a specific time. For example, the land use in an area might be cropland, but the land cover at a specific location in the area might be an agricultural crop, bare soil, grass, or trees. Similarly, in an area used for single-family residences, the land cover at a specific location might be concrete, grass, or trees. Furthermore, land cover can change dramatically in a short period while land use remains the same.

Land use and land cover, zoning, and future land use are discussed in detail in section 3.2 of the FEIS (CEMVN 2012). As discussed in section 3.2.4 of the FEIS, future land use development is identified at the intersection of I-12 and LA 434. The Tamanend development, proposed by Weyerhaeuser Real Estate Development Company, is an 848-acre mixed-use development that will include commercial offices, residential homes and apartments, and an educational campus adjacent to the development that is being constructed by St. Tammany Parish. The Tamanend development has been permitted and construction of basic infrastructure began in late 2014.

3.3 WATER RESOURCES

Watershed characteristics such as watershed size, overland slope, soil types, land cover, and man-made obstructions all affect drainage patterns and flooding in the project area. According to the U.S. Geological Survey hydrologic unit codes, St. Tammany Parish has four major watersheds: the Bogue Chitto, Lower Pearl, Tangipahoa, and Liberty Bayou-Tchefuncta. Those watersheds are quite expansive and extend up into Washington Parish and Mississippi. Within the watersheds are smaller subbasins that drain into the tributaries and eventually discharge into Lake Pontchartrain, Lake Maurepas, and the Pearl River.

St. Tammany Parish has a generally flat overland slope where water tends to pond where it falls and run off slowly, resulting in localized flooding conditions. The flat topography often makes it difficult to identify the natural drainage paths, which are often interrupted by man-made obstructions such as developments and roadways.

Watershed characterization and drainage patterns, hydrogeology/ground water, water quality, and stormwater management are discussed in detail in section 3.3 of the FEIS (CEMVN 2012).

3.4 ECOLOGICAL AND BIOLOGICAL RESOURCES

A detailed discussion of ecological and biological resources in the project area is provided in section 3.4 of the FEIS (CEMVN 2012). It includes information on vegetative communities, wildlife and fisheries, threatened and endangered species and habitats, sensitive terrestrial and aquatic habitats, and wetlands.

3.5 GEOLOGY AND SOILS

St. Tammany Parish is in the Gulf Coastal Plain physiographic province. More specifically, St. Tammany Parish can be described by four general physiographic areas: forested terrace uplands; broad terraces, also known as Gulf Coast Flatwoods; narrow floodplains of major streams; and marshes and swamps (USDA NRCS 1990). In the project area, topography is generally flat to broadly rolling, incised by many small streams and drains. Elevations range between about 125 feet mean sea level (msl) in the northern portion of the project area near LA 21 and Money Hill, to 30–25 feet msl along I-12 (CEMVN 2008; USGS 1983). The project area is in the general geologic setting of Louisiana's Pleistocene Terraces, consisting largely of alluvial deposits of sand, gravel, and mud underlying raised, flat surfaces with varying degrees of tilt and dissection that were raised as the coastal plain tilted in response to downwarping of the crustal floor of the Gulf of Mexico (LGS 2010). Soils of St. Tammany Parish are generally of alluvial origin.

Geology, soils, and prime farmland are discussed in detail in section 3.5 of the FEIS (CEMVN 2012).

3.6 AIR QUALITY

U.S. Environmental Protection Agency (EPA) Region 6 and the LDEQ Air Quality Assessment Division regulate air quality in Louisiana. The Clean Air Act (42 U.S.C. 7401-7671q), as amended, gives EPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (40 CFR Part 50) that set acceptable concentration levels for six criteria pollutants: fine particles (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), carbon monoxide (CO), nitrous oxides (NO_x), ozone (O_3), and lead. Short-term standards (for 1-, 8-, and 24-hour periods) have been established for pollutants that contribute to acute health effects, while long-term standards (annual averages) have been established for pollutants that contribute to chronic health effects. Each state has the authority to adopt standards stricter than those established under the federal program; however, Louisiana accepts the federal standards.

Worldwide, anthropogenic sources of greenhouse gases (GHGs) are widely believed to be linked to global climate change. 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, titled *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, it generally defers to individual federal agencies to develop 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 EPA 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 the regional, state, or national level. 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.

Air quality, including transportation conformity and climate and GHGs, is discussed in detail in section 3.6 of the FEIS (CEMVN 2012).

3.7 NOISE

As part of this SFEIS, the highway traffic noise study was updated to include an update of existing noise conditions in the vicinity of Alternative Q. The updated highway traffic noise study is included in appendix B. A quantitative, computer-based analysis of the effects of the proposed action on ambient noise levels was performed following the procedures of LADOTD and FHWA. The analysis consisted of evaluating effects on potentially noise-sensitive sites along the project corridor extending from Bush to I-12. The general procedure used to assess these effects include determining noise levels through computer modeling and assessing effects by comparing future modeled noise levels to LADOTD and FHWA criteria.

A discussion of noise fundamentals and a regulatory overview are provided in section 3.7.1 and section 3.7.2, respectively, of the FEIS (CEMVN 2012).

3.7.1 Existing Conditions

Different types of land uses and the human activities associated with them have different sensitivities to changes in ambient noise levels. In general, the area is typically rural, and the properties along the project corridor are typically residential. A majority of the project runs through relatively undeveloped and underdeveloped portions of St. Tammany Parish. Existing sources of noise are similar throughout the parish and include local road traffic, high-altitude aircraft overflights, and natural noises, such as wildlife vocalizations and leaves rustling. The only predominant ongoing source of noise associated with the project areas are existing roadways (e.g., I-12, LA 21, LA 434, LA 435, LA 1088, and Airport Road). Given the lack of other anthropogenic noises, vehicles on the roadways are likely audible for a mile or more, particularly during quiet periods. The noise environment in communities and towns throughout the parish is a mixture of quiet residential and light commercial. Some individual residences, multifamily dwellings, churches, and schools are within 1,000 feet of many of the primary arterials. They are chiefly in the communities and towns throughout the parish, such as Bush and Talisheek.

Background Measurements. A Larson Davis 824 integrating sound-level meter was used for monitoring background noise along the proposed route. The sound-level meter meets the requirements for ANSI S1.4-1983 Type 1 or better meters. The instrument was configured to measure and store the average, maximum, and minimum sound levels (i.e., L_{eq}, L_{max}, and L_{min}) as well as a number of other noise metrics and sound levels in each third-octave frequency band. The microphone was fitted with a windscreen to reduce wind-generated noise and mounted on a tripod at a height of approximately 5 feet above the ground.

Sound levels were collected at nine locations along Alternative Q (Figure 3-1): six as background measurements and three for model validation. A summary of the background sound levels (L_{eq}) is presented in Table 3-1. The average sound level (L_{eq}) ranged from 38.5 to 59.5 dBA at the monitoring sites. Notably, the wind was calm (less than 2 miles per hour [mph]) during the measurements, and insect noise was a substantial portion of the background noise environment in Bush and Talisheek (i.e., M1 through M4). Notably, noise measurements at the hospital (i.e., M5 and M6) were dominated by automobile traffic from I-12 and LA 434, and distant industrial noise.

Table 3-1.
Background Sound Level Measurements

Location	Sound Levels L_{eq}(1) (dBA)
M1: Ball Field Complex South of Bush	41.9
M2: South of Bush	38.5
M3: North of Talisheek	49.3
M4: South of Talisheek	40.2
M5: Hospital—100' from Centerline	59.5
M7: Hospital—Near Emergency Entrance	52.4

Figure 3-1. Noise Measurement Locations

Model Validation. Three locations were selected for model validation adjacent to LA 435 near I-12, as it is the only area with a roadway segment currently in place. To validate the noise model, the noise levels measured in the field were compared to the noise levels predicted by the model using the roadway parameters and traffic data collected at each site. Table 3-2 compares the field measurements to the modeled sound levels. Since the modeled results are within 3 dBA of the measured noise levels, no further action is required; the model was used to determine future noise levels.

Table 3-2.
Sound Level Measurements for Model Validation

	Sound Levels [L_{eq}(dBA)]		
Location	**Modeled**	**Measured**	**Difference**
M6: Park and Ride—100' from Centerline	59.6	60.6	1.0
M8: Park and Ride—200' from Centerline	56.6	54.5	2.1
M9: Park and Ride—400' from Centerline	48.9	48.8	0.1

Existing Levels. Because of the rural nature of the area, it is clear that existing noise levels at locations of interest are predominantly from primary and secondary roadways; therefore, existing traffic noise was modeled and added to background sound levels. Existing noise levels for Alternative Q were predicted using the FHWA highway traffic noise prediction model, Traffic Noise Model (TNM) 2.5. This model uses the number and types of vehicles on an existing or planned roadway, their speeds, and the physical characteristics of the road (e.g., curves, hills, depressed, elevated). Each existing roadway was modeled—assuming no special noise abatement measures would be incorporated—and the roadway sections were assumed at-grade. Since the existing roadways do not experience appreciable traffic congestion, it was assumed that the peak-hour volumes and corresponding speeds for trucks and automobiles would result in the noisiest conditions. During all other periods, the noise levels would be less than those indicated herein. The following roadways have the most traffic in the study area and were included in the noise evaluation: LA 21, LA 41, LA 36, LA 435, LA 434, LA 1088, and Airport Road.

Receptors (i.e., residential neighborhoods, parks, churches, schools, hospitals, libraries) within one mile of the proposed highway were identified (Figure 3-2). Notably, due to the rural nature of the study area, the vast majority of noise receptors are residential. Noise predictions of $L_{eq}(h)$ for representative receptors near roadways of interest in the study area are outlined in Table 3-3. Under existing conditions, only one residence identified equaled or exceeded the noise abatement criteria (NAC) for category B of L_{eq} greater than 66 dBA.

Table 3-3.
Sound Levels—Existing Conditions

Number of Receptors		L_{eq}[1hr]		Above the NAC
		a.m.	p.m.	
829	Maximum	66.8	65.6	1
	Minimum	36.3	36.3	
	Median	37.9	37.4	

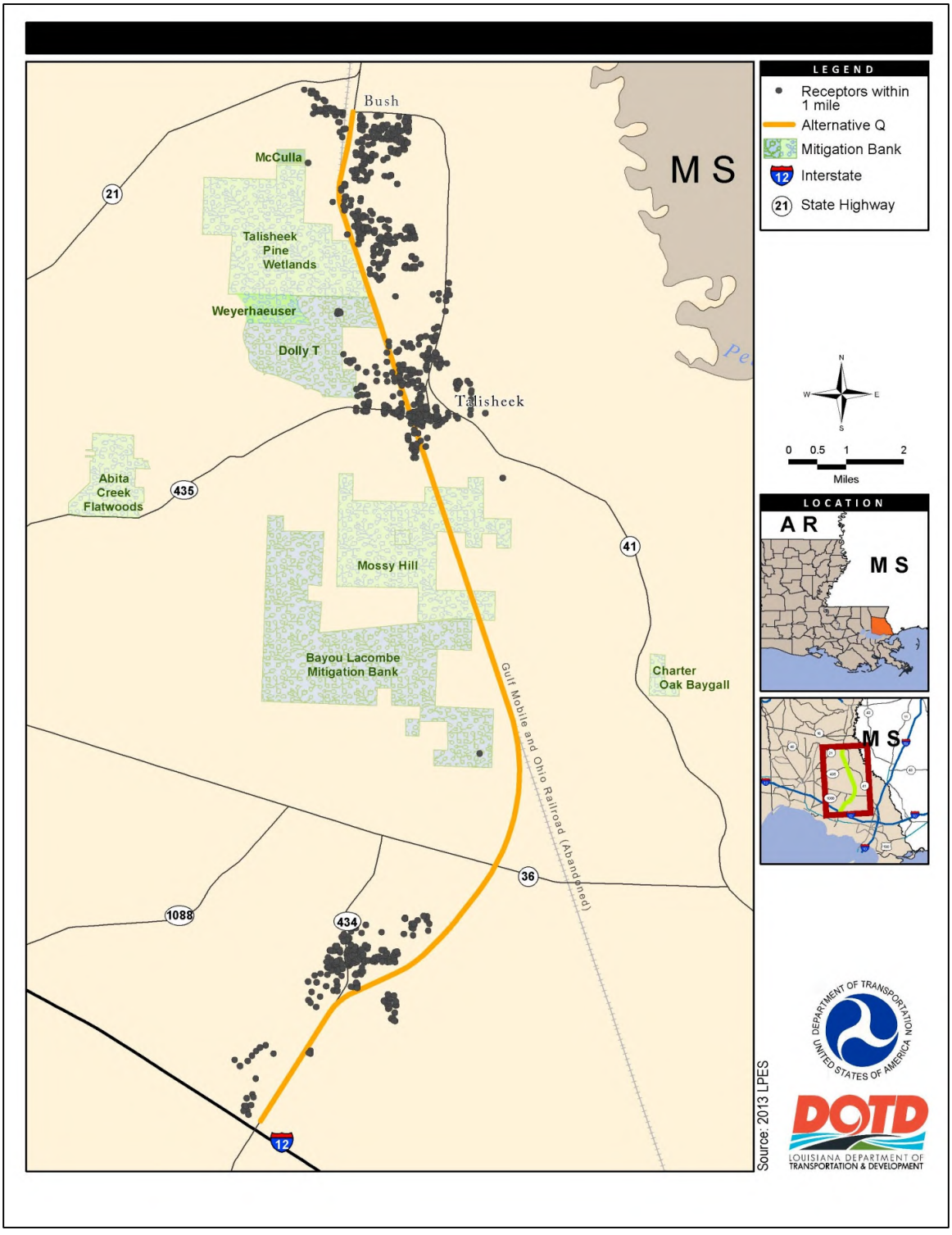

Figure 3-2. Noise Sensitive Receptors within 1 Mile of Alternative Q

3.8 RECREATIONAL RESOURCES

Tourism in Louisiana generates $8.3 billion in annual spending in Louisiana businesses and more than $5 billion in employee wages. Louisiana hosts approximately 23.3 million visitors each year to sustain more than 124,000 direct jobs in a variety of sectors (LDRCT 2011). In Louisiana, nature-based tourism and visitors to rural areas ranked slightly higher (35.5 percent) than New Orleans (35 percent) (Louisiana Sea Grant 2006). St. Tammany Parish's rural character and location just north of New Orleans makes the parish a popular tourist destination.

St. Tammany Parish has seen an increase in tourism because of the economic downturn in 2008—with a 70 percent increase in the number of tourists along the north shore and a 37 percent increase in the number of tourists visiting Tammany Trace (Alexander-Bloch 2009). The parish ranked 9th in 2008 in the state with $195 million spent by travelers, up 10 percent from 2007 (RDUSTA 2009). The parish was featured in the May/June 2009 issue of *National Geographic* as the destination for Great Long Weekends, America Coast to Coast for Louisiana (National Geographic 2009). Recreational resources not impacted by Alternative Q are discussed in detail in section 3.8 of the FEIS (CEMVN 2012).

As part of this SFEIS, a *de minimis* section 4(f) evaluation was prepared to address the requirements of 23 CFR part 774 for impacts to land from publicly owned parks, recreation areas, wildlife and waterfowl refuges, and public or private historic sites for federal highway projects. The *de minimis* section 4(f) evaluation report is included in appendix C.

3.8.1 Recreation Districts

St. Tammany Parish council divided the parish into 16 recreation districts to maintain and operate parish-owned recreational facilities (St. Tammany Parish Recreation District 2009). Recreation districts #1, 2, 4, 5, 7, 10, 11, and 16 are within the project area. Each recreation district operates as a free-standing government agency and operates and maintains community recreation centers, including ball parks, sports fields, gymnasiums, convention centers, boat launches, and parks in or near cities and towns in the district.

The only section 4(f) land identified in the Alternative Q project area is the Bush Recreational Center. St. Tammany Parish Recreation District #2 owns and operates the center, an 18-acre recreation complex approximately 0.4 mile south of the LA 21/LA 41 intersection on the west side of Watts Thomas Road. The complex consists of four baseball/softball fields, a soccer field, a basketball court, and a gymnasium. St. Tammany Parish Government District #6 has jurisdiction over the northeastern portion of the parish, which includes the recreation center and provides assistance to Recreation District #2 in meeting their goals.

A coordination letter was hand-delivered to Recreation District #2 on September 2, 2014, to request concurrence for the *de minimis* impact finding and an opinion of the finding. On September 9, 2014, the board of Recreation District #2 agreed that the impacts of Alternative Q would be *de minimis* and suggested consideration of additional protection measures (e.g., a solid fence and uncleared buffer and/or crash barrier).

3.9 TRAFFIC AND TRANSPORTATION

A detailed discussion of traffic and transportation is provided in section 3.9 of the FEIS (CEMVN 2012). This traffic study is provided in appendix E of the FEIS and includes documentation of

existing traffic volumes, a capacity analysis, and a safety discussion, and incorporates results from the economic study report.

3.10 UTILITIES

Utilities in the project area service the residents and businesses of St. Tammany Parish, and transmission lines traverse the parish to service other regions of the state. Utilities consist of water, wastewater, stormwater, solid waste, hazardous waste, telecommunications, and energy services. The primary public utility providing water and sewer service is St. Tammany Utilities; however, the rural character of the project area limits the network of collection and distribution systems providing water, sewer, and gas services.

Water and wastewater, electrical, telephone, cable, Internet, and oil and gas services are discussed in detail in section 3.10 of the FEIS (CEMVN 2012).

3.11 SOCIOECONOMICS

The analysis of socioeconomic resources that could be affected by the project is divided into six subsections: demographics; economic development (i.e., employment and income analysis); housing stock; quality of life characteristics (education, public safety [law enforcement and fire protection]) and health care; environmental justice; and protection of children. For purposes of the socioeconomic analysis, the appropriate socioeconomic region of influence (ROI) is two Louisiana parishes—St. Tammany and Washington. Details of the socioeconomic study, including methodology and modeling, are provided in the economic study report included as appendix F in the FEIS.

Socioeconomic resources are discussed in detail in section 3.11 of the FEIS (CEMVN 2012).

3.12 AESTHETIC AND VISUAL RESOURCES

Aesthetics and visual resources are the natural and man-made features of a landscape. They consist of cultural and historic landmarks, landforms of beauty or significance, water surfaces, and vegetation. Together, those features form the overall impression that a viewer receives of an area or its landscape.

Visual environments are key contributors to people's daily experiences and life styles and can significantly affect mood and the feeling of well-being. Major public improvement projects and facilities can have varying degrees and types of effects on the visual environment. The effects can range from very significant to hardly noticeable. Visual environments can be viewed as negative, or they can improve and contribute in a positive way to the appearance and image of a community. Although there is an inherent subjective nature to aesthetic evaluation, this section focuses on qualifying change by examining what is considered *noticeable* and its integration into the natural environment.

Aesthetic and visual resources are discussed in detail in section 3.12 of the FEIS (CEMVN 2012).

3.13 CULTURAL RESOURCES

Cultural resources are aspects of the physical environment that relate communities to their culture and history. They provide an identity for the community and link them to their surroundings. Cultural resources include tangible remains of human-influenced activities, including prehistoric

and historic archaeological sites, buildings, structures, objects, and districts. They also include intangible aspects of the natural environment, such as landscapes, places, topographic features, or biota that are a part of the traditional way of life and practices associated with community values and institutions.

A detailed discussion of cultural resources, including prehistoric and historic background and cultural resources compliance, is provided in section 3.12 of the FEIS (CEMVN 2012). As part of this SFEIS, the cultural resources survey was updated to include the revised alignment of Alternative Q near LA 434. The updated cultural resources survey is included in appendix D. This revised alignment routes Alternative Q away from the original alignment and further northwestward towards the community of St. Tammany. The survey area measures approximately 2.8 miles in length with some overlap with previously surveyed alignments. In addition, the survey was conducted at the intersection of LA 434 and Krentrel Road and North Dixie Road. In total, approximately 73.2 acres were surveyed. During the survey, no archaeological sites or standing structures older than 50 years were recorded.

3.14 HAZARDOUS AND TOXIC MATERIALS

LDEQ, in conjunction with EPA, administers specific environmental statutes and regulations governing hazardous material and hazardous-waste management activities in Louisiana. For the purpose of this analysis, the terms "hazardous waste," "hazardous materials," and "toxic substances" include substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act—also known as Superfund, the Resource Conservation and Recovery Act, or the Toxic Substances Control Act. In general, they include substances that, because of their quantity; concentration; or physical, chemical, or toxic characteristics, can present substantial danger to public health or welfare of the environment if released into the environment.

A "recognized environmental condition" is defined in American Society of Testing Materials Standard E 1527-05 as "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate a release, a past release, or a material threat of a release of any hazardous substances or petroleum products even under conditions in compliance with laws." The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

As part of this SFEIS, a phase I environmental site assessment was prepared for Alternative Q and is included in appendix E. No recognized environmental conditions were identified during the assessment (Tetra Tech 2013).

SECTION 4.0
ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This section presents the results of the analysis of direct, indirect, and cumulative environmental and socioeconomic impacts that would likely occur from implementing the proposed action, Alternative Q. In addition, this section identifies any adverse unavoidable environmental effects, the relationship between short-term environmental uses and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitment of resources involved with implementing the proposed action. Section 4.0 of the FEIS addresses the environmental consequences for the No Build Alternative, Alternative B/O, Alternative J, Alternative P, and Alternative Q in detail (CEMVN 2012). This SFEIS summarizes the impacts to Alternative Q from the FEIS and additional impacts from Alternative Q based on FHWA review guidelines and regulations.

Note: Potential environmental and/or socioeconomic impacts and changes identified throughout section 4.0 that could result from future growth or *induced development* following construction are speculative. Those changes are influenced by and dependent upon a multitude of factors and variables, including national and regional economics, population growth, employment opportunities, housing availability, and social issues. While addressed in this evaluation to assist in informed agency decision-making, such potential changes are ultimately uncertain.

4.1.1 Direct versus Indirect Impacts

The terms *impact* and *effect* are synonymous as used in this SFEIS. Impacts could be beneficial or adverse and could apply to the full range of natural, aesthetic, historic, cultural, and economic resources of St. Tammany Parish. Definitions and examples of direct and indirect impacts as used in this document are as follows:

- ***Direct Impact.*** A direct impact would be caused by implementing the proposed action and would occur at the same time and place. Direct impacts are impacts that could happen during construction within or adjacent to the 250-ft ROW of the proposed action.
- ***Indirect Impact.*** An indirect impact would be caused by operating the proposed action and would occur later in time or farther removed in distance, but it would still be a reasonably foreseeable outcome of the action. Indirect impacts could include induced changes in the pattern of land use, population density, or growth rate, and indirect impacts on air, water, and other natural resources and social systems. Indirect impacts could occur beyond the 250-ft ROW of the proposed action and after project construction is complete.
- ***Direct versus Indirect Impacts.*** For direct impacts to occur, a resource must be present. For example, if highly erodible soils were disturbed as a direct result of using heavy equipment during construction of an alternative, there could be a direct impact on soils due to erosion. This could later indirectly affect water quality if stormwater runoff containing sediment from the construction site entered adjacent water bodies.

4.1.2 Short-term versus Long-term Impacts

Impacts are also expressed in terms of duration. Short-term impacts typically last less than one year. For example, the construction of an alternative would likely expose soil in the immediate

area of construction. However, this impact would be considered short-term because it would be expected that vegetation would be reestablished on the disturbed area within a year of the disturbance. Long-term impacts typically last beyond one year and can potentially continue into perpetuity, in which case they would also be described as permanent.

4.1.3 Cumulative Impacts

Increasing evidence indicates that the most severe environmental consequences do not result from the direct impacts of any particular action but from a combination of impacts of multiple, independent actions over time. As defined in 40 CFR 1508.7 (CEQ regulations), a cumulative impact is the "impact on the environment which 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 nonfederal) or person undertakes such other actions." Some authorities contend that most environmental impacts could be seen as cumulative because almost all systems have already been modified. Table 4-1 presents the principles of cumulative impacts analysis, as described in the CEQ guide *Considering Cumulative Impacts under the National Environmental Policy Act*.

Table 4-1.
Principles of Cumulative Impacts Analysis

Cumulative impacts are caused by the aggregate of past, present, and reasonably foreseeable future actions.
Cumulative impacts are the total impacts, including both direct and indirect impacts, on a given resource, ecosystem, and human community of all actions taken, no matter who (federal, nonfederal, or private) has taken the actions.
Cumulative impacts need to be analyzed in terms of the specific resource, ecosystem, and human community being affected.
It is not practical to analyze the cumulative impacts of an action on the universe; the list of environmental impacts must focus on those that are meaningful.
Cumulative impacts on a given resource, ecosystem, and human community are rarely aligned with political or administrative boundaries.
Cumulative impacts could result from the accumulation of similar impacts or the synergistic interaction of different impacts.
Cumulative impacts could last for many years beyond the life of the action that caused the impacts.
Each affected resource, ecosystem, and human community must be analyzed in terms of the capacity to accommodate additional impacts, based on its own time and space parameters.

4.1.4 Intensity of Impacts

The following terms are used to describe the degree of direct and indirect impacts, whether they are adverse or beneficial:

- Negligible: the impact is at the lowest levels of detection.
- Minor: the impact is slight but detectable.
- Moderate: the impact is readily apparent.
- Major: the impact is severely adverse or exceptionally beneficial.

The descriptor "major" does not imply a significant impact (see below) unless specifically stated.

4.1.5 Significance

In accordance with CEQ regulations and implementing guidance, impacts are also evaluated in terms of being significant. The term "significant," as defined in 40 CFR 1508.27, part of the CEQ regulations for implementing NEPA, requires considerations of both context and intensity. "Context" means that the significance of an action must be analyzed in several settings, such as society as a whole, the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend on the impacts on the locale rather than on the world as a whole. Both short- and long-term impacts are relevant to the consideration of the significance of an impact.

"Intensity" refers to the severity of the impact and includes the ratings defined in section 4.1.4 (i.e., negligible through major). Factors contributing to the evaluation of the intensity of an impact include the following:

- The balance of beneficial and adverse impacts in a situation where an activity has both.
- The degree to which the action affects public health or safety.
- The unique characteristics of the geographic area of the proposed action, such as proximity to parklands, historic or cultural resources, wetlands, prime farmlands, wild and scenic rivers, and ecologically critical areas.
- The degree to which the impacts on the quality of the human environment are likely to be controversial.
- The degree to which the impacts of the action on the quality of the human environment are likely to be highly uncertain or involve unique or unknown risks.
- The degree to which the action might establish a precedent for future actions with significant impacts or represent a decision in principle about a future consideration.
- Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action "temporary" or by breaking it down into small component parts.
- The degree to which the action might adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP or might cause loss or destruction of significant scientific, cultural, or historical resources.
- The degree to which the action might adversely affect an endangered or threatened species or habitat that has been determined to be critical under the ESA.
- Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

4.1.6 Rationale for Alternative Analysis

The alternatives carried forward for detailed analysis in the FEIS were the No Build Alternative, Alternative B/O, Alternative J, Alternative P, and Alternative Q. Section 4.0 of the FEIS addresses the environmental consequences for those alternatives in detail; the underlying rationale for each of the alternatives developed for analysis is provided in sections 2.1 and 2.2 of the FEIS (CEMVN 2012). The following subsections address any additional impacts from the proposed action, Alternative Q, for noise; cultural resources; recreation resources; and hazardous, toxic, and radioactive materials. Impacts of Alternative Q on land use, water resources, ecological

resources, geology and soils, air quality, and socioeconomics are summarized below and addressed in additional detail in section 4.0 of the FEIS (CEMVN 2012).

4.2 LAND USE

Implementation of Alternative Q would result in short- and long-term adverse impacts to environmental resources in the project area. Existing land cover would be replaced with impervious road surfaces and a simplified habitat of grasses and herbaceous material in the 250-ft ROW. Approximately 100 acres of pine flatwoods habitat within the ROW would be permanently lost and converted to impervious cover and simplified grassland habitat. Approximately 335 acres of wetlands in the proposed ROW would be permanently lost to construction, clearing, and filling activities. An additional 231 acres of wetlands outside of the ROW could be impacted.

Direct and indirect impacts to land use and land cover, zoning, and future land use are discussed in detail in section 4.2 of the FEIS (CEMVN 2012).

4.3 WATER RESOURCES

Alternative Q proposes work in wetlands and structural crossings along various waterways in the project area. To evaluate the direct and indirect impacts to water resources, hydrologic modeling, hydraulic analysis, and indirect wetland impact analysis were performed for existing conditions. Details of the methodology, modeling, and model results are provided in the hydrology and hydraulics report in appendix G of the FEIS (CEMVN 2012).

Direct and indirect impacts to water resources are discussed in detail in section 4.3 of the FEIS (CEMVN 2012).

4.4 ECOLOGICAL RESOURCES

Construction of Alternative Q would result in fragmentation of existing habitats, causing direct and indirect impacts to wildlife. Clearing the ROW would cause localized and temporary dispersal impacts, but wildlife would be expected to return to adjacent areas after construction is complete and the area is revegetated. Aquatic species could be impacted as a result of changes in hydroperiod, an increase in sediment and/or pollutants, and alteration of aquatic habitats. An increase in light and noise as a result of increased traffic could affect migration, breeding, and nesting of wildlife in the vicinity of the roadway. Impacts to threatened or endangered species would not be expected.

Wetland functions and services and the plant and animal communities that inhabit the wetland are largely determined by hydrology. Wetland functions include water storage, transformation of nutrients, growth of living matter, and wildlife habitat. Construction of the roadway could impede channel and overland flow, resulting in oversaturated and ponded areas or drought areas in adjacent wetlands. A vegetative shift could be observed with increased duration of ponding or drought conditions. This change in vegetative complex could reduce the amount of wetlands throughout the study area, especially those located in the vicinity of the new roadway. This shift in vegetative complex could directly impact the pine flatwood wetlands throughout the project area. Pine flatwoods in the area could decline in coverage and be replaced with bayhead swamp species.

Direct and indirect impacts to ecological resources are discussed in detail in section 4.4 of the FEIS (CEMVN 2012).

4.5 GEOLOGY AND SOILS

Removal of surface material and placement of borrow material would directly impact soils in the project area during the construction of the new roadway. The excavation and deposition of fill material would alter natural contours and elevations, increasing slopes along the entire length of the proposed alignment. Additionally, native soil profiles would be altered by the redistribution of area soils and the introduction of foreign soils to the area. Compaction of the substrate would occur during the construction phase and continue over time with project use. Soil compaction would decrease surface and substrate porosity, forming barriers to surface and subsurface water flow.

Direct and indirect impacts to geology and soils are discussed in detail in section 4.5 of the FEIS (CEMVN 2012).

4.6 AIR QUALITY

Short- and long-term minor adverse impacts to air quality would be expected from implementing the proposed action. Short-term impacts would be primarily caused by construction of the proposed highway. Long-term impacts would be caused by the increase in traffic in the study area and rerouting of traffic to areas where previously there was none.

Construction would require the use of equipment that would emit small amounts of criteria pollutants and GHGs. Emissions from the use of heavy trucks, fugitive particles from surface disturbance, and workers' commutes would be in quantities of pollutants emitted by small quantities from construction and would not contribute to violation of any federal, state, or local air regulations. It is expected that GHG emissions from construction activities would be well below the CEQ presumptive effects threshold.

Both FHWA and LADOTD 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 DOT Center for Climate Change and Environmental Forecasting and 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.

LADOTD is focusing on reducing energy consumption (particularly fossil fuels) by funding Travel Demand Management strategies that reduce air pollution and GHGs, and support the nation's goal of energy independence. Examples of efforts undertaken by the state are the promotion of flex time, compressed work weeks, telecommuting, and ride share and publicizing transit services already available. LADOTD might use Congestion Mitigation and Air Quality 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. The department also is considering increasing Traffic System Management activities that are beneficial to air quality, including intersection improvements, upgrading signal equipment (e.g., using LED signal heads that are more energy efficient), signal coordination, network surveillance and incident management, and work zone management. LADOTD might also use funds for reforestation of highway ROWs (outside of the roadside recovery area) to increase absorption of pollutants and carbon dioxide. LADOTD invests in transit and highway capacity to reduce energy consumption, which is a common strategy for reducing air pollution, reducing GHGs, and helping the nation achieve energy independence.

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

Direct and indirect impacts to air quality are discussed in detail in section 4.6 of the FEIS (CEMVN 2012).

4.7 NOISE

A noticeable increase in the level of traffic noise (>3 dBA) would be expected for all receptors within approximately 1 mile of the proposed control of access highways proposed under Alternative Q. Beyond this distance, the change in noise would be barely perceptible. There would be an appreciable increase in the level of traffic noise (>10 dBA) for all receptors within approximately one-half mile of the proposed highways proposed under Alternative Q. Four receptors would approach or exceed the NAC for category B, 67 receptors would experience a greater than 10 dBA increase, and one receptor would meet both criteria when compared to existing conditions.

Moderate noise impacts would be expected during construction and with use of the proposed highway. As described in the highway traffic noise study update, Alternative Q would have short- and long-term minor adverse impacts to the noise environment at the Bush Recreational Center. Construction activities would cause the short-term impacts. Long-term effects would primarily be due to changes in traffic noise at the Bush Recreational Center.

Construction activities would cause short-term direct impacts. As with any major construction project, areas around the construction site are likely to experience varied periods and degrees of noise. Individual pieces of construction equipment typically generate noise levels of 80–90 dBA at a distance of 50 feet (FHWA 2006). Locations within 800 feet would experience appreciable levels of heavy equipment noise. Because construction activities would be confined primarily to daytime hours, noise at the Bush Recreational Center would be clearly audible. Highway construction activities would normally be conducted during daytime hours. Equipment would not be fixed in one location for long durations, but would progress along the ROW, and noise would be temporary and subside as the highway construction progresses to subsequent segments.

Background levels were measured at the baseball field complex within the Bush Recreational Center. Existing and future traffic noise was predicted using the FHWA highway traffic noise prediction model, TNM 2.5, with and without the proposed highway (Table 4-2). The complex would experience a greater than 10 dBA increase in noise with the proposed roadway during peak traffic periods when compared to existing conditions.

A relatively small number of receptors along the proposed roadway were identified that would approach the NAC or experience a greater than 10 dBA increase in noise under future conditions. Noise abatement measures were considered for the entire project, including the use of noise barriers. Noise barriers would either (1) not be feasible, as they would not provide at least a 5 dBA reduction for 75 percent of impacted first row receptors, or (2) would not be reasonable, as the cost would be greater than $35,000 per benefited receptor, including the ball field.

Table 4-2.
Sound Measurements and Predicted Traffic Noise at the Bush Recreational Center

	Sound Levels [dBA][a]	
Measured Background (2013)	L_{eq} = 41.9	
Peak Traffic Period (L_{eq})	a.m.	p.m.
Existing (2010)	48	46
No Build (2035)	52	52
Build (2035)	66	67
Difference (Build minus Existing)	18	21

[a] L_{eq} is the average sound level over a given period.

The approximate distance to the 66 dBA noise contour for the Design Year (2035) Build condition is provided in Table 4-3. Local planning officials can use the noise contour information in an effort to avoid development of noise-sensitive land uses on currently undeveloped lands in the study area.

Table 4-3. Design Year (2035) Noise Contours

Roadway Segment	Approximate Distance to 66 dBA from the Proposed Roadway (feet)[1]
I-12 to LA 36	188
LA 36 to LA 435	199
LA 435 to LA 41	188

[1] Distance from the nearest edge of proposed travel lane.

Direct and indirect impacts to noise levels are discussed in detail in appendix B.

4.8 RECREATION RESOURCES

One recreation feature would be indirectly impacted by Alternative Q. Approximately 0.01 acre for the proposed ROW of Alternative Q is anticipated to have a *de minimis* impact on the Bush Recreational Center in St. Tammany Parish. The recreation center is less than one-half mile south of LA 41. The ROW is adjacent to the northwest end of the outfields of the baseball field complex, but would not directly impact use of the complex (Figure 4-1). It would not require any alterations to the baseball fields or the facility. Fences would not require relocation. A coordination letter was hand-delivered to Recreation District #2 on September 2, 2014, to request concurrence for the *de minimis* impact finding and an opinion of the finding. On September 9, 2014, the board of Recreation District #2 agreed that the impacts would be *de minimis* and suggested consideration of additional protection measures (e.g., a solid fence and uncleared buffer and/or crash barrier.

The clearing of undeveloped land to construct new sections of the alignment could result in the loss or degradation of fish and wildlife habitat that are used for nature-based recreation. Individuals traveling to the area for bird watching, hunting and fishing, and other nature-based recreational opportunities could see a decrease in the available natural areas that play host to these opportunities.

Direct and indirect impacts to recreation resources are discussed in detail in section 4.8 of the FEIS (CEMVN 2012).

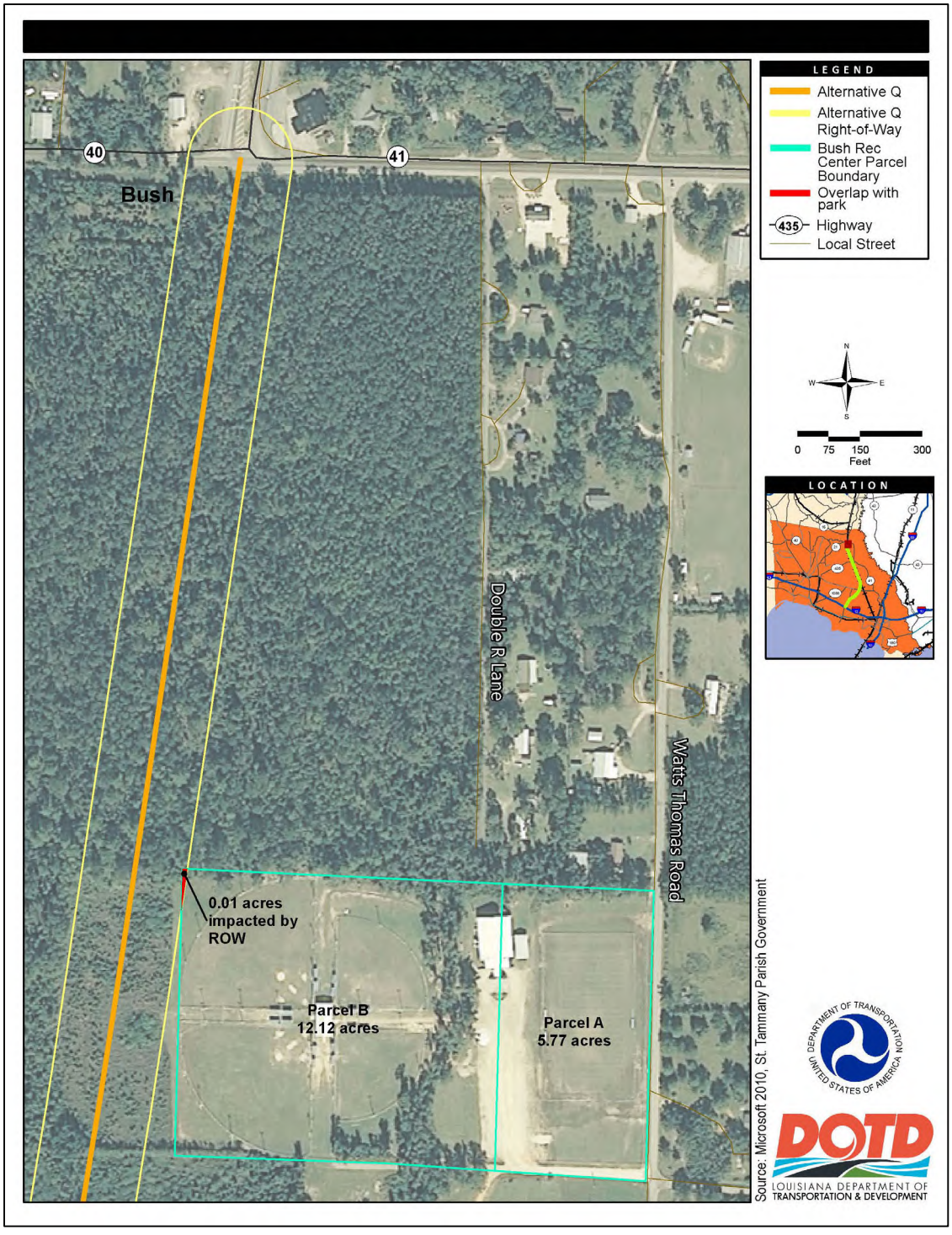

Figure 4-1. Bush Recreational Center

4.9 TRAFFIC AND TRANSPORTATION

Short- and long-term beneficial impacts to traffic and transportation would be expected. Alternative Q is also expected to divert traffic mainly from LA 41, LA 21, and LA 59 because of its location within the study area and connection points to the existing street network. The travel time savings expected with Alternative Q improves compared to the existing routes involving LA 41, LA 21, and LA 59. Alternative Q is expected to provide improvements in LOS and/or delay on the congested LA 21 and LA 59 corridors. The greatest savings in travel time is expected compared to the existing routes between Bush and the I-12 at U.S. 190 and I-12 at LA 434 interchanges. Capacity analysis for the implementation and design years indicates excess capacity at the intersections in the western portion of the project area. How long beneficial effects at intersections on existing routes would last depend on whether improvements are provided to existing intersections and when the improvements are implemented.

Direct and indirect impacts to traffic and transportation are discussed in detail in section 4.9 of the FEIS (CEMVN 2012).

4.10 UTILITIES

Existing electrical, telephone, and cable lines located on overhead poles would be expected to be relocated along the ROW where Alternative Q would overlap with LA 434 and at each intersection crossing. Substations located in the project area would be avoided. Estimated utility relocation costs for Alternative Q are $3 million.

Direct and indirect impacts to utilities are discussed in detail in section 4.10 of the FEIS (CEMVN 2012).

4.11 SOCIOECONOMICS

Under Alternative Q, the economic impact of project-related activities would be expected to be very minor. In all years 2010–2050 and in the ROI as a whole and in St. Tammany and Washington parishes individually, the project-related impacts, the annual changes over/under the applicable baselines, would be less than 0.14 percent. The economic impact in the ROI of the proposed project to the regional population, employment, GDP, and real personal income would be positive, but not statistically significant.

Direct and indirect impacts to socioeconomics are discussed in detail in section 4.11 of the FEIS (CEMVN 2012).

4.12 ENVIRONMENTAL JUSTICE

The socioeconomic and other environmental impacts during preconstruction and construction are minor and generally beneficial in that temporary and permanent jobs would be created. No adverse environmental justice impacts would be expected during the preconstruction or construction period to any population. No adverse socioeconomic or other environmental justice impacts would be expected during the post construction period. Additionally, there are no major and adverse environmental justice impacts to any population expected during the preconstruction, construction, or post-construction period. Minority and low-income populations would benefit from the project-related economic development because of increases in employment opportunities, the improved real personal income, and the growth in regional GDP.

Direct and indirect impacts to environmental justice are discussed in detail in section 4.12 of the FEIS (CEMVN 2012).

4.13 CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

No adverse environmental consequences would be expected for the health and safety of the children in the region under Alternative Q.

Direct and indirect impacts to children's environmental health and safety are discussed in section 4.13 of the FEIS (CEMVN 2012).

4.14 AESTHETIC AND VISUAL RESOURCES

Direct impacts to aesthetic and visual resources at the Bush Recreational Center would be moderate. Trees would be removed and the highway would be visible from the baseball complex.

Direct and indirect impacts to aesthetic and visual resources are discussed in section 4.14 of the FEIS.

4.15 CULTURAL RESOURCES

A phase I cultural resources survey for Alternative Q was conducted between April and October 2010. A second cultural resources survey was conducted in October 2013 to address the section of the realigned portion of Alternative Q and two ancillary roads. No archaeological sites or standing structures older than 50 years were documented along the proposed highway realignment.

Direct and indirect impacts would not be expected to cultural resources under the proposed action. The only site identified as being affected by this alignment is the New Orleans Great Northern Railroad. The railway was abandoned in the late twentieth century. The majority of the railroad has been destroyed and most of the alignment is now used as a logging road. Additionally, nine standing structures older than 50 years were identified along Alternative Q. None of the newly recorded sites is considered eligible for nomination to the NRHP.

If any archaeological cultural resources are encountered during project activities, work would cease and the State Historic Preservation Office (SHPO) would be consulted immediately.

Direct and indirect impacts to cultural resources are discussed in detail in section 4.15 of the FEIS (CEMVN 2012).

4.16 HAZARDOUS AND TOXIC SUBSTANCES AND POLLUTION

A phase I environmental site assessment conducted for Alternative Q in October 2013 found no recognized environmental conditions that would be expected to impact the construction and operation of Alternative Q.

Short-term minor adverse impacts would be expected from hazardous materials used and wastes generated during construction because the use of those materials and generated wastes could create a potential for hazardous spills. Construction contractors would be required to comply with all local, state, and federal regulations pertaining to the handling and management of hazardous materials waste.

Additionally, construction, ground clearing, leveling, and excavation could reveal hazardous materials stored in underground storage tanks or reveal historic spills. If such conditions are discovered during construction, construction contractors would be required to take appropriate measures to remediate the area and remove any existing soil, surface water, or ground water contamination in accordance with state and federal environmental regulations.

Homes and buildings that would be acquired as part of the ROW could be demolished and generate short-term minor adverse impacts. Each building should first be investigated for the presence of asbestos siding and lead-based paint, and construction contractors would be required to conduct demolition and debris disposal in accordance with state and federal regulations. Notification to EPA is required under 40 CFR 60.145, *Standard for Demolition and Renovation*.

Direct and indirect impacts to hazardous and toxic substances and pollution are discussed in detail in section 4.16 of the FEIS (CEMVN 2012).

4.17 SUMMARY OF CONSEQUENCES

A summary of the potential environmental and socioeconomic consequences of the No Build Alternative and Alternative Q is presented in Table 4-4.

4.18 CUMULATIVE IMPACTS

CEQ regulations define a "cumulative impact" as "the impact on the environment which 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 nonfederal) or person undertakes such other actions" (40 CFR 1508.7).

Actions in the project area that pose the potential for cumulative environmental or socioeconomic impacts are discussed in detail in section 4.18 of the FEIS.

4.19 UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts are environmental impacts beyond which could be reduced through mitigation. The principal unavoidable adverse impacts on the environment are summarized in section 4.19 of the FEIS.

4.20 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible commitment of resources would be expected to result directly from construction of the proposed roadway because these resources would be expended in a way that could not be recovered once committed to the proposed project. They are discussed in section 4.20 of the FEIS.

4.21 MITIGATION SUMMARY

Mitigation is an important component of the NEPA process that is used to avoid, minimize, or compensate for adverse environmental impacts associated with the proposed action. Mitigation actions are considered throughout the NEPA process to develop the proposed action and alternatives. Provisions regarding FHWA's legal responsibility and authority for mitigating project impacts are found in FHWA's environmental regulations at 23 CFR 771.105(d).

A detailed discussion of the mitigation measures that could be implemented due to direct and indirect impacts from Alternative Q is provided in section 4.21 of the FEIS.

Additionally, LADOTD and FHWA met with the U.S. Fish and Wildlife Service (USFWS) to discuss impacts on upland migratory bird habitat and mitigation that would be required. USFWS provided comments on the NOI to adopt the USACE EIS published by FHWA for the I-12-to-Bush project.

A breakdown of upland habitat was provided to USFWS that included classification and acreage for both the direct and indirect areas of impact. USFWS evaluated upland habitat impacted by Alternative Q, which will be used to review larger contiguous areas along the proposed route. That information will determine the size and quality of the upland habitats impacted that will require upland MBTA mitigation. Those areas will be incorporated into the wetland mitigation plan. Additional MBTA mitigation required by USFWS will also be included in the wetland mitigation plan for wetland areas. USFWS also indicated that under the MBTA that clearing and grubbing outside of the nesting season would be acceptable without their issuing permits for potential nest disturbance.

Table 4-4.
Summary of Potential Physical, Natural, and Social Environmental Consequences

Resource Area	No Build Alternative		Alternative Q	
	Direct Impacts	***Indirect Impacts***	***Direct Impacts***	***Indirect Impacts***
Land Use	None (Section 4.2.1)	None (Section 4.2.1)	Long-term major adverse and short-term minor adverse (Section 4.2.2.4)	Long-term major adverse (Section 4.2.2.4)
Water Resources	None (Section 4.3.1)	None (Section 4.3.1)	Long-term major and moderate adverse (Section 4.3.2)	Long-term major and moderate adverse (Section 4.3.2)
Ecological Resources	Section 4.4.1	Section 4.4.1	Section 4.4.2.4	Section 4.4.2.4
Land Cover	None	None	Long-term major adverse	Long-term moderate adverse
Wildlife	None	None	Long-term major adverse	Short-term minor adverse
Sensitive Habitats	None	None	Long-term major adverse	Short-term minor adverse
T&E Species	None	None	None	Long-term minor adverse
Wetlands	None	None	Long-term major adverse	Long-term moderate adverse

Table 4-4 (continued)

Resource Area	No Build Alternative		Alternative Q	
	Direct Impacts	***Indirect Impacts***	***Direct Impacts***	***Indirect Impacts***
Geology and Soils	None (Section 4.5.1)	None (Section 4.5.1)	Long-term major adverse (Section 4.5.2.4)	Short- and long-term moderate adverse (Section 4.5.2.4)
Air Quality	None (Section 4.6.1)	None (Section 4.6.1)	Short- and long-term minor adverse (Section 4.6.2)	Short- and long-term minor adverse (Section 4.6.2)
Noise	None (Section 4.7.1)	None (Section 4.7.1)	Short-term minor adverse (Section 4.7.2.4)	Long-term moderate adverse (Section 4.7.2.4)
Recreational Resources	None (Section 4.8.1)	None (Section 4.8.1)	Long-term moderate adverse (Section 4.8.2.4)	Short- and long-term minor adverse (Section 4.8.2.4)
Traffic and Transportation	None (Section 4.9.2)	None (Section 4.9.2)	Long-term moderate beneficial (Section 4.9.3.4.4)	Long-term moderate beneficial (Section 4.9.3.4.4)
Utilities	None (Section 4.10.1)	None (Section 4.10.1)	Short-term negligible (Section 4.10.2.4)	Long-term negligible (Section 4.10.2.4)
Socioeconomics	None (Section 4.11.1)	None (Section 4.11.1)	Short-term minor beneficial (Section 4.11.2)	Long-term minor beneficial (Section 4.11.2)
Aesthetic and Visual Resources	None (Section 4.14.1)	None (Section 4.14.1)	Short-term minor adverse and long-term major adverse (Section 4.14.2)	Short-term minor adverse (Section 4.14.2)
Cultural Resources	None (Section 4.15.1)	None (Section 4.15.1)	None (Section 4.15.2.4)	None (Section 4.15.2.4)
Hazardous & Toxic Substances	None (Section 4.16.1)	None (Section 4.16.1)	Short-term minor adverse (Section 4.16.2)	Long-term minor adverse (Section 4.16.2)

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SECTION 5.0
CONSULTATION AND COORDINATION

5.1 PUBLIC INVOLVEMENT AND COMMENTS

LADOTD will make the SFEIS available for public review and comment, publish a notice of availability of the SFEIS in local papers, and send copies of the SFEIS to individuals who have requested copies and to state and federal agencies cooperating on the FEIS. In addition, LADOTD will provide copies of the SFEIS to local and statewide libraries (Table 1-1). Agencies, organizations, and individuals are invited to review and comment on the document. The SFEIS will be available for a period of 30 days for comments on the proposed action, alternatives, and adequacy of the analysis.

5.2 ENVIRONMENTAL COMPLIANCE

This section documents the coordination and compliance efforts regarding statutory authorities including environmental laws, regulations, EOs, policies, rules, and guidance. Consistency of the Tentatively Selected Plan with other Louisiana coastal restoration efforts also is described.

5.2.1 Clean Water Act—Section 401 Water Quality

Under provisions of the CWA (33 U.S.C. § 1251), any project that involves placing dredged or fill material in waters of the United States or wetlands, or mechanized clearing of wetlands requires a water quality certification from the LDEQ, Office of Environmental Services. Along with a copy of the FEIS, an application for water quality certification has been provided to the LDEQ stating that the proposed placement of fill material into waters of the state will not violate established water quality standards.

5.2.2 Clean Water Act—Section 404 (b)(1)

The USACE is responsible for administering regulations under CWA section 404(b)(1). Potential project-related impacts subject to these regulations have been evaluated and determined to be in compliance. This evaluation is included in the FEIS as appendix K.

5.2.3 Endangered Species Act of 1973

Compliance with the ESA (7 U.S.C. 136; 16 U.S.C. 460 *et seq*.) has been coordinated with USFWS for species under their respective jurisdiction. Field surveys of all the alternatives were conducted for the presence of threatened or endangered species. The findings from the field surveys are provided in the threatened and endangered species report provided in appendix C of the FEIS. Based on results of the field surveys, implementation of the alternative alignments would not be expected to directly impact any federally listed threatened or endangered species or critical habitats in the project area. Louisiana Department of Wildlife and Fisheries (LDWF) and USFWS agreed with the findings of the threatened and endangered species report on March 11, 2011, and April 4, 2011, respectively.

5.2.4 Louisiana State Threatened and Endangered Species and Rare and Unique Habitats Coordination

The CEMVN reviewed the database maintained by the Louisiana Natural Heritage Program part of the LDWF, which provides the most recent listing and locations for threatened and endangered

species and rare unique habitats within the state of Louisiana. The proposed action would not adversely impact threatened or endangered species or rare and unique habitat.

5.2.5 Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) (16 U.S.C. 703-711) prevents the taking of birds listed as "migratory birds", including all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, and swallows or their body parts (e.g., feathers, plumes), nests, or eggs (50 CFR 10.13). Federal-aid highway projects that are likely to result in take of birds protected under MBTA require the issuance of take permits. St. Tammany Parish is in the Mississippi Flyway corridor and is a resting, nesting, and breeding area as well as resident habitat to many migratory birds. Mitigation measures have been identified and included in the pending mitigation plan.

5.2.6 Clean Air Act

Compliance with the Clean Air Act (42 U.S.C.A. §§7401) has been fully coordinated with the Air Quality Section of the LDEQ. The Transportation Conformity Rules are applicable to highways and mass transit projects in nonattainment areas and establish the criteria and procedures for determining that transportation plans, programs, and projects that are funded under 23 U.S.C., or the Federal Transit Act, conform to the State Implementation Plan of the Clean Air Act. Projects adopted, accepted, approved, or funded by the FHWA or the Federal Transit Authority must be included in a conforming transportation improvement plan. St. Tammany Parish and all areas associated with the proposed action are in full attainment for all criteria pollutants. Therefore, the Transportation Conformity Rules do not apply to the proposed action [40 CFR 93.102(b)].

5.2.7 National Historic Preservation Act of 1966

Section 106 of the NHPA, as amended, and its promulgating regulation 36 CFR part 800, require the head of any federal agency having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking in any state and the head of any federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP. The head of any such federal agency shall afford the State Historic Preservation Officer a reasonable opportunity to comment with regard to such undertaking.

5.2.8 Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, dated February 11, 1994, requires federal agencies to achieve environmental justice by identifying and addressing disproportionately high and adverse human health or environmental effects, including the interrelated social and economic effects of their programs, policies, and activities on minority and low-income populations in the United States. As indicated in the EO, the requirements are carried out to the greatest extent practicable and permitted by law and consistent with the principles set forth in the report on the National Performance Review. A key element in the environmental justice strategy adopted by FHWA to implement EO 12898 can be achieved within the framework of existing laws, regulations, and guidance.

5.3 FINAL STATEMENT RECIPIENTS

Copies of the SFEIS were distributed to the following federal and state agencies:

- U.S. Environmental Protection Agency, Headquarters, 1200 Pennsylvania Avenue, Washington, DC (uploaded electronically to e-NEPA Central Data Exchange website)
- U.S. Environmental Protection Agency, Region 6, 1445 Ross Avenue, Dallas, TX
- U.S. Fish and Wildlife Service, 646 Cajundome Boulevard, Lafayette, LA
- U.S. Army Corps of Engineers, New Orleans District, 7400 Leake Avenue, New Orleans, LA
- U.S. Department of the Interior, Office of Environmental Project Review, 1849 C Street, NW, Washington, DC
- Federal Highway Administration, 1200 New Jersey Avenue, SE, Washington, DC
- Louisiana Department of Transportation and Development, 1201 Capitol Access Road, Baton Rouge, LA
- Louisiana Department of Transportation and Development, District 62, 685 N. Morrison Boulevard, Hammond, LA
- Louisiana Department of Wildlife and Fisheries, 2000 Quail Drive, Baton Rouge, LA
- Louisiana Department of Environmental Quality, 602 N. Fifth Street Baton Rouge, LA
- St. Tammany Parish, Office of the President, 21490 Koop Drive, Mandeville, LA
- St. Tammany Parish, Department of Engineering, 21410 Koop Drive, Mandeville, LA
- St. Tammany Parish, Parish Council, 21490 Koop Drive, Mandeville, LA
- St. Tammany Parish, Recreation District #2, 30100 Crawford Cemetery Road, Bush, LA
- Regional Planning Commission, 10 Veterans Memorial Boulevard, New Orleans, LA

In addition, hardcopies of the SFEIS were distributed to the public libraries listed in Table 1-1. The SFEIS will be posted on LADOTD's web page and the project website (www.i12tobush.com) and be made available for downloading.

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SECTION 6.0
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SECTION 7.0
COOPERATING AGENCIES

Preparation of the FEIS was coordinated with appropriate congressional, federal, state, and local interests, as well as environmental groups and other interested parties. An interagency environmental team was established for this project in which interested federal and state agency staff played an integral part in the project planning and alternative analysis phases of the project. This interagency environmental team was integrated with LADOTD to help plan the project and to complete a mitigation determination of the potential direct and indirect impacts of the proposed action. The project interagency team consisted of representatives from the following federal and state agencies:

- U.S. Department of the Interior, Fish and Wildlife Service
- Louisiana Department of Wildlife and Fisheries
- U.S. Environmental Protection Agency

FHWA was not a cooperating agency on the FEIS. Hence, coordination continues on preparation of the SFEIS by FHWA. The FEIS is being supplemented to include requirements that apply to FHWA. FHWA has taken the lead on the SFEIS in accordance with CEQ regulations related to the adoption of another federal agency's FEIS.

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SECTION 8.0
PUBLIC INVOLVEMENT

8.1 SCOPING

An NOI to prepare a draft EIS for the proposed highway between Bush, Louisiana, and I–12 in St. Tammany Parish was posted in the *Federal Register* (volume 73, number 224) on November 19, 2008. Scoping for this project was initiated on December 22, 2008, through placing advertisements and public notices with local media. A public scoping meeting was held at the Abita Springs Town Hall on January 22, 2009. All interested agencies, tribes, nongovernmental organizations, and individuals were invited to attend to provide input into the scoping process, after which a 30-day scoping period was open for public comment submission. After the scoping period ended, a scoping report was prepared to summarize the comments provided by the public and agencies. The scoping report is provided in appendix L of the FEIS.

8.2 PUBLIC COMMENTS ON THE DRAFT EIS

The draft EIS was distributed for a 45-day public review and comment period from September 9 to October 24, 2011. A public hearing specific to the proposed action was held on September 28, 2011, at the Abita Springs Town Hall. All comments received during the 45-day public comment period were considered part of the official record.

A total of 149 comments were received regarding the proposed action during the 45-day public comment period. At the public hearing, 14 written comment forms were turned in, 9 oral comments were taken by the court reporter prior to the hearing, and 32 oral comments were taken during the hearing (two of the commenters also spoke to the reporter prior to the hearing). There also were 45 emails and 49 letters received from the public within the comment period.

8.3 PUBLIC COMMENTS ON THE FINAL EIS

This FEIS was distributed for a 30-day public review and comment period on March 9, 2012.

8.4 PUBLIC COMMENTS ON THE SFEIS

LADOTD made the SFEIS available for public review and comment on July 24, 2015, published a notice of availability of the SFEIS in local papers, and sent copies of the SFEIS to individuals who had requested copies and to state and federal agencies cooperating on the FEIS. In addition, LADOTD provided copies of the SFEIS to local and statewide libraries (Table 1-1). Agencies, organizations, and individuals were invited to review and comment on the document.

The SFEIS will be available for a period of 30 days for comments on the proposed action, the alternatives, work on the alignment change, and adequacy of the analysis. During the 30-day comment period, LADOTD will hold a public meeting to receive public comments on the *de minimis* section 4(f) finding in accordance with 23 CFR 774.5(b)(2) as well as on the SFEIS.

8.5 PROJECT WEBSITE

At any time during the EIS process, the public can access information regarding the I-12 to Bush EIS via the project website at www.i12tobush.com and on LADOTD's website. Information on the websites include electronic versions of the draft EIS, the FEIS, and the SFEIS.

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SECTION 9.0
ACRONYM LIST

CEMVN	U.S. Army Corps of Engineers, New Orleans District
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO2	carbon dioxide
CWA	Clean Water Act
DA	Department of the Army
dB	decibel
dBA	A-weighted decibel
DOT	U.S. Department of Transportation
EA	environmental assessment
EIS	environmental impact statement
EO	Executive Order
ESA	Endangered Species Act
FEIS	final environmental impact statement
FHWA	Federal Highway Administration
ft	foot
GHGs	greenhouse gases
I	Interstate
LA	Louisiana Highway
LADOTD	Louisiana Department of Transportation and Development
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
LEDPA	least environmentally damaging practicable alternative
L_{eq}	Equivalent Sound Pressure Level
$L_{eq}(h)$	1-hour Equivalent Sound Pressure Level
MBTA	Migratory Bird Treaty Act
mph	miles per hour
MSL	mean sea level
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NOx	nitrous oxide
NRHP	National Register of Historic Places
O_3	ozone
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
RA-2	rural arterial-2
RA-3	rural arterial-3

ROI	region of influence
ROW	right-of-way
SFEIS	supplemental final environmental impact statement
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
TIMED	Transportation Infrastructure Model for Economic Development
TNM	Traffic Noise Model
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

SECTION 10.0
INDEX

S

T

W

SECTION 11.0
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APPENDIX A
NOTICE OF INTENT

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Dated: October 29, 2013.

Faye Lipsky,

Reports Clearance Director, Social Security Administration.

[FR Doc. 2013–26054 Filed 10–31–13; 8:45 am]

BILLING CODE 4191–02–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Adoption: St. Tammany Parish, LA

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Intent.

SUMMARY: FHWA is issuing this notice of intent to advise the public of its intent to adopt an existing Environmental Impact Statement (EIS) in accordance with the Council on Environment Quality regulations, 40 CFR 1506.3. The final EIS was prepared and approved by the US Army of Engineers, New Orleans District for LA 3241, I–12 to Bush Highway in St. Tammany Parish, Louisiana. The FEIS will be supplemented to include a noise analysis in accordance with 23 CFR part 772, a Section 4(f) evaluation in accordance with 23 CFR part 774, and an analysis of the effects resulting from a change in the location of the connection with LA 434.

FOR FURTHER INFORMATION CONTACT: Carl Highsmith, Project Delivery Team Leader, Louisiana Division, Federal Highway Administration, 5304 Flanders Drive, Suite A, Baton Rouge, LA 70808 Telephone: 225.757.7615. See also the project Web site at *http://www.i12tobush.com.*

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the Louisiana Department of Transportation and Development (DOTD), intends to adopt an approved Final EIS for the I–12 to Bush Highway in St. Tammany Parish, Louisiana. The EIS was prepared by the US Army Corps of Engineers, New Orleans District, as part of a Section 404 permit application number MVN–2005–00037. The NOI for the EIS appeared in the FR, Volume 73, Number 224, November 19, 2008. The project calls for the construction of a new four-lane highway connecting I–12 to Bush, Louisiana, in St. Tammany Parish. The preferred alternative is approximately 19.8 miles in length and begins at LA 434, north of the existing LA 434 interchange, and traverses in a northeasterly direction until encountering an abandoned rail corridor. It then follows the rail corridor terminating at the LA 21/LA 41 intersection near Bush, Louisiana. The EIS considered the social, environmental, and economic impacts of the project. The No-Action alternative and four roadway alternatives were evaluated and discussed in the draft and final EIS. The FHWA will prepare a noise study in accordance with 23 CFR part 772 and coordinate the Section 4(f) evaluation for the project in accordance with 40 CFR 1505.2. The public will be given an opportunity to comment on the proposed action prior to issuance of a ROD by FHWA. The public notice will be published in local newspapers and on the project Web site at *www.i12tobush.com.*

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 Research, Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

Issued on: October 23, 2013.

Charles W. Bolinger,

Division Administrator, Baton Rouge, Louisiana.

[FR Doc. 2013–26051 Filed 10–31–13; 8:45 am]

BILLING CODE 4910–22–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

[Docket No. FHWA–2013–0048]

Notice of Funding Availability for Accelerated Innovation Deployment Demonstration

AGENCY: Federal Highway Administration (FHWA), Department of Transportation (DOT).

ACTION: Notice of funding availability; request for comments.

SUMMARY: This notice announces the availability of funding for Accelerated Innovation Deployment (AID) Demonstration authorized within the Technology and Innovation Deployment Program (TIDP) under the Moving Ahead for Progress in the 21st Century Act (MAP–21). This notice is addressed to organizations that are interested in applying and proposes selection criteria and application requirements for AID Demonstration funding. The FHWA requests comments on the content of this notice. The FHWA will take all comments into consideration and publish a final notice of funding availability.

The FHWA will solicit grant applications through the governmentwide electronic grants Web site at *http://www.grants.gov.*

DATES: All public comments must be received on or before November 22, 2013. Late-filed comments will be considered to the extent practicable.

The FHWA plans to conduct outreach regarding the AID Demonstration in the form of a Webinar within 2 weeks of this notice being issued. Participants can pre-register online at: *https://connectdot.connectsolutions.com/tidp/event/.* Information on the Webinar date and time will be emailed to registered participants. The Webinar will be recorded and posted on FHWA's Web site at *http://www.fhwa.dot.gov/accelerating/grants.*

ADDRESSES: You may submit comments, identified by docket number FHWA–2013–0048, by any of the following methods:

Federal eRulemaking Portal: Go to *http://www.regulations.gov* and follow the online instructions for submitting comments.

Mail: Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE., Washington, DC 20590–0001.

Hand Delivery: West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590–0001, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Instructions: You must include the agency name and docket number FHWA–2013–0048 on your comments. All comments received will be posted, without change, to *http//www.regulations.gov*, including any personal information provided.

FOR FURTHER INFORMATION CONTACT: Ms. Ewa Flom, Program Coordinator, Center for Accelerating Innovation, Federal Highway Administration, 1200 New Jersey Avenue SE., Washington, DC 20590, (202) 366–2169; or Ms. Seetha Srinivasan, Office of the Chief Counsel, Federal Highway Administration, 1200 New Jersey Avenue SE., Washington, DC 20590, (202) 366–4099. Office hours are from 8:00 a.m. to 4:30 p.m., e.t., Monday through Friday, except Federal holidays. A TDD is available for individuals who are deaf or hard of hearing at (202) 366–3993.

In addition, the FHWA will regularly post answers to questions and requests for clarifications on FHWA's Web site at *http://www.fhwa.dot.gov/accelerating/grants.* Applicants are encouraged to contact FHWA directly to receive information about AID Demonstration.

SUPPLEMENTARY INFORMATION:

APPENDIX B
HIGHWAY TRAFFIC NOISE STUDY

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Highway Traffic Noise Study (Update)
I-12 to Bush Supplemental Environmental Impact Statement
State Project No. H.004985.2

Prepared for

Louisiana Department of Transportation and Development

and

U.S. Department of Transportation, Federal Highway Administration

December 2013

Prepared by
LPES, Inc., Engineering and Planning
14053 Lawnes Creek Road
Smithfield, VA 23430

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Contents

Tables

Figures

Attachments

SECTION 1.0 INTRODUCTION

A quantitative, computer-based analysis of the effects of the proposed action on ambient noise levels was performed following the procedures of Louisiana Department of Transportation and Development (LADOTD) and the Federal Highway Administration (FHWA). The analysis consisted of the evaluation of effects on potentially noise-sensitive sites along the project corridor extending from Bush, Louisiana to I-12. The general procedure used to assess these effects include determining noise levels through computer modeling and assessing effects by comparing future modeled noise levels to the LADOTD and FHWA criteria.

1.1 NOISE FUNDAMENTALS

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies, depending on the type and characteristics of the noise, distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise may interfere with communication, produce awakenings from sleep or, in some cases, damage hearing. Noise is often generated by activities essential to a community's *quality of life*, such as construction or vehicular traffic.

Sound varies by both intensity and frequency. Sound levels, described in decibels (dB), are used to quantify the sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. A scale relating sounds encountered in daily life to their approximate dB values is provided in Table 1-1. Hertz (Hz) are use to quantify sound frequency. The human ear responds differently to different frequencies. The *A-weighing* of sound, described in A-weighted decibels (dBA), approximates this frequency response to describe better the perception of sound by humans.

Table 1-1. Common Sound Levels

Outdoor	Sound level (dBA)	Indoor
Snowmobile	100	Subway Train
Tractor	90	Garbage Disposal
Noisy Restaurant	85	Blender
Downtown (Large City)	80	Ringing Telephone
Freeway Traffic	70	TV Audio
Normal Conversation	60	Sewing Machine
Rainfall	50	Refrigerator
Quiet Residential Area	40	Library

Source: Harris 1998

The dBA noise metric describes steady noise levels. Although very few noises are, in fact, constant. Therefore, a noise metric, equivalent sound level (L_{eq}) has been developed. L_{eq} represents the average sound energy over a given period presented in dB (e.g., one-hour L_{eq} [$L_{eq}(h)$]). FHWA and LADOTD use the $L_{eq}(h)$ descriptor to estimate the degree of nuisance or annoyance arising from changes in traffic noise.

1.2 REGULATORY OVERVIEW

LADOTD has established a highway traffic noise policy consistent with FHWA regulations and guidance (LADOTD 2011; FHWA 2011). The policy outlines criteria associated with specific types of projects such as proposed construction of new highways or the physical alteration of existing highways, which increases the number of through-lanes. The proposed project meets both of those criteria; therefore, these policies have been used to assess the level of effects with respect to noise. The FHWA regulations established Noise Abatement Criteria (NAC) that provide a benchmark to assess the level at which noise becomes a clear source of annoyance for different land uses (Table 1-2). Category B, which represents residential land uses, best describes the majority of the receptors in the area. In Louisiana, impact occurs for residential use (category B) when the noise level is equal to or greater than is 66 dBA.

Table 1-2. FHWA Noise Abatement Criteria (NAC) Hourly A-weighted Sound Level decibels (dBA)

Activity category	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

*These values are consistent with the FHWA's requirement for consideration of traffic noise impacts 1 dBA below their noise abatement criteria.
Sources: LADOTD 2011; FHWA 2011

A traffic noise impact occurs when the future predicted levels approach or exceed the NAC (e.g. equal to or greater than 66 dBA for category B), or when the future predicted traffic noise levels exceed the existing noise levels by 10 dBA.

SECTION 2.0 EXISTING CONDITIONS

Different types of land uses and the human activities associated with them have different sensitivities to changes in ambient noise levels. In general, the area is typically rural, and the properties along the project corridor are typically residential. A majority of the project runs through relatively undeveloped and underdeveloped portions of St. Tammany Parish. Existing sources of noise are similar throughout the parish and include local road traffic, high-altitude aircraft overflights, and natural noises, such as wildlife vocalizations and leaves rustling. The only predominant ongoing source of noise associated with the project areas are existing roadways such as Interstate (I)-12, Louisiana roadway (LA) 21, LA 434, LA 435, LA 1088, and Airport Road. Given the lack of other anthropogenic noises, vehicles on the roadways are likely audible for a mile or more particularly during quiet periods. The noise environment in communities and towns throughout the Parish is a mixture of quiet residential and light commercial. Some individual residences, multifamily dwellings, churches, and schools are within 1,000 feet of many of the primary arterials. They are chiefly in the communities and towns throughout the parish such as Bush and Talisheek.

Background Measurements. A Larson Davis 824 integrating sound level meter was utilized for background monitoring along the proposed route. The sound level meter meets the requirements for ANSI S1.4-1983 Type 1 or better sound level meters. The instrument was configured to measure and store the average, maximum, and minimum sound levels (L_{eq}, $L_{max,}$ and L_{min}) as well as a number of other noise metrics and sound levels in each third octave frequency band. The microphone was fitted with a windscreen to reduce wind-generated noise and mounted on a tripod at a height of approximately five feet above the ground. Field data sheets and aerial figures outlining all measurement locations, weather, exact timing, and all other field data are provided in Attachment A.

Sound levels were collected at nine (9) locations along the proposed route (Figure 2-1); six (6) as background measurements and three (3) for model validation. A summary of the background sound levels (L_{eq}) is presented in Table 2-1. The average sound level (L_{eq}) ranged from 38.5 to 59.5 dBA at the monitoring sites. Notably, the wind was calm (less than two (2) miles per hour (mph) during the measurements, and insect noise was a substantial portion of the background noise environment in Bush and Talisheek (i.e. M1 through M4). Notably, noise measurements at the hospital (i.e. M5 and M6) were dominated by automobile traffic from I-12 and LA 434, and distant industrial noise.

Table 2-1. Background Sound Level Measurements

Location	Sound Levels L_{eq}(1h) (dBA)
M1 - Ball Field Complex South of Bush	41.9
M2 - South of Bush	38.5
M3 - North of Talisheek	49.3
M4 - South of Talisheek	40.2
M5 - Hospital - 100' from Centerline	59.5
M6 - Hospital - Near Emergency Entrance	52.4

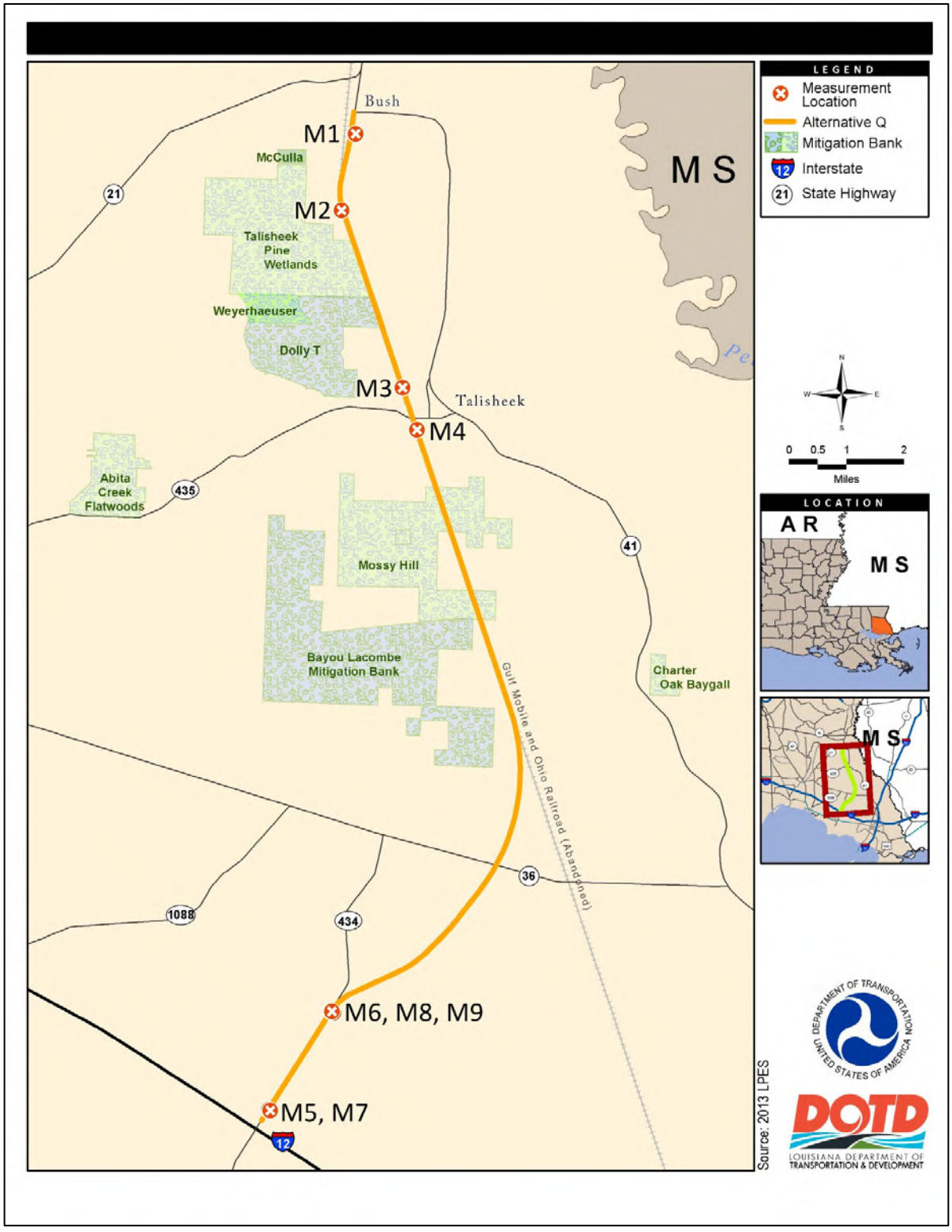

Figure 2-1. Noise Measurement Locations

Model Validation. Three (3) locations were selected for model validation adjacent to LA435 near I-12, as it is the only area with a roadway segment currently in place. To validate the noise model, the noise levels measured in the field were compared to the noise levels predicted by the model using the roadway parameters and traffic data collected at each site. Table 2-2 compares the field measurements to the modeled sound levels. Since the modeled results are within 3 dBA of the measured noise levels, no further action is required, and the model was used to determine future noise levels.

Table 2-2. Sound Level Measurements for Model Validation

	Sound Levels [L_{eq}(dBA)]		
Location	**Modeled**	**Measured**	**Difference**
M7 - Park and Ride - 100' from Centerline	59.6	60.6	1.0
M8 - Park and Ride - 200' from Centerline	56.6	54.5	2.1
M9 - Park and Ride - 400' from Centerline	48.9	48.8	0.1

Existing Levels. Because of the rural nature of the area, it is clear that existing noise levels at locations of interest are predominantly from primary and secondary roadways; therefore, existing traffic noise was modeled and added to background sound levels. Existing noise levels for Alternative Q were predicted using the FHWA highway traffic noise prediction model, Traffic Noise Model (TNM) 2.5. This model uses the number and type of vehicles on an existing or planned roadway, their speeds, and the physical characteristics of the road (e.g., curves, hills, depressed, elevated). Each existing roadway was modeled, assuming no special noise abatement measures would be incorporated, and the roadway sections were assumed at-grade. Since the existing roadways do not experience appreciable traffic congestion, it was assumed that the peak-hour volumes and corresponding speeds for trucks and automobiles would result in the noisiest conditions. During all other periods, the noise levels would be less than those indicated herein. The following roadways have the most traffic in the study area and were included in the noise evaluation: LA 21, LA 41, LA 36, LA 435, LA 434, LA 1088, and Airport Road.

Receptors (i.e., residential neighborhoods, parks, churches, schools, hospitals, libraries) within one mile of the proposed highway were identified (Figure 2-2). Detailed figures of the receptors are provided in Appendix A (see Figures A-4, A-5, and A-6). Notably, due to the rural nature of the study area the vast majority of noise receptors are residential. Noise predictions of L_{eq}(h) for representative receptors near roadways of interest in the study area are outlined in Table 2-3. Under existing conditions, only one (1) residence identified approach or exceed the NAC for category B of L_{eq} greater than 66 dBA.

Table 2-3. Sound levels – Existing Conditions

Number of Receptors		L_{eq}[1hr]		Approach or Exceed the NAC
		a.m.	p.m.	
829	Maximum	66.8	65.6	1
	Minimum	36.3	36.3	
	Median	37.9	37.4	

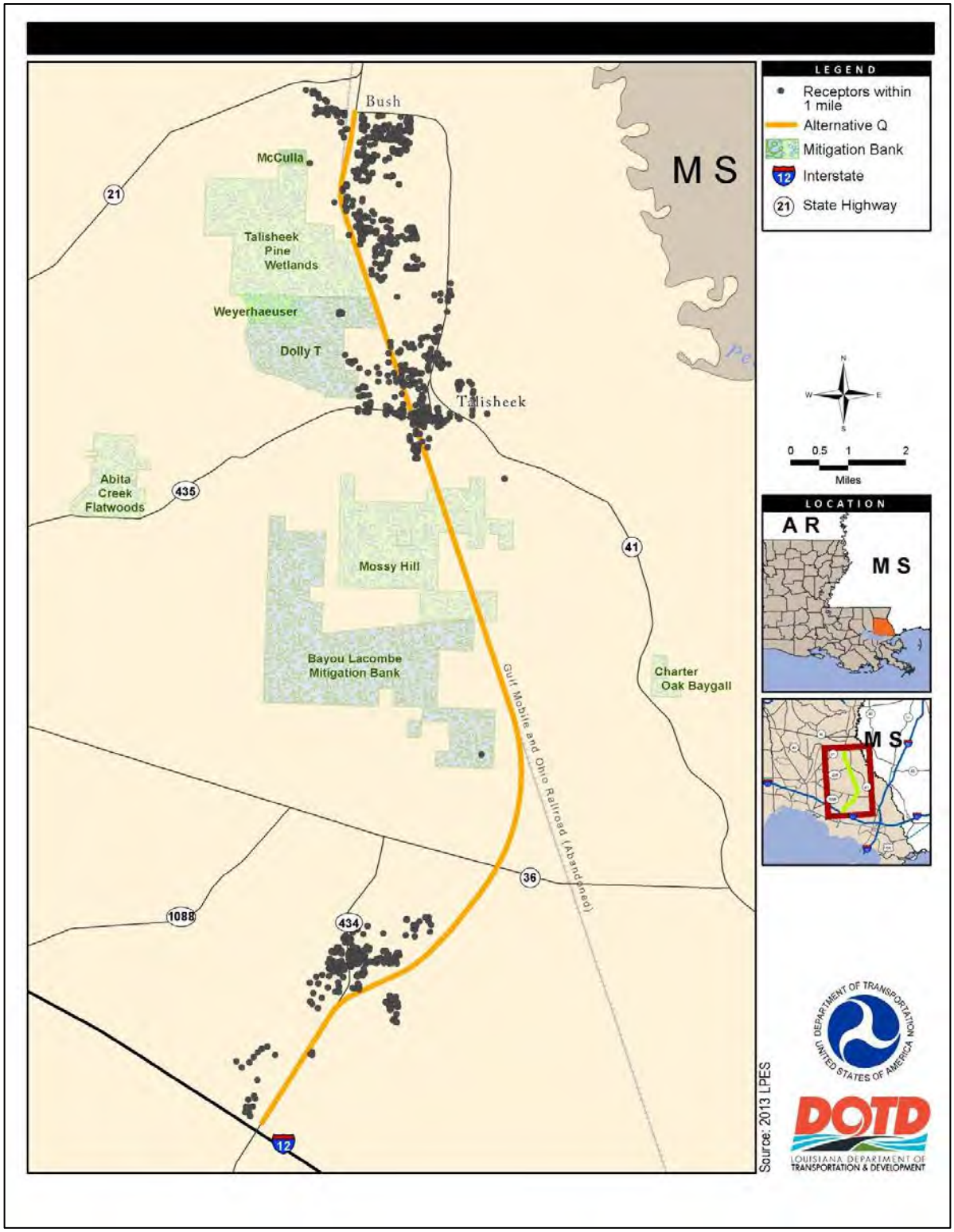

Figure 2-2. Noise Sensitive Receptors within 1 Mile of the Proposed Roadway

SECTION 3.0 NOISE ASSESSMENT

3.1 METHODOLOGY

As indicated in Section 2, existing noise levels throughout the study area were estimated using modeling. Design year peak-hour traffic noise (L_{eq}) was predicted for receptors in the vicinity of the project. FHWA's Traffic Noise Model (TNM) was used to compare predicted noise levels for the design year (2035) and existing noise levels to determine if traffic noise impacts can be expected. Traffic noise impacts were determined in accordance with FHWA regulations and guidelines published as Section 772 of Title 23 of the Code of Federal Regulations (23 CFR §772) and LADOTD Highway Traffic Noise Policy (2011). Where traffic noise impacts are predicted, the analysis includes an evaluation of noise abatement measures. Traffic noise impacts occur when the predicted traffic noise levels either (1) approach or exceed the NAC, or (2) exceed the existing noise levels by 10 dBA.

Receptors within one mile of the proposed highways were examined. Due to the rural nature of the proposed highway all receptors identified were land use category B or C and included primarily residences. As part of the Final EIS, the USACE prepared a Conceptual Stage Relocation Plan in accordance with the requirements of the LADOTD Office of Right of Way Operations Manual and 49 CFR Part 24 § 24.205a to outline those families, businesses, and other persons that would be displaced by the project. Families, businesses, and other persons that would be displaced by the project were excluded from this analysis.

An analysis was conducted to assess potential noise abatement measures, including traffic management measures, alignment modifications, property acquisition, and noise barriers. An analysis was performed to determine the potential *feasibility and reasonableness* for noise barriers along the proposed highway.

3.2 NO BUILD ALTERNATIVE

Long-term minor adverse effects on the noise environment would be expected with the implementation of the No Build Alternative. The effects would primarily be due to the natural increase in traffic in the study area.

Noise levels were modeled for future (2035) traffic conditions without the proposed roadway (USACE, 2011). Noise predictions of $L_{eq}(h)$ for representative receptors near roadways of interest in the study area are outlined in Table 3-1. Under the No Build Alternative, there would be a moderate increase in the level of traffic noise for identified receptors. Three (3) residences identified would approach or exceed the NAC for category B. No identified receptors would experience a greater than 10 dBA increase.

Table 3-1. Sound Levels – No Build Alternative (2035)

Number of Receptors		L_{eq}[1hr]		Greater than 10 dBA Increase	Approach or Exceed the NAC	Both Above the NAC and Greater than 10 dBA Increase
		A.M.	P.M.			
829	Maximum	70.6	71.3	0	3	0
	Minimum	32.9	32.4			
	Median	38.9	38.8			

3.3 ALTERNATIVE Q

Short- and long-term adverse effects to the noise environment would be expected with the implementation of Alternative Q. Long-term effects would primarily be due to changes in traffic noise throughout the study area, and specifically increase in noise along the proposed highway.

3.3.1 Construction Noise

As with any major construction project, areas around the construction site are likely to experience varied periods and degrees of noise. Individual pieces of construction equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet (FHWA 2006) Table 3-2 presents typical noise levels (dBA at 50 feet) that the U.S. Environmental Protection Agency (USEPA) has estimated for the main phases of outdoor construction.

Table 3-2. Noise Levels Associated with Outdoor Construction

Construction Phase	L_{eq} (dBA) at 50 feet from Source
Ground Clearing	84
Excavation, Grading	89
Foundations	78
Structural	85
Finishing	89

Source: USEPA 1974

With multiple pieces of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high construction noise levels typically extends to distances of 400 to 800 feet from the site of major construction operations. Locations within 800 feet would experience appreciable levels of heavy equipment noise. Because construction activities would be confined primarily to daytime hours, noise at nearby receptors may be clearly audible, but would not likely be highly annoying.

Construction would normally be conducted during daytime hours. At certain locations where road-use restrictions would affect the schedule, construction would proceed during evening hours. Equipment would not be fixed in one location for long durations, but would progress along the right-of-way, and noise would be temporary and subside at any particular location as the highway construction progresses to subsequent segments. These effects would be temporary, and minor.

3.3.2 Traffic Noise

Noise levels were modeled for 2035 traffic conditions with the establishment of the proposed highway under Alternative Q. Noise predictions of $L_{eq}(h)$ for representative receptors near roadways of interest in the study area are outlined in Table 3-3. There would be a noticeable increase in the level of traffic noise (>3 dBA) for all receptors within approximately one mile of the proposed highways. Beyond this distance the change in noise would be barely perceptible. There would be an appreciable increase in the level of traffic noise (>10 dBA) for all receptors within approximately ½ mile of the proposed highways under Alternative Q. Four (4) receptors would approach or exceed the NAC for category B, 67 receptors would experience a greater than 10 dBA increase, and 1 receptor would meet both criteria when compared to existing conditions (Figure 3-1).

The approximate distance to the 66 dBA noise contour for the Design Year (2035) Build condition is provided in Table 3-4. Local planning officials can use the noise contour information in an effort to avoid development of noise sensitive land uses on currently undeveloped lands in the study area.

Table 3-3. Estimated Sound Levels with Alternative Q

Number of Receptors		L_{eq}[1hr] [dBA]						Greater than 10 dBA Increase	Approach or Exceed the NAC	Both Above the NAC and Greater than 10 dBA Increase
		Existing		No Build (2035)		Build (2035)				
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.			
829	Maximum	66.8	65.6	70.6	71.3	72.7	72.6	67	4	1
	Minimum	36.3	36.3	32.9	32.4	34.7	34.5			
	Median	37.9	37.4	38.9	38.8	42.7	42.7			

Table 3-4. Design Year (2035) Noise Contours

Roadway Segment	Approximate Distance to 66 dBA from the Proposed Roadway (Feet)[1]
I-12 to Route 36	188
Route 36 to Route 435	199
Route 435 to Route 41	188

[1] Distance from the nearest edge of proposed travel lane.

3.3.3 Traffic Noise Abatement

Seventy-two (72) identified receptors would approach the NAC, experience a greater than 10 dBA increase when compared to existing conditions, or both; therefore, noise abatement measures for reducing or eliminating the noise impacts have been considered (Figure 3-1). Abatement measures to be considered include traffic management measures, alignment modifications, property acquisition, and noise barriers.

Traffic Management Measures. As an abatement technique, traffic management measures include modified speed limits or prohibition of certain vehicle types. Modifying the speed limit would reduce the capacity of the proposed roadway to service forecasted traffic volumes. As a public use corridor used to transport goods and support businesses, prohibiting truck traffic is not a viable option to reduce traffic noise. Therefore, traffic management measures are not considered a feasible abatement technique for this project.

Alignment Modification. Alignment modification involves orientating and/or constructing the roadway at a sufficient distance from the noise sensitive areas so as to minimize traffic noise. Since Alternative Q was selected by the USACE as the least environmentally damaging practicable alternative, the ability to provide modifications was limited. Benefits from noise reduction that may occur as a result of a particular alignment modification were considered along with other environmental, engineering, and cost factors for the selection of Alternative Q.

Property Acquisition. The acquisition of property to provide noise buffers outside of the right-of-way is not feasible for several reasons, the most prominent being cost. Further development in the area continues to increase making the availability of vacant land in proximity to noise sensitive sites unlikely. Notably, it is currently estimated that 17 residences are being relocated due to alignment, and right-of-way issues.

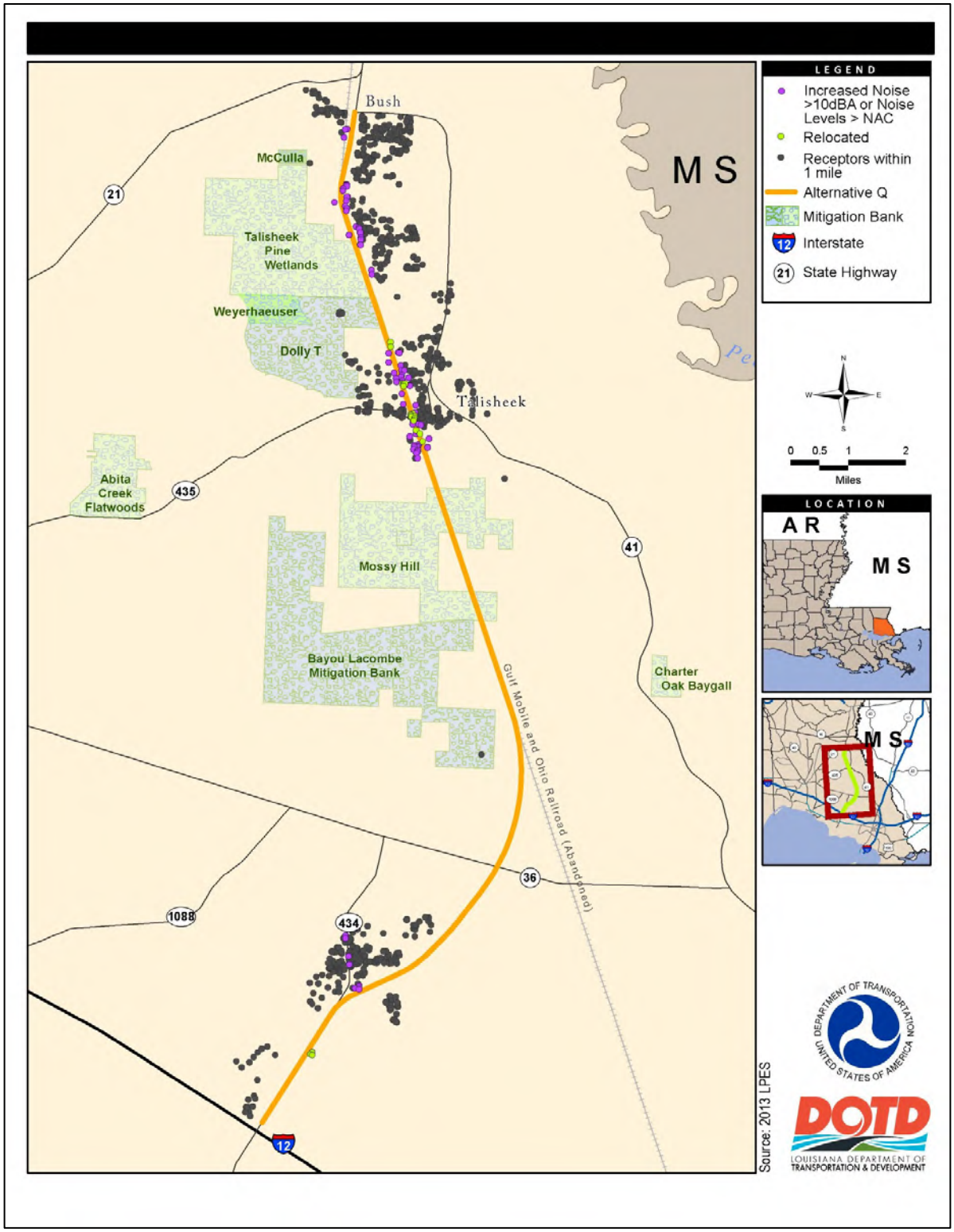

Figure 3-1. Impacted Noise Sensitive Receptors

Noise Barriers. Noise barriers reduce noise levels by blocking the sound path between a roadway and a noise sensitive site. To effectively reduce traffic noise, a noise barrier must be relatively long, continuous (with no intermittent openings) and of sufficient height. Noise barriers along the right-of-way line were evaluated for heights of both 10 and 15 feet. To be considered feasible, a noise barrier must provide a minimum noise reduction of at least 5 dBA at 75% of the first row impacted receptors. To be considered reasonable, a noise barrier must not exceed $35,000 per benefited receptor. A benefited noise sensitive site is defined as a site that would experience at least a 5 dBA reduction as a result of providing a noise barrier.

Due to the predominance of impacted receptors, noise barriers were evaluated for areas adjacent to the proposed highway southeast of Bush, north and south of Talisheek, and east of LA 434 (Figures 3-2, 3-3, and 3-4). Notably, potential barriers on both sides of the proposed roadway near Talisheek would have breaks to allow for turning traffic to access LA 435. Notably, all receptors identified as potential for noise barriers are in low-density areas and the distance between the proposed highway and the receptors is relatively large.

Feasibility. The results of the analysis are provided in Table 3-5. Both 10-foot and 15-foot noise barriers along the right-of-way were assessed for all six locations. A 10- and 15-foot barrier southeast of Talisheek and a 15-foot barrier both southeast of Bush and northwest of Talisheek would be feasible, as they would provide at least a 5 dBA reduction for 75% of impacted first row receptors. Therefore, barriers at these locations were carried forward to assess their potential for reasonableness. Other potential barrier locations would not be feasible, as they would not provide at least a 5 dBA reduction for 75% of impacted first row receptors; therefore, they were not carried forward. Detailed feasibility and reasonableness calculations and worksheets are provided in Attachment A.

Table 3-5. Feasibility Assessment for Noise Barriers

Barrier	Number of First Row Receptors	Height = 10 Feet			Height = 15 Feet		
		First Row Receptors with 5 dBA Decrease	% Benefited	Feasible	First Row Receptors with 5 dBA Decrease	% Benefited	Feasible
Southeast of Bush	18	7	38.9%	No	17	94.4%	**Yes**
Northeast of Talisheek	9	6	66.7%	No	8	88.9%	**Yes**
Northwest of Talisheek	7	5	71.4%	No	5	71.4%	No
Southeast of Talisheek	4	3	75.0%	**Yes**	4	100.0%	**Yes**
Southwest of Talisheek	7	3	47.6%	No	5	71.4%	No
East of LA 434	3	1	33.3%	No	2	66.7%	No

Reasonableness. The results of the reasonableness analysis are provided in Table 3-6. Both 10-foot and 15-foot barriers southeast of Talisheek, and a 15-foot barrier both southeast of Bush and northwest of Talisheek were assessed. All of these barriers would provide an 8-dBA benefit to at least one impacted receptor; however, receptors are too wide spread along the proposed highways, and the cost for the barriers would be greater than $35,000 per receptor, therefore none of the barriers examined would be reasonable. Detailed feasibility and reasonableness calculations and worksheets are provided in Attachment A.

Even with refinements to the alignment or additional precision to the noise modeling, it is not foreseeable that the overall number of receptors with a greater than 10 dBA increase in noise or the configuration of potential noise barrier required would change appreciably. Therefore, noise barriers would not become reasonable with additional refinements.

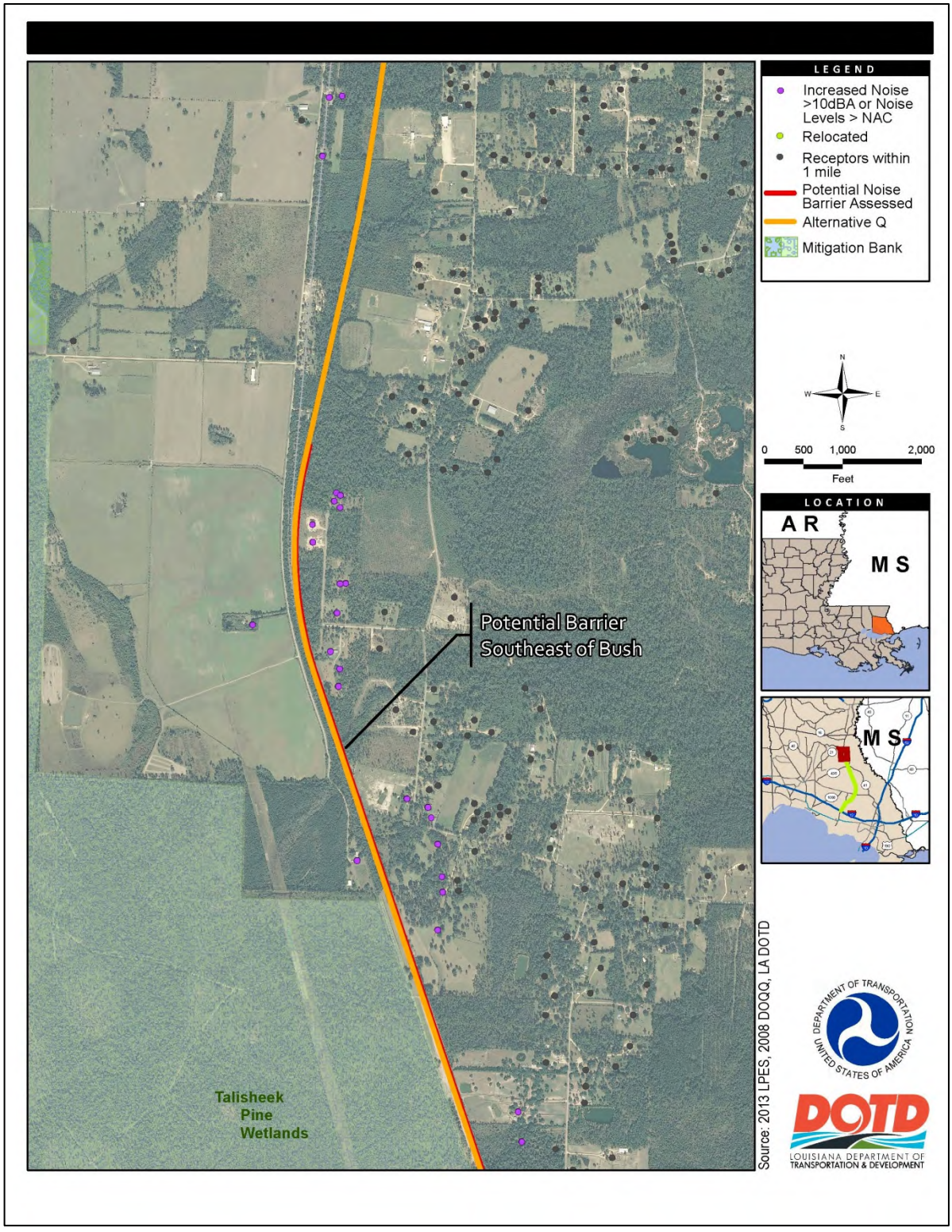

Figure 3-2. Potential Noise Barrier – Southeast of Bush

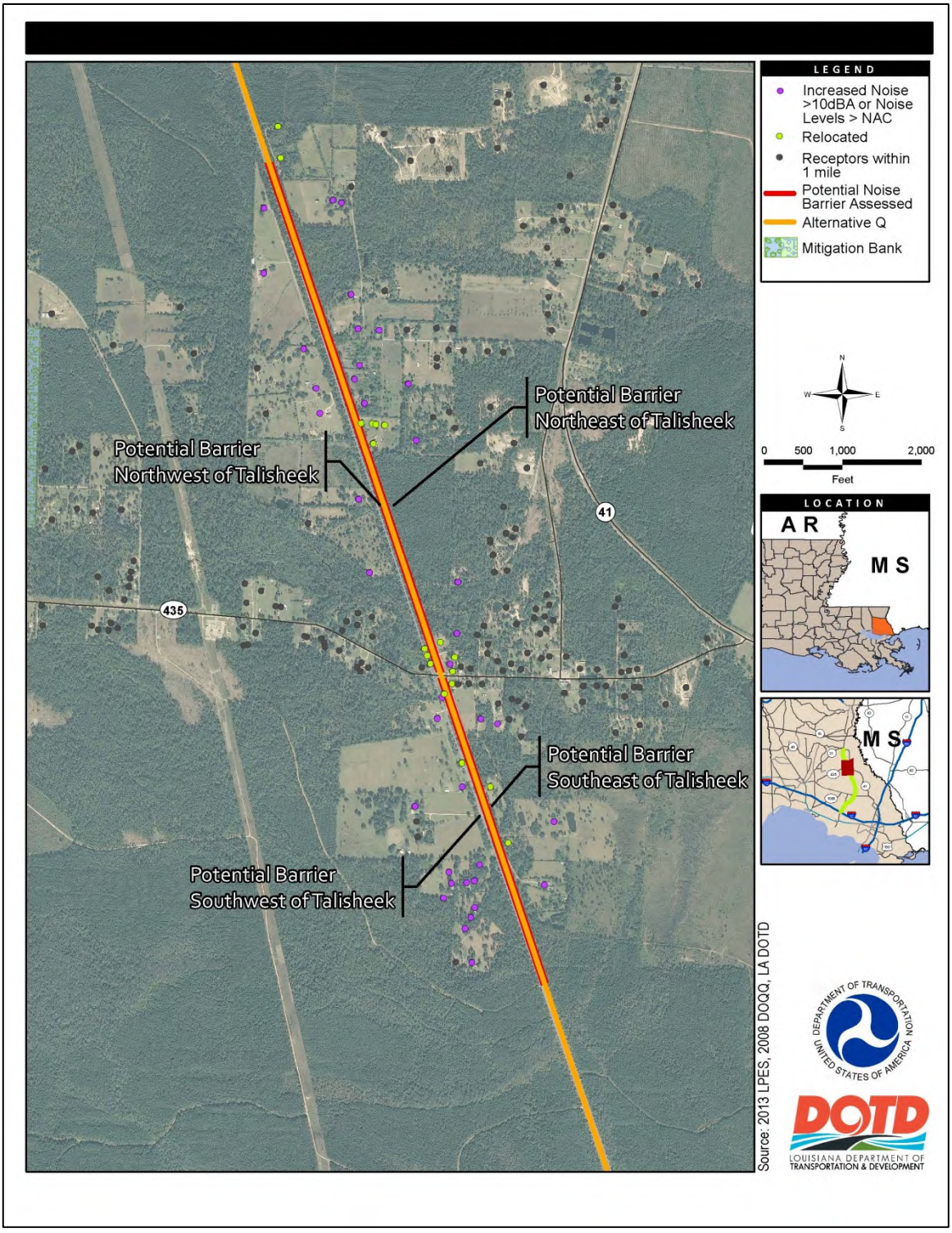

Figure 3-3. Potential Noise Barrier – Near Talisheek

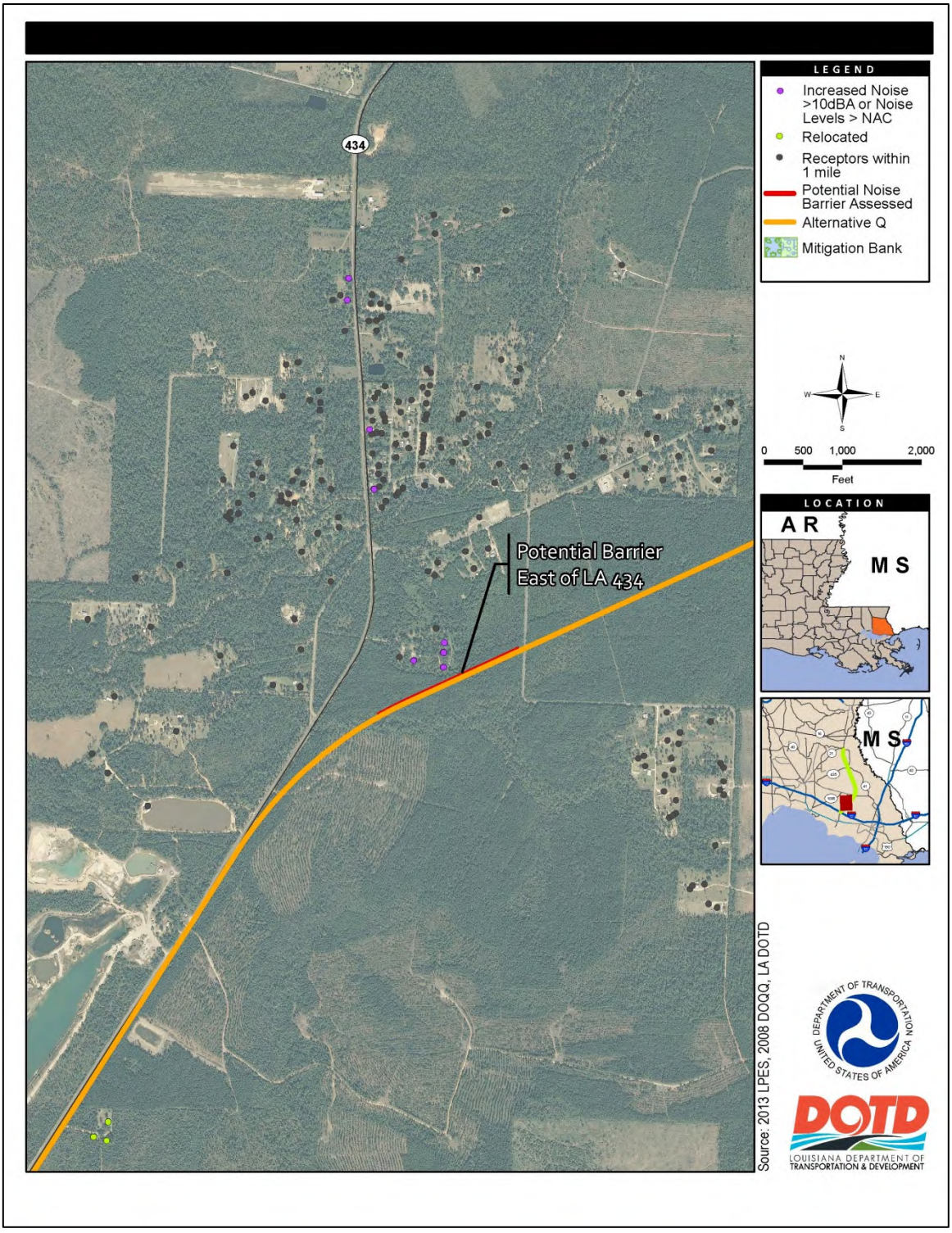

Figure 3-4. Potential Noise Barrier – East of LA 434

Table 3-6. Reasonableness Assessment for Noise Barriers

Barrier	Number of Benefited Receptor	Length [Feet]	Area [sqft]	Cost/SqFt	Barrier Cost	Cost per Benefited Receptor	Reasonable
Southeast of Bush (15')	17	10,717	160,755	$54	$8,680,770	$510,633	No
Northeast of Talisheek (15')	8	5,625	84,375	$54	$4,556,250	$569,531	No
Southeast of Talisheek (15')	4	3,932	58,980	$68	$4,010,640	$1,002,660	No
Southeast of Talisheek (10')	4	3,932	39,320	$17	$668,440	$167,110	No

3.4 SUMMARY

An analysis of the effects of the proposed action on ambient noise levels was performed following the procedures of LADOTD and FHWA. The analysis consisted of the evaluation of effects on potentially noise-sensitive sites along the project corridor extending from Bush, Louisiana to I-12. The general procedure used to assess these effects include determining highway traffic noise levels through computer modeling and assessing effects by comparing future modeled noise levels to the LADOTD and FHWA criteria.

The proposed roadway would have short- and long-term adverse effects to the noise environment. Short-term effects would be due to construction activities. Long-term effects would be due to changes in traffic noise throughout the study area, and specifically increase noise along the proposed highway. These areas are rural in nature and currently do not support high levels of through traffic; subsequently, they would have the greatest increase in noise when compared to current levels.

A relatively small number of receptors were identified that would approach the NAC or experience a greater than 10 dBA in noise during peak traffic periods under future conditions. All receptors identified along the proposed highways are in low-density areas and the distance between the proposed highway and the receptors is relatively large. Noise barriers would either (1) not be feasible, as they would not provide at least a 5 dBA reduction for 75% of impacted first row receptors, or (2) would not be reasonable, as the cost would be greater than $35,000 per benefited receptor.

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SECTION 6.0 ACRONYMS AND ABBREVIATIONS

USACE	U.S. Army Corp of Engineers
CFR	Code of Federal Regulations
dB	decibel
dBA	A-weighted decibel
DOQQ	digital orthophoto quarter quads
e.g.	*exempli gratia*, for the sake of example
EIS	Environmental Impact Statement
Etc.	*et cetera*, and other things
FHWA	Federal Highway Administration
ft	feet
Hz	hertz
I	Interstate
i.e.	*id est*, that is
LA	State of Louisiana Roadway
LADOTD	Louisiana Department of Transportation
L_{eq}	Equivalent Sound Pressure Level
$L_{eq}(h)$	1-hour Equivalent Sound Pressure Level
L_{min}	minimum sound pressure level
L_{max}	maximum sound pressure level
LiDAR	Light Detection and Ranging Data
mph	miles per hour
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
TNM	Traffic Noise Model
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

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ATTACHMENT A: NOISE ANALYSIS SUPPORTING DOCUMENTATION

A.1 Impacted Receptors and Feasibility and Reasonableness Calculations

Table A-1 Impacted Receptors - Alternative Q (2035)

	Existing	No Build	2035	Δ	Impact	10' Barrier	> 5 dBA Benefit	15' Barrier	> 5 dBA Benefit	Barrier	Front Row
R609	65.6	66.2	68.3	2.7	Level	68.3		68.3		E of LA 434	
R615	63.5	64.1	66.3	2.8	Level	66.3		66.3		E of LA 434	
R668	64.3	64.9	67.1	2.8	Level	67.1		67.1		E of LA 434	
R728	64.0	64.6	66.8	2.8	Level	66.8		66.8		E of LA 434	
R768	42.0	42.8	53.9	11.9	Increase	50.7		49.7		E of LA 434	
R770	41.9	42.7	56.7	14.8	Increase	51.9		50.5	Yes	E of LA 434	Yes
R773	44.3	45.0	55.1	10.8	Increase	51.9		50.9		E of LA 434	Yes
R774	41.7	42.5	62.9	21.2	Increase	54.8	Yes	51.8	Yes	E of LA 434	Yes
R347	36.3	36.0	49.9	13.6	Increase	49.4		49.2		NE of Talisheek	Yes
R348	36.3	36.0	48.2	11.9	Increase	47.5		47.3		NE of Talisheek	
R373	36.3	36.9	53.7	17.4	Increase	48.9		46.7	Yes	NE of Talisheek	Yes
R380	36.3	37.3	55.3	19.0	Increase	49.4	Yes	46.6	Yes	NE of Talisheek	Yes
R383	36.3	37.4	49.4	13.1	Increase	45.6		43.3		NE of Talisheek	
R393	36.3	37.8	60.1	23.8	Increase	52.1	Yes	48.6	Yes	NE of Talisheek	Yes
R396	36.3	37.9	64.3	28.0	Increase	55.7	Yes	51.5	Yes	NE of Talisheek	Yes
R397	36.3	38.2	47.2	10.9	Increase	43.9		41.7		NE of Talisheek	
R399	36.3	38.3	63.5	27.2	Increase	54.9	Yes	50.7	Yes	NE of Talisheek	Yes
R419	36.3	39.0	49.4	13.1	Increase	45.3		42.8		NE of Talisheek	
R454	37.8	43.1	51.0	13.2	Increase	46.5		44.0	Yes	NE of Talisheek	Yes
R492	42.2	48.6	57.1	14.9	Increase	50.9	Yes	48.3	Yes	NE of Talisheek	Yes
R523	52.0	58.9	64.4	12.4	Increase	59.3	Yes	58.1	Yes	NE of Talisheek	Yes
R351	36.3	35.9	62.0	25.7	Increase	61.8		61.8		NW of Talisheek	Yes
R366	36.3	36.6	52.6	16.3	Increase	50.0		49.2		NW of Talisheek	Yes
R386	36.3	37.5	58.0	21.7	Increase	51.0	Yes	47.9	Yes	NW of Talisheek	Yes
R398	36.3	38.1	57.5	21.2	Increase	50.4	Yes	47.1	Yes	NW of Talisheek	Yes
R405	36.3	38.5	55.6	19.3	Increase	49.2	Yes	46.0	Yes	NW of Talisheek	Yes
R433	36.3	40.5	60.3	24.0	Increase	51.9	Yes	48.1	Yes	NW of Talisheek	Yes
R451	38.5	44.4	54.3	15.8	Increase	48.5	Yes	45.4	Yes	NW of Talisheek	Yes
R560	41.8	48.3	62.9	21.1	Increase	54.4		50.8		NW of Talisheek	
R66	36.3	35.1	54.6	18.3	Increase	54.6		54.6		SE of Bush	
R68	36.3	35.1	50.6	14.3	Increase	50.6		50.6		SE of Bush	
R95	36.3	34.4	51.4	15.1	Increase	51.4		51.4		SE of Bush	
R178	36.3	32.7	53.3	17.0	Increase	49.9		48.5		SE of Bush	Yes
R180	36.3	32.7	51.9	15.6	Increase	48.8		47.4		SE of Bush	
R181	36.3	32.7	53.6	17.3	Increase	49.6		48.0	Yes	SE of Bush	Yes
R182	36.3	32.7	51.6	15.3	Increase	48.0		46.2		SE of Bush	
R183	36.3	32.6	62.4	26.1	Increase	54.2	Yes	51.0	Yes	SE of Bush	Yes
R184	36.3	32.6	62.0	25.7	Increase	53.6	Yes	50.0	Yes	SE of Bush	Yes
R185	36.3	32.5	49.7	13.4	Increase	45.7		43.0		SE of Bush	
R186	36.3	32.5	51.2	14.9	Increase	46.7		43.8	Yes	SE of Bush	Yes
R189	36.3	32.5	53.4	17.1	Increase	48.0	Yes	44.7	Yes	SE of Bush	Yes
R191	36.3	32.5	50.6	14.3	Increase	50.6		50.6		SE of Bush	
R193	36.3	32.5	60.0	23.7	Increase	51.9	Yes	48.0	Yes	SE of Bush	Yes
R194	36.3	32.4	57.8	21.5	Increase	50.6	Yes	46.9	Yes	SE of Bush	Yes
R195	36.3	32.4	61.6	25.3	Increase	52.7	Yes	48.6	Yes	SE of Bush	Yes
R215	36.3	32.4	50.0	13.7	Increase	45.5		42.7	Yes	SE of Bush	Yes
R221	36.3	32.4	46.4	10.1	Increase	43.1		40.7	Yes	SE of Bush	Yes
R229	36.3	32.5	46.4	10.1	Increase	43.1		40.8	Yes	SE of Bush	Yes
R243	36.3	32.5	46.8	10.5	Increase	43.4		41.0	Yes	SE of Bush	Yes
R248	36.3	32.4	62.1	25.8	Increase	62.1		62.1		SE of Bush	
R255	36.3	32.5	48.0	11.7	Increase	44.2		41.6	Yes	SE of Bush	Yes
R266	36.3	32.5	48.9	12.6	Increase	44.8		42.1	Yes	SE of Bush	Yes
R272	36.3	32.5	53.7	17.4	Increase	48.0	Yes	44.7	Yes	SE of Bush	Yes
R304	36.3	32.9	48.6	12.3	Increase	44.8		42.4	Yes	SE of Bush	Yes
R305	36.3	33.0	50.1	13.8	Increase	45.9		43.4	Yes	SE of Bush	Yes
R561	42.3	48.8	59.3	17.0	Increase	52.1	Yes	49.1	Yes	SE of Talisheek	Yes
R563	41.4	47.8	53.6	12.2	Increase	48.5	Yes	46.0	Yes	SE of Talisheek	Yes
R572	36.3	39.9	47.8	11.5	Increase	44.5		42.3	Yes	SE of Talisheek	Yes
R580	36.3	38.1	55.7	19.4	Increase	49.9	Yes	47.2	Yes	SE of Talisheek	Yes
R553	47.3	54.1	68.7	21.4	Both	61.0	Yes	56.2	Yes	SW of Talisheek	Yes
R569	36.3	41.4	63.7	27.4	Increase	54.8		50.7		SW of Talisheek	

Table A-1 Impacted Receptors - Alternative Q (2035)

	Existing	No Build	2035	Δ	Impact	10' Barrier	> 5 dBA Benefit	15' Barrier	> 5 dBA Benefit	Barrier	Front Row
R570	36.3	40.3	46.9	10.6	Increase	43.7		41.5		SW of Talisheek	
R575	36.3	38.7	59.7	23.4	Increase	51.9	Yes	48.5	Yes	SW of Talisheek	Yes
R576	36.3	38.5	49.0	12.7	Increase	45.1		42.8		SW of Talisheek	
R577	36.3	38.3	55.1	18.8	Increase	49.2	Yes	46.2	Yes	SW of Talisheek	Yes
R578	36.3	38.2	52.4	16.1	Increase	47.4		44.7		SW of Talisheek	
R579	36.3	38.2	48.7	12.4	Increase	45.0		42.7		SW of Talisheek	
R581	36.3	37.9	46.4	10.1	Increase	43.5		41.6		SW of Talisheek	
R582	36.3	37.7	52.3	16.0	Increase	47.6		45.1	Yes	SW of Talisheek	Yes
R583	36.3	37.6	50.5	14.2	Increase	46.5		44.3	Yes	SW of Talisheek	Yes
R584	36.3	37.4	48.3	12.0	Increase	45.2		43.3		SW of Talisheek	Yes
R586	36.3	36.9	47.5	11.2	Increase	45.2		44.0		SW of Talisheek	Yes

Table A-2 Location of Impacted Receptors - Alternative Q (2035)

R	Easting	Northing	R	Easting	Northing	R	Easting	Northing	R	Easting	Northing
R66	221793	3389404	R229	222138	3386606	R397	223515	3382457	R576	223673	3380567
R68	221743	3389398	R243	222163	3386504	R398	223158	3382439	R577	223771	3380534
R95	221716	3389171	R248	221850	3386441	R399	223346	3382382	R578	223741	3380526
R178	221770	3387865	R255	222180	3386377	R405	223173	3382343	R579	223683	3380524
R180	221786	3387856	R266	222183	3386319	R419	223546	3382237	R580	224042	3380518
R181	221762	3387834	R272	222163	3386171	R433	223323	3382011	R581	223651	3380466
R182	221784	3387808	R304	222475	3385467	R451	223365	3381726	R582	223772	3380430
R183	221678	3387743	R305	222489	3385351	R454	223707	3381689	R583	223758	3380392
R184	221679	3387675	R347	223224	3383168	R492	223703	3381491	R584	223735	3380348
R185	221807	3387515	R348	223258	3383158	R523	223678	3381372	R586	223762	3380217
R186	221784	3387513	R351	222957	3383138	R553	223646	3381243	R609	221755	3366887
R189	221772	3387399	R366	222956	3382886	R560	223628	3381162	R615	221750	3366803
R191	221445	3387354	R373	223294	3382803	R561	223796	3381161	R668	221837	3366302
R193	221747	3387251	R380	223321	3382670	R563	223861	3381140	R728	221854	3366072
R194	221783	3387183	R383	223402	3382664	R569	223725	3380898	R768	222126	3365478
R195	221778	3387116	R386	223111	3382593	R570	223541	3380822	R770	222122	3365440
R215	222043	3386680	R393	223328	3382528	R572	224079	3380761	R773	222008	3365408
R221	222125	3386647	R396	223307	3382476	R575	223792	3380595	R774	222122	3365382

Table A-3 Impacted Receptors in No Build (2035)

	Existing	No Build	Northing	Easting
R465	64.4	71.3	3381598	222097
R536	60.5	67.4	3381344	223687
R609	65.6	66.2	3366887	221755

Table A-4 Barrier Feasibility

Barrier	Number of First Row Receptors	Number of First Row Receptors with 5 dBA Benefited	Percent Front Row with 5 dBA Benefit	Feasible	Number of First Row Receptors with 5 dBA Benefited	Percent Front Row with 5 dBA Benefited	Feasible
SE of Bush	18	7	38.9%	No	17	94.4%	**Yes**
NE of Talisheek	9	6	66.7%	No	8	88.9%	**Yes**
NW of Talisheek	7	5	71.4%	No	5	71.4%	No
SE of Talisheek	4	3	75.0%	**Yes**	4	100.0%	**Yes**
SW of Talisheek	7	3	47.6%	No	5	71.4%	No
E of LA 434	3	1	33.3%	No	2	66.7%	No

Table A-5 Barrier Reasonableness

Barrier	Number of Benefited Receptor	Length [Feet]	Area [sqft]	Cost/SqFt	Barrier Cost	Cost per Benefited Receptor	Reasonable
Southeast of Bush (15')	17	10,717	160,755	$54	$8,680,770	$510,633	No
Northeast of Talisheek (15')	8	5,625	84,375	$54	$4,556,250	$569,531	No
Southeast of Talisheek (15')	4	3,932	58,980	$68	$4,010,640	$1,002,660	No
Southeast of Talisheek (10')	4	3,932	39,320	$17	$668,440	$167,110	No

A.2 Feasibility and Reasonableness Worksheets

Feasibility Worksheet			
	ID number	Route Location	
Project : I-12 to Bush	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	SE of Bush	10,717	10
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve $\geq$ 5 dBA reduction:
18	7		38.9%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle Yes or (No)		
	Explain: Does not provide a 5 dBA reduction for 75% of front row receptors.		

Feasibility Worksheet			
	ID number	Route Location	
Project : I-12 to Bush	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	SE of Bush	10,717	15
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve $\geq$ 5 dBA reduction:
18	17		94.4%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle (Yes) or No		
	Explain: Does provide a 5 dBA reduction for 75% of front row receptors.		

Feasibility Worksheet			
	ID number	Route Location	
Project : I-12 to Bush	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	NE of Talisheek	5,625	10
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve $\geq$ 5 dBA reduction:
9	6		66.7%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle Yes or (No)		
	Explain: Does not provide a 5 dBA reduction for 75% of front row receptors.		

Feasibility Worksheet			
	ID number	Route Location	
Project : I-12 to Bush	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	NE of Talisheek	5,625	15
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve $\geq$ 5 dBA reduction:
9	8		88.9%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle (Yes) or No		
	Explain: Does provide a 5 dBA reduction for 75% of front row receptors.		

Feasibility Worksheet

Project : I-12 to Bush	ID number	Route Location	
	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	NW of Talisheek	5,638	10
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve > 5 dBA reduction:
7	5		71.4%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle Yes or (No)		
	Explain: Does not provide a 5 dBA reduction for 75% of front row receptors.		

Feasibility Worksheet

Project : I-12 to Bush	ID number	Route Location	
	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	NW of Talisheek	5,638	15
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve > 5 dBA reduction:
7	5		71.4%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle Yes or (No)		
	Explain: Does not provide a 5 dBA reduction for 75% of front row receptors.		

Feasibility Worksheet

Project : I-12 to Bush	ID number	Route Location	
	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	Southeast of Talisheek	3,932	10
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve > 5 dBA reduction:
4	3		75.0%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle (Yes) or No		
	Explain: Does provide a 5 dBA reduction for 75% of front row receptors.		

Feasibility Worksheet

Project : I-12 to Bush	ID number	Route Location	
	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	Southeast of Talisheek	3,932	15
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve > 5 dBA reduction:
4	4		100.0%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle (Yes) or No		
	Explain: Does provide a 5 dBA reduction for 75% of front row receptors.		

Feasibility Worksheet

Project : I-12 to Bush	ID number	Route Location	
	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	SW of Talisheek	3,948	10
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve ≥ 5 dBA reduction:
7	3		47.6%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle Yes or (No)		
	Explain: Does not provide a 5 dBA reduction for 75% of front row receptors.		

Feasibility Worksheet

Project : I-12 to Bush	ID number	Route Location	
	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	SW of Talisheek	3,948	15
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve ≥ 5 dBA reduction:
7	5		71.4%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle Yes or (No)		
	Explain: Does not provide a 5 dBA reduction for 75% of front row receptors.		

Feasibility Worksheet

Project : I-12 to Bush	ID number	Route Location	
	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	East of Route 434	1,414	15
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve ≥ 5 dBA reduction:
3	1		33.3%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle Yes or (No)		
	Explain: Does not provide a 5 dBA reduction for 75% of front row receptors.		

Feasibility Worksheet

Project : I-12 to Bush	ID number	Route Location	
	H.004985.2	Saint Tammany Parrish	
	Location	Length (feet)	Height (feet)
Barrier	East of Route 434	1,414	15
Number of first row receptors (receptors adjacent to barrier):	Number of *first row* receptors that achieve at least a 5dBA reduction in noise with barrier:		% that achieve ≥ 5 dBA reduction:
3	2		66.7%
Are there any additional feasibility issues to consider?	*Explain: No*		
Based on the above, is the barrier feasible?	Circle Yes or (No)		
	Explain: Does not provide a 5 dBA reduction for 75% of front row receptors.		

Reasonableness Worksheet DURING NEPA- Southeast of Bush - 15 Ft Barrier				
	ID number	Route	Parish/City	
Project	H.004985.2	I-12 to Bush	Saint Tammany Parrish	
	Length	Height	Location	
Barrier	10,717	15	Southeast of Bush	
Criterion 1: Cost				
Total Square Feet	Cost per Square Foot	Total Cost	Number of Benefited Receptors	Cost per Benefited Receptor
160,755	$54	$8,680,770	17	$510,633
Criterion 2: Design Goal				
At least an 8dBA reduction at 1 Receptor?	Circle: Yes or No			
	Notes: Seven (7) receptors with a greater than 8 dBA reduction			
Criterion 3: Desires of Benefited Receptors				
Public Involvement events showing *Likely* barrier	Event(s) and date(s): NA			
	Notes: Does not meeting cost reasonableness criteria, No further action required.			
Benefitted Receptors' viewpoint of barrier	Circle: Positive or Negative			
	Notes:			
Separate Query of Benefitted Receptors	Circle: Yes or No			
	If Yes, note type and results (% of responses for barrier):			
Reasonableness criteria met?	Criterion 1 (yes or no) No	Criterion 2 (yes or no) Yes	Criterion 3 (yes or no) NA	Date 10/15/2013

Reasonableness Worksheet DURING NEPA- Northeast of Talisheek - 15 Ft Barrier				
	ID number	Route	Parish/City	
Project	H.004985.2	I-12 to Bush	Saint Tammany Parrish	
	Length	Height	Location	
Barrier	5,625	15	Northeast of Talisheek	
Criterion 1: Cost				
Total Square Feet	Cost per Square Foot	Total Cost	Number of Benefited Receptors	Cost per Benefited Receptor
84,375	$54	$4,556,250	8	$569,531
Criterion 2: Design Goal				
At least an 8dBA reduction at 1 Receptor?	Circle: Yes or No			
	Notes: Two (2) receptors with a greater than 8 dBA reduction			
Criterion 3: Desires of Benefited Receptors				
Public Involvement events showing *Likely* barrier	Event(s) and date(s): NA			
	Notes: Does not meeting cost reasonableness criteria, No further action required.			
Benefitted Receptors' viewpoint of barrier	Circle: Positive or Negative			
	Notes:			
Separate Query of Benefitted Receptors	Circle: Yes or No			
	If Yes, note type and results (% of responses for barrier):			
Reasonableness criteria met?	Criterion 1 (yes or no) No	Criterion 2 (yes or no) Yes	Criterion 3 (yes or no) NA	Date 10/15/2013

Reasonableness Worksheet DURING NEPA - Southeast of Talisheek - 15 Ft Barrier					
	ID number	Route	Parish/City		
Project	H.004985.2	I-12 to Bush	Saint Tammany Parrish		
	Length	Height	Location		
Barrier	3,932	15	Southeast of Talisheek		
Criterion 1: Cost					
Total Square Feet	Cost per Square Foot	Total Cost	Number of Benefited Receptors	Cost per Benefited Receptor	
84,570	$68	$4,010,640	4	$1,002,660	
Criterion 2: Design Goal					
At least an 8dBA reduction at 1 Receptor?	Circle: Yes or No				
	Notes: One (1) receptors with a greater than 8 dBA reduction				
Criterion 3: Desires of Benefited Receptors					
Public Involvement events showing *Likely* barrier	Event(s) and date(s): NA				
	Notes: Does not meeting cost reasonableness criteria, No further action required.				
Benefitted Receptors' viewpoint of barrier	Circle: Positive or Negative				
	Notes:				
Separate Query of Benefitted Receptors	Circle: Yes or No				
	If Yes, note type and results (% of responses for barrier):				
Reasonableness criteria met?	Criterion 1 (yes or no) No	Criterion 2 (yes or no) Yes	Criterion 3 (yes or no) NA	Date 10/15/2013	

Reasonableness Worksheet DURING NEPA - Southeast of Talisheek - 10 Ft Barrier					
	ID number	Route	Parish/City		
Project	H.004985.2	I-12 to Bush	Saint Tammany Parrish		
	Length	Height	Location		
Barrier	3,932	10	Southeast of Talisheek		
Criterion 1: Cost					
Total Square Feet	Cost per Square Foot	Total Cost	Number of Benefited Receptors	Cost per Benefited Receptor	
39,320	$17	$668,440	3	$167,110	
Criterion 2: Design Goal					
At least an 8dBA reduction at 1 Receptor?	Circle: Yes or No				
	Notes: One (1) receptors with a greater than 8 dBA reduction				
Criterion 3: Desires of Benefited Receptors					
Public Involvement events showing *Likely* barrier	Event(s) and date(s): NA				
	Notes: Does not meeting cost reasonableness criteria, No further action required.				
Benefitted Receptors' viewpoint of barrier	Circle: Positive or Negative				
	Notes:				
Separate Query of Benefitted Receptors	Circle: Yes or No				
	If Yes, note type and results (% of responses for barrier):				
Reasonableness criteria met?	Criterion 1 (yes or no) No	Criterion 2 (yes or no) Yes	Criterion 3 (yes or no) NA	Date 10/15/2013	

A.3 Field Measurement Sheets

Project		I-12 to Bush - Background		Cal Check	Y
Location		M1 Ball Field		Data File Stored	Y
Date		10/01/2013		File Number	6
Pictures		Yes		Weather	Cloudy
Arrival Time		1625 EST		Temperature (°F)	84.5°
Departure Time				Wind Speed (mph)	0-.05
Waypoint	010	Easting	0222040	Northing	3389269
Description of Location	Ball fields south side of Bush				
Audible Noise Sources	Traffic on 41, insects, birds, distant chickens				
Automobiles:					
Medium Trucks:				Speed:	
Heavy Trucks:		Buses:		Motorcycles:	

Project		I-12 to Bush - Background		Cal Check	Y
Location		M2 South of Bush		Data File Stored	Y
Date		10/01/2013		File Number	5
Pictures		Yes		Weather	Cloudy
Arrival Time		1556 EST		Temperature (°F)	86°
Departure Time		1610 EST		Wind Speed (mph)	0
Waypoint	008	Easting	0221653	Northing	3387127
Description of Location	¾ mile south of Bush on Railroad Road				
Audible Noise Sources	Birds, dripping water, distant thunder, distant autos				

Project		I-12 to Bush - Background		Cal Check	Y
Location		M3 Talisheek Remote		Data File Stored	Y
Date		10/01/2013		File Number	4
Pictures		Yes		Weather	Cloudy
Arrival Time		1522 EST		Temperature (°F)	85.8°
Departure Time				Wind Speed (mph)	0-.05
Waypoint	007	Easting	0223356	Northing	3382166
Description of Location	Along ROW north of Talisheek				
Audible Noise Sources	Birds, distant thunder, distant autos				
Note: One car passed close at 5 minutes					

Project		I-12 to Bush - Background		Cal Check	Y
Location		M4		Data File Stored	Y
Date		10/01/2013		File Number	3
Pictures		Yes		Weather	Cloudy
Arrival Time		1456 EST		Temperature (°F)	
Departure Time		1504 EST		Wind Speed (mph)	0-.05
Waypoint	006	Easting	0223758	Northing	3380994
Description of Location	¼ mile south of Highway 435 in Talisheek				
Audible Noise Sources	Insects, birds, distant traffic				
Note: Left after eight minutes due to rain					

Project		I-12 to Bush - Validation		Cal Check	Y
Location		M5		Data File Stored	Y
Date		10/02/2013		File Number	1
Pictures		Yes		Weather	
Arrival Time		1349 EST		Temperature (°F)	79.5°
Departure Time		1404 EST		Wind Speed (mph)	0-2
Waypoint	004	Easting	0219608	Northing	3361957
Description of Location	100 Feet from Road in front of the hospital				
Audible Noise Sources	Insect noise, car noise, crow, distant industrial hum@130Hz, distant I-12				
Automobiles: 50					
Medium Trucks: 3				Speed: 47	
Heavy Trucks: 4		Buses: 0		Motorcycles: 1	

Project	I-12 to Bush - Background/Validation			Cal Check	Y
Location	M6			Data File Stored	Y
Date	10/01/2013			File Number	9
Pictures	Yes			Weather	Cloudy
Arrival Time	1845 EST			Temperature (°F)	86°
Departure Time				Wind Speed (mph)	0-1
Waypoint 014	Easting	0221420		Northing	3364679
Description of Location Park & Ride 400 feet from center line					
Audible Noise Sources Insects, frogs, traffic					
Automobiles: 39					
Medium Trucks: 2				Speed:	
Heavy Trucks: 0		Buses: 0		Motorcycles:	

Project	I-12 to Bush - Validation			Cal Check	Y
Location	M7			Data File Stored	Y
Date	10/01/2013			File Number	2
Pictures				Weather	Cloudy
Arrival Time	1406 EST			Temperature (°F)	80°
Departure Time				Wind Speed (mph)	0-3
Waypoint 005	Easting	0219656		Northing	3361940
Description of Location At emergency entrance to hospital					
Audible Noise Sources HVAC, distant industrial hum, I-12 distant, insects					
Automobiles: 44					
Medium Trucks: 2				Speed: 45	
Heavy Trucks: 10		Buses: 0		Motorcycles: 0	

Project	I-12 to Bush - Validation			Cal Check	Y
Location	M8 Park & Ride			Data File Stored	Y
Date	10/01/2013			File Number	7
Pictures	Yes			Weather	Cloudy
Arrival Time	1812 EST			Temperature (°F)	82°
Departure Time				Wind Speed (mph)	0-1
Waypoint 012	Easting	0221364		Northing	3364720
Description of Location Park & Ride 100 feet from center line					
Audible Noise Sources Insects, traffic					
Automobiles: 56					
Medium Trucks: 2				Speed: 50	
Heavy Trucks: 0		Buses: 0		Motorcycles: 0	

Project	I-12 to Bush - Background/Validation			Cal Check	Y
Location	M9 Park & Ride			Data File Stored	Y
Date	10/01/2013			File Number	8
Pictures	Yes			Weather	Cloudy
Arrival Time	1829 EST			Temperature (°F)	82°
Departure Time				Wind Speed (mph)	0
Waypoint 013	Easting	0221383		Northing	3364712
Description of Location Park & Ride 200 feet from center line					
Audible Noise Sources Insects, traffic, frogs					
Automobiles: 52					
Medium Trucks: 2				Speed: 0	
Heavy Trucks: 1		Buses: 0		Motorcycles: 2	

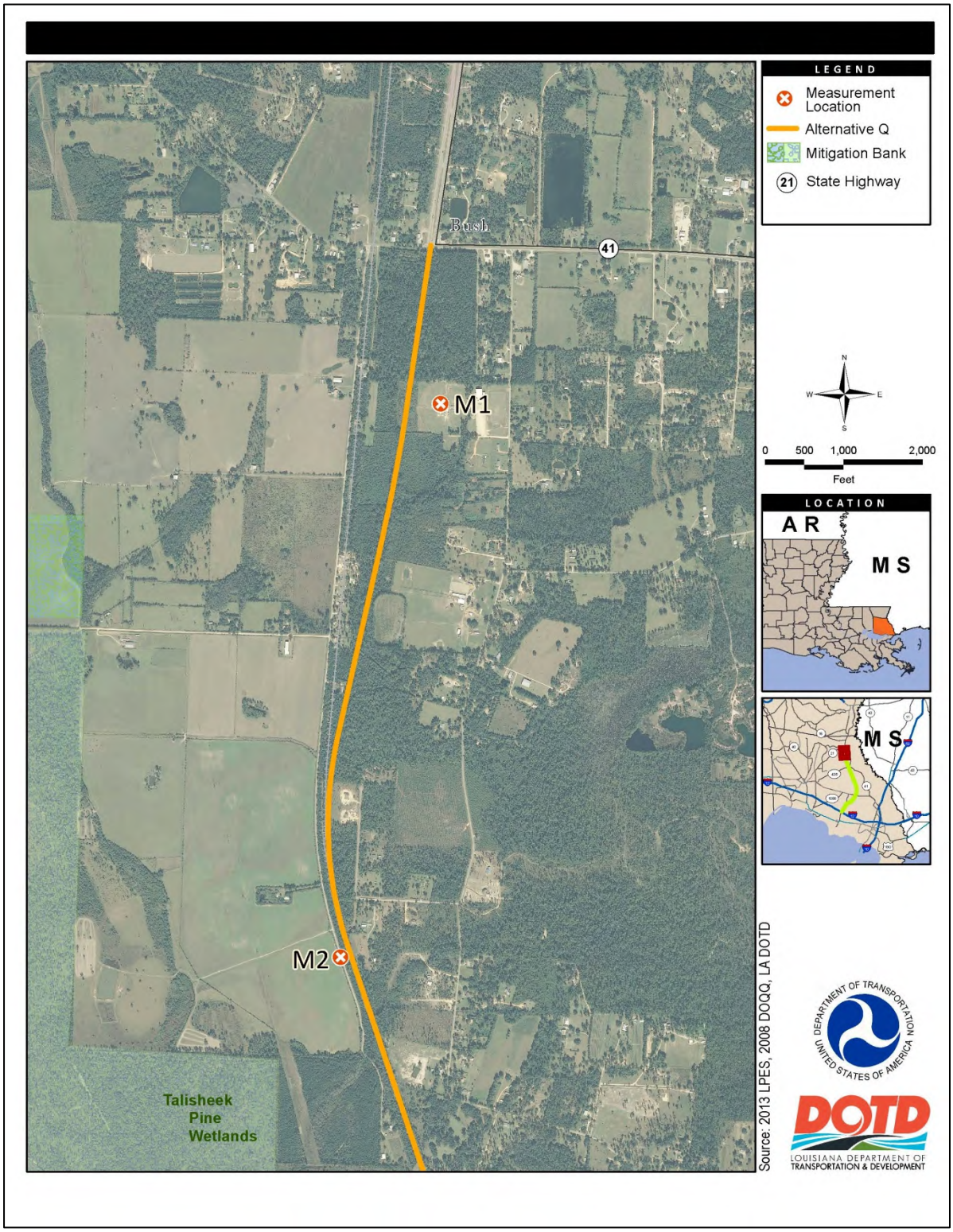

Figure A-1. Background Noise Measurement Sites (M1 and M2)

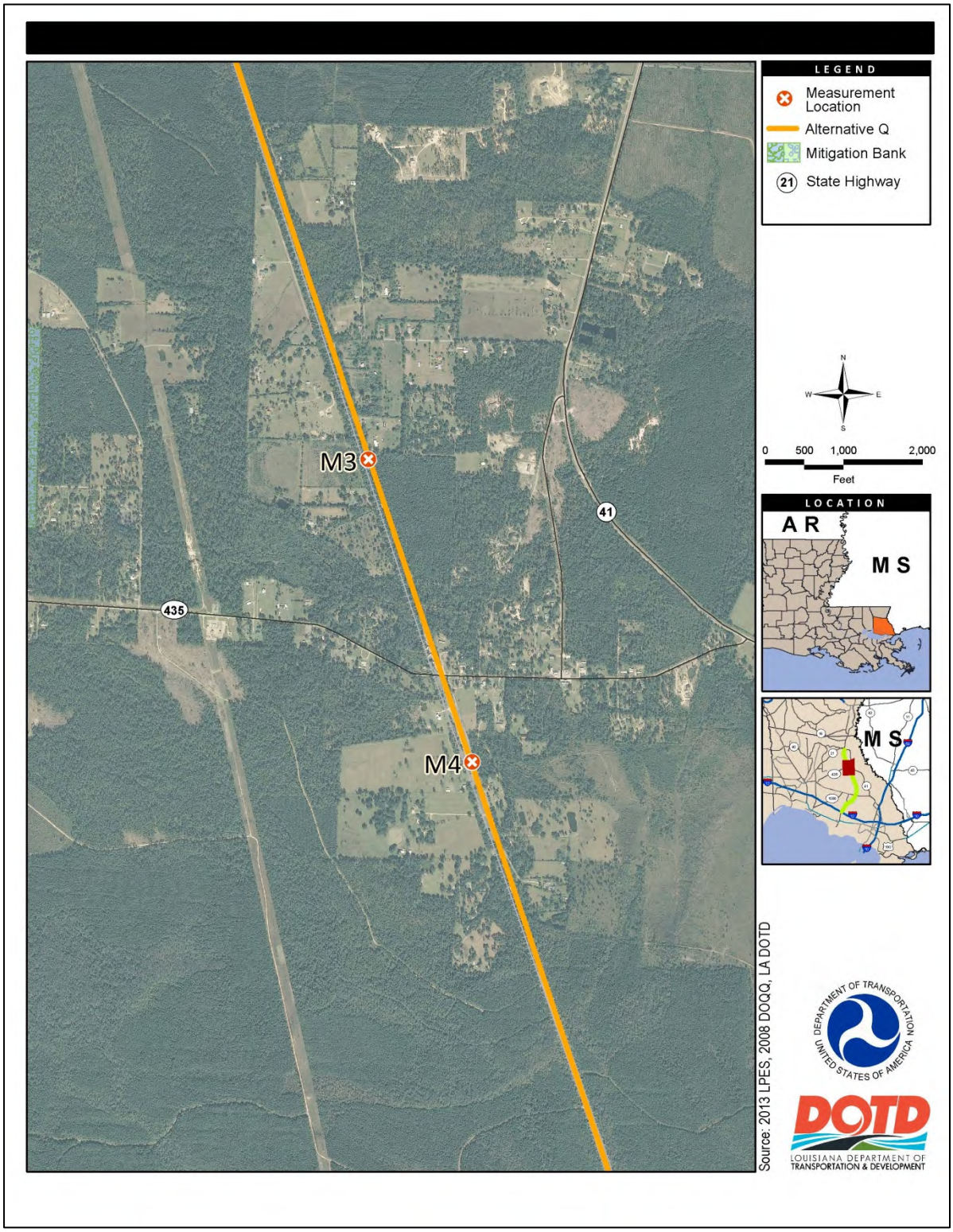

Figure A-2. Background Noise Measurement Sites (M3 and M4)

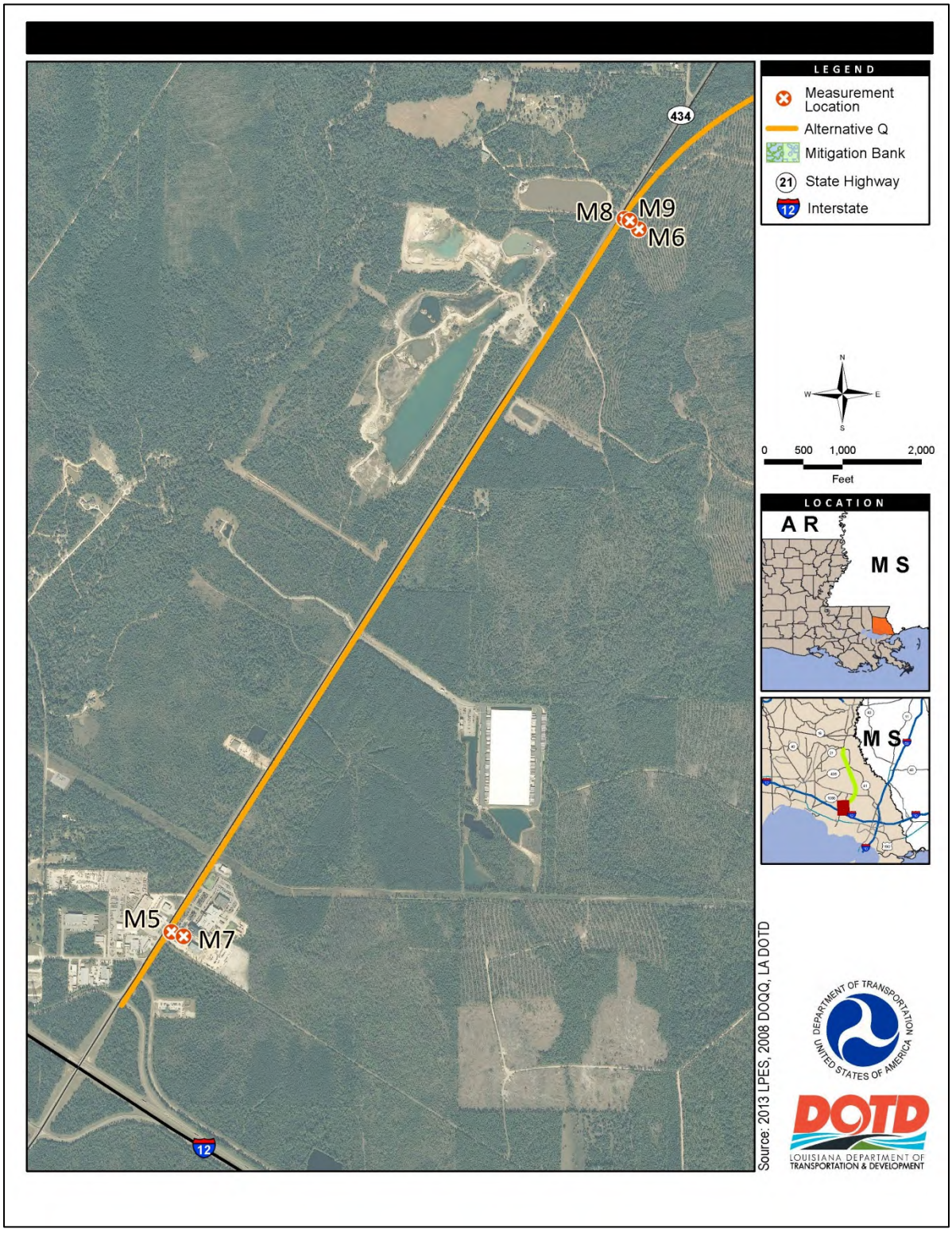

Figure A-3. Background Noise Measurement Sites (M5 through M9)

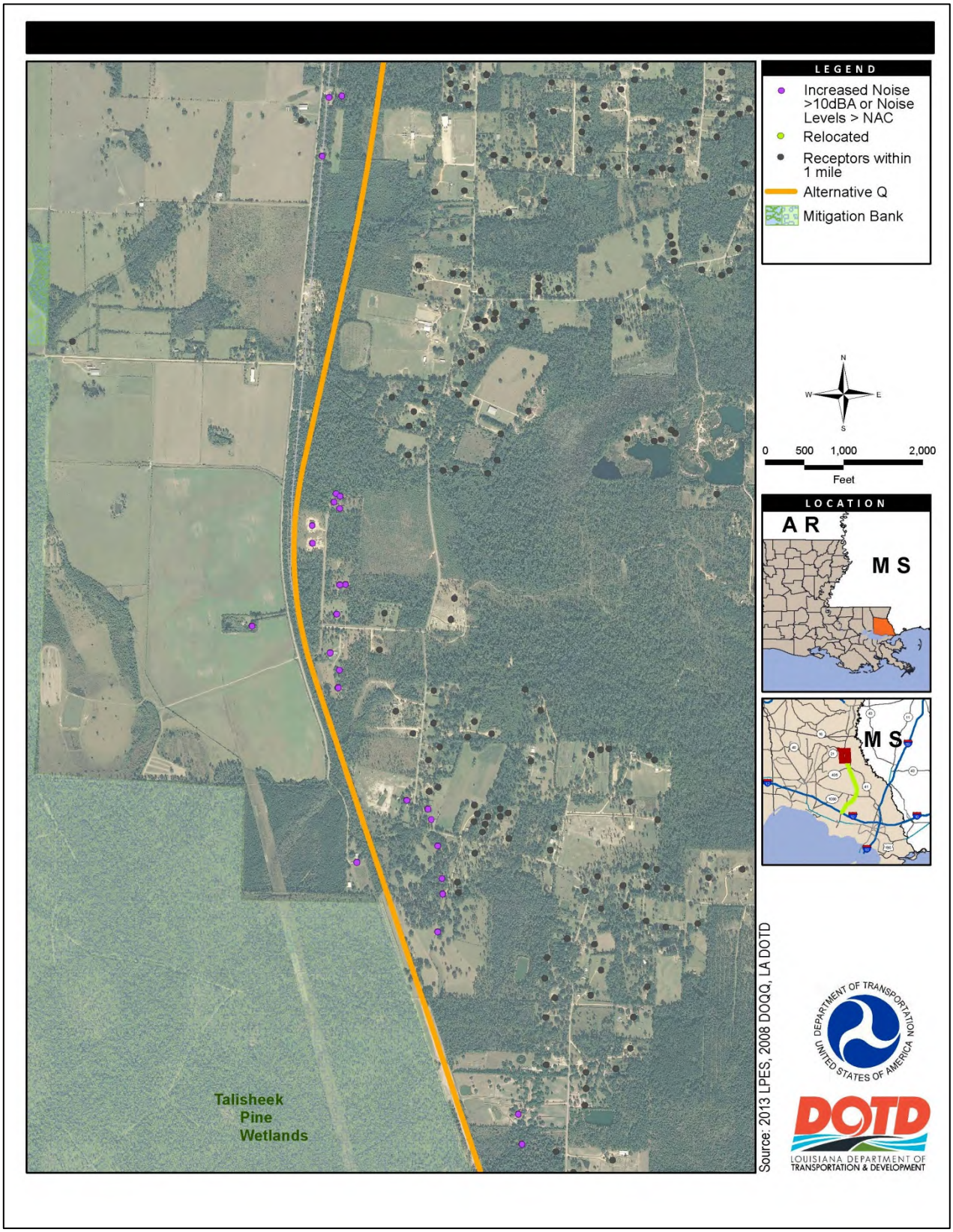

Figure A-4. Receptors – Southeast of Bush

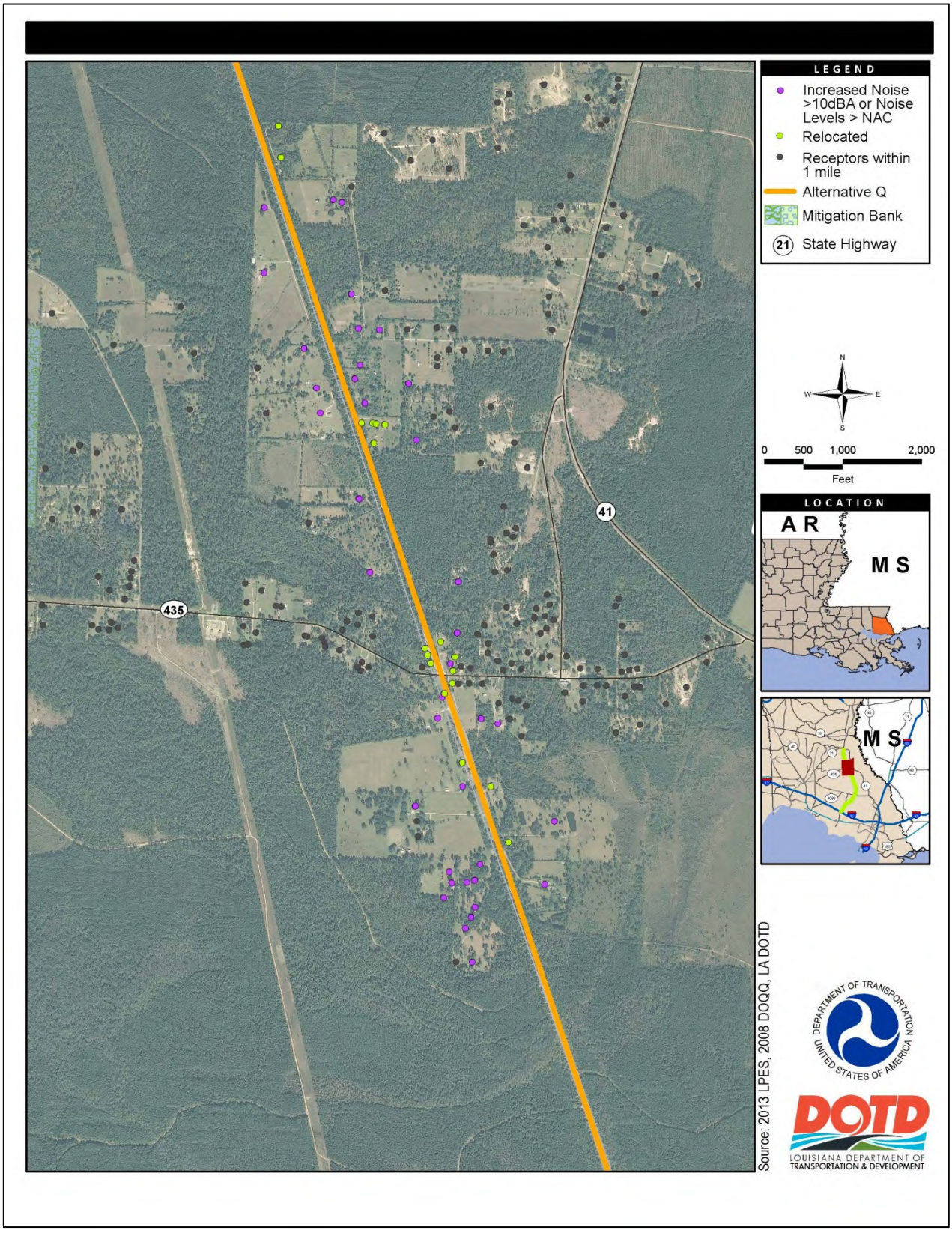

Figure A-5. Receptors – Near Talisheek

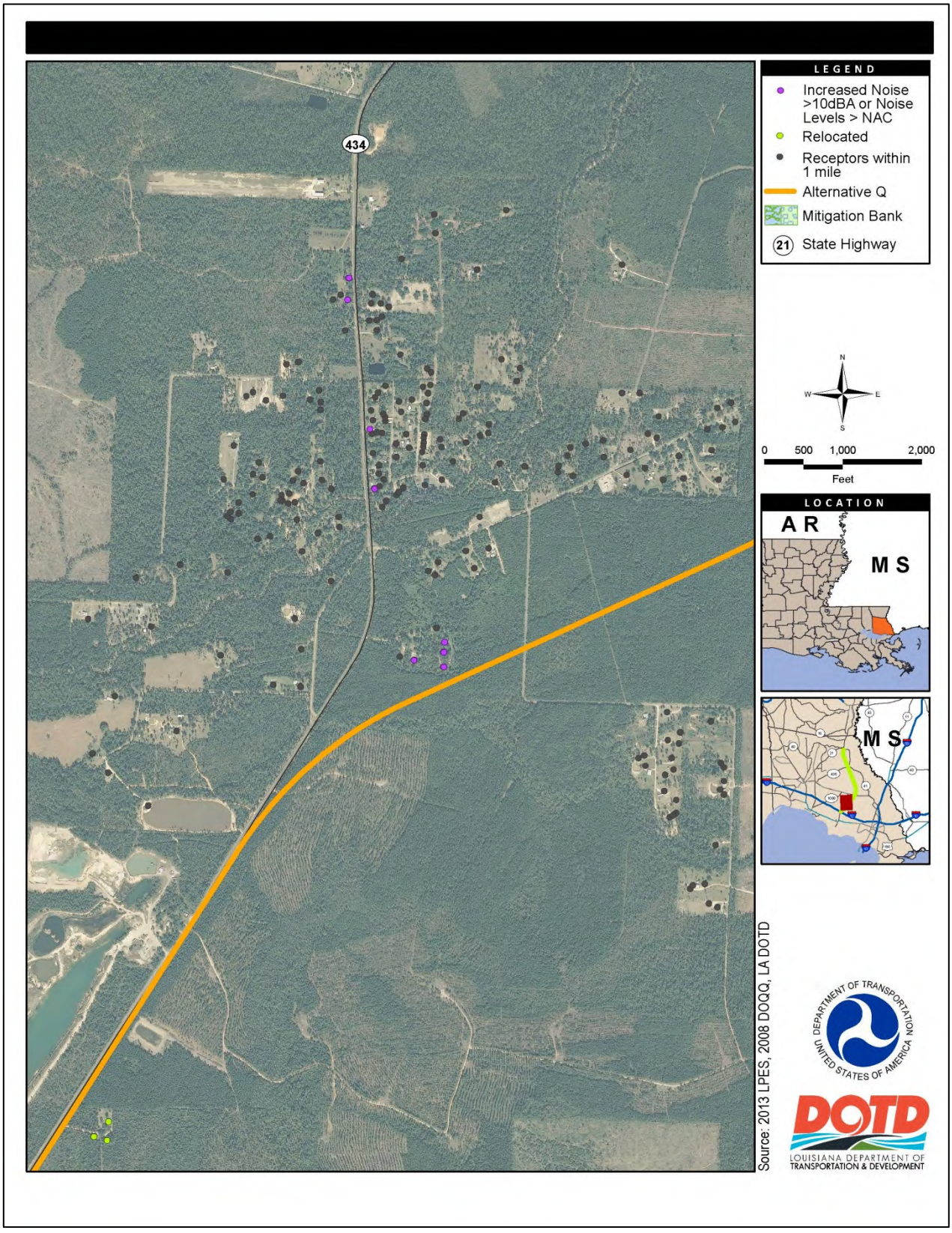

Figure A-6. Receptors – East of LA 434

APPENDIX C
SECTION 4(F) EVALUATION

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Section 4(f) Evaluation

I-12 to Bush, Route LA 3241

St. Tammany Parish, Louisiana

State Project No. H.004985.2

Prepared for

Louisiana Department of Transportation and Development

and

U.S. Department of Transportation, Federal Highway Administration

Prepared by
Tetra Tech
748 Main St, Suite B
Baton Rouge, LA 70802

Contents

Figures

Tables

Appendix

Acronym List

CFR	Code of Federal Regulations
CEMVN	U.S. Army Corps of Engineers, New Orleans District
dBA	A-weighted decibel
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
LA	Louisiana State Highway
LADOTD	Louisiana Department of Transportation and Development
LEDPA	Least Environmentally Damaging Practicable Alternative
L_{eq}	Equivalent Sound Pressure Level
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
ROD	Record of Decision
ROW	right-of-way
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SFEIS	Supplemental Final Environmental Impact Statement
SHPO	State Historic Preservation Office
U.S.C.	United States Code
USDOT	U.S. Department of Transportation
USACE	U.S. Army Corps of Engineers

SECTION 1.0
INTRODUCTION AND METHODOLOGY

On June 7, 2012, the U.S. Army Corps of Engineers (USACE), New Orleans District (CEMVN) identified Alternative Q as the Least Environmentally Damaging Practicable Alternative (LEDPA) for the proposed Interstate 12 to Bush (Route 3241) project and issued a Record of Decision (ROD) to the Louisiana Department of Transportation and Development (LADOTD) in compliance with Section 404(b)(1) of the Clean Water Act with additional stipulations. Alternative Q would include new construction of a 4-lane highway beginning at the existing I-12 and LA 434 interchange (Exit 74). It would tie into LA 434, and then follow an abandoned railroad corridor from a point approximately 1.7 miles north of LA 36 to Bush (Figure 1-1). This alternative would be approximately 20.0 miles long, with 9.8 miles using the abandoned railroad embankment, 7.7 miles on new alignment, and 2.7 miles on existing roadway. The majority of the alternative (16.4 miles) consists of a RA-3 typical cross section, which would have a maximum right-of-way (ROW) width of 250 feet. The northern 0.7 miles of the route would have a RA-2 cross section, while the southern 2.7 miles will have suburban arterial SA-1 cross section.

The following regulations impact conducting a Section 4(f) evaluation including Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 (23 *United States Code* [U.S.C.] Section 138 and 49 U.S.C. Section 303 and implementing regulation Title 23 *Code of Federal Regulations* [CFR] 774). If no prudent and feasible alternative to the use of land from a publicly owned public park, recreation area, wildlife or refuge or land of a historic or national, state, or local significance (as federal, state, and local officials that have jurisdiction over such resources determine) then a Section 4(f) will be initiated. This action includes evaluating all possible measures to minimize harm in accordance with Federal Highway Administration (FHWA) Section 4(f) regulations, 23 CFR 774, and FHWA's Section 4(f) Policy Paper (July 12, 2012) and is consistent with the criteria for a Section 4(f) Evaluation.

Section 4(f) coordination for the I-12 to Bush project was initiated after CEMVN finalized the third-party Environmental Impact Statement (EIS) and LADOTD subsequently received an opportunity for federal funding to complete construction of the road. Section 1.4 of the CEMVN Final EIS (2012a) describes the purpose and need for the proposed alignment in the project area.

A Section 4(f) use occurs when property identified as a Section 4(f) resource is permanently acquired and incorporated into a transportation project or when occupancy of land is adverse in terms of integrity of the Section 4(f) resource. In compliance with Section 106 of the National Historic Preservation Act, and to identify the Section 4(f) resources in the project area, coordination was conducted between the State Historic Preservation Office (SHPO) and St. Tammany Parish Government District #6, which oversees Recreation District #2. St. Tammany Recreation District #2 owns and operates the Bush Recreational Center and makes decisions that affect the property. St. Tammany Parish Government District #6 assists St. Tammany Parish Recreation District #2 with meeting their goals. The Section 4(f) Evaluation for the proposed project indicates *de minimis* impacts to the Bush Recreational Center. This is the only Section 4(f) feature identified along proposed route and is adjacent to the northern end of Alternative Q (Figure 1-2).

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFTEA-LU) amendment to the Section 4(f) requirements allows USDOT to determine when certain uses of Section 4(f) land will have *de minimis impacts* on that specific protected resource. When this is the case, and the responsible official(s) with jurisdiction over the resource agrees in writing, compliance with Section 4(f) is met.

Public notice and an opportunity for public review and comment concerning the effects on the protected activities, features, or attributes of the property must be provided in accordance with 23 CFR 774.5. The

public was given an opportunity to review and comment on the Draft EIS during a 45-day comment period, from September 9, 2011 through October 24, 2011, and a public hearing was held on September 28, 2011. The Final EIS was also available for a 30-day public comment from March 9, 2012 to April 9, 2012.

A comment letter (Comment 22 in the Draft EIS) regarding the Bush Recreational Center was submitted regarding the impacts from Alternative Q. The Draft EIS, Section 3.8.3 (Recreation Districts) was revised was to include the following text, "Recreation District #2 operates a baseball field complex approximately 0.4 miles south of the LA 21/LA 41 intersection on the west side of Watts Thomas Road. This complex consists of four baseball/softball fields and is used year-round."

The public will be given the opportunity to review the Supplemental Final Environmental Impact Statement (SFEIS) in July 2015.

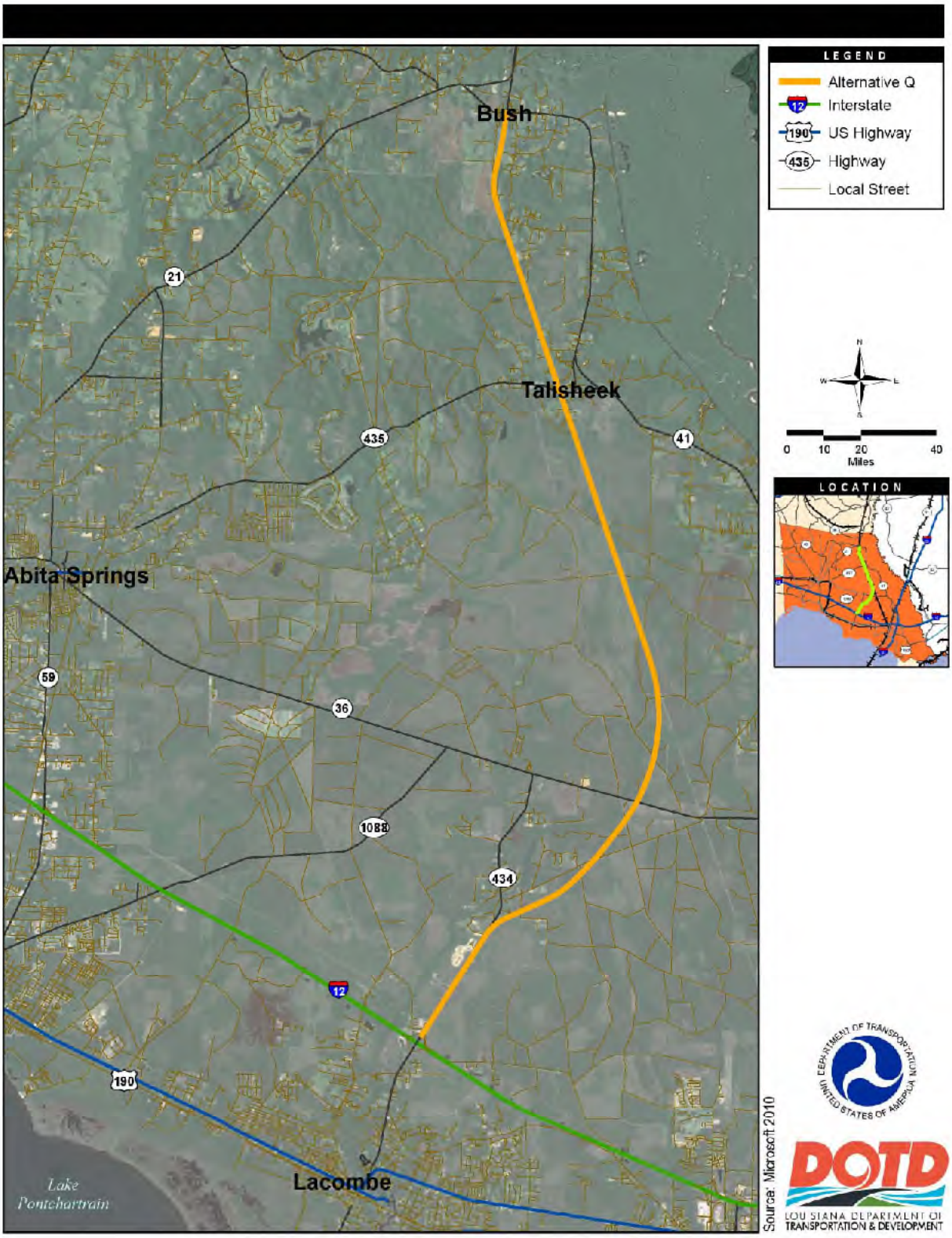

Figure 1-1. Alternative Q

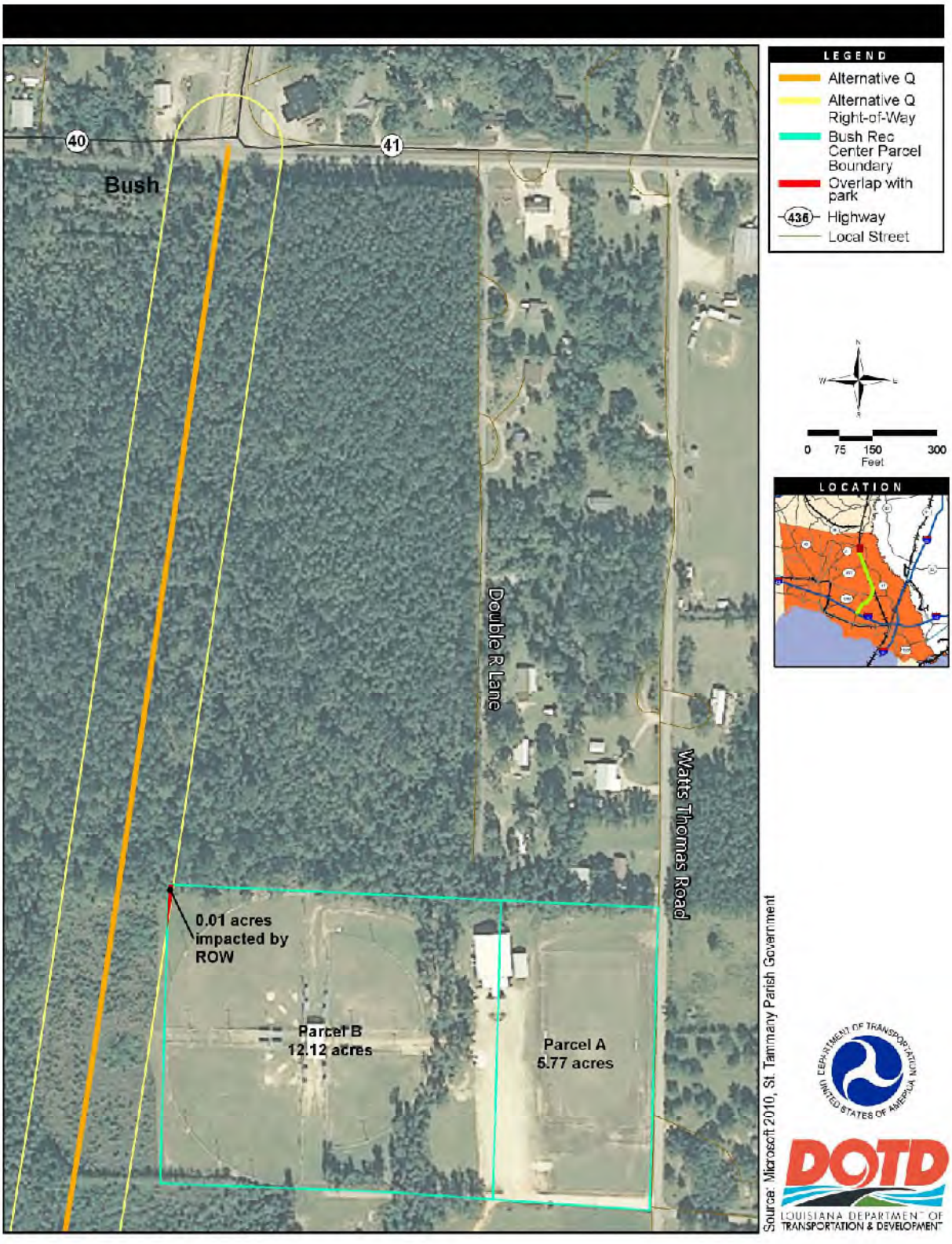

Figure 1-2. Bush Recreational Center

SECTION 2.0
PROJECT ACTION

LADOTD proposes to construct a high-speed, four-lane arterial highway. Alternative Q would include new construction of a 4-lane highway beginning at the existing I-12 and LA 434 interchange (Exit 74). It would tie into LA 434, and then follow an abandoned railroad corridor from a point approximately 1.7 miles north of LA 36 to Bush. This alternative would be approximately 20.0 miles long, with 9.8 miles using the abandoned railroad embankment, 7.7 miles on new alignment, and 2.7 miles on existing roadway. The southern 16.4 miles consists of a RA-3 typical cross section, and the northern 0.7 miles of the route would have a RA-2 cross section, while the southern 2.7 miles will have suburban arterial SA-1 cross section.

The majority of the proposed highway (16.4 miles) would be a rural arterial road RA-3 with a design speed of 70 miles per hour, which, according to LADOTD, generally equates to a posted speed limit of 65 miles per hour. LADOTD and FHWA state that the rural minor arterial road system should, in conjunction with the principal arterial system, form a rural network having the following characteristics (FHWA 1989):

1. Link cities and larger towns (and other traffic generators, such as major resort areas that are capable of attracting travel over similarly long distances) and form an integrated network providing interstate and intercounty service.
2. Spaced at such intervals, consistent with population density, so that all developed areas of the state are within a reasonable distance of an arterial highway.
3. Provide (because of the two characteristics defined above) service to corridors with trip lengths and travel density greater than those rural collector or local systems predominantly serve. Minor arterials constitute routes whose design should provide for relatively high overall travel speeds, with minimum interference to through movement.

The typical cross section would have two 12-foot travel lanes, an 8- to 10-foot outside shoulder, and a 4-foot inside shoulder in each direction. The median width would vary depending on the highway design class used, which would be between 40 and 60 feet, and a maximum ROW requirement of 250 feet. The exception to that design could be as the proposed project transitions into existing roadways (i.e., intersections).

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SECTION 3.0
DESCRIPTION OF SECTION 4(F) PROPERTIES

The only Section 4(f) land identified in the Alternative Q project area is the Bush Recreational Center. St. Tammany Parish Recreation District #2 owns and operates the Bush Recreational Center, an 18-acre recreation complex approximately 0.4 miles south of the LA 21/LA 41 intersection on the west side of Watts Thomas Road. This complex consists of four baseball/softball fields, a soccer field, a basketball court, and a gymnasium. St. Tammany Parish Government District #6 has jurisdiction over the northeastern portion of St. Tammany Parish which includes the recreational center and provides assistance to Recreation District #2 in meeting their goals.

As 23 CFR 774.5 states, a Section 4(f) Evaluation shall be provided for coordination and comment to the official with jurisdiction over the Section 4(f) resource. A letter was provided to St. Tammany Parish Recreation District #2 on September 2, 2014 and a response was provided to LADOTD on September 9, 2014. Coordination with St. Tammany Parish Government District #6 was initiated and a letter was sent to the District Councilman on September 19, 2013. A response was provided on October 11, 2013 and is summarized below (see Appendix A).

- Local residents use Bush Recreational Center throughout the year.
- The center charges general fees for use, as well as tournament fees. The amount of funds collected each year was unavailable.
- No easements, covenants, or restrictions are known to affect the property.
- There are no plans to expand the recreation center.
- The only access point is via Watts Thomas Road to Crawford Cemetery Road, which is used by vehicles, bicycles, and pedestrians.
- A ditch crosses the west side of the parking lot, but no incidences of flooding or other land use issues on the property have been reported.
- Approximately 350–400 children live in the vicinity and the recreation center could receive as many as 5,000–10,000 visitors per year.

Appendix A provides a copy of the correspondence letter dated September 16, 2013 with St. Tammany Parish Government District #6 and a copy of the response dated October 11, 2013.

Appendix A also includes a copy of the letter provided to Recreation District #2 hand-delivered on September 2, 2014 and a copy of the response provided to LADOTD on September 9, 2014. The board members agreed in writing that the proposed project would impact the Bush Recreation Center on a *de minimis* basis and also requested the following (see Appendix A)

- The buffer in the ROW remain undisturbed
- A crash barrier be included if the area must be cleared
- Construct a solid fence along the ROW

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SECTION 4.0
USE OF SECTION 4(F) PROPERTIES

A *de minimis* impact determination under 23 CFR 774.3(b) shall include sufficient supporting documentation demonstrating that the use, after avoidance, minimization, mitigation, or enhancement measures are taken into account, will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f).

Alternative Q would be expected to have a *de minimis* impact on the Bush Recreational Center in St. Tammany Parish. The ROW for the alignment for Alternative Q is adjacent to the northwest end of the outfields of the baseball field complex, but would not directly impact use of the complex. The recreation center is less than one-half mile south of LA 41 and would be indirectly impacted by the proposed alignment (Figure 1-2). Approximately 0.01 acres of the northwest corner of the property would be used for the proposed ROW; however, the acquired ROW would not require any alterations to the baseball fields or the facility. Fences would not require relocation, and a 60-foot ROW would be maintained for Alternative Q.

Visual impacts to the Bush Recreational Center would be moderate. Trees would be removed and the highway would be visible. Moderate noise impacts would be expected during construction and with use of the proposed highway.

As outlined in the Highway Traffic Noise Study Update, Alternative Q would have short- and long-term minor adverse impacts to the noise environment at the ball field. Construction activities would cause the short-term impacts. Long-term effects would primarily be due to changes in traffic noise at the Bush Recreational Center.

Construction activities would cause short-term direct impacts. As with any major construction project, areas around the construction site are likely to experience varied periods and degrees of noise. Individual pieces of construction equipment typically generate noise levels of 80 to 90 decibels (dBA) at a distance of 50 feet (FHWA 2006). Locations within 800 feet would experience appreciable levels of heavy equipment noise. Because construction activities would be confined primarily to daytime hours, noise at the Bush Recreational Center would be clearly audible. Highway construction activities would normally be conducted during daytime hours. Equipment would not be fixed in one location for long durations, but would progress along the ROW, and noise would be temporary and subside as the highway construction progresses to subsequent segments.

Background levels were measured at the baseball complex within the Bush Recreational Center. Existing and future traffic noise was predicted using the FHWA highway traffic noise prediction model, Traffic Noise Model 2.5 with and without the proposed highway (Table 4-1). The complex would experience a greater than ten (10) dBA increase in noise with the proposed roadway during peak traffic periods when compared to existing conditions.

Table 4-1 Sound Measurements and Predicted Traffic Noise

	Sound Levels [dBA][a]	
Measured Background (2013)	L_{eq} = 41.9	
Peak Traffic Period (L_{eq})	A.M.	P.M.
Existing (2010)	48	46
No Build (2035)	52	52
Build (2035)	66	67
Difference (Build minus Existing)	18	21

[a] L_{eq} is the average sound level over a given period.

A relatively small number of receptors along the proposed roadway were identified that would approach the NAC or experience a greater than 10 dBA in noise under future conditions. Noise abatement measures were considered for the entire project, including the use of noise barriers. Noise barriers would either (1) not be feasible, as they would not provide at least a 5 dBA reduction for 75% of impacted first row receptors, or (2) would not be reasonable, as the cost would be greater than $35,000 per benefited receptor including the ball field.

SECTION 5.0
AVOIDANCE ALTERNATIVES

Avoidance alternatives were discussed during development and design of the alternatives in the Final EIS. Impact was minimized to the use of the Bush Recreational Center by minimizing the amount of land that would be acquired for the ROW. Approximately 0.01 acres in the northwest corner of the property would be acquired for the highway ROW. The ROW acquisition will not directly impact the use of the facility.

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SECTION 6.0
MINIMIZATION AND MITIGATION

Sections 4.19 and 4.21 of the Final EIS state that mitigation is an important component of the National Environmental Policy Act (NEPA) process that is used to avoid, minimize, or compensate for adverse environmental impacts associated with the proposed action. Mitigation actions are considered throughout the NEPA process to develop the proposed action and alternatives.

Impacts to land use were minimized by reducing the overall ROW width for the alignments to a maximum of 250 feet. This minimized direct impacts to existing land use, minimizing the amount of land converted to impervious road surfaces and a simplified habitat of grasses and herbaceous material.

Reducing the overall ROW width for the alignments to a maximum of 250 feet reduced direct impacts to aesthetic and visual resources along the alternative's ROW.

Some loss of scenic attractiveness and scenic integrity would be associated with the construction of the proposed roadway. The proposed roadway would replace rural, forested areas with impervious road surfaces and a simplified habitat of grasses and herbaceous material in the 250-foot ROW.

To further mitigate and minimize potential impacts, Recreation District #2 requested a solid fence barrier in the ROW and also requested that the ROW buffer remained undisturbed or that a crash barrier be installed (Appendix A).

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SECTION 7.0
COORDINATION

Coordination with St. Tammany Parish Government District #6 was initiated and a letter was sent to the District Councilman on September 19, 2013 with a response via phone call on October 11, 2013. St. Tammany Parish Recreation District #2 owns and operates the Bush Recreational Center. A meeting with the Recreation District #2 board members occurred on September 2, 2014. A response letter was provided on September 9, 2014 from the Chairman, Mr. Phillip Moore. These responses are included in Appendix A. Recreation District #2 concurred, in writing, that potential impacts to the recreation center would be *de minimis*.

The U.S. Fish and Wildlife Service and Louisiana Department of Wildlife and Fisheries were coordinating agencies during the Final EIS and participated throughout the NEPA process. No wildlife or waterfowl refuges, or such, would be directly impacted by Alternative Q. The Threatened and Endangered Species Report of the Final EIS contains the findings from the field survey. The Louisiana Department of Wildlife and Fisheries and U.S. Fish and Wildlife Service agreed with the findings of the report on March 11, 2011, and April 4, 2011, respectively.

7.1 CONCLUSION

On the basis of the evaluation for Section 4(f) properties, Alternative Q would be expected to have a *de minimis* impact to Bush Recreational Center and would not impact any properties listed in, or eligible for, the National Register of Historic Places (NRHP). Additionally, Alternative Q would not impact the use of any other publicly owned park, recreation area, wildlife and waterfowl refuge, and public or private historic site.

To approve a *de minimis* determination, a public notice and an opportunity for public review and comment concerning the protected activities, features, or attributes of the Bush Recreational Center occurred as part of the public comment periods that occurred for the Draft EIS during a 45-day comment period, from September 9, 2011 through October 24, 2011, and the public hearing held on September 28, 2011. The Final EIS was also available for a 30-day public comment from March 9, 2012 to April 9, 2012.

The official with jurisdiction over the Section 4(f) resource concurred in writing that the project will not adversely affect the activities, features, or attributes that make the Bush Recreational Center eligible for Section 4(f) protection. This letter of concurrence is included in Appendix A.

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SECTION 8.0
REFERENCES

CEMVN (U.S. Army Corps of Engineers, New Orleans District). 2012a. *Final Environmental Impact Statement I-12 to Bush, Louisiana Proposed Highway St. Tammany Parish, Louisiana*. USACE Permit Number: MVN-2005-00037. March 2012.

CEMVN (U.S. Army Corps of Engineers, New Orleans District). 2012b. *Record of Decision and Permit Evaluation*. Application Number: MVN-2005-0037. June 7, 2012.

FHWA (Federal Highway Administration). 1989. *FHWA Functional Classification Guidelines Manual*.

FHWA (Federal Highway Administration). 2006. *Construction Noise Handbook*. FHWA-HEP-06-015. August 2006.

USDOT (U.S. Department of Transportation) and FHWA (Federal Highway Administration). 2012. *Section 4(f) Policy Paper*. Office of Planning, Environment, and Realty Project Development and Environmental Review, Washington, DC. July 20, 2012.

USEPA (U.S. Environmental Protection Agency). 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Accessed May 2010. http://www.nonoise.org/library/levels74/levels74.htm#table%20of%20contents.

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APPENDIX A

St. Tammany Parish Government District #6 Coordination and Response

and

St. Tammany Parish Recreation District #2 Coordination and Response

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TETRA TECH

Thursday, September 19, 2013

Mr. Richard Tanner, Councilman
Council District #6
St. Tammany Parish Recreation District #2
84149 House Creek Rd.
Bush, LA 70431

RE: St Tammany Recreation District #2 - Bush Recreational Center
30100 Crawford Cemetery Rd
Bush, LA 70431

Mr. Richard Tanner:

As part of Louisiana Department of Transportation and Development (LADOTD) TIMED Project for a proposed highway between Interstate 12 and Bush, Louisiana, LADOTD is seeking federal funding through the Federal Highway Administration (FHWA). A Record of Decision for the highway was issued by the U.S. Army Corps of Engineers – New Orleans District (CEMVN) on June 7, 2012 with additional stipulations for Alternative Alignment Q. Funding from FHWA requires additional review beyond the existing CEMVN Environmental Impact Statement prior to allocating funds for this project.

The impacts of a transportation project on a park, recreation area, or wildlife and waterfowl refuge that qualifies for Section 4(f) evaluation. However protection may be determined to be *de minimis* if:

- The transportation use of the Section 4(f) property, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, or attributes that qualify the resource for protection under Section 4(f);
- The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, or attributes of the Section 4(f) property; and
- The official(s) with jurisdiction over the property, after being informed of the public comments and FHWA's intent to make the *de minimis* impact finding, concur in writing that the project will not adversely affect the activities, features, or attributes that qualify the property for protection under Section 4(f).

The alignment would be adjacent to the west end of the outfields of the baseball field complex (outside the existing fence line), a Section 4(f) property. However the road is not expected to directly impact use of the complex. The attached figure shows where the alignment would be located in relation to the Recreational Center.

Tetra Tech
P.O. Box 2188, Baton Rouge, LA 70821
Tel 225-383-1780 Fax 225.-387-0203 tetratech.com

As part of our FHWA evaluation, the following information needs to be included in the report. Your assistance is greatly appreciated in addressing the following:

- Are there an easements, covenants, or restrictions that would affect this property?
- Are any fees required to use the facility?
- The site appears to be approximately 18 acres with 4 baseball/softball fields, a parking lot, a community building, and a large soccer field. Do any other activities occur, or are any future activities planned at this location?
- Please verify that access to the Recreation Center is via Watts Thomas Road and if any other access routes exist for pedestrian or bicycle access.
- Can you provide an estimate to the number of visitors each year?
- Does the center experience any flooding or other land conditions that may impact the value of the property?

Please review and comment on the proposed alignment as shown on the attached figure. If you have any questions or comments, you can reach me at Nicole.chapman@tetratech.com or by phone at 225.383.1780 or 225.223.4214. We would appreciate a response by October 7, 2013.

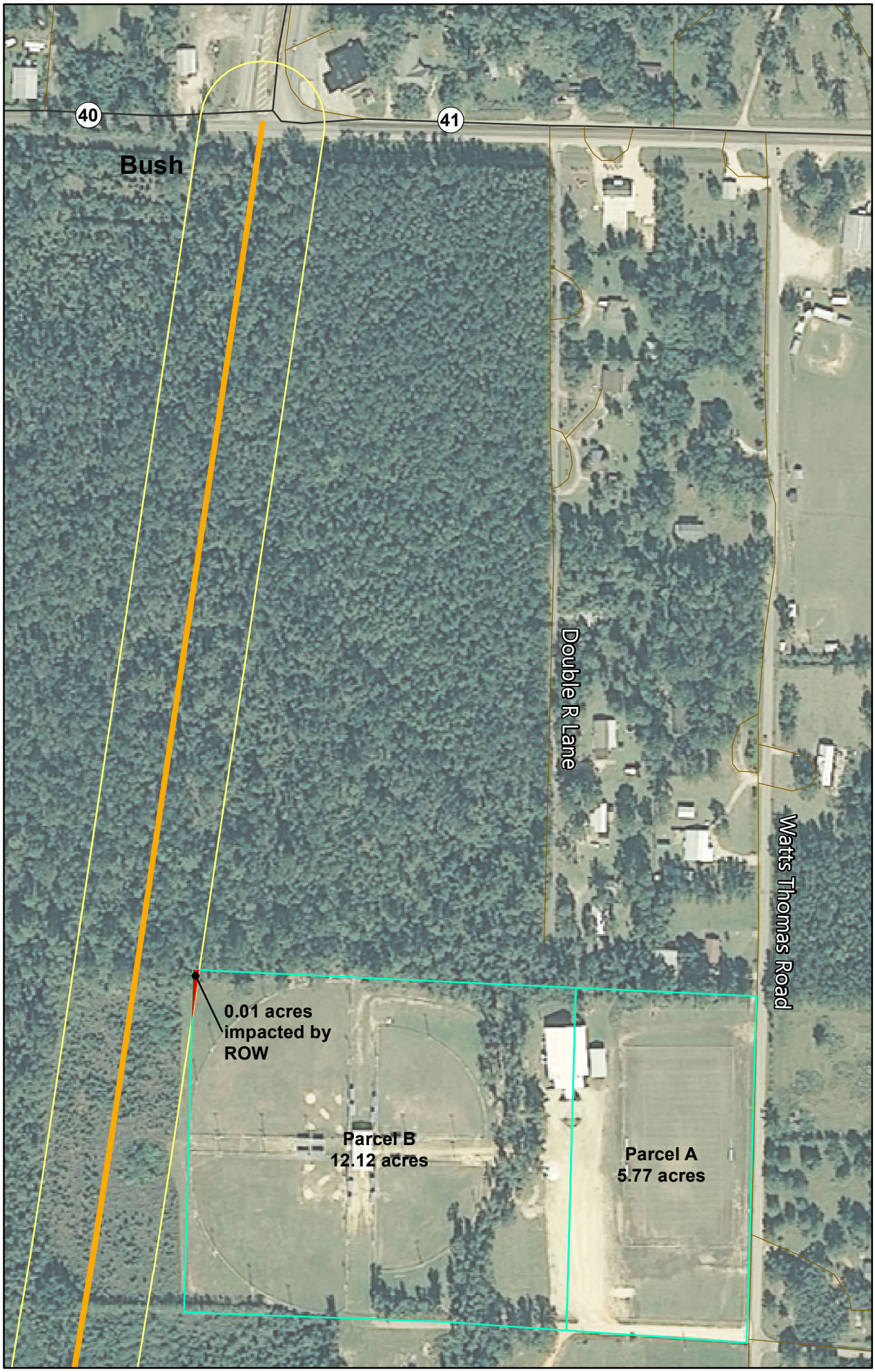
Sincerely,

Nicole Chapman

Nicole Chapman, PLA
Environmental Scientist

Enclosures: Bush Recreational Center Location Map

Cc: Ms. Noel Ardoin, LADOTD



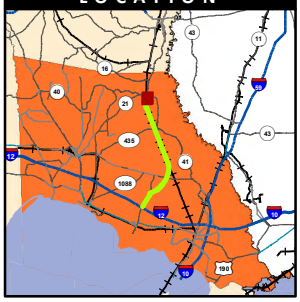
LEGEND

- Alternative Q
- Alternative Q Right-of-Way
- Bush Rec Center Parcel Boundary
- Overlap with park
- 435 Highway
- Local Street

N
W E
S

0 75 150 300
Feet

LOCATION



Source: Microsoft 2010, St. Tammany Parish Government

DEPARTMENT OF TRANSPORTATION UNITED STATES OF AMERICA

DOTD

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Environmental Section
PO Box 94245 | Baton Rouge, LA 70804-9245
Phone: 225-242-4502

September 18, 2014

St. Tammany Parish Recreation District #2
Board Members
(Hand Delivered at 9/2/2014 Board Meeting)

RE: **Bush Recreational Center**
De minimis impact
State Project No. H.004985.2
(Legacy 700-52-0198)
I-12 to Bush EIS
Route: LA 3241
St. Tammany Parish

Dear Board Members:

The Louisiana Department of Transportation and Development (DOTD) is proposing the construction of a new four lane highway from Bush, Louisiana, to Interstate 12. An Environmental Impact Statement (EIS) was prepared by the U.S. Army Corps of Engineer, New Orleans District (Corps). A Record of Decision for the highway was issued by the Corps on June 7, 2012, with the selection of Alternative Q. Alternative Q begins at the LA 40/LA 41 intersection south of Bush and follows the abandoned rail alignment south then veers westward to connect with LA 434 to access I-12 via the existing LA 434 interchange. This alignment clips the northwest corner of the Bush Recreational Center.

DOTD is seeking federal funding for the project through the Federal Highway Administration (FHWA). Funding from FHWA requires additional review beyond the existing Corps EIS. DOTD finds that the effect of the project to the Bush Recreational Center is de minimis pursuant to 23 CFR Part 774. The basis for this finding are outlined below.

The required right of way from the park is approximately 0.01 acres. (This estimate is based on aerial photography overlaid with GIS data. The actual amount will be determined once the right of way is surveyed and the project plans are developed.) The park is located on 17.89 acres. The estimated taking is about 0.06% of the park property.

The right of way required is from Parcel B. Parcel B is 12.12 acres accommodating four ball fields. The required right of way is outside of the fenced ball field on the northwest corner of the park. Hence, the ball field is unaffected by the taking. See the attached exhibit.

The Corps EIS included 4 build alternatives of which 3 impacted the Bush Recreational Center. The public was given a number of opportunities to provide comments during the EIS process. No objections or substantive comments were received related to the impact of the alternatives to the Bush Recreational Center.

Based on the above information, DOTD feels the effect to the park is de minimis. We respectfully request your comments related to this finding. In particular, we are interested in knowing whether the taking of this right of way will adversely affect the activities, features, or attributes of the park. A comment form with DOTD's return mailing address is attached for your convenience.

We are also requesting that the District provide a contact person for further coordination regarding this project. A Supplemental Final Environmental Impact Statement (SFEIS) is being prepared for FHWA. During the SFEIS process, we will share any public comments that we receive related to the park with the District. We will also ensure that the District is given a copy of the SFEIS for review and comment when published.

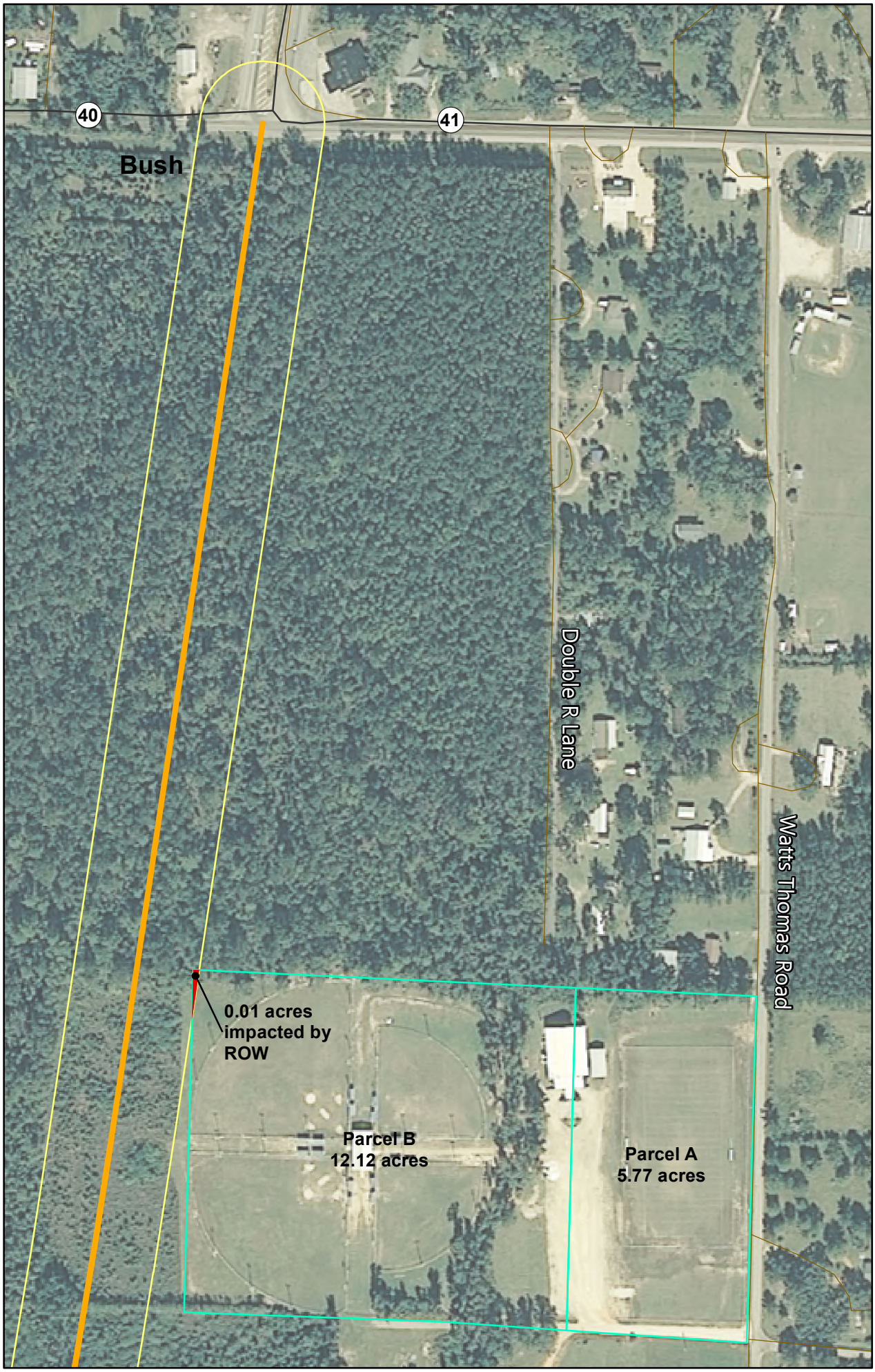
If you have any questions or comments, please contact Noel Ardoin by phone at (225) 242-4501 or by email at noel.ardoin@la.gov. Thank you in advance for your assistance.

Sincerely,

Noel Ardoin
DOTD Environmental Engineer Administrator

na
Enclosures (exhibit & optional comment form)

pc: Mr. Jeffrey Burst
FHWA



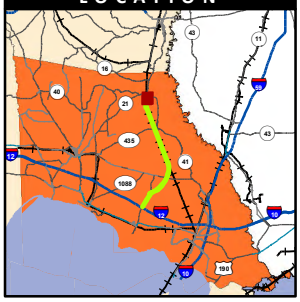
LEGEND

- Alternative Q
- Alternative Q Right-of-Way
- Bush Rec Center Parcel Boundary
- Overlap with park
- 435 Highway
- Local Street

N
W E
S

0 75 150 300
Feet

LOCATION



Source: Microsoft 2010, St. Tammany Parish Government

DEPARTMENT OF TRANSPORTATION UNITED STATES OF AMERICA

DOTD

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

State Project No. H.004985.2 (Legacy 700-52-0198)
I-12 to Bush EIS
Route: LA 3241
St. Tammany Parish

Return this form or a letter to:
DOTD Section 28
P.O. Box 94245
Baton Rouge, LA 70804

Comment Form for Bush Recreational Center

The I12 to Bush project will require roughly 0.01 acres from the northwest corner of Bush Recreational Center. The required right of way is outside of the ball field fence along the edge of the property line.

We offer the following comments:

I. DETERMINATION OF EFFECT

☐ The I-12 to Bush Project will not adversely affect the activities, features or attributes of the park

☐ The I-12 to Bush Project will adversely affect the activities, features or attributes of the park. The following are the activities, features or attributes impacted:

_____
_____
_____
_____
_____
_____

☐ More information is needed to determine the effect. The following information would be helpful:

_____
_____
_____
_____
_____
_____

II. CONSIDERATION SHOULD BE GIVEN TO THE FOLLOWING

☐ Consideration of the following measures to minimize harm is requested:

_____
_____
_____
_____
_____
_____

☐ Other items or issues to consider are:

_____
_____
_____
_____
_____
_____

ST. TAMMANY RECREATIONAL DISTRICT #2

_____
Signature

_____
Print Name and Date

State Project No. H.004985.2 (Legacy 700-52-0198)
I-12 to Bush EIS
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Comment Form for Bush Recreational Center

The I12 to Bush project will require roughly 0.01 acres from the northwest corner of Bush Recreational Center. The required right of way is outside of the ball field fence along the edge of the property line.

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I. DETERMINATION OF EFFECT

☑ The I-12 to Bush Project will not adversely affect the activities, features or attributes of the park

☐ The I-12 to Bush Project will adversely affect the activities, features or attributes of the park. The following are the activities, features or attributes impacted:

☐ More information is needed to determine the effect. The following information would be helpful:

II. CONSIDERATION SHOULD BE GIVEN TO THE FOLLOWING

☑ Consideration of the following measures to minimize harm is requested:
solid fence and uncleared buffer and/or crash barrier

☐ Other items or issues to consider are:

ST. TAMMANY RECREATIONAL DISTRICT #2

Phillip P Moore
Signature

Phillip P Moore 9/9/2014
Print Name and Date

TETRA TECH, INC.

Memorandum

DATE: October 11, 2013
TO: Noel Ardoin – Louisiana Department of Transportation and Development (LADOTD)
CC: Dean Goodin – Tetra Tech
FROM: Nicole Chapman – Tetra Tech
RE: Response to St. Tammany Recreation District #2 – Bush Recreation Center Letter

On September 19, 2013, Mr. Richard Tanner, Councilman for District #6, which has jurisdiction over St. Tammany Parish Recreation #2 – the Bush Recreation Center, was contacted via letter about the evaluation of Alternative Q's right-of-way to the facility. The letter stated:

The impacts of a transportation project on a park, recreation area, or wildlife and waterfowl refuge that qualifies for Section 4(f) evaluation. However protection may be determined to be *de minimis* if:

- The transportation use of the Section 4(f) property, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, or attributes that qualify the resource for protection under Section 4(f);
- The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, or attributes of the Section 4(f) property; and
- The official(s) with jurisdiction over the property, after being informed of the public comments and FHWA's intent to make the *de minimis* impact finding, concur in writing that the project will not adversely affect the activities, features, or attributes that qualify the property for protection under Section 4(f).

The alignment would be adjacent to the outfield on the northwestern baseball field complex (outside the existing fence line), a Section 4(f) property. However, Alternative Q is not expected to directly impact use of the complex.

I spoke with Mr. Tanner on October 11, 2013 to discuss the letter, he mentioned he had not had a chance to discuss the letter with the board but was able to provide the following information:

- Are there an easements, covenants, or restrictions that would affect this property?
  - Not to Mr. Tanner's knowledge.
- Are any fees required to use the facility?
  - Fees are charged for tournaments and general fees to use the recreation center. He was not aware of the amount of the various fees associated with using the facilities.

- The site appears to be approximately 18 acres with 4 baseball/softball fields, a parking lot, a community building, and a large soccer field. Do any other activities occur, or are any future activities planned at this location?
    - No future activities planned, but the community building has a basketball court and gymnasium.
- Please verify that access to the Recreation Center is via Watts Thomas Road (through Crawford Cemetery Road) and if any other access routes exist for pedestrian or bicycle access.
    - Watts Thomas Road is the only vehicular access road and pedestrians and bicyclists also use the road for access.
- Can you provide an estimate to the number of visitors each year?
    - Mr. Tanner estimated that there are 350-400 children in the area and estimates the center may receive 5,000-10,000 visitors per year.
- Does the center experience any flooding or other land conditions that may impact the value of the property?
    - No flooding or other land use issues exist at the property.

APPENDIX D
CULTURAL RESOURCES SURVEY

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ADDENDUM: PHASE I CULTURAL RESOURCES SURVEY FOR THE I-12 TO BUSH CORRIDOR STUDY AREA, ST. TAMMANY PARISH, LOUISIANA (22-2921) NEGATIVE FINDINGS REPORT

State Project Nos. 700-52-0198 and H.004985.2 (TIMED)
USACE Permit No. MVN-2006-0037

Revised Draft Addendum January 2014

EARTH SEARCH, INC.
P.O. Box 770336
New Orleans, LA 70177-0336

Prepared for:

Tetra Tech, Inc.
748 Main Street, Suite B
Baton Rouge, Louisiana 70802

ADDENDUM: PHASE I CULTURAL RESOURCES SURVEY FOR THE I-12 TO BUSH CORRIDOR STUDY AREA, ST. TAMMANY PARISH, LOUISIANA (22-2921) NEGATIVE FINDINGS REPORT

STATE PROJECT NOs. 700-52-0198 AND H.004985.2 (TIMED)
USACE PERMIT NO. MVN-2006-0037

By
Jason L. Parrish and Rhonda L. Smith

Revised Draft Report Submitted by

Jill-Karen Yakubik, Ph.D., RPA
Principal Investigator

Earth Search, Inc.
P.O. Box 770336
New Orleans, LA 70177-0336

Prepared for

Tetra Tech, Inc.
748 Main Street, Suite B
Baton Rouge, Louisiana 70802

For Submission to

Louisiana Department of Transportation and Development
1201 Capital Access Road
Baton Rouge, LA 70802

U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

January 2014

ABSTRACT

During 2010, Earth Search, Inc. (ESI), under contract to Tetra Tech, Inc., performed a Phase I cultural resources survey of four alternatives for the I-12 to Bush Corridor Study in St. Tammany Parish, Louisiana (Parrish et al. 2011), as part of the documentation process for the Environmental Impact Statement (EIS). This document serves as an addendum to Parrish et al. (2011) and includes the results of the current Phase I cultural resources survey.

This addendum report details the Phase I cultural resources survey of a realignment of Alternative Q and two ancillary roads. This revised alignment routes Alternative Q away from the original alignment and further northwestward towards the community of St. Tammany. The survey area measures approximately 4.5 km (2.8 mi) in length with some overlap with previously surveyed alignments. In addition, survey was conducted at the intersection of LA 434 and Krentrel Road and North Dixie Road. In total, approximately 29.6 ha (73.2 A) were surveyed. During the survey, ESI recorded no archaeological sites or no standing structures greater than 50 years of age.

ACKNOWLEDGMENTS

The current survey was initiated in an effort to satisfy 36 CFR § 800.5 (a)(1) (Section 106 of the National Historic Preservation Act, as amended) requirements to identify and mitigate the effects that the current undertaking may have on potential cultural resources present in the project area as part of the documentation process required by the National Environmental Policy Act, as amended. As the permitting agency for the project, the New Orleans District U.S. Army Corps of Engineers (NODCOE) is the lead Federal agency. The Louisiana Department of Transportation and Development (LADOTD) has provided the funding for the Environmental Assessment (EA) and the Environmental Impact Statement (EIS).

The authors would like to extend their sincere thanks to the many individuals who contributed to the success of this project. Dr. Jill-Karen Yakubik served as Principal Investigator and report editor. Jason Parrish serves as Project Manager for the project and Rhonda Smith as Senior Project Manager. Archaeological field technicians who worked on the project include Matthew Parks, Clifford Sebastian, and Emily Wiegers.

Mr. Jason Parrish completed the Introduction, Field Investigations, and Recommendations. Research of previous investigations conducted in and around the project area was completed by Rhonda Smith. Maps and GIS data were produced by Eylene Parrish. Architectural survey and research was completed by Shawna Atkins. Report coordination, non-map graphics production, copyediting, printing, and binding was completed by Eylene Parrish, Rhonda Smith, and Donna Stone.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER 1
INTRODUCTION

During 2010, Earth Search, Inc. (ESI), under contract to Tetra Tech, Inc., performed a Phase I cultural resources survey of four alternatives for the I-12 to Bush Corridor Study in St. Tammany Parish, Louisiana (Parrish et al. 2010), as part of the documentation process for the Environmental Impact Statement (EIS). This document serves as an addendum to Parrish et al., 2010, and includes the results of the current Phase I cultural resources survey. Field work took place during October 2013 and consisted of a project manager and three archaeologists.

This addendum report details the Phase I cultural resources survey of a realignment of Alternative Q and two ancillary roads. Alternative Q that was surveyed in 2010 is depicted in Figure 1, and the Alternative Q realignment is depicted in Figure 2. This revised alignment routes Alternative Q away from the original alignment and further northwestward towards the community of St. Tammany. The survey area measures approximately 4.5 km (2.8 mi) in length with some overlap with previously surveyed alignments. In addition, survey was conducted at the intersection of LA 434 and Krentrel Road and North Dixie Road (Figure 2). In total, 5.1transect miles (mi) (8.2 transect kilometers [km]) were surveyed.

No archaeological sites or standing structures greater than 50 years of age were documented along the proposed highway realignment. No further investigations are recommended.

Project Area Description

The realignment of Alternative Q is located in Sections 4, 5, 8, and 17 of T8S, R13E and in Sections of 33 and 34 of T7S, R13E. The total project area measures approximately 8.2 transect km (5.1 transect mi) in length and encompasses approximately 29.6 hectares (ha) (73.2 acres [A]).

Curation Statement

Associated records from this project are currently housed at Earth Search, Inc., 4212 St. Claude Ave., New Orleans, Louisiana. They will be permanently curated with the State of Louisiana, Department of Culture, Recreation, and Tourism, Division of Archaeology, P.O. Box 44247, Baton Rouge, Louisiana, 70804-4247, (225) 342-8170. The curation facility is located at the Galvez Building, Room B-023, 602 N. Fifth Street, Baton Rouge, Louisiana, 70802, (225) 342-4475.

Report Organization

Chapter 2 describes the previous investigations. The field methodology and the results of the archaeological investigations are described in Chapter 3. Chapter 4 presents ESI's conclusions and recommendations.

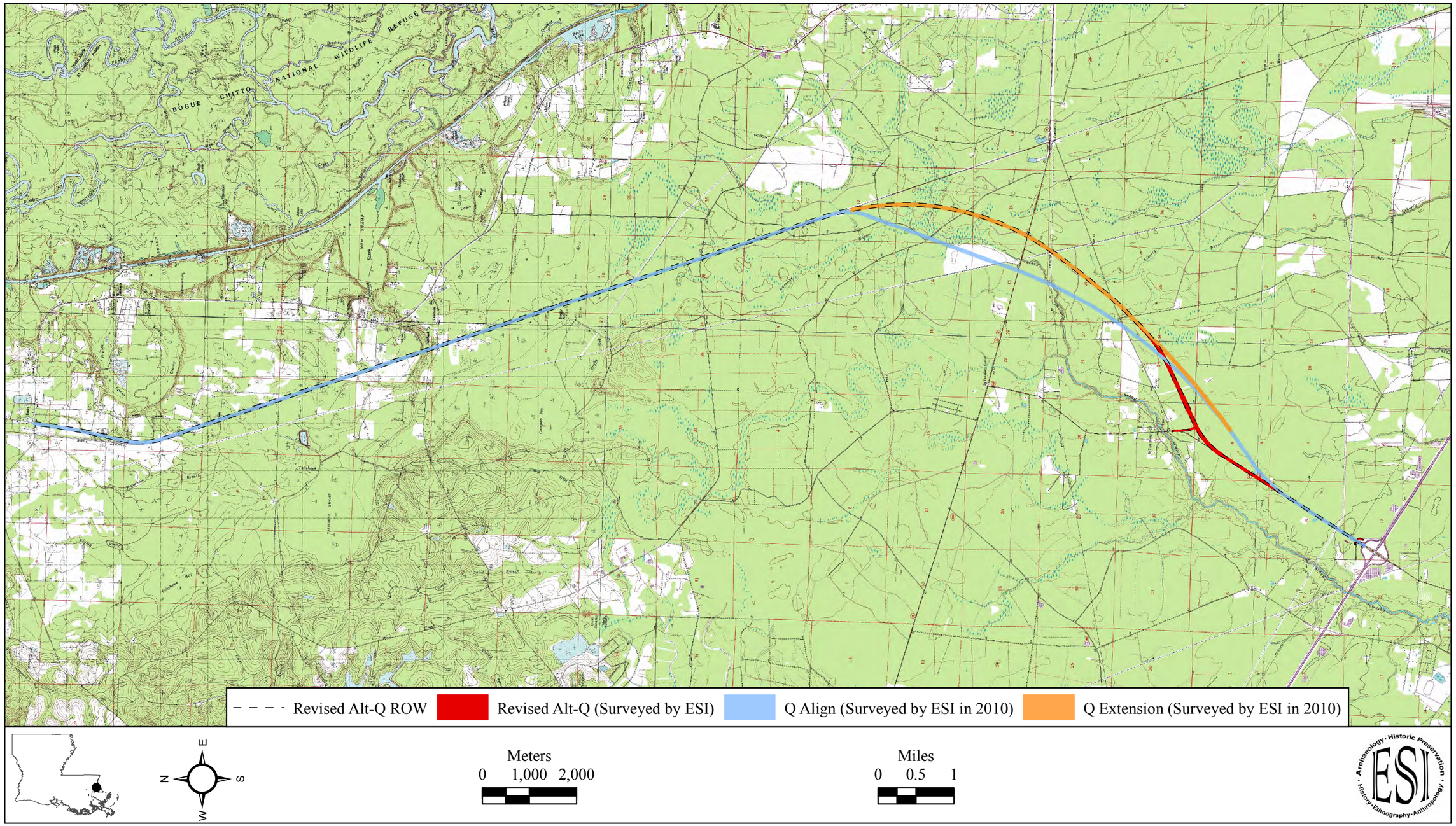

Figure 1. Excerpts from the USGS , *Hickory, Lacombe, Slidell, and St. Tammany, LA* 1:24,000 topographic quadrangles showing the location the revised Alt Q ROW.

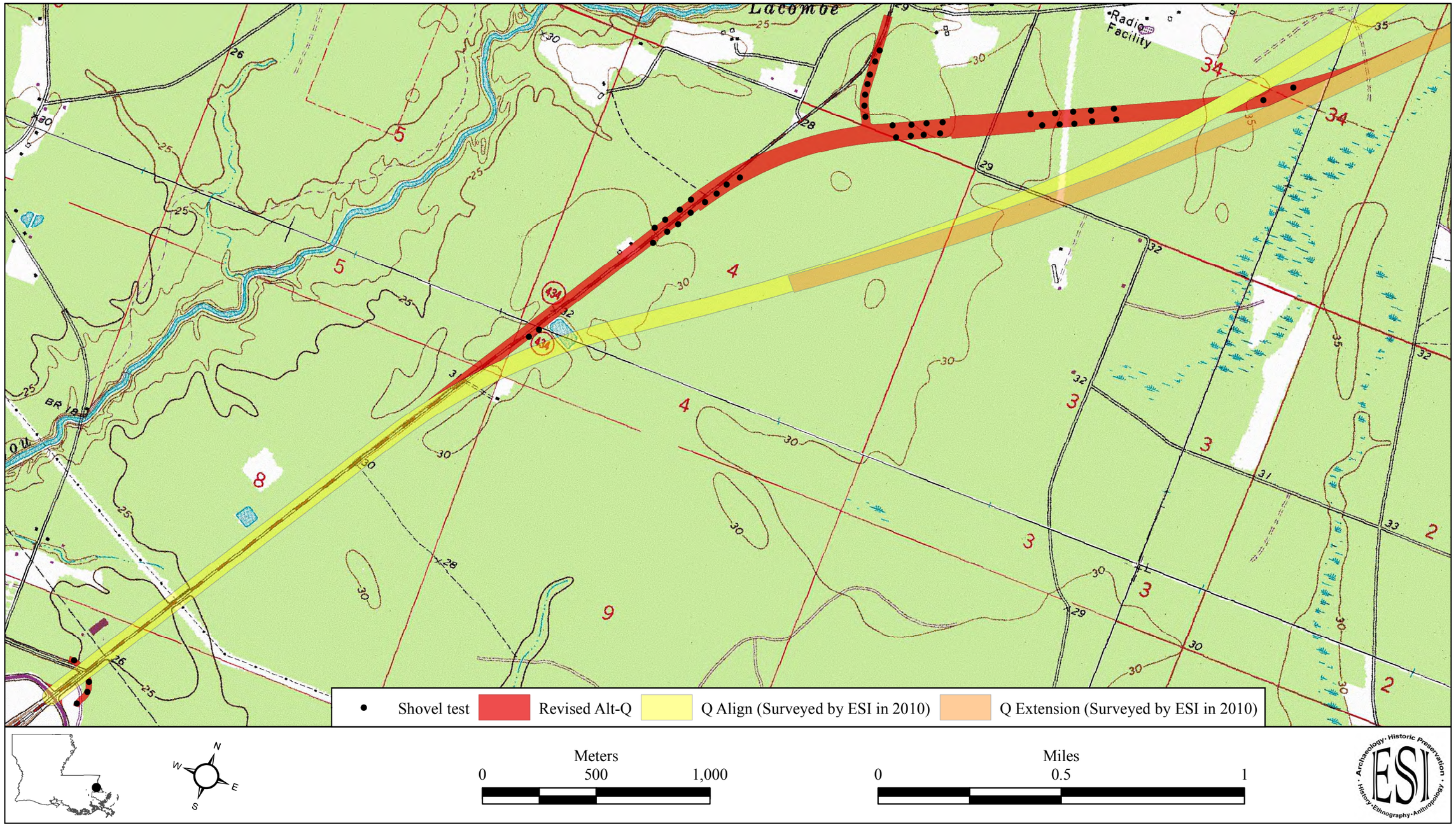

Figure 2. Excerpts from the USGS , *Hickory, Lacombe, Slidell, and St. Tammany, LA* 1:24,000 topographic quadrangles showing the location of shovel tests excavated within the revised Alt Q ROW.

CHAPTER 2
PREVIOUS INVESTIGATIONS

Prior to the commencement of field investigations, a detailed literature search and records review was undertaken at the Louisiana Divisions of Archaeology and Historic Preservation and the State Library. This research was undertake in order to identify any additional archaeological surveys, sites, NRHP properties, or standing structures, that may have been recorded after the 2010 investigations were completed.

Research revealed that no additional cultural resources investigations were conducted within one mile (1.6 km) of the current project area. The archaeological background and site file search revealed no additional sites have been recorded within one mile (1.6 km) of the project area. In addition, there are no National Register properties and no standing structures greater than 50 years of age within the one mile (1.6 km) buffer. For a full discussion of the previous investigations in the project area vicinity, the reader is referred to Parrish et al. (2011).

CHAPTER 3
FIELD INVESTIGATIONS

Methodology

This addendum report details the Phase I cultural resources survey of an alignment revision of Alternative Q (Figure 2). This revised alignment routes Alternative Q away from the original alignment and further northwestward towards the community of St. Tammany. The survey area measures approximately 4.5 km (2.8 mi) in length with some overlap with previously surveyed alignments. Also, additional survey was conducted at the intersection of LA 434 and Krentrel Road and North Dixie Road (Figure 2). In total, 5.1 transect miles (8.2 transect km) were surveyed.

As originally planned, the archaeological survey and subsurface testing were to be performed at the high probability interval of 30 m (98.4 ft) spacing between adjacent transects and between shovel tests along each transect. During the initial day of fieldwork, it became clear that the area was actually low probability for encountering archaeological sites. This observation was made based on the low topography and the amount of inundation. For the remaining days of fieldwork, the project manager made the decision to change the survey strategy to follow the low probability guidelines of 50 m (164.0 ft) intervals between transects and shovel tests. As the survey proceeded, field conditions deteriorated due damage from recent logging across the area. At this point, survey was restricted to areas with sufficient topographic relief (i.e. not inundated or deeply rutted) to allow for subsurface testing.

Survey Results

Survey of the Alternative Q revised alignment began at the northernmost boundary and proceeded southeastward towards LA 434 for a distance of approximately 2.7 km (1.7 mi). Upon intersecting LA 434, survey continued southward along LA 434 for approximately 1.5 km (0.9 mi). Lastly, the additional survey area near Krentrel and North Dixie Road was surveyed. It measures approximately 180 m (590.6 ft).

The majority of the portion of the survey ROW that is located west of LA 434 exhibits signs of recent logging activities; estimated to have occurred within the past 2-4 years. It appears that during the logging activities, 7-8 m (23-26 ft) swaths of trees and vegetation were removed (Figures 3 and 4). A current aerial photograph of the survey ROW and the surrounding forest (Figure 5) depicts the logging pattern of removed vegetation encountered during survey. This type of logging is called “strip logging” (Monga Bay 2013 and Weebly 2013). This method of logging cuts trees down in rows and is usually done in boreal and mixed forests. It allows the forest to naturally reseed itself. The disadvantage of strip logging is the amount of erosion that occurs in the strips where the trees were harvested (Monga Bay 2013 and Weebly 2013). As observed during survey, numerous stripped areas are heavily eroded and contain deep ruts left behind by heavy machinery (Figures 6 and 7). Shovel testing in the areas where the strip logging had taken place proved futile as all shovel tests filled with liquefied mud and water at approximate 10 cmbs (4.0 inbs) or less (Figure 8 and 9). As noted above, due to the numerous inundated “strip logged” areas, shovel testing was restricted to areas with sufficient topographic relief. In total, 27 shovel tests were excavated in the survey area located west of LA 434 (Figure 10). No cultural materials were recovered from the shovel tests and no artifacts or cultural deposits were observed eroding from the affected land.

Once the ROW intersected and began paralleling LA 434 southward, a single transect of shovel tests was excavated along both sides of the highway (Figure 11). Shovel testing within

Figure 3. Cleared strip of forest located within current ROW.

Figure 4. Cleared strip of forest located within current ROW.

Figure 5. Google Earth image depicting the strip logging areas located within the current ROW (in red). (Google Earth 2010)

Figure 6. Example of heavy machinery ruts filled with water located within the strip logging area in the current ROW.

Figure 7. Example of heavy machinery ruts filled with water located within the strip logging area in the current ROW.

Figure 8. Example of shovel test filling with water.

Figure 9. Example of shovel test filled with water.

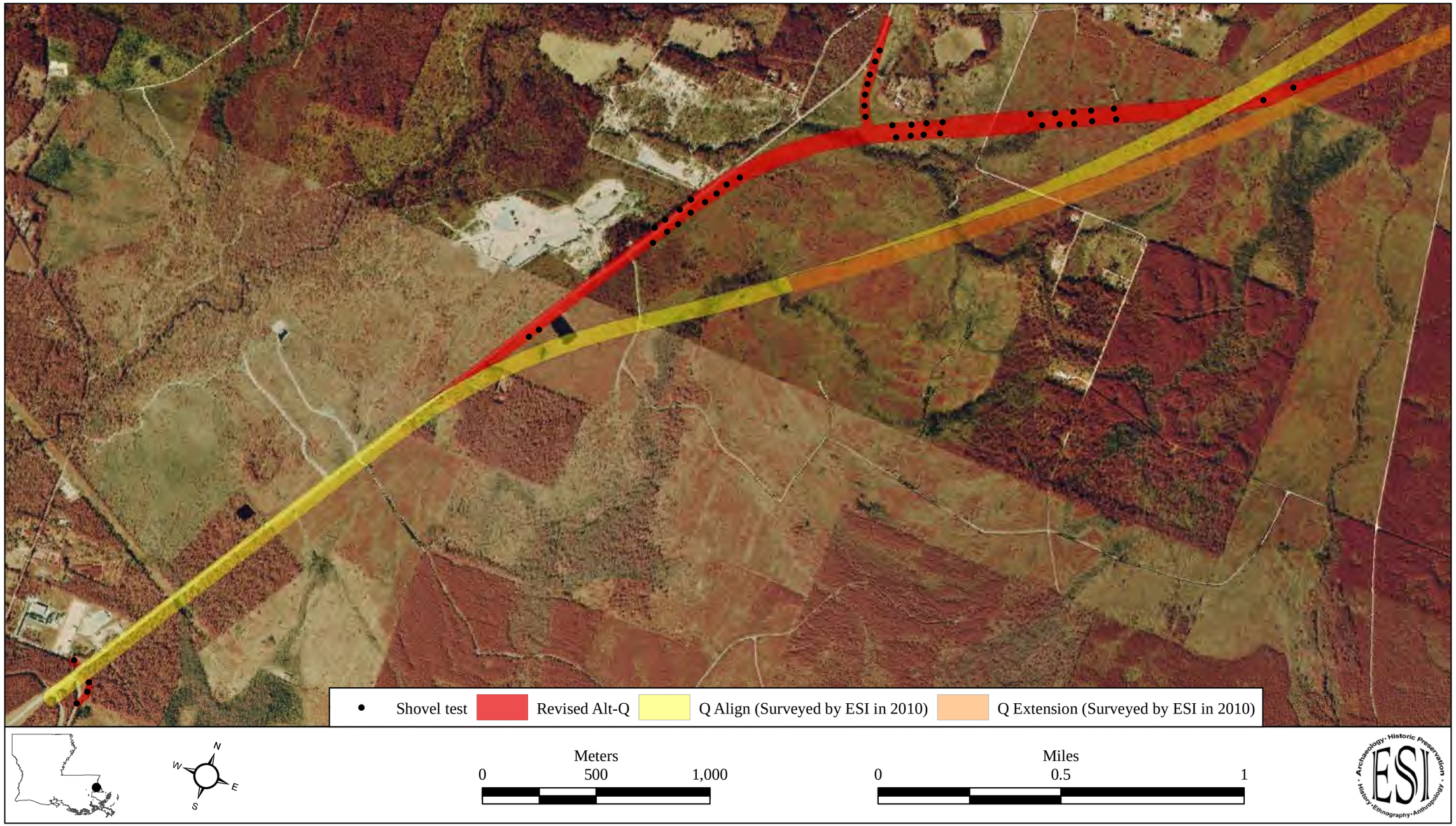

Figure 10. Excerpt from the 2004 USGS *Hickory* (SW), *Lacombe* (NE), *Slidell* (NW), and *St Tammany* (SE), LA 3.75' digital orthophoto quarter quadrangle showing the location of shovel tests (all negative) within APE.

Figure 11. Narrow roadside drainage located on the west side of LA 434, facing south.

the survey ROW along LA 434 was limited due to the presence of wide roadside drainages and heavily inundated areas (Figures 12-15).Shovel tests excavated along LA 434 generally revealed two strata (Figure 16). Stratum I (0-20 cmbs [0-7.9 inbs]) is a 10YR 6/3 (pale brown) silt clay and Stratum II (20-50 cmbs [7.9-19.7 inbs]) is a 10YR 5/1 (gray) loam mottled with a 10YR 5/4 (yellowish brown) clay. A total of 14 shovel tests were excavated along LA 434 (Figure 10). No cultural materials were encountered.

Four shovel tests were excavated within the southernmost portion of the survey ROW, located near the intersection of LA 434 and Krentrel Road and North Dixie Road (Figure 10). These tests revealed two strata (Figure 16 and 17). Stratum I (0-15 cmbs [0-5.9 inbs]) is a 10YR 2/1 (black) sandy loam and Stratum II (15-50 cmbs [5.9-19.7 inbs]) is a 10YR 6/6 (brownish yellow) sandy clay. No cultural materials were recovered.

Thus, a total of 45 shovel tests were excavated throughout the survey ROW. No cultural materials were encountered. In addition, no historic standing structures were recorded within or adjacent to the survey ROW. No further cultural resources investigations are recommended.

Figure 12. Wide roadside drainage located on the west side of LA 434, facing southward.

Figure 13. Wide roadside drainage and inundated area located along the east side of LA 434, facing south.

Figure 14. Wide inundated area located along the east side of LA 434, facing south.

Figure 15. Inundated area located along the east side of LA 434, facing south.

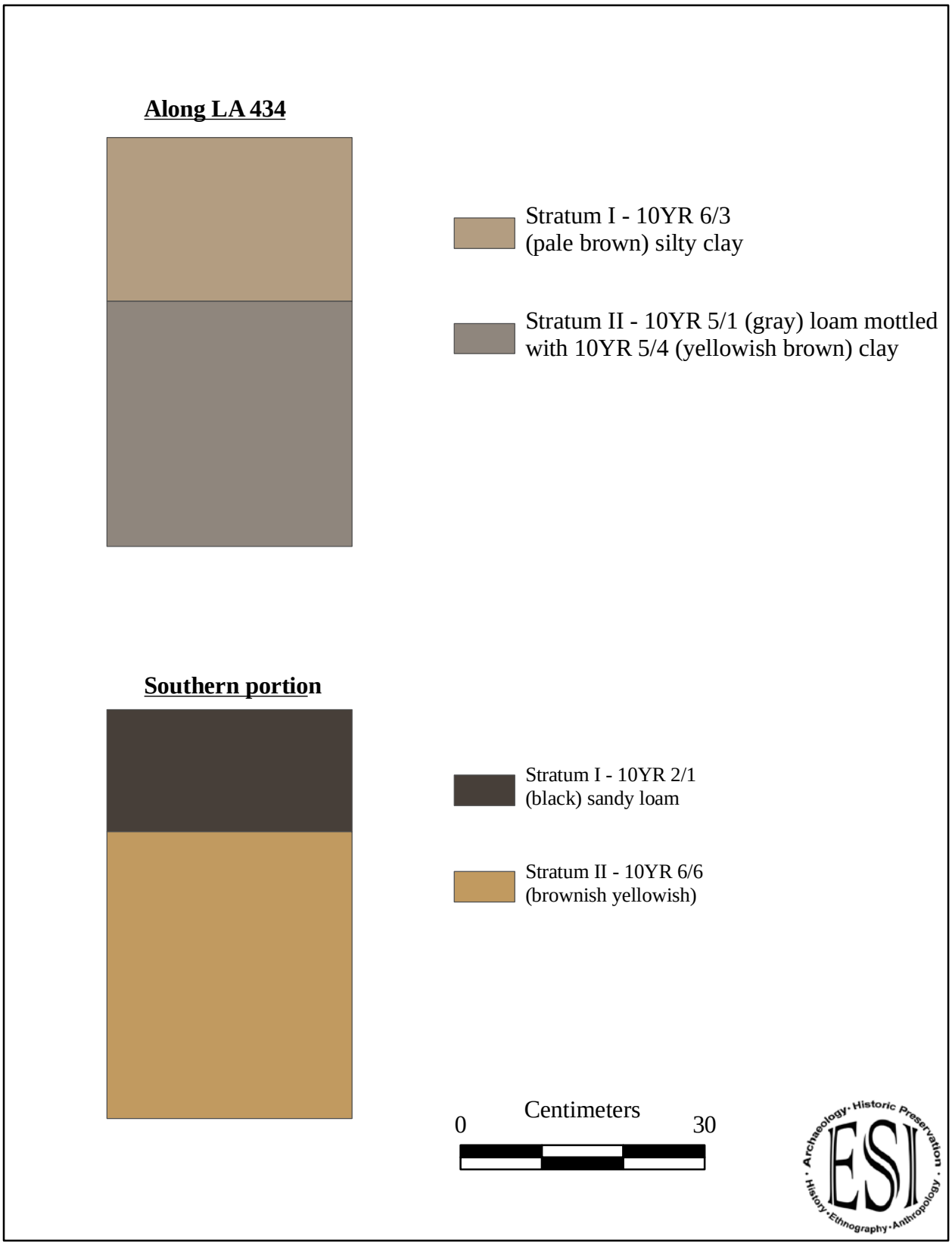

Figure 16. Representative soil profiles along LA 434 and the most southern portion near I-12.

Figure 17. Shovel test excavated at southernmost portion of survey area.

CHAPTER 4
CONCLUSIONS AND RECOMMENDATIONS

ESI undertook intensive cultural resources investigations for the I-12 to Bush Corridor Study for the Louisiana Department of Transportation and Development (LADOTD). In 2005-2006, ESI completed a Phase I survey for the alternatives developed in the Environmental Assessment (EA). This work was performed under contract to Burk-Kleinpeter, Inc. In 2010, ESI began cultural resources investigations for the Environmental Impact Statement (EIS), under contract to Tetra Tech, Inc. This report serves as an addendum to the 2010 investigations (Parrish et al. 2011).

A revision to Alternative Q was surveyed during October 2013. In total, approximately 4.5 km (2.8 mi) were surveyed. The total project area encompasses approximately 29.6 ha (73.2 A). No archaeological sites or standing structures greater than 50 years of age were documented along the proposed highway realignment. No further investigations are recommended.

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APPENDIX E
PHASE I ENVIRONMENTAL SITE ASSESSMENT FOR ALTERNATIVE Q

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PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

I-12 to Bush Supplemental Environmental Impact Statement
State Project No. H.004985.2
Alternative Q

Prepared for

Louisiana Department of Transportation and Development
and
U.S. Department of Transportation, Federal Highway Administration

November 2013

Prepared by
Tetra Tech, Inc.
748 Main Street, Suite B
Baton Rouge, Louisiana
70802

CONTENTS

APPENDICES

Appendix

TABLES

Table **Page**

EXECUTIVE SUMMARY

The following report summarizes the Phase I Environmental Site Assessment (ESA) conducted within the footprint of Louisiana Department of Transportation and Development's (LADOTD) Alternative Q alignment for the proposed Interstate 12 (I-12) to Bush, Louisiana highway (Figure 1). The project boundaries represent a 250-foot (ft) wide right-of-way (ROW) along the length of the alternative. Alternative Q would be new construction of a 4-lane highway following the abandoned railroad corridor from Bush, Louisiana to a point approximately 1.7 miles north of Louisiana State Highway (LA) 36. From this point the alternative leaves the railroad corridor to connect to LA 434, which ties into I-12 with an existing interchange (Exit 74). This alternative would be approximately 20 miles long; 9.8 miles using the abandoned railroad embankment, 8.7 miles on new alignment, and 1.3 miles of existing roadway. Alternative Q is one of four alignments under consideration for the proposed project (Figure 2).

Tetra Tech, Inc. (Tetra Tech) generally conducted this ESA in accordance with the ASTM E-2247-08 Standard (Phase I Environmental Site Assessment Process for Forestland or Rural Property), and otherwise in compliance with U.S. Environmental Protection Agency (EPA) "All Appropriate Inquiries" Rule (AAI Rule) (40 *Code of Federal Regulations* [CFR] Part 312).

The purpose of the ESA is to identify recognized environmental conditions (REC) to the subject property and to identify the nature of contamination and the risks posed by the contamination, if present. RECs include the presence or likely presence of any hazardous substances or petroleum products, even under conditions that comply with applicable laws that present a material risk of harm to public health or the environment.

The following are significant findings and conclusions from records review, interviews, or reconnaissance:

- Review of historical documentation indicated development of the railroad corridor ROW as early as 1935.

- An AT&T buried cable marker was observed at the south side of the intersection of Krentel Road and Louisiana Highway 434. The buried cable appears to run east to west across Louisiana Highway 434 near Interstate 12. In addition, an Atmos Energy natural gas pipeline marker was observed at the north side of the intersection of Krentel Road and Louisiana

Highway 434. The Atmos Energy pipeline appears to run northward along the west side of existing Louisiana Highway 434. A Tri-States NGL, LLC and Gas South natural gas pipeline marker were observed at the intersection of the Alternate Q alignment at Holly Hill Road. A PEG Bandwith fiber optic cable marker was observed running east to west along Louisiana Highway 36 where the Alternative Q alignment crosses the highway and continues northward. The pipelines and easements were clearly marked and no evidence of spills or releases from the pipelines was observed during the site reconnaissance.

- An abandoned boat hull was observed on the Alternate Q alignment at the Holly Hill Road alignment crossing. Based on the condition of the boat hull and lack of engine, it is not likely the hull still contained fluids such as gasoline and other oils; therefore, its presence is not considered a REC to the subject property.

- Various trash and debris was observed along the Alternate Q alignment and associated ROW during the site reconnaissance. However, these areas of trash and debris are considered de minimis and are not considered RECs.

- Evidence of fill and grading were observed along the Alternate Q alignment and associated ROW during the site reconnaissance. The southernmost section of the alignment is located along existing Louisiana Highway 434 for approximately 3 miles. In addition, a raised dirt and gravel paved access road was observed along the majority of the former railroad ROW from Louisiana Highway 36 northwards along the alignment. No stains or evidence of environmental concerns were observed along existing highways and access roads during the site reconnaissance, and the existing highways and access roads do not appear to represent RECs to the Alternate Q alignment and associated ROW.

- Numerous pole-mounted transformers were observed along the Alternate Q alignment and associated ROW along state highways and residential roadways. No evidence of leaks or were noted on the observed transformers and all appeared to be in good condition. Presence of the pole-mounted transformers does not pose a REC to the subject property.

- Standing water was observed on the Alternate Q alignment and associated ROW near the alignment crossing at Dixie Ranch Fire Tower Road, and at an unmarked roadway crossing along the former railroad ROW south of Talisheek, Louisiana. The standing water was

observed in low-lying wooded areas and appeared to be due to equipment ruts caused during timber harvesting activities. Presence of the standing water does not pose a REC to the subject property.

- No dry, irrigation, injection, abandoned, or other wells were observed on the Alternate Q alignment and associated ROW during the site reconnaissance. However, based on information obtained from the EDR Report, domestic wells are associated with the residential structures on and along the alignment. The potential presence of water wells are not considered a REC for the alignment.

- Wastewater treatment systems/septic tanks may be associated with the residential structures observed on and along the alignment during the site reconnaissance. The potential presence of septic tanks are not considered a REC for the alignment.

Tetra Tech offers the following recommendations:

- An AT&T buried cable marker was observed at the south side of the intersection of Krentel Road and Louisiana Highway 434. The buried cable appears to run east to west across Louisiana Highway 434 near Interstate 12. In addition, an Atmos Energy natural gas pipeline marker was observed at the north side of the intersection of Krentel Road and Louisiana Highway 434. The Atmos Energy pipeline appears to run northward along the west side of existing Louisiana Highway 434. A Tri-States NGL, LLC and Gas South natural gas pipeline marker were observed at the intersection of the Alternate Q alignment at Holly Hill Road. A PEG Bandwith fiber optic cable marker was observed running east to west along Louisiana Highway 36 where the Alternative Q alignment crosses the highway and continues northward. The pipelines and easements were clearly marked and no evidence of spills or releases from the pipelines was observed during the site reconnaissance. Tetra Tech recommends that care should be taken to ensure that all utility and natural gas easements are not impacted during development of the Alternate Q alignment and associated ROW.

- An abandoned boat hull was observed on the Alternate Q alignment at the Holly Hill Road alignment crossing. Based on the condition of the boat hull and lack of engine, it is not likely the hull still contained fluids such as gasoline and other oils; therefore, its presence is not

considered a REC to the subject property. Tetra Tech recommends that the boat hull be removed and properly disposed according to applicable state and local disposal regulations.

- Various trash and debris was observed along the Alternate Q alignment and associated ROW during the site reconnaissance. However, these areas of trash and debris are considered de minimis and are not considered RECs. Tetra Tech recommends that trash and debris be removed and disposed according to applicable state and local disposal regulations.

- No dry, irrigation, injection, abandoned, or other wells were observed on the Alternate Q alignment and associated ROW during the site reconnaissance. However, based on information obtained from the EDR Report, domestic wells are associated with the residential structures on and along the alignment. The potential presence of water wells are not considered a REC for the alignment. Tetra Tech recommends that all water wells impacted by the location of the Alternate Q alignment and associated ROW be properly plugged and abandoned if no longer required.

- Wastewater treatment systems/septic tanks may be associated with the residential structures observed on and along the alignment during the site reconnaissance. The potential presence of septic tanks are not considered a REC for the alignment. Tetra Tech recommends that all septic systems/tanks impacted by the location of the Alternate Q alignment and associated ROW be properly removed or closed in place if no longer required.

1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech) was tasked by the Louisiana Department of Transportation and Development (LADOTD) to conduct a Phase I Environmental Site Assessment (ESA) of the Alternative Q alignment for the proposed Interstate 12 (I-12) to Bush, Louisiana highway (Figure 1).

Tetra Tech conducted this ESA of the subject property in accordance with the ASTM E-2247-08 Standard (Phase I Environmental Site Assessment Process for Forestland or Rural Property), and otherwise in compliance with U.S. Environmental Protection Agency (EPA) "All Appropriate Inquiries" Rule (AAI Rule) (40 *Code of Federal Regulations* [CFR] Part 312). For the purpose of this ESA, the *user* is defined as LADOTD. LADOTD tasked Tetra Tech to conduct a Phase I ESA on the Alternate Q alignment in order to identify recognized environmental conditions (REC) to the Alternative Q alignment and applicable ROW and identify the nature of contamination and the risks posed by the contamination, if present.

For the purpose of this ESA, the Alternate Q alignment project boundaries represent a 250-foot (ft) wide right-of-way (ROW) along the length of the alternative. Alternative Q would be new construction of a 4-lane highway following the abandoned railroad corridor from Bush, Louisiana to a point approximately 1.7 miles north of Louisiana State Highway (LA) 36. From this point the alternative leaves the railroad corridor to connect to LA 434, which ties into I-12 with an existing interchange (Exit 74). This alternative would be approximately 20 miles long; 9.8 miles using the abandoned railroad embankment, 8.7 miles on new alignment, and 1.3 miles of existing roadway. A full subject property description is provided in Section 2.0.

1.1 PURPOSE

The goal of this ESA is to identify RECs to the subject property. RECs are the presence or likely presence of any hazardous substances or petroleum products on a subject property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the subject property or into the ground, groundwater, or surface water of the subject property. The term includes hazardous substances or petroleum products, even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Historical recognized environmental conditions (HREC) are environmental

conditions that in the past would have been considered RECs, but that may or may not be considered RECs currently.

This ESA is intended to satisfy one of the requirements for the innocent landowner defense, the contiguous property exemption, and the bona fide prospective purchaser exemption to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability: that is, the practices that constitute "all appropriate inquiry into the previous ownership and uses of the subject property consistent with good customary practice," as defined in 42 U.S. Code Section 9601 (35)(B).

1.2 SCOPE OF WORK

Tetra Tech developed the Scope of Services (SOS) for the Preparation of a Supplemental Environmental Impact Statement with Federal Highway Administration Participation for a Proposed Highway between Bush, Louisiana and Interstate 12 in St. Tammany Parish (see Appendix A). Appendix D of the SOS, based on ASTM designation E-2247-08, was to identify RECs to the Alternative Q alignment and associated ROW. Phase I ESAs typically are conducted in a four-phase process, including: (1) records review; (2) site reconnaissance; (3) interviews with current and previous owners and occupants of the subject property, adjacent property owners and occupants, and local government agencies; and (4) preparation of a report.

Any items listed in the ASTM standard that the report does not specifically identify as present can be assumed not present within the Alternative Q alignment and associated ROW or within such distance to the Alternative Q alignment and associated ROW as to be of potential concern to the Alternative Q alignment and associated ROW. Any item mentioned but not specifically identified as a REC can be assumed not a REC.

1.3 SIGNIFICANT ASSUMPTIONS

The following are beyond the scope of this evaluation: sampling and analysis for radon in indoor air, and for asbestos and lead in water, soil, groundwater, and building materials (if any); evaluations of indoor and/or outdoor air quality, regulatory compliance, industrial hygiene, and noise impacts; and identification of geological or geotechnical hazards.

1.4 DEVIATIONS

Deletions or deviations from ASTM E-2247-08 are as follows. For each deviation noted, the Tetra Tech Environmental Professional (EP) has conducted an analysis of the data gaps or failures, and impacts of these on Tetra Tech's ability to render an opinion regarding conditions indicative of releases or threatened releases of petroleum products or hazardous substances.

- A time gap of more than 5 years was noted in available historical information. Based on the consistent, observed use of the Alternate Q alignment and associated ROW as a railroad ROW, existing state highway, and undeveloped timber and agricultural property in all reviewed historical information, the presence of time gaps does not impact Tetra Tech's ability to render an opinion regarding RECs.

- An environmental lien search was not obtained for the Alternate Q alignment and associated ROW because the alignment and ROW is a former railroad ROW, existing state highway, and undeveloped timber and agricultural property and no parcel and/or address is associated with the alignment and ROW.

- A questionnaire was not provided to the LADOTD to obtain historical information on use of the Alternate Q alignment and associated ROW.

- Interviews with previous land owners, operators, or occupants were not conducted.

- No interviews with adjacent property owners or occupants were conducted. ASTM Practice E-2247-08 does not require interviews with adjacent property owners unless a property has been abandoned and potential unauthorized uses or evidence of uncontrolled access to the abandoned property is evident. Based on the consistent use of the alignment and ROW as a former railroad ROW, existing state highway, and undeveloped timber and agricultural property, Tetra Tech believes that information obtained from other adjacent property owners or occupants likely would not be additional to that obtained from current land owners, operators, and occupants, or other resources.

1.5 LIMITATIONS AND EXCEPTIONS

This report was based partially on information supplied to Tetra Tech from outside sources and on other information available in the public domain. The conclusions and opinions reported herein are based on the information Tetra Tech obtained in compiling the report. This information is on file at Tetra Tech's office in Baton Rouge, Louisiana. Tetra Tech makes no warranty as to the accuracy of statements made by others which may be contained in the report, nor are any other warranties or guarantees, expressed or implied, included or intended by the report except that it has been prepared in accordance with the current generally accepted practices and standards consistent with the level of care and skill exercised under similar circumstances by other professional consultants or firms performing the same or similar services. Because the facts forming the basis for the report are subject to professional interpretation, differing conclusions could be reached. Tetra Tech does not assume responsibility for the discovery and elimination of hazards that could possibly cause accidents, injuries, or damage. Compliance with submitted recommendations or suggestions does not assure elimination of hazards or the fulfillment of the client's obligations under local, state, or federal laws or any modifications or changes to such laws. None of the work performed hereunder shall constitute or be represented as a legal opinion of any kind or nature, but shall be a representation of findings of fact from records examined.

1.6 SPECIAL TERMS AND CONDITIONS

There were no special terms or conditions for the ESA.

1.7 STATEMENT OF USER RELIANCE

Tetra Tech is not required to verify independently the information provided to it by the user or gathered throughout the course of this ESA. For this ESA, the LADOTD may rely on information provided unless actual knowledge is possessed that certain information is incorrect based on additional data obtained during the ESA or otherwise known by the person preparing this report.

2.0 SITE DESCRIPTION

This section provides a brief description of the subject property and the physical setting based on information obtained from the LADOTD and a records review prior to the site reconnaissance. Observations during the site reconnaissance regarding current land use of the Alternative Q alignment and associated ROW and adjoining properties are described in Section 4.0.

2.1 SITE LOCATION AND LEGAL DESCRIPTION

For the purposes of the ESA, the Alternative Q alignment and associated ROW includes an abandoned railroad corridor from Bush, Louisiana to a point approximately 1.7 miles north of Louisiana State Highway (LA) 36. From this point the alternative leaves the railroad corridor to connect to LA 434, which ties into I-12 with an existing interchange (Exit 74). This alternative route is approximately 20 miles long; 9.8 miles using the abandoned railroad embankment, 8.7 miles on new alignment, and 1.3 miles of existing roadway (Figure 1). The coordinates at the approximate north end of the alignment are 30° 36' 33.46" north latitude and 89° 53' 58.90" west longitude. The coordinates at the approximate south end of the alignment are 30° 21' 08.18" north latitude and 89° 55' 13.51" west longitude (Google Earth 2013).

A list of the property owners and a description of the portion of their respective properties being impacted by the location of the Alternate Q alignment and associated ROW are provided in Appendix C of this report.

2.2 SITE AND VICINITY GENERAL CHARACTERISTICS

The project boundaries represent a 250-ft ROW along the length of the alternative. Alternative Q would be new construction of a 4-lane highway following the abandoned railroad corridor from Bush, Louisiana to a point approximately 1.7 miles north of LA 36. Here the alternative leaves the railroad corridor to connect to LA 434 which ties into I-12 with an existing interchange. This alternative would be approximately 20 miles long; 12.3 miles using the abandoned railroad embankment 5.4 miles on new alignment and 2.3 miles of existing roadway. The subject property runs through or is adjacent to portions of the following cities in St. Tammany Parish, Louisiana: Lacombe, Talisheek, and Bush.

2.3 CURRENT AND PAST USES OF THE SITE

The majority of Alternate Q consists of an abandoned railroad ROW currently used as access road through pine plantation property. This section of Alternate Q is generally gravel paved and accessed via locked gates. The northernmost portion the abandoned railroad ROW runs through undeveloped swampland, pasturelands and residential properties in the vicinity of Talisheek and Bush, Louisiana. The southernmost portion of Alternate Q runs through undeveloped wooded property until it ties into the existing Louisiana Highway 434 corridor in Lacombe, Louisiana, then southward to Interstate 12. Along intermittent sections of the ROW through pine plantation property, there are steel and concrete bridges over ditches. As stated above, rural and residential properties and associated structures are located on the northward section of the abandoned railroad ROW in the vicinity of Talisheek and Bush, Louisiana.

2.4 DESCRIPTIONS OF STRUCTURES, ROADS, AND OTHER IMPROVEMENTS ON THE SITE

The Alternate Q alignment and associated ROW are located along existing paved highway from Interstate 12 northward along Louisiana Highway 434 for approximately 3 miles. An AT&T buried cable marker was observed at the south side of the intersection of Krentel Road and Louisiana Highway 434. The buried cable appears to run east to west across Louisiana Highway 434 near Interstate 12. In addition, an Atmos Energy natural gas pipeline marker was observed at the north side of the intersection of Krentel Road and Louisiana Highway 434. The Atmos Energy pipeline appears to run northward along the west side of existing Louisiana Highway 434. Development along existing Louisiana Highway 434 consists of various commercial, industrial, and medical facilities. From Louisiana Highway 434, the Alternate Q alignment veers northeastwards through mixed undeveloped wooded and rural residential property and crosses Dixie Ranch Fire Tower Road and Holly Hill Road northward to Louisiana Highway 36. Tri-States NGL, LLC and Gas South natural gas pipeline marker were observed at the intersection of the Alternate Q alignment at Holly Hill Road. A PEG Bandwith fiber optic cable marker was observed running east to west along Louisiana Highway 36 where the Alternative Q alignment crosses the highway and continues northward. From Louisiana Highway 36 northwards towards Talisheek, the Alternative Q alignment follows a gravel paved former railroad ROW through pine plantation property to the intersection of Mossy Hill Road. Mossy Hill Road is an unpaved road that runs from the ROW northwestwards to Louisiana Highway 435. The former railroad ROW is gravel paved and no structures were observed along the route with the exception of steel and concrete bridges crossing drainage pathways. Access to the gravel paved former railroad ROW is restricted via a locked gate from

the south side of Louisiana Highway 36, and a locked gate at the south side of Louisiana Highway 435 at Mossy Hill Road. South of Louisiana Highway 435, the Alternate Q alignment and associated ROW was accessed from Tycer Lane and Kining Road via Rheusaw Parker Road. Rural residences were observed along the west side of the Tycer Lane and Kining Road, and a rural residence appeared to be directly on the Alternative Q alignment and associated ROW at the south side of Louisiana Highway 435 and west of Rheusaw Parker Road. Residential trailers were observed along the east and west sides of the Alternate Q alignment north of Louisiana Highway 435. The Alternate Q alignment was accessed north of Louisiana Highway 435 via Boyd Davis Drive. The Alternate Q alignment runs parallel and along the east side of Boyd Davis Drive northwards. Access to the Alternate Q alignment is restricted northwards at the intersection of Boyd Davis Road and Vernon Talley Road. The Alternate Q alignment and associated ROW was accessed at the north end of the alignment via Railroad Avenue at the intersection of Railroad Avenue and Louisiana Highway 40. From the intersection of Railroad Avenue and Louisiana Highway 40 southwards, the Alternative Q alignment and associated ROW runs along the east side of Railroad Avenue towards the intersection of Boyd Davis Drive and Vernon Talley Road. Residences, pastureland, and wooded properties were observed along Railroad Avenue along the west side of the Alternate Q alignment and ROW.

2.5 CURRENT AND PAST USES OF ADJOINING/SURROUNDING PROPERTIES

The subject property runs through or is adjacent to portions of the following cities: Lacombe, Talisheek, and Bush, Louisiana. The adjoining and surrounding properties consist of retail businesses, medical facilities, light industrial property, residential housing, farmland, pine plantation, and undeveloped wooded properties. A review of historical documents indicates the area in the vicinity of the Alternate Q alignment and associated ROW has been primarily unimproved property with development of commercial property in the vicinity of Interstate 12 and Louisiana Highway 434 between 1973 and 1983.

2.6 GEOLOGIC, HYDROGEOLOGIC, HYDROLOGIC, AND TOPOGRAPHIC CONDITIONS

The following sections describe the environmental setting of the Alternative Q alignment and associated ROW and surrounding area.

2.6.1 Topography

Based on a review of the USGS 15-minute series Slidell and Sun topographic quadrangle maps (USGS 1935, 1951, 1961), and 7.5-minute series Talisheek, St. Tammany, Lacombe, Hickory, Bush, and Industrial topographic quadrangle maps (USGS 1940, 1970, 1971, 1979, 1983, 1994, 1997, 1998), elevations along the Alternate Q alignment and associated ROW range from about 25 to 75 feet above mean sea level (amsl). The Alternate Q alignment and associated ROW appears to generally slope northwards from Bush, Louisiana, southwards to the intersection of Interstate 12 and Louisiana Highway 434.

2.6.2 Geologic Setting

According to the USGS Web Soil Survey (NRCS 2010) and St. Tammany Parish Soil Survey (NRCS 1990), soils occurring within the project area include: Cahaba fine sandy loam, Latonia fine sandy loam, Myatt fine sandy loam, Ouachita and Bibb soils, Prentiss fine sandy loam, Savannah fine sandy loam, and Stough fine sandy loam. Cahaba fine sandy loam: The Cahaba series consists of deep, well drained, moderately permeable soils that formed in loamy and sandy alluvium. They are on nearly level to sloping stream terraces in the Coastal Plain.

- Latonia fine sandy loam: The Latonia series consists of deep, well drained, moderately rapidly permeable soils. They formed in marine or alluvial sediments that are loamy in the upper part and sandy in the lower part. They are on marine or stream terraces of the Southern Coastal Plain and Gulf Coast Flatwoods.

- Myatt fine sandy loam: The Myatt series consists of deep, poorly drained, moderately slowly permeable soils on stream terraces and upland flats of the Coastal Plain.

- Ouachita and Bibb soils: The Ouachita series consists of deep, well drained, moderately slowly permeable soils that formed in loamy alluvium. These level to nearly level soils are found on flood plains and natural levees along streams in the Western Coastal Plains. The Bibb series consists of very deep, poorly drained, moderately permeable soils that formed in stratified loamy and sandy alluvium. These soils are on flood plains of streams in the Coastal Plain.

- Prentiss fine sandy loam: The Prentiss series consists of deep, moderately well drained, moderately permeable soils with a fragipan. They formed in loamy marine or fluvial sediments.

They are on nearly level to sloping terraces and uplands of the Southern Coastal Plain Major Land Resource Area.

- Savannah fine sandy loam: The Savannah series consists of moderately well drained, moderately slowly permeable soils with a fragipan. They formed in loamy marine or fluvial terrace deposits. They are on uplands and terraces that range from nearly level to moderately steep in the Southern Coastal Plain.

- Stough fine sandy loam: The Stough series consists of deep, somewhat poorly drained soils that formed in loamy sediments of fluvial or marine origin. Permeability is moderately slow. These nearly level to gently sloping soils are on terraces and uplands of the Southern Coastal Plain

2.6.3 Hydrogeology

The majority of potable water for St. Tammany Parish is obtained from groundwater resources in the underlying Chicot, Evangeline, and Jasper equivalent aquifer systems. Aquifer units in St. Tammany Parish generally dip and thicken to the south and range from 0 to 3,300 feet below ground surface (USGS 2012).

As part of this assessment, a water well search was conducted by EDR to locate known private and public water wells within 1.0 mile of the Alternate Q alignment and associated ROW. The search revealed 23 federal wells, one federal public water supply system, 359 state wells, and three oil and gas wells located within 1.0 mile of the Alternate Q alignment and associated ROW. Based on the location of the wells depicted in the EDR Well Search Report, 30 state water wells appear to be in close proximity to the Alternate Q alignment and associated ROW. Twenty of the wells were identified in the vicinity of existing Louisiana Highway 434 located at the south end of the Alternate Q alignment and associated ROW. These wells appear to be used of domestic and irrigation purposes. The remaining 10 wells are located north of Louisiana Highway 435 and appear to be associated with the rural and residential properties located along that section of the Alternate Q alignment and associated ROW. No environmental issues were indicated for these wells. A copy of the EDR Well Search Report is included in Appendix E.

2.6.4 Hydrology

Surface water in the project area is drained through a number of natural and man-made creeks, ditches, and streams. Water is drained through ditches found in the logging roads of pine plantations and along state and local highways. Other areas are drained by natural creeks and streams found throughout the project area. Named water bodies in the project area include: Little Brushy Branch, Talisheek Creek and Bayou Lacombe.

3.0 USER-PROVIDED INFORMATION

The following section summarizes information provided by the LADOTD regarding the ESA.

3.1 EXISTING STRUCTURE INFORMATION AND DRAWINGS

Tetra Tech was not provided with any existing structure information or drawings regarding the Alternate Q alignment and associated ROW by the LADOTD.

3.2 SUMMARY OF TITLE INFORMATION

Tetra Tech was not provided with any title information regarding the Alternate Q alignment and associated ROW by the LADOTD. A list of the property owners and a description of the portion of their respective properties being impacted by the location of the Alternate Q alignment and associated ROW were provided by the St. Tammany Parish Government and are provided in Appendix C of this report.

3.3 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

Tetra Tech was not provided with any information regarding environmental liens or activity and use limitations for the Alternate Q alignment and associated ROW by the LADOTD.

3.4 SPECIALIZED KNOWLEDGE

Tetra Tech was not provided with any specialized knowledge regarding the Alternate Q alignment and associated ROW by the LADOTD.

3.5 OWNER, SITE MANAGER, AND OCCUPANT INFORMATION

A list of the property owners and a description of the portion of their respective properties being impacted by the location of the Alternate Q alignment and associated ROW were provided by the St. Tammany Parish Government and are provided in Appendix C of this report.

3.6 REASON FOR PERFORMING PHASE I ESA

This ESA was requested by the LADOTD to provide an area-wide environmental assessment of the Alternate Q alignment and associated ROW which would include new construction of a 4-lane highway following the abandoned railroad corridor from Bush, Louisiana to a point approximately 1.7 miles north

of Louisiana State Highway (LA) 36. From this point the alternative leaves the railroad corridor to connect to LA 434, which ties into I-12 with an existing interchange (Exit 74). This alternative would be approximately 20 miles long; 9.8 miles using the abandoned railroad embankment, 8.7 miles on new alignment, and 1.3 miles of existing roadway. This ESA intends to satisfy one of the requirements for the innocent landowner defense to CERCLA liability: that is, the practices that constitute "all appropriate inquiry into the previous ownership and uses of the property consistent with good customary practice," as defined in 42 U. S. Code Section 9601 (35)(B).

4.0 SITE RECONNAISSANCE

The site reconnaissance was conducted on October 9, 2013, by Kevin Matherne and Benjamin Richard of Tetra Tech. Photographic documentation from the site reconnaissance is included in Appendix D.

4.1 METHODOLOGY AND LIMITING CONDITIONS

The site reconnaissance consisted of a visual inspection of the Alternate Q alignment and associated ROW in accordance with requirements set forth in 40 CFR Part 312. The purpose of the reconnaissance of the subject property was to seek out "conditions indicative of releases or threatened releases" as required by ASTM E-2247-08. Its purpose was also to gather information from the current owners or operators about any RECs and/or HRECs associated with the Alternate Q alignment and associated ROW. Tetra Tech conducted the reconnaissance of the subject property for evidence of the following:

- Use, storage, treatment, disposal, or generation of hazardous substances, "controlled substances," or petroleum products
- Landfills, dumps, or evidence of burial activities or solid waste disposal
- Aboveground storage tanks (AST), underground storage tanks (UST), drums, or containers capable of storing hazardous substances or petroleum products
- Transformers or other electrical or mechanical equipment potentially containing polychlorinated biphenyls (PCB)
- Evidence of petroleum-based heating fuel sources
- Drains, pits, sumps, cisterns, cesspools, or similar receptacles where liquids drain, collect, or are stored
- Pits, ponds, lagoons, or open pools likely to contain hazardous substances or petroleum products or waste
- Staining on pavement or areas of dead, distressed, discolored, or stained vegetation that may indicate RECs
- Grading or fill material that may indicate contaminated soils or dumping

- Chemical smells, petroleum gases, foul odors, wells, and/or other site-specific environmental conditions.

Tetra Tech mobilized to the subject property to observe current conditions and obtain additional information relevant to the ESA.

Any items listed in the ASTM method not identified in the following sections can be assumed not present. Likewise, any item mentioned but not identified as a REC can be assumed not a REC.

4.2 GENERAL SITE SETTING

The following sections describe the subject property's current and past uses and exterior and interior features.

4.2.1 Site Description

For the purpose of this ESA, the Alternate Q alignment project boundaries represent a 250-foot (ft) wide right-of-way (ROW) along the length of the alternative. Alternative Q would be new construction of a 4-lane highway following the abandoned railroad corridor from Bush, Louisiana to a point approximately 1.7 miles north of Louisiana State Highway (LA) 36. From this point the alternative leaves the railroad corridor to connect to LA 434, which ties into I-12 with an existing interchange (Exit 74). This alternative would be approximately 20 miles long; 9.8 miles using the abandoned railroad embankment, 8.7 miles on new alignment, and 1.3 miles of existing roadway.

4.2.2 Exterior Observations

The reconnaissance consisted of a survey of the Alternate Q alignment and associated ROW and of adjoining properties and land uses that could have an adverse environmental impact on the subject property. The Alternate Q alignment and associated ROW was accessed along Louisiana Highway 434; along the former railroad ROW; at alignment crossings at Dixie Ranch Fire Tower Road, Holly Hill Road, Louisiana Highway 36, Louisiana Highway 435; along Boyd Davis Drive; along Railroad Avenue; and, at the alignment termination at Louisiana Highway 40 in Bush, Louisiana. The site reconnaissance was conducted by driving and walking along the alignment to the extent possible. Attempts were made to observe the entire length of the Alternate Q alignment and associated ROW.

During the site reconnaissance, the Alternate Q alignment and associated ROW, and properties immediately adjacent were inspected for obvious indications of ASTs, USTs, chemical use and disposal, stained earth, stressed vegetation, or oily residues. No such indications were found on the Alternate Q alignment and associated ROW, or the adjacent properties other than noted below. Other than overgrown vegetation and scattered trash and debris including an abandoned boat hull, generally the Alternate Q alignment and associated ROW was well maintained and in good condition. Items of concern on adjacent parcels are discussed below.

4.2.3 Interior Observations

Rural residences were observed along the west side of Tycer Lane and Kining Road, and a rural residence appeared to be directly on the Alternative Q alignment and associated ROW at the south side of Louisiana Highway 435. Residential trailers were observed along the east and west sides of the Alternate Q alignment north of Louisiana Highway 435. From the intersection of Railroad Avenue and Louisiana Highway 40 southwards, the Alternative Q alignment and associated ROW runs along the east side of Railroad Avenue towards the intersection of Boyd Davis Drive and Vernon Talley Road. Residences, pastureland, and undeveloped wooded property were observed along Railroad Avenue along the west side of the Alternate Q alignment and ROW. No structures or residential interiors were accessed during the site reconnaissance.

4.3 SPECIFIC RECONNAISSANCE ITEMS

The following sections are related to items observed during reconnaissance.

4.3.1 Hazardous Substances and Petroleum Products

An Atmos Energy natural gas pipeline marker was observed at the north side of the intersection of Krentel Road and Louisiana Highway 434. The Atmos Energy pipeline appears to run northward along the west side of existing Louisiana Highway 434. In addition, Tri-States NGL, LLC and Gas South natural gas pipeline markers were observed at the intersection of the Alternate Q alignment at Holly Hill Road. The pipelines were clearly marked and no evidence of spills or releases from the pipelines was observed during the site reconnaissance.

No other hazardous substances or petroleum products were observed on the Alternate Q alignment and associated ROW during the site reconnaissance.

4.3.2 Hazardous Waste

No evidence of storage or discharge of hazardous waste was observed during reconnaissance of the Alternate Q alignment and associated ROW.

4.3.3 Landfills, Dumps, Burials, or Solid Waste Disposal

No landfills, dumps, or evidence of burial activities was observed on the Alternate Q alignment and associated ROW. An abandoned boat hull was observed at the Holly Hill Road alignment crossing and miscellaneous debris was observed along the alignment. No other observable quantity of solid waste was observed on the Alternate Q alignment and associated ROW during the site reconnaissance. Presence of the solid waste does not pose a REC to the Alternate Q alignment and associated ROW.

4.3.4 Storage Tanks

Underground Storage Tanks

No visual evidence of past or present on-site USTs—including pipes, pumps, or stains—was apparent during the site reconnaissance of the Alternate Q alignment and associated ROW.

Aboveground Storage Tanks

No visual evidence of past or present on-site ASTs was apparent during the site reconnaissance of the Alternate Q alignment and associated ROW.

4.3.5 Polychlorinated Biphenyls-containing Equipment

Numerous pole-mounted transformers were observed along the Alternate Q alignment and associated ROW along state highways and residential roadways. No evidence of leaks or were noted on the observed transformers and all appeared to be in good condition. Presence of the pole-mounted transformers does not pose a REC to the subject property.

4.3.6 Heating, Ventilation, and Air Conditioning System and Fuel Source

Heating, ventilation, and air conditioning (HVAC) systems were observed in the vicinity of the residential structures located on or within the Alternate Q alignment and associated ROW.

4.3.7 Drains, Sumps, Pools of Liquids, Standing Water, Cisterns, and Cesspools

Standing water was observed on the Alternate Q alignment and associated ROW near the alignment crossing at Dixie Ranch Fire Tower Road, and at an unmarked roadway crossing along the former railroad ROW south of Talisheek, Louisiana. The standing water was observed in low-lying wooded areas and appeared to be due to equipment ruts caused during timber harvesting activities. Presence of the standing water does not pose a REC to the subject property.

No other drains, sumps, pools of liquid, cisterns, or cesspools were observed on the Alternate Q alignment and associated ROW during the site reconnaissance. However, wastewater treatment systems/septic tanks may be associated with the residential structures observed on and along the alignment during the site reconnaissance. The potential presence of septic tanks are not considered a REC for the alignment.

4.3.8 Pits, Ponds, and Lagoons

No pits, ponds, lagoons, or open pools likely to contain or to have been used in the disposal of hazardous substance or petroleum products, or for waste disposal or waste treatment, were observed on the Alternate Q alignment and associated ROW during the site reconnaissance.

4.3.9 Stains or Corrosion and Stained Soil or Pavement

No areas of stains, corrosion, stained soils, or pavement were observed on the Alternate Q alignment and associated ROW during the site reconnaissance.

4.3.10 Areas of Dead, Distressed, Discolored, or Stained Vegetation

No areas of dead, distressed, discolored, or stained vegetation other than those associated with leaking containers that indicate RECs were observed on the Alternate Q alignment and associated ROW during the site reconnaissance.

4.3.11 Possible Fill, Grading, or Solid Waste Disposal

An abandoned boat hull was observed on the Alternate Q alignment at the Holly Hill Road alignment crossing. Based on the condition of the boat hull and lack of engine, it is not likely the hull still contained

fluids such as gasoline and other oils; therefore, its presence is not considered a REC to the subject property.

Various trash and debris was observed along the Alternate Q alignment and associated ROW during the site reconnaissance. However, these areas of trash and debris are considered de minimis and are not considered RECs.

Evidence of fill and grading were observed along the Alternate Q alignment and associated ROW during the site reconnaissance. The southernmost section of the alignment is located along existing Louisiana Highway 434 for approximately 3 miles. In addition, a raised dirt and gravel paved access road was observed along the majority of the former railroad ROW from Louisiana Highway 36 northwards along the alignment. No stains or evidence of environmental concerns were observed along existing highways and access roads during the site reconnaissance, and the existing highways and access roads do not appear to represent RECs to the Alternate Q alignment and associated ROW.

No other areas of fill, grading, or solid waste disposal that would indicate RECs were observed on the Alternate Q alignment and associated ROW during the site reconnaissance.

4.3.12 Smells of Chemical Gases, Petroleum Products, or Noxious Odors

No smells of chemical gases, petroleum products, or other noxious odors were noted at the time of the site reconnaissance.

4.3.13 Wastewater and Stormwater Systems and Discharges

No wastewater or stormwater discharges were observed on the Alternate Q alignment and associated ROW during the site reconnaissance.

4.3.14 Wells and Potable Water Supply

No dry, irrigation, injection, abandoned, or other wells were observed on the Alternate Q alignment and associated ROW during the site reconnaissance. However, based on information obtained from the EDR Report, domestic wells are associated with the residential structures on and along the alignment. The potential presence of water wells are not considered a REC for the alignment.

4.3.15 Other Site-specific Environmental Conditions

No other site-specific environmental conditions were noted during the site reconnaissance.

4.4 VICINITY RECONNAISSANCE

The reconnaissance consisted of a limited survey of properties immediately adjacent to the Alternate Q alignment and associated ROW that could have an adverse environmental impact on the alignment. Other than the service station, medical facilities, and light industrial properties observed along the portion of the alignment that consisted of existing Louisiana Highway 434, properties immediately adjacent to the alignment appeared to consist of undeveloped wooded or residential property.

5.0 INTERVIEWS

The objective of conducting interviews is to obtain information concerning RECs in connection with the subject property. This information was obtained verbally, if possible.

5.1 INTERVIEW WITH OWNER

The Alternate Q alignment and associated ROW is not currently owned by the LADOTD. A list of the property owners and a description of the portion of their respective properties being impacted by the location of the Alternate Q alignment and associated ROW were provided by the St. Tammany Parish Government and are provided in Appendix C of this report. Due to the extensive list of property owners associated with the alignment, interviews with current property owners were not conducted as part of this Phase I ESA.

5.2 INTERVIEW WITH KEY SITE MANAGER

The Alternate Q alignment and associated ROW is not currently owned or managed by the LADOTD. A list of the property owners and a description of the portion of their respective properties being impacted by the location of the Alternate Q alignment and associated ROW were provided by the St. Tammany Parish Government and are provided in Appendix C of this report. Due to the extensive list of property owners associated with the alignment, interviews with current property owners or associated managers were not conducted as part of this Phase I.

5.3 INTERVIEWS WITH CURRENT OCCUPANTS

The Alternate Q alignment and associated ROW is not currently owned by the LADOTD. A list of the property owners and a description of the portion of their respective properties being impacted by the location of the Alternate Q alignment and associated ROW were provided by the St. Tammany Parish Government and are provided in Appendix C of this report. Due to the extensive list of property owners associated with the alignment, interviews with current property owners were not conducted as part of this Phase I ESA.

5.4 INTERVIEWS WITH PAST SITE OWNERS/OCCUPANTS

The Alternate Q alignment and associated ROW is not currently owned by the LADOTD. A list of the property owners and a description of the portion of their respective properties being impacted by the

location of the Alternate Q alignment and associated ROW were provided by the St. Tammany Parish Government and are provided in Appendix C this report. Due to the extensive list of property owners associated with the alignment, no interviews were conducted with past owners/occupants of the Alternate Q alignment and associated ROW property parcels. Contacting previous owners/occupants was implausible.

5.5 INTERVIEWS WITH LOCAL/STATE GOVERNMENT OFFICIALS

At the local level, Tetra Tech interviewed Fire Chief Scott Brewer with St. Tammany Fire District No. 9, located in Bush, Louisiana. Fire Chief Brewer stated he has been associated with the St. Tammany Fire District for 30 years and is familiar with the Alternate Q alignment and associated ROW. Fire Chief Brewer stated that he is unaware of any incidents involving, leaks, spills, or environmental concerns associated with the Alternate Q alignment and associated ROW.

6.0 RECORDS REVIEW

The purpose of the records review is to obtain and review records that will help identify RECs in connection with the subject property.

6.1 ENVIRONMENTAL RECORDS SOURCES

The following sources of environmental records were accessed and reviewed as part of this assessment.

6.1.1 Environmental Database Search

Federal, state, regional, and local records were reviewed to assess whether the subject property or surrounding properties have undergone significant unauthorized releases of hazardous substances or other events with potentially adverse environmental effects. EDR performed a database search of the subject property in accordance with ASTM E-2247-08 (EDR 2013a). A copy of this report is included as Appendix E.

The databases searched have been developed and are updated by federal, state, and local agencies. While these databases generally are reliable and comprehensive, cases in which data are out of date and no longer reflect actual property conditions may occur. The Government Records Searched/Data Currency Tracking section of the environmental report identifies when each record was updated (see Appendix E).

The database search identifies properties with environmental records from numerous federal, state, tribal, and local regulatory agencies, and distances of these properties from a specified geographic location (typically the perimeter of the subject property). The environmental databases searched and the respective recommended search radii are listed in the Map Findings Summary on pages 1 and 2 of Appendix E.

The facilities cited in the environmental database are summarized in Table 6-1. The subject property was not listed in any of the databases searched by EDR. Tetra Tech reviewed the facilities listed within the EDR Report (EDR 2013a), as summarized in Table 6-1. The review of the database listings focused on the facilities identified adjacent to the subject property and those facilities whose operations would pose the greatest risk to contributing to contamination to the surface at the subject property. The

groundwater is not being used on the subject property and is not projected for use based on the future intended use of the land.

TABLE 6-1

SUMMARY OF REGULATORY AGENCY DATABASE LISTINGS
WITHIN APPROPRIATE SEARCH RADII

Records Category	Number of Properties Listed in the Database	Any of the Properties Located Adjacent to the Alignment? If Yes, Property Name and Address Listed	RECs Associated with any of the Properties?
RCRA-LQG	1	No	No
RCRA-SQG	2	LA Heart Hospital 64030 LA Highway 434 Lacombe, LA	No
FINDS	15	The Family Store LLC/McDonald Enterprises, Inc. 65301 LA Highway 434 Lacombe, LA	No
		LA Heart Hospital Medcath LA Medical Center Medcath STP 64030 LA Highway 434 Lacombe, LA	
		Lacombe Stores, LLC 64041 LA Highway 434 Lacombe, LA	
		St. Tammany Fire Station No. 33 64110 LA Highway 434 Lacombe, LA	
		The Floor Man 64214 LA Highway 434 Lacombe, LA	
		Pavestone Co., LP 29095 Krentel Road Lacombe, LA	
US AIRS	2	Folgers Coffee Co. 64490 LA Highway 434 Lacombe, LA	No
		Pavestone Co., LP 29095 Krentel Road Lacombe, LA	
SWF/LF	1	St. Tammany Parish 65501 LA Highway 434 Lacombe, LA	No
LDEQ DEBRIS	1	St. Tammany Parish 65501 LA Highway 434 Lacombe, LA	No
LA UST	1	Chevron Travel Center 64041 LA Highway 434 Lacombe, LA	No violations or releases reported for the facility.

TABLE 6-1 (Continued)

SUMMARY OF REGULATORY AGENCY DATABASE LISTINGS WITHIN APPROPRIATE SEARCH RADII

Records Category	Number of Properties Listed in the Database	Any of the Properties Located Adjacent to the Alignment? If Yes, Property Name and Address Listed	RECs Associated with any of the Properties?
LA SPILLS	1	McDonald Enterprises, Inc. 65301 LA Highway 434 Lacombe, LA No	No – facility reported as discharging muddy water into Bayou Lacombe in March, 2004. Referred to LDEQ. No additional information obtained in EDR Report.
NPDES	12	McDonald Enterprises, Inc. 65301 LA Highway 434 Lacombe, LA No No	No
		Folgers Coffee Co. 64490 LA Highway 434 Lacombe, LA	
		St. Tammany Parish 64030 LA Highway 434 Lacombe, LA	
		H&M Metal Express, LLC 64033 LA Highway 434 Lacombe, LA	
		Lacombe Stores, LLC 64041 LA Highway 434 Lacombe, LA	
		St. Tammany Fire Station No. 33 64110 LA Highway 434 Lacombe, LA	
		Pavestone Co., LP 29095 Krentel Road Lacombe, LA	
AIRS	2	Folgers Coffee Co. 64490 LA Highway 434 Lacombe, LA	No
		Pavestone Co., LP 29095 Krentel Road Lacombe, LA	

Notes:

AIRS	Aerometric Information Retrieval System
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
EDR	Environmental Data Resources, Inc.
FINDS	Facility Index System
LA	Louisiana
LDEQ	Louisiana Department of Environmental Quality
LQG	Large Quantity Generator
NPDES	National Pollutant Discharge Elimination System
SQG	Small Quantity Generator
SWF/LF	State solid waste facility/landfill
UST	Underground Storage Tank

6.1.2 Valuation Reduction for Environmental Issues

LADOTD did not provide information regarding valuation reduction for environmental issues associated with the Alternate Q alignment and associated ROW.

6.1.3 Engineering and Institutional Controls

As part of the environmental records search performed by EDR, federal and state databases for institutional and engineering controls were searched, including EPA's Engineering Controls Sites List and Sites with Institutional Controls. No facilities were identified on the EDR database searches.

6.1.4 Title Records

LADOTD did not have deeds for the properties associated with the Alternate Q alignment and associated ROW. Due to the large number of properties associated with the alignment, title records were not reviewed.

6.2 HISTORICAL USE INFORMATION FOR THE SITE AND ADJOINING PROPERTIES

Historical data regarding the subject property and surrounding area were gathered to determine past uses and evaluate visible environmental issues that may pose RECs. The following sections describe Sanborn® maps, aerial photographs, topographic maps, city directories, and past environmental reports that were available for the subject property. Historical use documentation referenced in the following sections is included as Appendix F.

6.2.1 Certified Sanborn® Map Report

A search for Sanborn® maps was conducted by EDR. No Sanborn® maps were available for the subject property (see Appendix F-1) (EDR 2012b).

6.2.2 Aerial Photographs

Tetra Tech reviewed aerial photographs of the subject property and surrounding area for the years 1973, 1983, 1998, 1999, and 2004 (EDR 2013c) (see Appendix F-2). Table 6-2 is a summary of information obtained from the aerial photographs.

TABLE 6-2

SUMMARY OF AERIAL PHOTOGRAPHS

Year	Comments
1973	**Alt. Q Alignment and Surrounding Properties:** Due to the resolution, specific structures are not discernible. The majority of the area appears agricultural and undeveloped with sparsely developed residential areas. No evidence of Interstate 12 is observed.
1983	**Alt. Q Alignment and Surrounding Properties:** Interstate 12 is developed at the southern end of the alignment. The former railroad ROW is observed at the northern end of the alignment in the vicinity of Bush. Agricultural and rural residential development is observed in the vicinity of Bush, Louisiana, with primarily undeveloped land southwards toward the southern end of the alignment.
1998	**Alt. Q Alignment and Surrounding Properties:** Development of the existing gas station and the Pavestone facility is observed near the intersection of Interstate 12 and Louisiana Highway 434. No other significant changes from the 1983 aerial photographs.
1999	**Alt. Q Alignment and Surrounding Properties:** No significant changes from the 1998 aerial photographs.
2004	**Alt. Q Alignment and Surrounding Properties:** Commercial development appears to expand along Louisiana at the southern end of the alignment. Additional residential development is observed in the vicinity of Talisheek, Louisiana.

Review of aerial photographs indicated the general developmental changes on the subject property and in the surrounding area. They provided no visual surface evidence of gross areas of potential environmental concern to the Alternate Q alignment and associated ROW or adjoining properties.

6.2.3 Historical Topographic Maps

Topographic maps can be used as indicators of land use and structural changes on the subject property, and thus can help determine historical land use that might pose an environmental issue to the subject property. Tetra Tech reviewed USGS Slidell, Talisheek, Sun, St. Tammany, Lacombe, Hickory, Bush, and Industrial, Louisiana quadrangle topographic maps of the subject property and surrounding area for the years 1935, 1940, 1951, 1961, 1970, 1971, 1979, 1983, 1994, 1997, and 1998 (EDR 2013d) (see Appendix F-3). Table 6-3 is a summary of information obtained from the historical topographic maps.

TABLE 6-3

SUMMARY OF HISTORICAL TOPOGRAPHIC MAPS

Year	Description
1935	The Gulf Mobile and Northern Railroad is visible, however, the portion of the railroad along the Alt. Q alignment and associated ROW, as well as the other portions of the Alt. Q alignment and associated ROW are not depicted on the topographic maps.
1940	The Gulf Mobile and Ohio Railroad is visible from Bush to Talisheek, Louisiana. The surrounding area consists of unimproved land with sporadic residential development in the vicinity of Bush and Talisheek, Louisiana.
1951	No significant changes from the 1935 topographic maps.
1961	No significant changes from the 1940 topographic maps.
1970	A minimum area of the Alt. Q alignment is depicted in the available topographic maps. The general area consists of unimproved land along Louisiana Highway 434 north to Louisiana Highway 36.
1971	Interstate 12 at the south end of the alignment appears under construction. The area surrounding Interstate 12 and along Louisiana Highway 434 at the south end of the alignment appears unimproved. The Gulf Mobile and Ohio Railroad remains visible heading northwards towards Talisheek and Bush, Louisiana. The majority of the property along the alignment remains unimproved.
1979	A pipeline easement and transmission line easement are observed north of the intersection of Interstate 12 and Louisiana Highway 434. The Gulf Mobile and Ohio Railroad remains visible. No other significant improvements since 1971.
1983	The Alt. Q alignment is visible from Bush, Louisiana southwards to south of Talisheek, Louisiana. The Illinois Central/Gulf Railroad and Railroad Avenue are visible at the north end of the alignment. The railroad continues southward through Talisheek and the area surrounding the ROW appears to remain primarily unimproved. Additional development does appear along the railroad ROW south of Talisheek, Louisiana. The southern half of the Alt. Q alignment is not visible in the available topographic maps.
1994	No significant changes observed from the 1983 topographic maps.
1997	The railroad ROW is observed south of Talisheek, Louisiana. No other coverage of the Alt. Q alignment was provided.
1998	Additional commercial/industrial development is observed north of Interstate 12 and Louisiana Highway 434. No other significant changes observed since 1997.

Review of topographic maps provided a general overview of the developmental changes to the subject property and surrounding areas. The topographic maps indicated no obvious evidence of potential environmental concern to the subject property or adjoining properties.

6.2.4 City Directories

No city directories were ordered for the Alternate Q alignment and associated ROW.

6.2.5 Previous Reports

No previous reports were provided by LADOTD for the Alternate Q alignment and associated ROW.

7.0 FINDINGS AND OPINIONS

The following are significant findings from records review, interviews, or reconnaissance:

- Review of historical documentation indicated development of the railroad corridor ROW as early as 1935.

- An AT&T buried cable marker was observed at the south side of the intersection of Krentel Road and Louisiana Highway 434. The buried cable appears to run east to west across Louisiana Highway 434 near Interstate 12. In addition, an Atmos Energy natural gas pipeline marker was observed at the north side of the intersection of Krentel Road and Louisiana Highway 434. The Atmos Energy pipeline appears to run northward along the west side of existing Louisiana Highway 434. A Tri-States NGL, LLC and Gas South natural gas pipeline marker were observed at the intersection of the Alternate Q alignment at Holly Hill Road. A PEG Bandwith fiber optic cable marker was observed running east to west along Louisiana Highway 36 where the Alternative Q alignment crosses the highway and continues northward. The pipelines and easements were clearly marked and no evidence of spills or releases from the pipelines was observed during the site reconnaissance.

- An abandoned boat hull was observed on the Alternate Q alignment at the Holly Hill Road alignment crossing. Based on the condition of the boat hull and lack of engine, it is not likely the hull still contained fluids such as gasoline and other oils; therefore, its presence is not considered a REC to the subject property.

- Various trash and debris was observed along the Alternate Q alignment and associated ROW during the site reconnaissance. However, these areas of trash and debris are considered de minimis and are not considered RECs.

- Evidence of fill and grading were observed along the Alternate Q alignment and associated ROW during the site reconnaissance. The southernmost section of the alignment is located along existing Louisiana Highway 434 for approximately 3 miles. In addition, a raised dirt and gravel paved access road was observed along the majority of the former railroad ROW from Louisiana Highway 36 northwards along the alignment. No stains or evidence of environmental concerns were observed along existing highways and access roads during the

site reconnaissance, and the existing highways and access roads do not appear to represent RECs to the Alternate Q alignment and associated ROW.

- Numerous pole-mounted transformers were observed along the Alternate Q alignment and associated ROW along state highways and residential roadways. No evidence of leaks or were noted on the observed transformers and all appeared to be in good condition. Presence of the pole-mounted transformers does not pose a REC to the subject property.

- Standing water was observed on the Alternate Q alignment and associated ROW near the alignment crossing at Dixie Ranch Fire Tower Road, and at an unmarked roadway crossing along the former railroad ROW south of Talisheek, Louisiana. The standing water was observed in low-lying wooded areas and appeared to be due to equipment ruts caused during timber harvesting activities. Presence of the standing water does not pose a REC to the subject property.

- No dry, irrigation, injection, abandoned, or other wells were observed on the Alternate Q alignment and associated ROW during the site reconnaissance. However, based on information obtained from the EDR Report, domestic wells are associated with the residential structures on and along the alignment. The potential presence of water wells are not considered a REC for the alignment.

- Wastewater treatment systems/septic tanks may be associated with the residential structures observed on and along the alignment during the site reconnaissance. The potential presence of septic tanks are not considered a REC for the alignment.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Tetra Tech has performed an ESA in conformance with the scope and limitations of ASTM E-2247-08 for the approximate 20-Mile Alternate Q alignment and associated ROW in St. Tammany Parish, Louisiana. Exceptions to, or deletions from, this practice are described in Section 1.4 of this report. Based on available information, this assessment has revealed no evidence of RECs or environmental issues in connection with the subject property, as described in Section 7.0. This area-wide Phase I ESA is based predominantly on review of available public records. As a general rule, no considered engineering opinion can be issued regarding the types and levels of contamination that may be associated with the assessed parcels within the subject property without an appropriate scope of work that specifies intrusive exploration, material sampling, and chemical analysis. For this reason, Tetra Tech recommends the following:

- An AT&T buried cable marker was observed at the south side of the intersection of Krentel Road and Louisiana Highway 434. The buried cable appears to run east to west across Louisiana Highway 434 near Interstate 12. In addition, an Atmos Energy natural gas pipeline marker was observed at the north side of the intersection of Krentel Road and Louisiana Highway 434. The Atmos Energy pipeline appears to run northward along the west side of existing Louisiana Highway 434. A Tri-States NGL, LLC and Gas South natural gas pipeline marker were observed at the intersection of the Alternate Q alignment at Holly Hill Road. A PEG Bandwith fiber optic cable marker was observed running east to west along Louisiana Highway 36 where the Alternative Q alignment crosses the highway and continues northward. The pipelines and easements were clearly marked and no evidence of spills or releases from the pipelines was observed during the site reconnaissance. Tetra Tech recommends that care should be taken to ensure that all utility and natural gas easements are not impacted during development of the Alternate Q alignment and associated ROW.

- An abandoned boat hull was observed on the Alternate Q alignment at the Holly Hill Road alignment crossing. Based on the condition of the boat hull and lack of engine, it is not likely the hull still contained fluids such as gasoline and other oils; therefore, its presence is not considered a REC to the subject property. Tetra Tech recommends that the boat hull be removed and properly disposed according to applicable state and local disposal regulations.

- Various trash and debris was observed along the Alternate Q alignment and associated ROW during the site reconnaissance. However, these areas of trash and debris are considered de minimis and are not considered RECs. Tetra Tech recommends that trash and debris be removed and disposed according to applicable state and local disposal regulations.

- No dry, irrigation, injection, abandoned, or other wells were observed on the Alternate Q alignment and associated ROW during the site reconnaissance. However, based on information obtained from the EDR Report, domestic wells are associated with the residential structures on and along the alignment. The potential presence of water wells are not considered a REC for the alignment. Tetra Tech recommends that all water wells impacted by the location of the Alternate Q alignment and associated ROW be properly plugged and abandoned if no longer required.

- Wastewater treatment systems/septic tanks may be associated with the residential structures observed on and along the alignment during the site reconnaissance. The potential presence of septic tanks are not considered a REC for the alignment. Tetra Tech recommends that all septic systems/tanks impacted by the location of the Alternate Q alignment and associated ROW be properly removed or closed in place if no longer required.

9.0 CERTIFICATION STATEMENT

The resume of the Environmental Assessor who conducted the site reconnaissance and the Environmental Professional who prepared the report and oversaw completion of this work (same person) is provided in Appendix G. I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR Part 312.10. I have the specific qualifications based on education, training, and experience to assess the nature, history, and setting of the subject property addressed in this report. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312, and attest to the completeness and accuracy of the information contained in this report.

If you have any questions concerning the findings and conclusions contained in this report, please call Tetra Tech Program Manager Dean Goodin at (804) 364-2636, or Tetra Tech Project Geologist and Environmental Professional Kevin Matherne at (225) 383-1780.

Environmental Assessor/Professional

Kevin Matherne
Tetra Tech Project Geologist

10.0 REFERENCES

ASTM International (ASTM).

2008. Standard Practice of Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property. E 2247-08.

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2013a. EDR DataMap™ Corridor Study. March 7.

2013b. Certified Sanborn® Map Report. March 6.

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