US 51 Business (LA 22 to Club Deluxe Road)

Stage 1 Supplemental Environmental Assessment with Finding of No Significant Impact

Tangipahoa Parish, LA
State Project No. H.008399
Federal Aid Project No. H008399
RPC Task US51Tan1

Prepared for:

Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes

and

Louisiana Department of Transportation and Development

and

U.S. Department of Transportation - Federal Highway Administration
(Lead Federal Agency)

July 2018

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(Lead Federal Agency)

Prepared by:

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

in association with

ELOS Environmental, LLC - ITS Regional, LLC - Bowlby and Associates, Inc. - O.R. Colan Associates, Inc. - Earth Search, Inc. - Jemison & Partners

July 2018

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

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

John Bel Edwards, Governor
Shawn D. Wilson, Ph.D., Secretary

January 24, 2018

STATE PROJECT NO.: H.008399
F.A.P. NO.: H008399
US 51B (LA 22 TO CLUB DELUXE RD)
US 51B
TANGIPAHOA PARISH

Mr. Wes Bolinger
Division Administrator
Federal Highway Administration
5304 Flanders Drive, Suite A
Baton Rouge, Louisiana 70808

SUBJECT: Supplemental Environmental Assessment & Request for FONSI

Dear Mr. Bolinger:

Attached for your review are PDFs of the final Environmental Assessment (EA) with a memo of changes made to address the comments provided in December 2017, and the Public Hearing Transcript for the captioned project. The LADOTD certifies that due consideration has been given to the social, economic, environmental and other effects of the proposed project, and that all requirements set forth in Section 128 of Title 23 of the United States Code have been met.

We request that this project be processed as a Finding of No Significant Impact (FONSI). The attached page has been provided for your stamp and signature. Upon your concurrence, notice of its availability will be sent to State and area wide clearinghouses, as identified in 23CFR771. If we can be of further assistance, please contact Sharon Gage at (225) 242-4515.

APPROVED
[redacted]
PROJECT DELIVERY TEAM LEADER
FEDERAL HIGHWAY ADMINISTRATION
DATE 7/3/2018

Sincerely,

for Noel Ardoin
Environmental Engineer Administrator

Enclosure
NA/sdg

REVIEWED AND RECOMMENDED FOR APPROVAL
DATE 7-3-18

SENT ELECTRONICALLY

FEDERAL HIGHWAY ADMINISTRATION

FINDING OF NO SIGNIFICANT IMPACT

FOR

STATE PROJECT NO. H.008399
F.A.P. NO. H008399
US 51B (LA 22 to CLUB DELUXE RD)
US 51B
TANGIPAHOA PARISH

The FHWA has determined that Build Alternative 1 (the Selected Alternative) will not have any significant impact on the human environment. This Finding of No Significant Impact (FONSI) is based on the Supplemental Environmental Assessment (EA) which has been independently evaluated by the FHWA and determined to adequately and accurately discuss the environmental issues and impacts of the proposed project. It provides sufficient evidence and analysis for determining that an environmental impact statement is not required. The FHWA takes full responsibility for the accuracy, scope, and content of the attached EA.

7/3/2018
Date

Joshua Cunningham
Project Delivery Team Leader
Federal Highway Administration
Louisiana Division

REVIEWED AND RECOMMENDED FOR APPROVAL RMahoney
DATE 7-3-18

Summary of Mitigation, Commitments and Permits

Mitigation, Commitments and Permits for the impacts associated with the implementation of the preferred alternative for the US 51 Business project include the following:

- In terms of **relocations** the LADOTD is committed to following the federal rules and regulations in providing relocation assistance for all displaced households.

- There is a possibility of **cultural resource impacts**. The close proximity of Structure 53-01136 (1210 US 51 Business) to the direct Area of Potential Effect (APE) is of concern. The National Register of Historic Places eligible cottage is located in the indirect APE approximately 1.2 m or 4 feet from the edge of the proposed new right-of-way line. To avoid adversely impacting the historic structure, ongoing consultation among RPC, FHWA, SHPO and LADOTD during design and construction will be implemented to insure appropriate recommended mitigation measures.

- In terms of **mitigation of construction period impacts** (noise, air quality and vibration), appropriate mitigation steps shall be taken and proper procedures followed, including such things as time limitations on construction operations, monitoring of pile driving operations, use of best management practices,

- In terms of **vegetation impacts,** there are three (3) live oaks in front of the Brandon G. Thompson Funeral Home considered significant due to size and species, and other criteria. One (1) tree would be impacted (removed) by the widening of US 51 Business. The other two (2) oaks may be slightly impacted as their trunks will likely be out of the right-of-way, but their canopies would extend over the right-of-way.

  Mitigation measures for these significant trees may take the form of replacing/replanting trees of the same species in the same general location. Mitigation may also include avoidance measures and/or or implementing soil compaction avoidance measures within the drip zone to protect the 2 remaining significant trees.

- The proposed project's **wetlands impacts** are projected to consist of approximately .57 acres of jurisdictional wetlands that lie within the proposed right-of-way. Onsite mitigation of wetland impacts could include clearing and maintenance of the minimum area of required right- of-way. Installing adequate cross-drain underneath the roadway facility will facilitate maintenance of current surface water movement. For unavoidable wetland impacts, compensatory mitigation is required. During the Section 404 permitting process, the USACE-New Orleans District will determine the appropriate form and amount of required mitigation. Methods of providing compensatory mitigation include Permittee-Responsible Mitigation through aquatic resource restoration, establishment, enhancement, and in certain circumstances, preservation activities; and third-party compensation through obtaining credits from an approved wetlands mitigation bank.

- A Section 401 Permit (Water Quality Certification) will be required from the Louisiana Department of Environmental Quality.

- Because the project affects wetlands, a Section 404 Permit will be required from the US Army Corps of Engineers, New Orleans District.

- According to the US Army Corps of Engineers, Ponchatoula Creek is a navigable waterway and a DA Section 10 Permit will be required prior to any work in that waterway.

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ENVIRONMENTAL CHECKLIST

WBS No. : H.008399.2
Name: Route US 51 (LA 22 to Club Deluxe Road)
Route: US 51 Business
Parish: Tangipahoa

1. General Information

☒Conceptual Layout ☐Line and Grade ☐Preliminary Plans
☐Survey ☐Plan-in-Hand ☐Advance Check Prints

2. Class of Action

☐ Environmental Impact Statement (E.I.S.) ☐ State Funded Only (EE/EF/ER)
☒ Environmental Assessment (E.A.)
☐ Categorical Exclusion (C.E.)
☐ Programmatic C.E. (as defined in FHWA letter of agreement dated 03/15/95)

3. Project Description

See EA Document

4. Public Involvement

☒ Views were solicited on March 11, 2015
☐ Views were not solicited.
☒ Public Involvement events held (Public Meeting held on April 5, 2016)
☒ Public Hearing held on September 22, 2017.
☐ A public hearing/opportunity for requesting a public hearing not required.

5. Real Estate

	NO	YES	N/A
a. Will additional **right-of-way** be required?	☐	☒	☐
Is right-of-way required from a **burial/cemetery** site?	☒	☐	☐
Is right-of-way required from a Wetland Reserve Program (**WRP**) property?	☒	☐	☐
Is required right-of-way prime **farmland**? (Use form AD 1006, if needed) ...	☒	☐	☐
b. Will any **relocation** of residences or businesses occur?	☐	☒	☐
c. Are construction or drainage **servitudes** required?	☒	☐	☐

6. Section 4(f) and Section 6(f)

	NO	YES	N/A
a. Will historic sites or publicly owned parks, recreation areas, wildlife or waterfowl refuges (**Section 4f**) be affected?	☒	☐	☐
b. Are properties acquired or improved with **L&WC** funds affected?	☒	☐	☐

7. Cultural Section 106

		NO	YES	N/A
a.	Are any **known historic properties** adjacent or impacted by the project? (If so, list below)……..	☐	☒	☐
b.	Are any **known archaeological sites** adjacent or impacted by the project? (If so, list site # below) ……..	☒	☐	☐
c.	Would the project affect property owned by or held in trust for a federally recognized **tribal government**?	☒	☐	☐

8. Natural & Physical Environment

		NO	YES	N/A
a.	Are **wetlands** affected? …….....	☐	☒	☐
b.	Are **other waters** of the U.S. affected? …….....	☐	☒	☐
c.	Are **Endangered/Threatened Species**/Habitat affected? ……	☐	☒	☐
d.	Is project within 100 Year **Floodplain**?	☐	☒	☐
e.	Is project in **Coastal Zone** Management Area?	☒	☐	☐
f.	Is project in a **Coastal Barrier Resources** area? ……..	☒	☐	☐
g.	Is project on a **Sole Source Aquifer**? ……..……..	☐	☒	☐
h.	Is project impacting a **navigable waterway**?	☐	☒	☐
i.	Are any State or Federal **Scenic Rivers/Streams** impacted? ……	☒	☐	☐
j.	Is a **noise** analysis warranted (Type I project) ……..……	☐	☒	☐
k.	Is an **air** quality study warranted?	☐	☒	☐
l.	Is project in a **non-attainment** area? …….....	☒	☐	☐
m.	Is project in an approved Transportation Plan, Transportation Improvement Program (TIP) and State Transportation Improvement Program (**STIP**)?	☐	☒	☐
n.	Are **construction** air, noise, & water impacts major? ……	☒	☐	☐
o.	Will the project affect or be affected by a **hazardous waste site**, leaking underground storage tank, oil/gas well, or other potentially contaminated site?	☒	☐	☐

9. Social Impacts

		NO	YES	N/A
a.	Will project change **land use** in the area? ……	☒	☐	☐
b.	Are any **churches and schools** impacted by or adjacent to the project? ….. (If so, list below)	☐	☒	☐
c.	Has **Title VI** been considered? ……	☒	☐	☐
d.	Will any **specific groups** be adversely affected? (i.e., *minorities, low-income, elderly, disabled,* etc.) ……	☒	☐	☐
e.	Are any **hospitals, medical facilities, fire police** facilities impacted by or adjacent to the project? (If so, list below)……	☐	☒	☐
f.	Will **Transportation patterns** change? ……..	☐	☒	☐
g.	Is **Community cohesion** affected by the project? ……	☒	☐	☐
h.	Are **short-term social/economic** impacts due to construction considered major?	☒	☐	☐
i.	Do conditions warrant **special construction times?** (i.e., *school in session, congestion, tourist season, harvest*) ……	☒	☐	☐
j.	Were **Context Sensitive Solutions** considered? (If so, explain below)……	☐	☒	☐
k.	Were **bike and pedestrian** accommodations considered? (explain below)…..	☐	☒	☐

		NO	YES	N/A
l.	Will the **roadway/bridge be closed?** (If yes, answer questions below)…….	☒	☐	☐
	Will a **detour bridge** be provided?	☒	☐	☐
	Will a **detour road** be provided?	☒	☐	☐
	Will a **detour route** be signed?	☒	☐	☐

10. Permits (Check all permits that may be required)

☐Corps Nationwide	☐CUP/Consistency Determination	☐LA Scenic Stream
☒Corps Section 404/10	☐USCG Bridge	☒DEQ WQC
☐Levee	☐USCG Navigational Lights	☐LPDES Stormwater
☐Other (explain below)		

11. Other (Use this space to explain or expand answers to questions above.)

Public Involvement Events - Public Meeting was held on April 5, 2016

Public Hearing/Opportunity for Requesting a Public Hearing - A Public Hearing was held on Sept. 26, 2017.

Known Historic Sites/Structures: There are four structures that demonstrate qualities suggesting eligibility for nomination to the National Register of Historic Places (NRHP) adjacent to the project: a Tudor Cottage at 1221 US 51 North (53-00133), a vernacular cottage at 1210 US 51 North (53-00136), a vernacular cottage at 495 Barringer Dr. PI53-00111, and a vernacular cottage at 2450 Southwest Railroad Ave. (53-00142). None of the structures that appear to be eligible for nomination to the NRHP are in the **direct** APE of any alternative. However, the close proximity of 53-01136 to the direct APE is of concern. The cottage is located in the indirect APE approximately 1.2 m or 4 feet from the edge of the proposed new right-of-way line. Several mitigation measures have been suggested for this structure. These measures include (1) Vibration analysis and reduction to prevent physical damage to the structure; (2) Maintaining or replacing the vegetative screen between the roadway and the structure to provide a buffer from the highway and prevent adverse effects to the viewshed; and, (3) Physically moving the structure on its parcel further back from the right-of-way line. Consultation among the RPC, LADOTD, FHWA, and SHPO to implement appropriate mitigation measures such as those listed above or any other is recommended prior to design and construction

Churches adjacent to project –Christian Life Assembly of God, 2575 Veterans Ave (US 51 Business) and Kingdom Hall Jehovah's Witness, 2535 Veterans Avenue (US 51 Business). Neither are affected by roadway widening.

Hospitals, medical facilities, fire police – North Oaks Medical Center is along the project route and a portion of their site will be required for new road right-of-way. No buildings at North Oaks Medical Center will be affected and no relocations are required.

Context Sensitive Solutions - The initial environmental impact analysis revealed that four (4), possibly five (5) live oak trees in front of the Brandon G. Thompson Funeral Home that would be considered significant due to size and species and other criteria would be impacted by the roadway widening. The roadway median was reduced from 16 ft. width to the 6 ft. minimum width in that vicinity to save significant trees at that location. As a result, only one (1) tree would now be impacted (removed) by the widening of US 51 Business. Two (2) more oaks may be impacted as their trunks will likely be out of the right-of-way, but their canopies would extend over the right-of-way.

Mitigation measures for these significant trees may take the form of replacing/replanting trees of the same species in the same general location. Mitigation may also include avoidance measures and/or or implementing soil compaction avoidance measures within the drip zone to protect the 2 remaining significant trees.

Bike and Pedestrian Accommodations - The proposed typical section of US 51 Business is a 4-lane section with a 16' median, curb and subsurface drainage, 11' lanes, **a 3' buffer adjacent to a 6' bike lane and sidewalks adjacent to the back of curb.**

SELECTED ALTERNATIVE

Following public and agency review of the draft EA document, the FHWA has determined that Build Alternative 1 (the Preferred Alternative) will not have any significant impact on the human environment, and was fully analyzed in the Environmental Assessment (EA), which has been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed improvements and appropriate mitigation measures. As such, it is further identified as the **Selected Alternative**.

Preparer: Bruce J. Richards, AICP,CTP
Title: Project Consultant
Date: December 21, 2017

Attachments

- ☒ S.O.V. and Responses
- ☒ Wetlands Finding
- ☒ Project Description Sheet
- ☒ Conceptual Stage Relocation Plan
- ☒ Noise Analysis
- ☒ Air Analysis
- ☒ Exhibits and/or Maps
- ☐ 4(f) Evaluation
- ☐ Form AD 1006 (Farmlands)
- ☐ 106 Documentation
- ☒ Other: Environmental Assessment Document

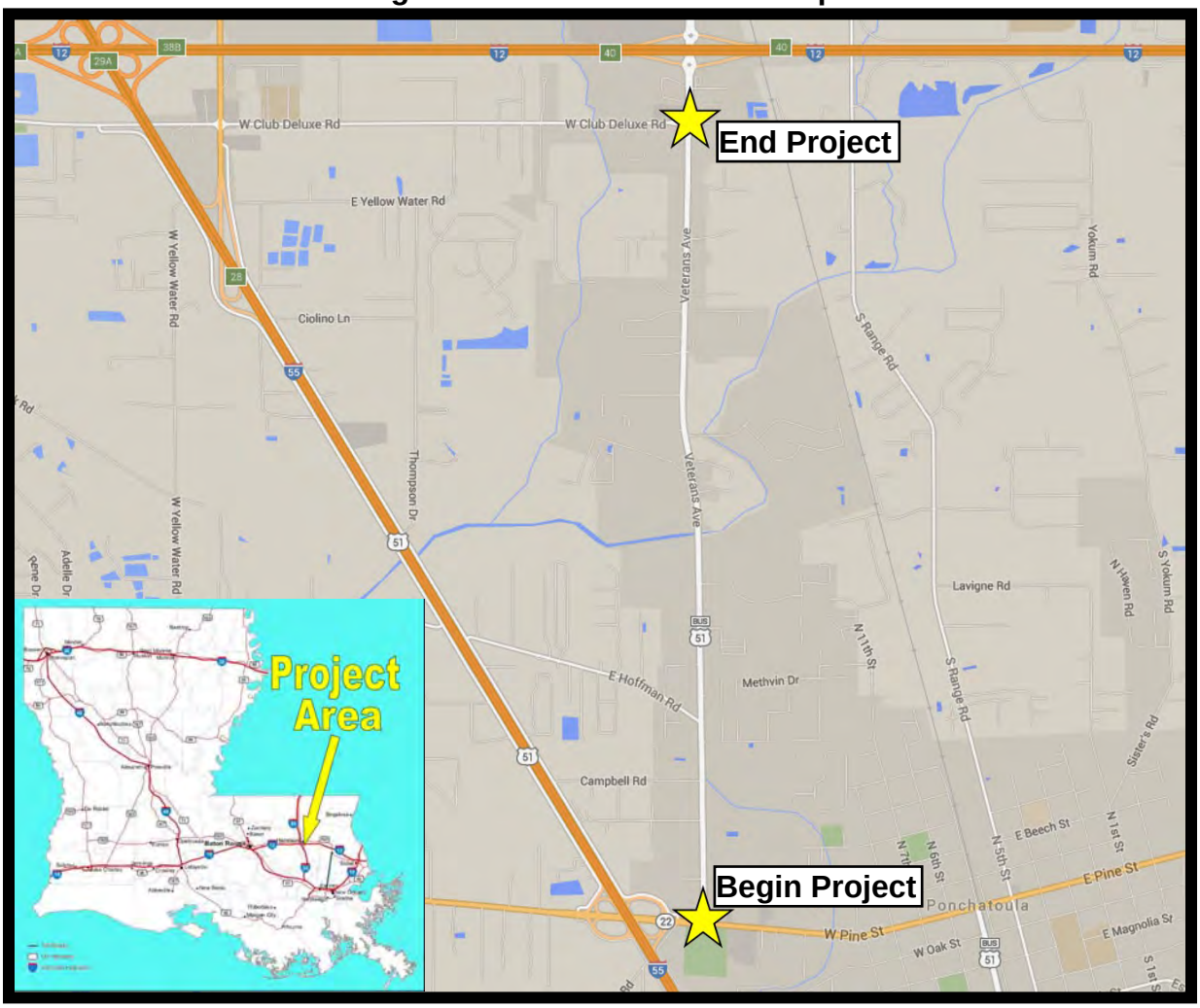
CHAPTER I

INTRODUCTION, PURPOSE AND NEED, AND REPORT ORGANIZATION

INTRODUCTION

A comprehensive study for a Supplemental Environmental Assessment (EA) has been conducted for the widening of US 51 Business (Veterans Avenue/SW Railroad Avenue) in Tangipahoa Parish, LA (see **Figure I-1**, below, for a general location map). The total length of the project is approximately 2½ miles. The Federal Highway Administration (FHWA) is the lead federal agency for this project. This Supplemental EA was prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) addressing potential social, environmental, and economic impacts.

Figure I-1 General Location Map



The proposed project involves adding capacity and improving existing US Business 51 from just south of the new roundabout constructed at the intersection with West Club Deluxe Road to just north of the intersection with LA Highway 22 *(the LA Hwy 22/US 51 intersection is being studied under a separate LADOTD project: SP No. H011618.1*). US 51 Business in the project corridor is currently almost entirely a three-lane section, with the only exception being the bridge over Ponchatoula Creek, which is only two lanes. The project proposes to widen the existing highway from its current condition to a four-lane divided highway along the entire length. The improved roadway is proposed to be an Urban Arterial (UA-2) design with a raised median. Other improvements will include curb and gutter, use of subsurface drainage and intersection improvements (roundabouts).

US 51 Business in the project area serves as a minor arterial between the cities of Ponchatoula and Hammond. Students at Southeastern Louisiana University in Hammond who live in Ponchatoula use US 51 Business as a commuting route to and from the university, and residents of Ponchatoula and Hammond use the highway to access goods and services in each other's cities. The project corridor has seen an increasing amount of development along its length, including new residential subdivisions, retail stores (including a new Walmart), and continued development associated with the North Oaks Medical Center.

The purpose of this Supplemental EA is the identification, collection of data and mapping of major categories of social, economic and environmental conditions, and the assessment of the potential for these conditions to be impacted by either the proposed action or the no build alternative.

The data presented in the report text and maps characterize conditions for the general project area as well as the specific project site. Data was collected by document and records reviews, meetings with the public and local and state officials, and also via field work (site reconnaissance and field investigations).

PROJECT HISTORY AND BACKGROUND

Plans to improve US 51 Business have been under consideration for some time, evolving to the present effort over time. Previous studies and relevant projects examined in this section include:

- Environmental Assessment for US 51 Business (LA 22 to I-12) (*LADOTD)* - January 2004.
- Stage 0 Feasibility Study for US 51 Business, Ponchatoula Creek to US 51 (*LADOTD)* - May 2009.
- New roundabout at intersection of US 51 Business and W. Club Deluxe Road (completed 2015) and improvements (installation of roundabouts) to I-12 ramp intersections with US 51 business (completed 2016) under State Project SP No. H.003432

These are further described below:

ENVIRONMENTAL ASSESSMENT (2004)

In 2004, The Louisiana Department of Transportation and Development (LADOTD) completed an EA for a project to widen US 51 Business between LA 22 and I-12 in Ponchatoula. The project proposed to widen the (then) existing two-lane US 51 Business from two 3.6 meter (12 foot) travel lanes with two 2.4 meter (8 foot) shoulders to a four lane urban section with a center two-way left turn lane. The proposed roadway would include four 3.6 meter (12 foot) travel lanes with a 4.3 meter (14 foot) center two-way left turn lane and two 2.4 meter (8 foot) shoulders and curb and gutter drainage.

As described in the project's *Purpose and Need* section, the purpose of the project was to upgrade US 51 Business to meet current design standards for an urban section. US 51 Business north of 1-12 near Hammond was a four-lane urban section with a center two-way left turn lane. A portion of US 51 Business south of 1-12 within the project area was a four-lane roadway with a center two-way left turn lane. The remainder of the project area at the time of the EA was two lanes. Widening US 51 Business within the project area and adding the two-way center turn lane would allow for the flow of traffic in the future.

There were only two (2) alternatives for the proposed project - the build alternative and the No Build alternative. Shortly after the EA was completed with a Finding of No Significant Impact (FONSI) in January 2004, US 51 Business was converted from a two-lane facility to a three-lane facility. The proposed widening to a five-lane facility was never implemented.

Since that time, the LADOTD changed their roadway design criteria and no longer approves or designs five-lane facilities. This factor and the time elapsed since the original FONSI was issued with no further progress necessitated the need for this Supplemental Environmental Assessment.

STAGE 0 FEASIBILITY STUDY (2009)

In 2009, Shread-Kuyrkendall & Associates, Inc. along with Urban Systems, Inc. completed a *Stage 0 Feasibility Study for US 51 Business, Ponchatoula Creek to US 51*. The purpose of the project under study was to reduce existing traffic congestion and minimize travel delays, address projected traffic increases and to alleviate conflicting business access within the project corridor. The project was to provide for the safe weaving/turning of trucks and eliminate the "gridlock" conditions that impair emergency vehicles and the efficient flow of traffic in the project' area.

Although the study was listed as "*Ponchatoula Creek to US 51*", the only areas recommended for improvement were between I-12 and W. Club Deluxe Road.

The study specifically addressed the operational impacts of "mid-block" left turn movements and the access demands for driveways at adjacent properties that were

densely located along the corridor. Those left turn movements and the high volume of trucks contributed significantly to congestion in the "midblock" segment south of Interstate 12.

Three (3) Alternates were studied for improvement. Alternate A included refurbishing existing pavement and striping for median treatment with minimal pavement widening and shoulder considerations. Alternate B included refurbishing existing pavement and striping with minimal pavement widening and shoulder considerations along with a W. Club Deluxe Road roundabout. Alternate C included refurbishing existing pavement and striping with pavement widening. Alternate C also included roundabouts located at the major intersections along the corridor to provide for free flow movements and U-turn capabilities for the access to driveways in the project area.

NEW ROUNDABOUT AT INTERSECTION OF US 51 BUSINESS AND W. CLUB DELUXE ROAD (2015) AND IMPROVEMENTS (INSTALLATION OF ROUNDABOUTS) TO I-12 RAMP INTERSECTIONS WITH US 51 BUSINESS (2016)

This project essentially represents the improvements recommended in Alternate C of the Stage 0 Feasibility Study, and was completed within the past year.

PROJECT PURPOSE AND NEED

PURPOSE

The purpose of this project is to:

1. reduce existing traffic congestion and minimize travel delays;
2. address projected traffic increases and congestion;
3. manage access and provide an efficient flow of traffic in the project area; and,
4. enhance alternative transportation methods (pedestrian and bicycle) by including installation of a complete streets cross-section.

NEED

Traffic Congestion

Tangipahoa Parish has been experiencing one of the highest growth rates in the area (a 16.94% increase in population between 2000 and 2010). Similar levels of growth are expected to continue.

Rapid growth has led to heavy traffic volumes that correspond to such growth. The purpose of this project is to address existing and anticipated traffic congestion along the US 51 Business corridor specifically between LA Highway 22 and Club Deluxe Road. Without improvement to the roadway and intersections along it, Level of Service (LOS) conditions are anticipated to reach failing status within the next 20 years.

Traffic Analysis

As part of the Environmental Assessment, a *Traffic Analysis Report* was completed for the project. Portions of the report are included herein to help illustrate the traffic-related need for the project. The report included a comprehensive traffic review of the US 51 Business corridor. This review included automatic traffic volume counts at key intersections, manual peak period turning movement counts at all intersections, driveway counts for all commercial and institutional establishments identified along the corridor, a determination of current Levels of Service (LOS), an analysis of future land use patterns, estimating the 20-year traffic projections (Year 2035) for the study corridor, projections of future LOS, synchro analysis, alternatives analysis and safety analysis.

Existing Traffic Conditions

- Mainline Roadway

The existing Year 2015 traffic volumes on the US 51 Business corridor in the Study Area ranged from 14,000 vehicles per day (vpd) to 17,000 vpd. A two-lane analysis for the Year 2015 traffic volumes with existing geometry was performed using HCS 2010 software. **Table I-1** below includes a summary of the two-lane analysis.

TABLE I-1
EXISTING YEAR 2015 HCS CAPACITY ANALYSIS (TWO-LANE GEOMETRY)

Roadway Segment	AM		PM	
	v/c	LOS	v/c	LOS
LA 22 to Boudreaux Lane	0.50	D	0.45	D
Fischers Lane to Campbell Lane	0.45	D	0.43	E
Campbell Lane to Barringer Drive	0.42	C	0.39	D
Barringer Drive to E. Hoffman Road	0.48	D	0.42	E
Avalon Villa Drive to St. Patrick's Boulevard	0.47	D	0.39	D
Belle Drive to Medical Arts Drive	0.48	D	0.39	D
Paul Vega Medical Drive to Paul Vega Drive/ Doctors Boulevard	0.46	D	0.43	D
Paul Vega Medical Drive/ Doctors Boulevard to North Oaks Drive	0.46	D	0.47	D
Lamonte Drive to Club Deluxe Road	0.49	E	0.52	E

As seen in **Table I-1**, the HCS 2010 analysis determined this section of two-lane divided roadway to be operating between LOS “C” and LOS “E” based on existing Year 2015 traffic volumes.

- Intersections

The weekday peak hour operations at Study Area intersections were analyzed using Synchro 9 software with the existing roadway geometry, existing signal timing plans, and existing Year 2015 traffic volumes. HCM 2000 output reports were considered for analysis since Synchro's HCM 2010 computation does not support turning movement with shared and exclusive lanes. All individual movements at Study Area intersections operate at Level of Service "D" or better during the weekday AM and PM peak hours.

Future Traffic Conditions

The 20-year traffic projections (i.e. Year 2035 post-development volumes) were obtained by growing the Year 2015 existing traffic volumes by 2.5% for 20 years to obtain post-development peak hour volumes.

- Mainline Roadway

Based on the 20-year growth projections, the year 2035 traffic volumes along this corridor are expected to range from 22,382 vpd to 27,837 vpd. A two-lane analysis for the Year 2035 traffic volumes with existing geometry was performed using HCS 2010 software. Table I-2 below includes a summary of the two-lane analysis:

TABLE I-2
YEAR 2035 HCS CAPACITY ANALYSIS (TWO-LANE GEOMETRY)

Roadway Segment	AM		PM	
	v/c	LOS	v/c	LOS
LA 22 to Boudreaux Lane	0.81	E	0.74	E
Fischers Lane to Campbell Lane	0.74	E	0.7	E
Campbell Lane to Barringer Drive	0.69	E	0.63	E
Barringer Drive to E. Hoffman Road	0.79	E	0.68	E
Avalon Villa Drive to St. Patrick's Boulevard	0.77	E	0.64	E
Belle Drive to Medical Arts Drive	0.78	E	0.7	E
Paul Vega Medical Drive to Paul Vega Drive/ Doctors Boulevard	0.76	E	0.7	E
Paul Vega Medical Drive/ Doctors Boulevard to North Oaks Drive	0.67	E	0.77	E
Lamonte Drive to Club Deluxe Road	0.81	E	0.85	E

Table I-2 demonstrates that with no improvements, all segments of the two-lane divided roadway section is projected to operate at LOS "E", falling short of the required LOS criteria for the US 51 Business corridor under Year 2035 AM and PM peak hour conditions.

- Intersections

The future Year 2035 weekday peak hour operations at study intersections were analyzed using Synchro 9 software with the existing roadway geometry and projected Year 2035 traffic volumes. Many movements at the Study Area intersections will operate at LOS "F" or worse during weekday AM and PM peak hours.

Alternative Transportation Methods (Bicycle and Pedestrian)

In July of 2010, the Louisiana Department of Transportation and Development enacted a *Complete Streets Policy*. In short, the Complete Streets Policy addresses the needs of pedestrians and bicyclists, and calls for the LADOTD to consider and include (where appropriate) sidewalks and bicycle accommodations along new and reconstruction roadway projects.

Currently, in the project area, US 51 business has no facilities for either bicyclists or pedestrians. The shoulder is 1' paved along the main roadway (less along the bridge) and is not suitable for accommodating bicyclists. The elected officials of the project area (Tangipahoa Parish President and the mayors of Ponchatoula and Hammond) are all in agreement that such facilities are needed and desired by those in the community, and have expressed their support for redeveloping US 51 Business with a complete streets section to accommodate pedestrians and bicyclists.

REPORT ORGANIZATION

CHAPTER I – INTRODUCTION, PURPOSE AND NEED, AND REPORT ORGANIZATION

CHAPTER II - ALTERNATIVE DEVELOPMENT, REVIEW & SELECTION, AND DESCRIPTION OF ALTERNATIVES

Chapter II begins with a discussion of build alternative development during the early portion of this process. The Chapter then provides an examination of refinement of build alternatives completed under the line and grade study portion and Traffic Analysis portion of the Environmental Assessment that resulted in the three (3) build alternatives. The considered alternatives are then fully defined, beginning with the No-Build Alternative and followed by the three (3) Build Alternatives. For the build alternatives, roadway design criteria, which were used in the development of the alternatives, are first discussed. The refined design concepts of the build alternatives are then

described. Conceptual project costs are also estimated. Plan view layouts and typical sections for all three build alternatives are presented at the end of this chapter.

CHAPTER III – THE AFFECTED ENVIRONMENT

In this chapter, the project corridor and study area are first delineated and described. The existing transportation system, including highways and roadways, rail, transit and pedestrian facilities are presented. The Chapter concludes with an examination of the affected human and natural environment.

CHAPTER IV – ENVIRONMENTAL IMPACTS OF THE CONSIDERED ALTERNATIVES AND SELECTION OF THE PREFERRED ALTERNATIVE

In this chapter, the impacts of the four alternatives considered (the three Build Alternatives and the No Build Alternative) are assessed relative to the evaluation categories of transportation and traffic, human environment, and the natural environment. The chapter then provides a comparative analysis between the four alternatives based on their ability to meet the project Purpose and Need, and describes the selection of the Preferred Alternative.

CHAPTER V – THE PREFERRED ALTERNATIVE: IMPACT SUMMARY, MITIGATION MEASURES AND PERMITS

The Direct Impacts to the transportation system and the human and natural environments as a result of the implementation of the Preferred Alternative are listed. For unavoidable adverse impacts, this chapter provides a discussion of mitigation measures recommended to reduce those adverse effects. The indirect and cumulative impacts of the Preferred Alternative are also examined in this chapter. Commitments made to further the project are then described. The Chapter concludes with a section listing the permits required to complete the project.

CHAPTER VI – PUBLIC PARTICIPATION, AGENCY COMMENTS AND COORDINATION

This chapter describes the public participation process for the project, including documentation of public meetings and hearings and coordination efforts associated with the development of the project. These efforts included meetings with LADOTD, FHWA, other agencies and elected officials and a Solicitation of Views requesting written comments on the project.

CHAPTER VII – REFERENCES AND APPENDIX

The Environmental Assessment concludes with this chapter. The References section lists publications, websites and other sources of information used in the writing of this document. The Appendix lists the stand-alone documents and other data which were completed as part of this EA and are considered part of this EA. The Appendix also includes copies of the responses to the Solicitation of Views and formal agency responses received during the Draft EA review process. Next in the appendix is the Design Report for Minimum Design Guidelines as required by LADOTD. Finally, the Appendix also includes a utility disposition table listing the public and private utilities identified within the roadway alternative alignments.

CHAPTER II

ALTERNATIVE DEVELOPMENT, REVIEW & SELECTION AND DESCRIPTION OF ALTERNATIVES

Chapter II begins with a discussion of build alternative development during the early portion of this process. The Chapter then provides an examination of refinement of build alternatives completed under the line and grade study portion and Traffic Analysis portion of the Environmental Assessment that resulted in the three (3) build alternatives. The considered alternatives are then fully defined, beginning with the No-Build Alternative and followed by the three (3) Build Alternatives. For the build alternatives, LADOTD roadway design guidelines and Design Report prepared for this project, which were used in the development of the alternatives, are first discussed. The refined design concepts of the build alternatives are then described. Conceptual project costs are also estimated. The conceptual project cost section includes text describing the component cost estimates and assumptions used in determining costs for:

- Main Roadway
- Utilities
- Right-of-Way Acquisition and Relocation
- Contingencies
- Engineering Design cost
- Environmental Mitigation

Plan view layouts and typical sections for all three build alternatives are presented at the end of this chapter.

ALTERNATIVE DEVELOPMENT

ANALYSIS AND REFINING OF EARLIER ALTERNATIVE

The starting point for build alternative development was an earlier 2004 Environmental Assessment (EA). That study proposed to widen the existing US 51 Business from two 3.6 meter (12 foot) travel lanes with two 2.4 meter (8 foot) shoulders to a four lane urban section with a center two-way left turn lane. The proposed roadway was to include four 3.6 meter (12 foot) travel lanes with a 4.3 meter (14 foot) center two-way left turn lane and two 2.4 meter (8 foot) shoulders and curb and gutter drainage. It should be noted that this was the only Build Alternative listed in the Environmental Assessment.

Shortly after the EA was completed, the roadway was converted to a three-lane section by substantially reducing the existing shoulders.

Although the Environmental Assessment received a Finding of No Significant Impact (FONSI), it was never constructed as planned. Since that time, the LADOTD has changed their policy, and no longer designs five-lane sections. Any widening of the roadway would need to be a four-lane section with a median.

Additionally, in September 2008, the LADOTD issued *Engineering Design Standards Manual (EDSM) IV.2.1.4 - Multi-Lane Roadways and Median Openings*, later refined in June 2014. It states the following definitions and criteria for design of median openings on such roadways:[1]

- ***Full Access Median Opening*** *is defined as a median opening that allows all directions of movements, including all tuning movements (left turns, right turns, and through movements). It may also allow u-turs when they are needed and can be safely provided. This median opening may be signalized or unsignalized. This definition does not apply to roundabout intersections due to the reduced number of conflict points.*
- ***Partial Median Opening*** *is defined as a median opening that allows for lefts from the mainline and right-in/right-out from the minor roadway (or access connection). This type of opening prohibits left turns or through movements from the minor roadway (or access connection). The Restricted Crossing U-Turn Intersection and the Median U-Turn Intersection are examples of uses of partial median openings.*
- *Median U-Turn openings for passenger cars shall be spaced at ¼ mile distances. This minimizes the distance for a vehicle to turn right, make a u-turn and get back to where they started to no more than ½ mile.*
- *Full access median openings will only be allowed if the provisions of EDSM VI.3.1.6 (Installation of a New Traffic Signal) are met and full analysis utilizing the following alternatives predicts that the Full Access Median Opening will be safer and more efficient.*
- *Design vehicles shall be approved by the DTOE based on the following guidance:*

Access Type and Spacing	Truck Percentage	
	<5%	>5%
Minor Median U-Turn Openings (Typical ¼ mile spacing)	P	SU
Major Median U-Turn Openings (Typical 2 mile spacing)	SU	WB-67
Signalized Intersections and Roundabouts	WB-67	WB-67

It should be noted that during the original 2004 Environmental Assessment, only traditional intersections (signalized and stop conditions) were developed. More modern and efficient intersection types (such as roundabouts and J-Turns) were not considered.

Finally, the 2004 study did not include any consideration of other types of transportation use (bicycle or pedestrian use).

These considerations helped drive the development of new alternatives under this Environmental Assessment.

[1] *LADOTD Engineering Design Standards Manual (EDSM) IV.2.1.4, June 2014*

REFINEMENT OF BUILD ALTERNATIVES UNDER LINE AND GRADE STUDY

In December 2014, the Stage 1 Environmental Assessment process was initiated. The first step in this process was undertaking a comprehensive Line and Grade study, under which the design guidelines, roadway and bridge sections were to be verified. Additionally, full horizontal (plan) and vertical (profile) alignments were to be developed for the Alternatives, and additional traffic analyses were to be performed on the Alternatives. In particular, the geometric and traffic-related feasibility of specific numbers of and types of intersection alternatives were to be examined at specific intersection locations along the route.

DESIGN CRITERIA

Early in the EA process, it was determined that as the roadway is classified as a minor arterial (urban) and currently has a posted speed limit of 45 miles per hour (mph) this speed would be used as the design speed. This and other factors, including the desire to limit right-of-way takings, led to a Design Report being prepared and approved by LADOTD based on the LADOTD's Minimum Design Guidelines dated 3-6-17. A copy of that Design Report is presented in the Appendix.

LAYOUT OF WIDENING SEGMENT

At the project kickoff meeting held on January 15, 2015, the definition of "Build Alternatives" for the project was discussed. As the objective in conceptually designing alternatives was avoidance and minimization of impacts, particularly residential and commercial relocations, it was submitted that rather than explore multiple alignment possibilities (widening to the east, widening to the west, widening equally from the middle) one common widening alignment-- the one with the least impacts -- might be used for all alternatives. Build Alternatives could be differentiated by types of intersection improvements (or combination of different types of intersection improvements), and as per the Scope of Work, three (3) such alternatives would be developed.

After preliminary research, particularly on existing utilities along the corridor and review of land use/vacant land, this approach was confirmed at a progress meeting with RPC and LADOTD held on September 17, 2015. For this common widening layout, as much as possible considering the design criteria and geometrics, right-of-way was to be acquired from vacant areas.

At that September 17, 2015 meeting, it was also agreed that wherever possible based on the grade portion of the line and grade study, the new roadway would be constructed in cut rather than fill, with curb and gutter and a subsurface drainage system. Additional or new cross-drains would be included at key locations. This would enable less right-of-way to be required and lessen impacts.

COMPLETE STREETS - BICYCLE AND PEDESTRIAN FACILITIES

From the beginning of the project, it was the consensus of the RPC, LADOTD, and local officials that the improved roadway would be a "Complete Street" and include facilities for not only motorized vehicles, but also bicyclists and pedestrians. Different possibilities for reaching this goal were discussed in the September 17th meeting, with the two most likely candidate cross-sections being:

1. A shared use (bicycle/pedestrian) path on one side of the roadway, along with a pedestrian-only sidewalk on the opposite side; or,

2. In-street bicycle lanes in each direction, along with pedestrian sidewalks along both sides of the roadway.

A meeting was held on November 9th, 2015 with the top elected officials of each jurisdiction (Tangipahoa Parish President, Mayor of Hammond, and Mayor of Ponchatoula) along with RPC and LADOTD staff to discuss the bicycle and pedestrian facilities issue. At that meeting a clear consensus was reached that the second cross-section (in-street bicycle lanes with pedestrian sidewalks) was preferred, and this would be used in the layout of the alternatives.

BRIDGE CROSSING

The current bridge over Ponchatoula Creek is only two lanes in width, with no shoulders. As such, it does not meet LADOTD geometric standards. The existing bridge is also posted with weight limits. The current bridge also does not have any provision for pedestrian or bicyclists. It was determined during the line and grade process that the existing bridge would be completely replaced (as opposed to building a new parallel span and improving the existing bridge to meet LADOTD standards).

INTERSECTION DEVELOPMENT AND ANALYSIS

As mentioned earlier, different types of intersection alternatives were to be examined at specific intersection locations along the route-- essentially those that are at currently signalized intersections.

Utilizing the projected volumes from earlier traffic analyses, future scenarios with three different types of intersections - traditional signalized intersections, roundabouts, and J-Turns (signalized and/or unsignalized) - were developed and Levels of Service projected for each scenario at the currently signalized intersections. Initial findings were presented to the RPC and LADOTD at the September 17th, 2015 progress meeting, and were then refined with further analysis. In November of 2015, the consultant team developed and proposed (in *Technical Memorandum IV- Alternative Analysis of Roadway Improvements*) three (3) alternative intersection combinations to be explored in the EA as per the Scope of Work. They were as follows:

- Alternative 1: *All roundabouts* (at LA 22, Campbell Road/Walmart entrance, Medical Arts Drive, and N. Oak Drive/Medical Center Drive).

- Alternative 2: *Predominately J-Turns* (Traditional signalized intersection at LA 22, signalized J-turns at Campbell Road/Walmart entrance and North Oak Drive/Medical Center Drive, and unsignalized J-turn at Medical Arts Drive).

- Alternative 3: *Low-impact, best traffic improvement combination* (Traditional signalized intersection at LA 22, roundabouts at Campbell Road/Walmart entrance and North Oak Drive/Medical Center Drive, and an unsignalized J-turn at Medical Arts Drive).

At a Progress Meeting on January 28, 2016, the above alternatives were accepted by the RPC and LADOTD; however, the US 51 Business/ LA Hwy 22 intersection was removed from further consideration at the request of the LADOTD as the LADOTD was studying improvements to that intersection as part of a separate project studying improvements to LA 22. All data and analysis done to that point was accepted by LADOTD for their use in that separate project.

All three Build Alternatives were then fully developed with vertical and horizontal geometry which were reviewed and approved by the RPC and LADOTD.

POSSIBILITY OF RELOCATING SIGNALIZED INTERSECTIONS

At the January 28th, 2016 progress meeting, local elected officials suggested that rather than improve the existing signalized intersection locations associated with the North Oaks Medical Center complex (Medical Arts Drive and North Oaks Drive/Medical Center Drive), the improved intersections (roundabouts or J-turns) may be better served by relocating them to a different roadway accessing the medical complex (namely Paul Vega Medical Drive, a loop road with two access points on US 51 Business that directly accesses the main entrance to the complex). A meeting with North Oaks officials was held on February 1, 2016, at which they were shown the proposed alternatives and at which they expressed their desire to keep the alternatives as originally developed and not relocate the intersection improvements to Paul Vega Medical Drive.

RECONFIGURATION OF ROUNDABOUTS

At the public informational meeting held on April 5th, 2016, local citizens, LADOTD and RPC staff, and the consultant team discussed reducing the size of the right-of-way affected by the roundabout intersections. After further consultation with LADOTD engineers, the consultant team reduced the amount of right-of-way needed for the roundabout by placing pedestrian and bicycle crossings at the splitter islands.

ALTERNATIVES CONSIDERED

Beginning below, the considered alternatives are fully defined, beginning with the No-Build Alternative and followed by Alternatives 1, 2, and 3.

NO BUILD ALTERNATIVE

The No Build Alternative looks at the project study area without the project but with other planned improvements that would take place regardless of whether the project is constructed.

Transportation Projects

There are several other transportation projects planned for the project study area and outside of the study area which would affect traffic flows in the corridor. The Regional Planning Commission, lists several projects in their *Metropolitan Transportation Plan 2043 South Tangipahoa Urbanized Area FY 2014 – 2043* that have impacted or will impact the project study area and would affect travel and traffic volumes along US 51 Business and other roadways in the study area. It should be noted that widening of US 51 Business itself is listed in this transportation plan as a series of Tier II projects.

These projects are briefly described below:

Tier I Highway Projects (Fiscal Years 2014 - 2017)

I-12 @ US 51B Improvements - This project, which was recently completed, includes construction of roundabout intersections at the off and on ramp intersections of I-12 and US 51 Business.

US 51B: Right Turn @ LA 22 – This project involves construction of a new right turn lane at the west junction of US 51 Business and LA 22.

Tangipahoa Parish RR Safety Improvements - This project involves examining and constructing improvements to roadway/railroad crossings in the Parish

Tier 2 Highway Projects (Fiscal Year 2018-2027):

US 51X: LA 22 to I‑12 – This project is the one currently under study in this Environmental Assessment, and involves the widening of US 51 Business between LA 22 and I-12.

US 51 (I-12 to Minnesota Park Rd.) - This project involves construction of access management improvements.

Club Deluxe Rd. US 51B to US 51 (S. Morrison) – This project involves upgrade/minor widening, and drainage improvements.

LA 22 @ I-55 – This project involves interchange improvements.

Tier III Highway Projects (Fiscal Year 2028-2043):

(none in project area)

BUILD ALTERNATIVES

Design Criteria

US 51 Business is classified as a minor arterial (urban) and is currently posted as 45 mph. For this classification and posted speed, a Design Report was prepared and approved by LADOTD based on the LADOTD's Minimum Design Guidelines dated 3-6-17. A copy of that Design Report is presented in the Appendix.

In addition to the design report, the proposed design vehicle is a WB-67 truck for commercial deliveries. For the U-turns, LADOTD's Engineering Directives and Standards Manual (EDSM) IV.2.1.4 "Median Openings on Divided Multi-Lane Roadways" (June 2, 2014) was used to consider the spacing and size.

The EDSM states that because the truck percentage is greater than or equal to 5%, a major median U-turn opening designed for a WB-67 shall be provided for each direction every two miles. The project length from LA 22 to Club Deluxe Road is 2.5 miles. The major intersections along the route and those segments lengths are 0.5 miles from LA 22 to Campbell Road, 1.4 miles from Campbell Road to Medical Arts Drive, 0.2 miles from Medical Arts Drive to N. Oaks Drive and 0.5 miles from N. Oaks Drive to Club Deluxe Road.

With the level of commercial businesses along this route (Walmart, fast food restaurants, gas stations and medical complex) WB-67 trucks are expected to be used for many of the deliveries. Thus, the bump outs as shown are all sized for a WB-67 truck. The bump-out spacings were adjusted to avoid impacts, wetlands or other restrictions of movement. The location of bump outs were also tied to the proposed roundabouts, which accommodate truck U-turns, and J-turn locations.

Design Concept

Typical Sections

The proposed typical section of US 51 Business is a 4-lane section with a 16' median, curb and subsurface drainage, 11' lanes, a 3' buffer adjacent to a 6' bike lane and sidewalks adjacent to the back of curb. The median width is 16' for each alternate and tapers down to match existing conditions at the northern and southern project limits. The median width is measured from the inside lane line of the southbound and

northbound travel lanes. For this project's proposed roadway classification (UA-2), a 30' median is desirable, and 6' is minimum. The proposed 16' median width allows for a 4' minimum median when a 12' left turn lane is provided.

At the northern project limit, the roadway will transition into a four-lane roadway with a minimal median, tying into the Club Deluxe Road roundabout recently constructed as four lanes under SP No. H.003432. The southern project limit will transition into a four-lane undivided roadway, tying into the existing roadway and turn lanes. The LA 22 intersection is currently being studied by the LADOTD as part of SP No. H.011618.1 to improve traffic flow on LA 22.

According to available as-built plans, the apparent existing right-of-way width is 80'. US 51 Business was widened to two 12' lanes by SP No. 853-36-0014(1959) and included cross drain extensions. The bridge over Ponchatoula Creek had previously been widened to a 24' wide bridge by SP No. 6202 (1930). SP. No. 853-36-0030 (1998) included pavement widening between Ponchatoula Creek and I-12. US 51 Business was widened from two 12' lanes to a 3 lane section by SP No. 853-36-0034 (2004). This and earlier projects also included cross drain extensions with the widening but there were no improvements to the bridge over Ponchatoula Creek.

Horizontal Alignment and Geometric Design Features

Each of the three alternatives being considered meet or exceed the Design Report. For each alternative, any shifts in horizontal alignment were accomplished using smooth curvature. LADOTD's Roadway Design Procedures and Detail Manual (Road Design Manual) was used to define the roadway geometry. Reverse curves (a curve in one direction followed closely by a curve in the opposite direction) were used to shift the roadway alignment. Where reverse curves were used, a straight tangent section of roadway is included between the curves to provide a comfortable transition between the adjacent curves. The Road Design Manual requires a 100' minimum tangent section between the reverse curves. The minimum length of horizontal curve used was 250' for each reverse curve to create the offsets in alignment. All curves are larger and flatter than the minimum 1000' radius included in the Design Criteria.

Consideration was given to the land use, property improvements along US 51 Business, utilities and traffic analyses while refining the alternative alignments. Each alternative includes improvements at the major intersections and also includes similar median opening locations. The plan views of each alternate are shown at the end of this chapter.

LADOTD EDSM IV.2.1.4 recommends median U-turn openings spaced at ¼ mile for projects where a median did not exist prior to the current project. US 51 Business has 5% truck traffic and this EDSM recommends minor median openings spaced at ¼ mile, designed for a single unit (SU) design vehicle and major U-turn openings for WB-67 trucks be provided for each travel direction every 2 miles. As noted previously, the total length of project from LA 22 to Club Deluxe Road is approximately 2.5 miles. Roundabouts as proposed will accommodate U-turns for all vehicle types. The

proposed combination of roundabouts and U-turns provide a U-turn spacing that varies from 1000' to almost 3000'. The two 3000' locations include the bridge over Ponchatoula Creek and between the proposed roundabout at N. Oaks Dr. and the existing roundabout at Club Deluxe Road.

The proposed median openings and turn lane lengths were modeled in the Traffic Study, and the U-turns do not appear to have a negative impact on traffic flow.

At each U-turn, a U-turn lane is provided in the median and the pavement is widened on the outside to accommodate a WB-67 truck.

A partial median opening is defined as a median opening that allows for left turns from the mainline and right-in/right-out access for the minor roadway. A partial median opening was considered at Barringer Drive and E. Hoffman Road. However, with their close proximity to each other, there is insufficient space to provide for a left turn lane queue and taper between these two side streets.

Vertical Profile

The proposed profile of US 51 Business generally follows a light rolling grade needed for curb and gutter drainage. The proposed profile is slightly lower than the existing road profile to provide for over curb drainage to minimize the required right-of-way width for the majority of the project length. It is designed for 45 mph and uses vertical curves that are long enough to promote sight distance and a smooth, comfortable drive. The profile considered the intersecting side streets to avoid low points at the intersecting side streets along US 51, which could create drainage issues.

The profiles were set to be similar to the existing grade at side streets intersections to minimize long tie-ins and to avoid undesirable driveway grades. The conceptual profile uses near-minimum length vertical curves at small intervals to follow the apparently flat grade of the existing roadway with ditches.

During the design process, these vertical curves will likely be elongated and a number of the crests and sags eliminated as more detailed topographic survey information becomes available. The proposed roadway alignment and profile can be found in the engineering drawings at the end of this chapter.

According to the most recent FEMA Flood Insurance Rate Maps (FIRM) for this area (22105C0430F, July 22, 2010) the Base Flood Elevation (BFE) for the project area is as follows:

- Elevation (EL) 17 on Ponchatoula Creek at the US 51 bridge
- EL 19 on the east side of US 51, between Ponderosa Drive and Belle Drive, which is part of the Ponchatoula Creek flood plain (Ponchatoula Creek above the US 51 bridge)
- No BFEs or base flood elevations are shown crossing US 51 within the project limits.

North of Ponchatoula Creek, the existing roadway varies from EL 22 at the bridge to EL 32 at the Club Deluxe Roundabout. Between Ponderosa Drive and Belle Drive, the existing profile was not lowered due to the Base Flood Elevation (EL 19). At Ponchatoula Creek, the road profile was raised to meet the proposed bridge which was set to provide at least 2' of freeboard over the EL 17 BFE. At the northern project limits, the profile ties into the recently completed Club Deluxe Road roundabout.

South of Ponchatoula Creek, the existing roadway varies from EL 22 at the bridge to EL 28 before falling to EL 22 near Boudreaux Lane. South of Boudreaux Lane, the profile ties into the existing roadway and the LA 22 intersection.

Drainage Considerations

The majority of the existing drainage along US 51 Business is currently consistent with rural drainage design and is accomplished with open ditches. In some areas, the commercial businesses have closed the ditches with culverts and drop inlets or these were added as part of the past roadway widening. In a few places, businesses have added curbs to their side of the road and subsurface drainage, such as Walmart and Murphy Express at Campbell Lane.

In general, the natural drainage of US 51 Business is south from Club Deluxe Road to Ponchatoula Creek. South of Ponchatoula Creek the natural drainage is north to Ponchatoula Creek from approximately E. Hoffman Road. From approximately E. Hoffman Road to Fischers Lane, it drains to the cross-drain just north of Campbell Road that is connected to the Walmart system, which eventually flows south to LA 22, crossing under LA 22 west of US 51 Business in a double barrel box culvert.

There are only a few cross drains under US 51 Business. South of Ponchatoula Creek, this is limited to a double barrel box culvert on the north side of Campbell Road that was extended as part of SP No. 853-36-14 in 1959. This was not observed in the field, but at the public meeting, it was confirmed verbally by a property owner and the LADOTD that it does exist on the north side of Campbell Road. In SP No. 853-36-34 (2004), this box culvert was extended to the east side and a manhole installed on the west side. It was also reported by the LADOTD that this drainage route was appended onto with a subsurface drainage system by Walmart as part of their development.

North of Ponchatoula Creek, SP No. 853-36-14(1959), extended a single barrel box culvert on the north side and south side of Ponderosa Drive. Both of the single barrel box culverts near Ponderosa Drive were observed and they flow directly to Ponchatoula Creek. With the proposed widening to the west, some drainage re-alignment will be required at these box culverts. SP No. 853-36-34(1998) extended the two 24" reinforced concrete pipes (RCP) on the south side of Paul Vega Medical Drive/ Doctor's Boulevard, extended a 24" corrugated metal pipe (CMP) north of Medical Arts Drive/N. Oaks Drive and extended a 24" RCP just north of Demarco Lane. The single 24" RCP noted in the plans could not be found. All of these crossings are proposed to be increased.

The proposed typical section includes curbs, which will require curb inlets and drop inlets in a closed, urban drainage system.

Bridge

The existing bridge over Ponchatoula Creek is a 186' long concrete deck girder bridge (five 31 ft. spans). Its LADOTD structure number is 62538533604211 and its LADOTD recall number is 063450. It was constructed as part of SP No. 6202(1931) with a 24' width and is currently posted as 20T-35T. The deck has an asphalt overlay and guardrails have been extended across the bridge, to bridge over guardrail damage on each side of the structure.

From review of the as-built plans, the bridge was constructed with 30' concrete piles and included deep abutments on timber piles. The 3/26/2013 bridge inspection report reported ground line measurements from the top of pile to the ground line as varying from 6' to 22'. This limits the embedment of some of the 30' piles. The bridge inspection report also indicated spalling of substructure and superstructure elements in various locations. Therefore, it is recommended that the entire bridge be replaced.

The proposed bridge replacement is for two independent structures with a bridge length of 700' for northbound traffic and 750' for southbound traffic. The existing bridge approach on the south side is a narrow peninsula which falls off quickly on either side with potential wetlands identified on each side. To avoid the placement of fill in these areas, (both under the bridge approach and the adjacent side slopes), the bridge is proposed to be lengthened. Reducing the height of fill reduces the width for the side slopes and reduces the required right-of-way. Thus the longer bridge will reduce wetland impacts and the additional required right-of-way.

The existing embankment bridge approach/peninsula would be degraded below the northbound superstructure to EL 17.0 to allow flood waters to flow over the existing embankment. Under the parallel southbound bridge, the existing ground would be degraded to EL 17.0 only where necessary to maintain clearance between grade and the bottom of the girders.

The bridge section will match the roadway section with two 11' lanes and a 3' buffer adjacent to the 6' bike path. In addition, the bridge will include a 2' inside shoulder and a 5' sidewalk for pedestrians.

The parallel bridge structures can be built in phases with the new southbound bridge being constructed first while maintaining two-way traffic on the existing bridge. Traffic could be detoured to the new southbound bridge as two-way traffic, on a wider bridge, followed by removal of the existing bridge and construction of the new northbound bridge. When completed, each bridge would support two lanes of one-way traffic.

Intersection Alternatives

At the current three signalized intersection locations, there are new intersection options, including: roundabouts, signalized J-turns, and unsignalized J-turns. Each Build Alternative provides a different combination of intersection options:

- **Alternative 1** is an all-roundabout alternative. Under this alternative, the current signalized intersections at Campbell Road/Walmart entrance, Medical Arts Drive and N. Oaks/Medical Center Drive would all be converted to roundabouts.
- **Alternative 2** features the use of J-turn intersections. The intersections at Campbell Road/ Walmart Entrance and Medical Center Drive would be converted to signalized J-turns, while the N Oaks/Medical Arts Drive intersection would be converted to an unsignalized J-Turn intersection.
- **Alternative 3** is an amalgam of the two previous options, with roundabouts at Campbell Road/ Walmart Entrance and N. Oaks/Medical Center Drive, and an unsignalized J-Turn intersection at Medical Arts Drive.

Utilities

The utility disposition table in the Appendix lists the public and private utilities identified within the roadway alternative alignments through discussions with the individual utilities. Private utilities requiring relocation include Entergy, Southern Lights, NTS, Hunt Telecom, AT&T, Charter Communications, and Atmos Energy. Public utilities include sewer and water.

The utility companies with facilities along US 51 Business were also contacted for planned future utility expansions. However, none indicated any immediate plans.

Those utilities with existing servitudes are considered to be a cost to the project if relocation or protection is required for the proposed widening. These include the City of Ponchatoula for water and sewer, the City of Hammond for sewer, and AT&T for a portion of their underground facilities. AT&T did not provide actual locations but did provide a cost to relocate their underground facilities in servitude. Historical costs for water and sewer work were used to determine a project cost.

Entergy stated that "they have been there a long time", but did not provide any verification of prior rights.

No other utilities are believed to have prior rights along the project. Therefore, most of the utility relocations will be made at the owner’s expense.

As all alternatives widen to the west, the main difference in utility relocations come from the roundabout and J-turn in each of the alternates. The roundabouts have a larger footprint then the J-turns and thus the potential for slightly larger utility impacts. The total anticipated utility relocation costs for each alternative have been included in conceptual cost estimate based on the conceptual lengths of relocation and costs provided by the utility or historical data.

There are a few gravity sewer manholes within the project limits at the proposed J-turn and roundabout intersections which will require manhole adjustments, but the gravity sewer lines all appear to have sufficient depth to not be disturbed by the roadway widening.

No sewer lift stations will be located, but sewer force mains will be relocated from under the bump outs and intersections where possible or otherwise protected.

Design Refinement

The first design refinement came as a result of comments received from officials with North Oaks Medical Center. The officials closely examined the two alternatives (Alternatives 1 and 3) which put a roundabout at Medical Center Drive, which currently has a signalized intersection. Their concern was the proposed area impact to their property at the northwest corner of N. Oaks Drive/Medical Center Drive and US 51 Business, particularly how the roundabout veers substantially west which could make any future options for that piece of property very limited.

A meeting was held at North Oaks Medical Center on Wednesday, August 10th with LADOTD and RPC staff, local elected officials, and Medical Center officials to discuss engineering options. As a result of the meeting, the roundabout at the intersection of US 51 Business and N. Oaks Drive/Medical Center Drive was revised/reconfigured under Alternatives 1 and 3. The new configuration involved rotating the roundabout; it provides better allowance for future development on the North Oaks Medical Center site, without seriously impacting the east side of US 51 Business.

The second design refinement involved vegetation/significant trees The initial environmental impact analysis revealed that four (4), possibly five (5) live oak trees (that would be considered significant due to size and species and other criteria) in front of the Brandon G. Thompson Funeral Home would be impacted by the roadway widening. The roadway median was reduced from 16 ft. width to the 6 ft. minimum width in that vicinity to save significant trees at that location. As a result, only one (1) tree would now be impacted (removed) by the widening of US 51 Business. The other two (2) oaks may be slightly impacted as their trunks will likely be out of the right-of-way, but their canopies would extend over the right-of-way.

CONCEPTUAL PROJECT COST

CONSTRUCTION COST

Construction quantities for the proposed action were derived from the typical sections and the plan layouts as shown at the end of this chapter. Unit prices are based on Louisiana Department of Transportation and Development (LADOTD) 1st quarter 2016 unit prices.

Construction costs were divided into the following basic groups: Roadway, Bridge Removal, Bridge Construction, Right-of-Way & Relocation, Utilities, and Contingencies.

Main Roadway

The at-grade roadway cost estimate includes construction of new roadway, curbs and striping. The area of proposed construction is mostly flat. Asphalt pavement was assumed for estimating purposes along the roadway corridor.

Utilities

Utility costs include costs for the relocation of existing utilities that have been identified with the utility companies as being a cost to the project. Private utilities are considered to be relocated at the utility provider's cost unless the utility has stated they have a basis for the project paying for the relocation. During design, the utility will have to provide the basis for the project paying the relocation costs. See the Appendix for those utilities identified with the utility companies along the proposed alignments.

Right-of-Way Acquisition and Relocation

Private property will need to be acquired to construct each Build Alternative. The methodology employed in the determination of estimated costs for private property involved research of property for sale and recent sales in the project area. Right-of-way acquisition costs include land, improvements, damages, appraisal fees, acquisition fees, relocation fees and other costs.

Contingencies

A 20% construction cost contingency was included for this concept-level study.

OTHER PROJECT COSTS

Engineering Design Costs

Prior to construction, the project will need to be fully engineered, not only including actual design, but also including testing, surveying, and geotechnical investigation. Using a baseline estimate of 15% of construction cost, engineering design costs would be range between $6.35 and $6.44 million.

Environmental Mitigation

The last project cost would be cost of mitigation of any unavoidable impacts. One possible cost of mitigation has already been identified, that of wetland impacts: Mitigation credits would be purchased at the appropriate mitigation bank(s) and at the directed amount required by the US Army Corps of Engineers. Three (3) current wetland mitigation areas (or wetland banks) were contacted, and mitigation purchases at these banks ranged between $35,000 and $50,000 per acre. Of course prior to the project progressing to the construction phase, coordination with the US Army Corps of Engineers will need to be undertaken, and depending on their findings and determination under the Louisiana Wetland Rapid Assessment Method (LRAM), impacted wetlands may need to be replaced at a 1-1 ratio, a 1-2 ratio, a 1-3 ratio, or an even higher ratio.

For purposes of this study, a basic replacement ratio of 1:1 and a conservative mitigation cost estimate of $50,000 per wetland acre impacted is included.

SUMMARY

Table II-1 on the following page presents detailed conceptual project cost estimates for each Build Alternative. The total conceptual project cost estimate for Alternative 1 is $58,042,590 the cost for Alternative 2 is $57,237,890; and the cost for Alternative 3 is $57,834,015. As of the date of this document, there is no current funding source identified for designing or constructing this project.

Costs are shown for each major component of the construction project. The costs for each alternate are similar. These cost estimates are accurate for the level of detail of this study but will likely change after more detailed design.

TABLE II-1: Conceptual Project Cost Estimate

	Alternative 1	Alternative 2	Alternative 3
Road Construction	$26,624,000	$26,678,000	$26,527,000
Existing Bridge Removal	$148,000	$148,000	$148,000
Bridge Construction	$6,340,000	$6,340,000	$6,340,000
Right-of-Way & Relocation	$9,729,400	$9,073,400	$9,671,900
Utilities	$132,000	$132,000	$132,000
Subtotal	$42,973,400	$42,371,400	$42,818,900
Contingencies (20%)	$8,594,680	$8,474,280	$8,563,780
Engineering (15%)	$6,446,010	$6,355,710	$6,422,835
Mitigation	$28,500	$36,500	$28,500
Total Project Cost	**$58,042,590**	**$57,237,890**	**$57,834,015**

PROJECTED OPERATIONS AND MAINTENANCE COSTS

The annual total operation and maintenance costs for the each of the alternatives include the annual cost of maintenance for the roadway and bridges, through re-striping the roadway and bridges every five years, coldmill and overlay the asphalt paving every ten years, bi-annual bridge inspections and clearing of debris hang-ups on the Ponchatoula Creek Bridge after high water events and periodic cleaning of bridge joints. The costs of routine grass cutting on the right-of-way and sweeping the roadway are not kept by LADOTD. They are considered negligible.

Typical maintenance costs were obtained through previous discussions with LADOTD Operations and Maintenance Department Staff and LADOTD unit prices. Access to the Ponchatoula Creek Bridge for inspections under the bridge is limited and will require a snooper along with an operator and a 2-man inspection team for a 1/2 day per structure with pre-cast girders. High water debris removal from Ponchatoula Creek will require the use of a back-hoe or crane with operator, a 4-man crew of laborers, flagmen and supervisor and a truck with driver for removal and disposal with a duration of 1/2 day per event.

Table II-2 on the following page gives a breakdown of the annual operations and maintenance costs:

Table II-2
Build Alternatives
Annual Operation and Maintenance Costs

O&M Category	All Alternatives
Re-Striping	$13,700
Preventive Maintenance (coldmill & overlay)	$140,150
Bridge Inspections	$3,200
River Debris Removal	$1,500
TOTAL:	**$158,550**

CONSTRUCTION PHASING

The proposed widening of US 51 is a four-lane divided roadway with parallel bridge structures over Ponchatoula Creek. The widening of US 51 includes replacing the existing pavement on new alignment and profile predominately to the west side. As such the roadway widening would need to be completed full width. However, the roadway widening north of Ponchatoula Creek can be constructed independently of the roadway widening south of Ponchatoula Creek as a natural break.

The proposed bridge replacement is for two independent structures with varying lengths for northbound and southbound traffic matching the roadway section with a median.

The parallel bridge structures can be built in separate phases with the new southbound bridge being constructed first while maintaining two-way traffic on the existing bridge. Traffic could be detoured to the new southbound bridge as two-way traffic, on a wider bridge, followed by removal of the existing bridge and construction of the new northbound bridge. When completed, each bridge would support two lanes of one-way traffic.

Considering that the existing Ponchatoula Creek Bridge is currently posted, constructing the new bridge as Phase 1 will improve the ability of truck traffic to access the area, crossing Ponchatoula Creek. Accordingly, the suggested construction phasing for US 51 Business would be as follows:

- Phase 1 – Construction of the new south bound bridge with temporary roadway transitions to the existing roadway on each end
- Phase 2 – Widening of US 51 north of Ponchatoula Creek, tying into the new southbound bridge and the existing bridge while maintaining the temporary roadway transition on the south side of Ponchatoula Creek
- Phase 3 – Removal of the existing bridge and construction of the new northbound bridge
- Phase 4 – Widening of US 51 south of Ponchatoula Creek

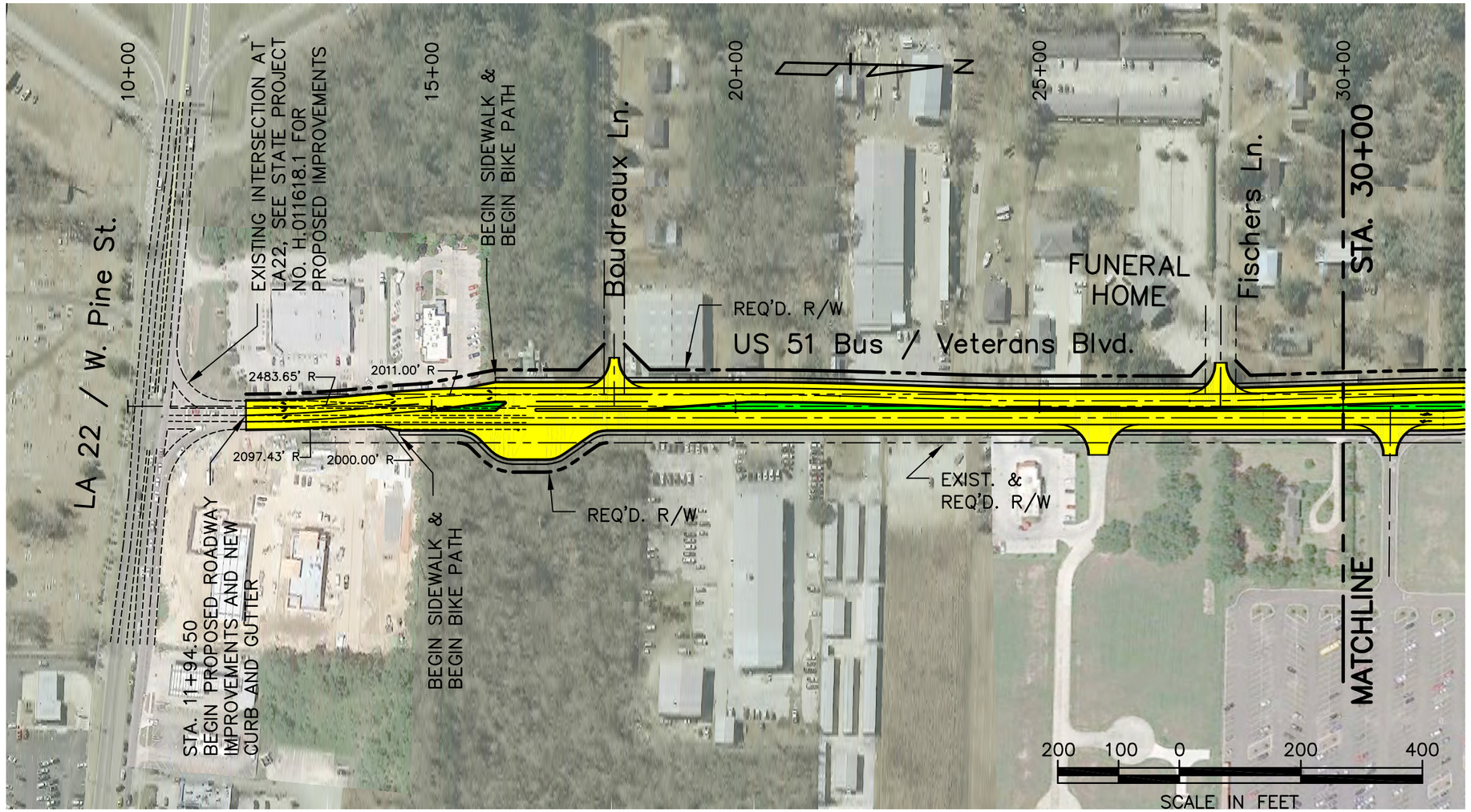
It should be noted that the new south bound bridge could be constructed with the roadway widening north of Ponchatoula Creek. Removal of the existing bridge and construction of the new north bound bridge could be combined with the roadway widening south of Ponchatoula Creek. This would reduce the overall project to just two phases.

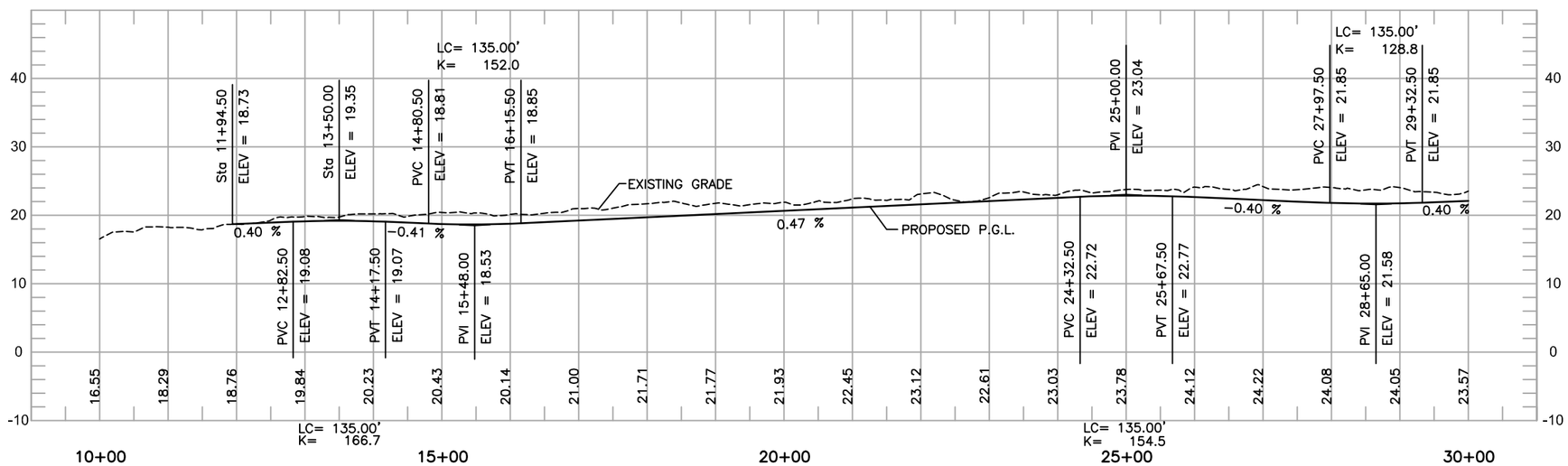
ENGINEERING DRAWINGS

Plan and profile view layouts and typical sections for the Build Alternatives are presented beginning on the following page.

LEGEND

- PGL — PROFILE GRADE LINE
- C/L PROPOSED ROADWAY
- PROPOSED BRIDGE STRUCTURE
- PROPOSED AT–GRADE ROADWAY
- PROPOSED MEDIAN
- PROPOSED ROUNDABOUT TRUCK APRON
- PROPOSED REQ'D. R/W
- APPARENT EXIST. R/W
- MATCHLINE
- PROPOSED SIGNALIZED INTERSECTION





SHEET ALT. 1-1

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 1

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LEGEND

- PGL — PROFILE GRADE LINE
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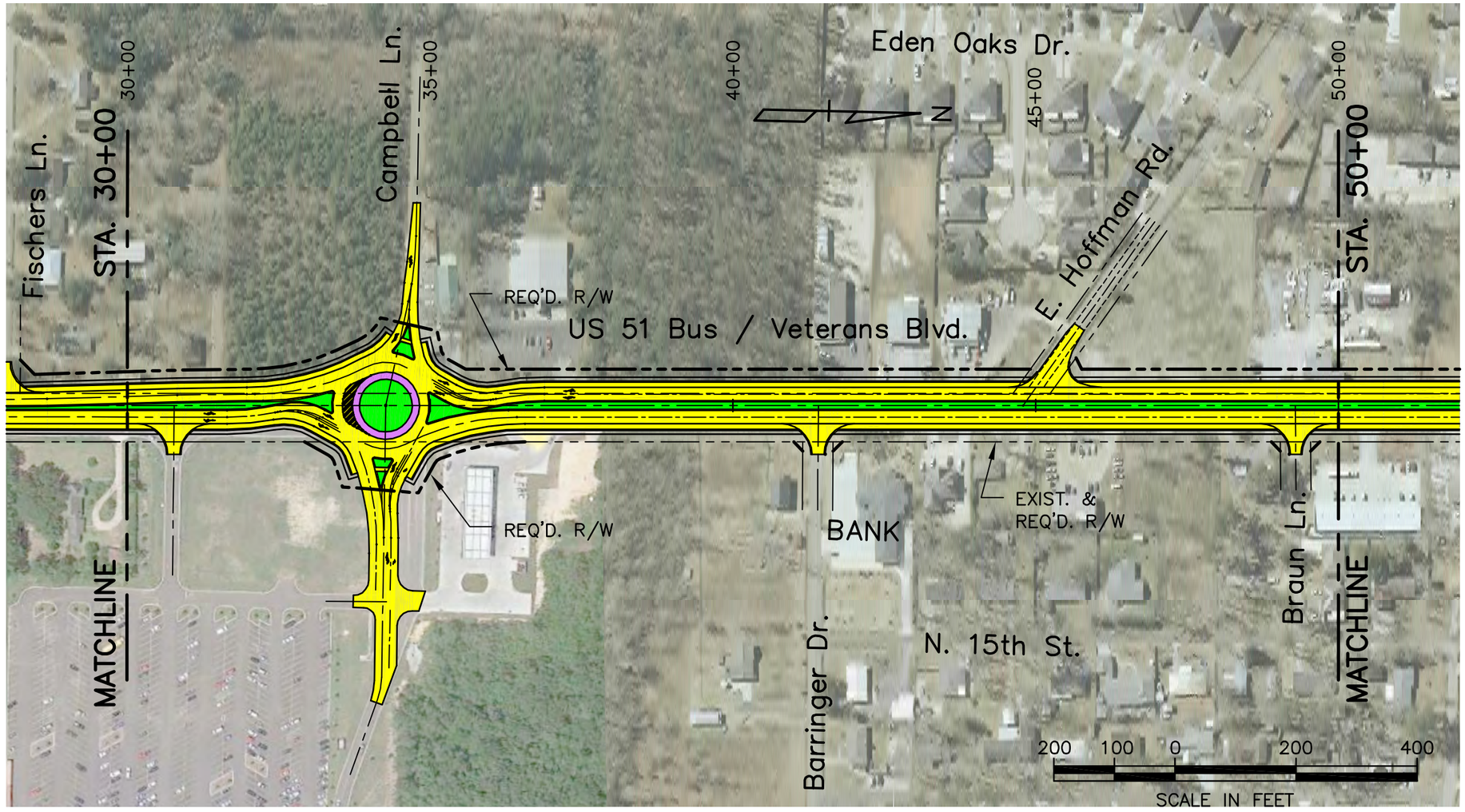

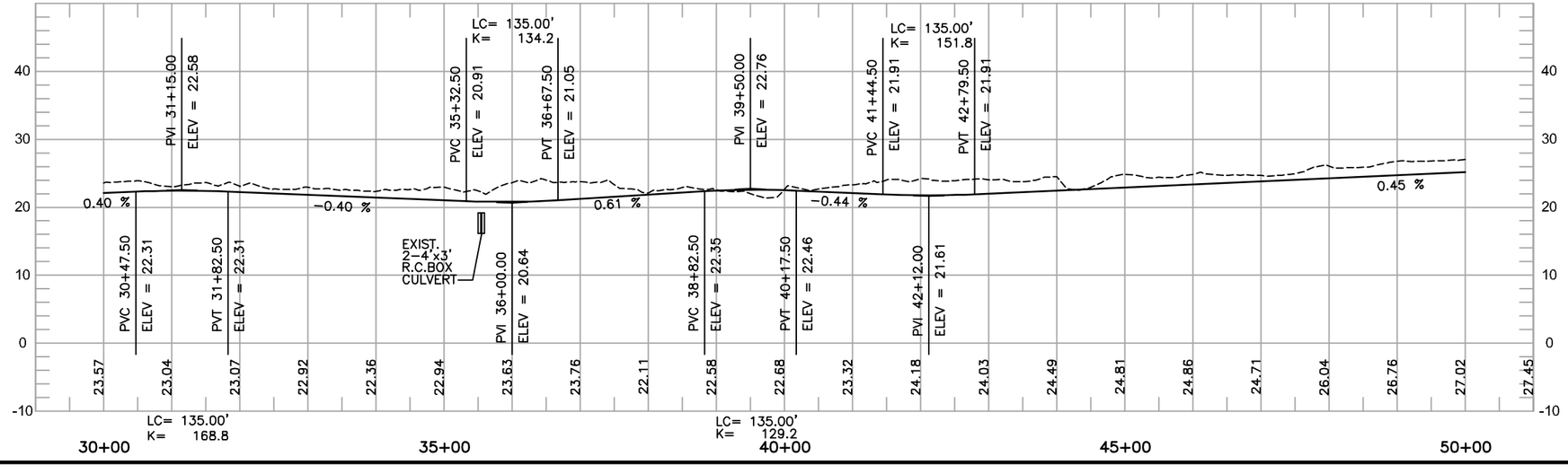

SHEET ALT. 1-2

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 1

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LEGEND

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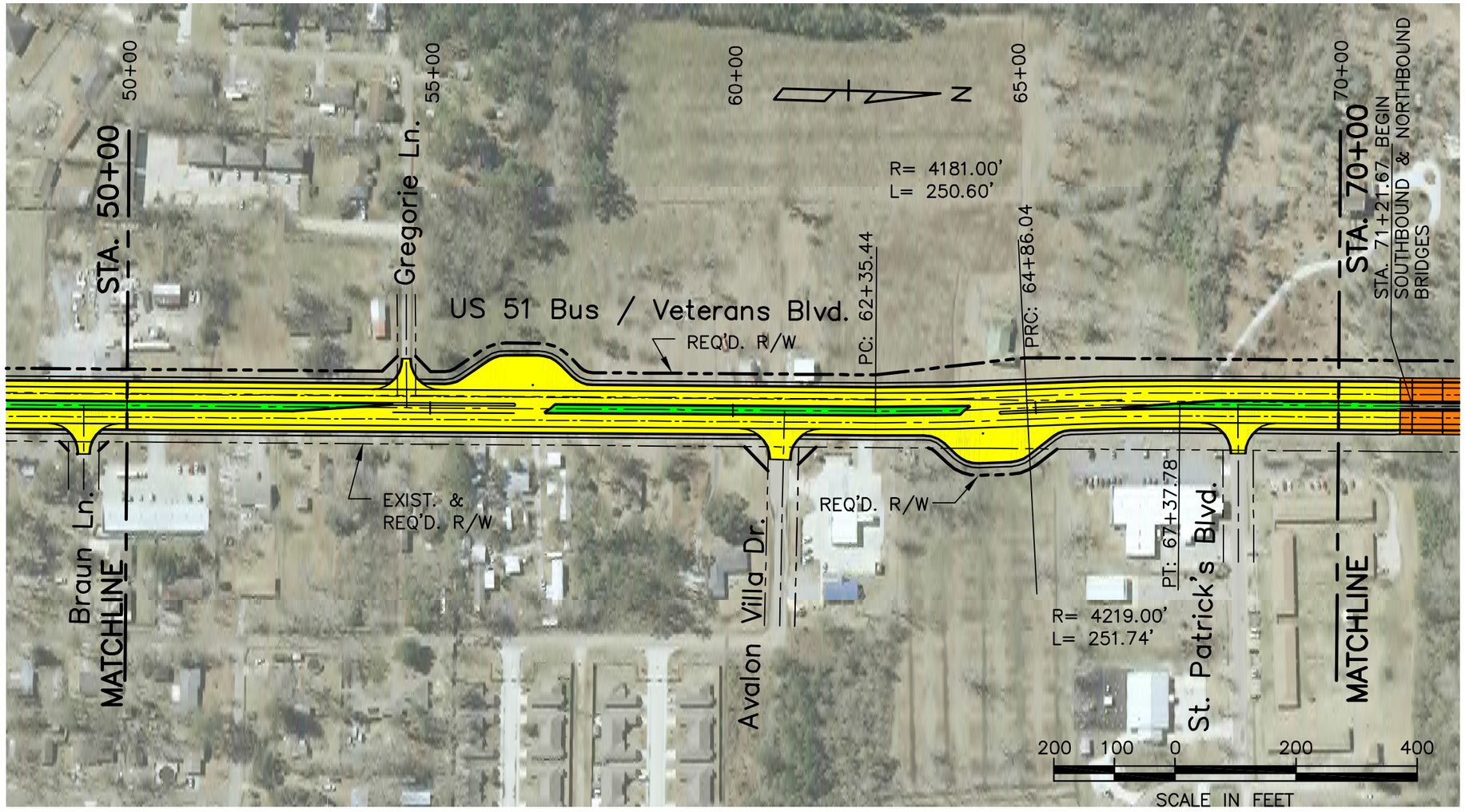

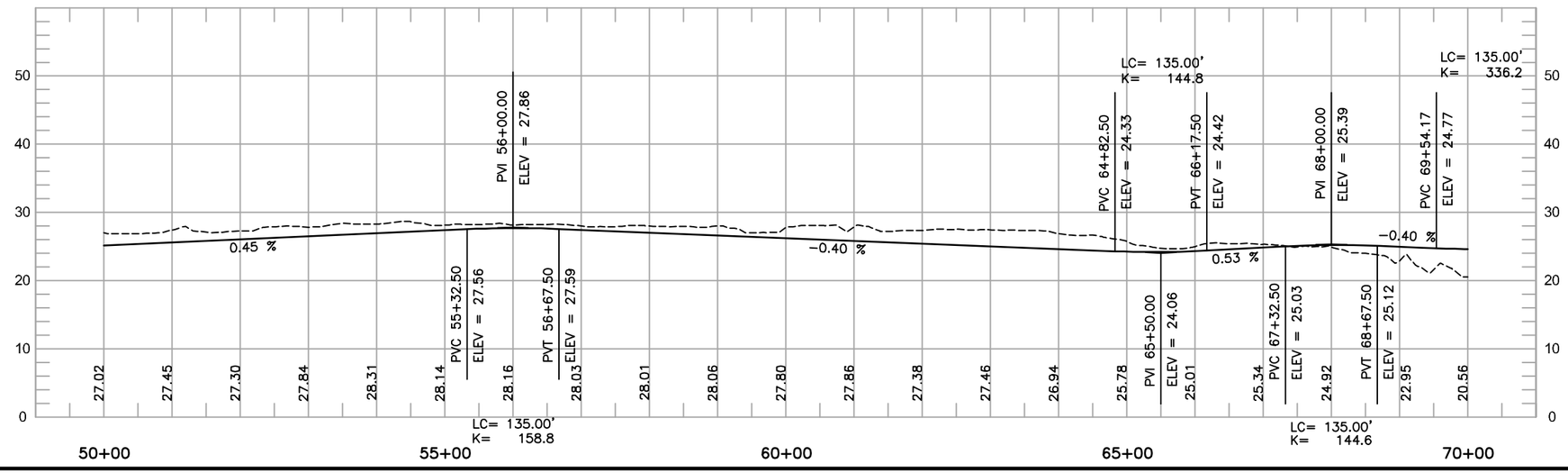

SHEET ALT. 1-3

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 1

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LEGEND

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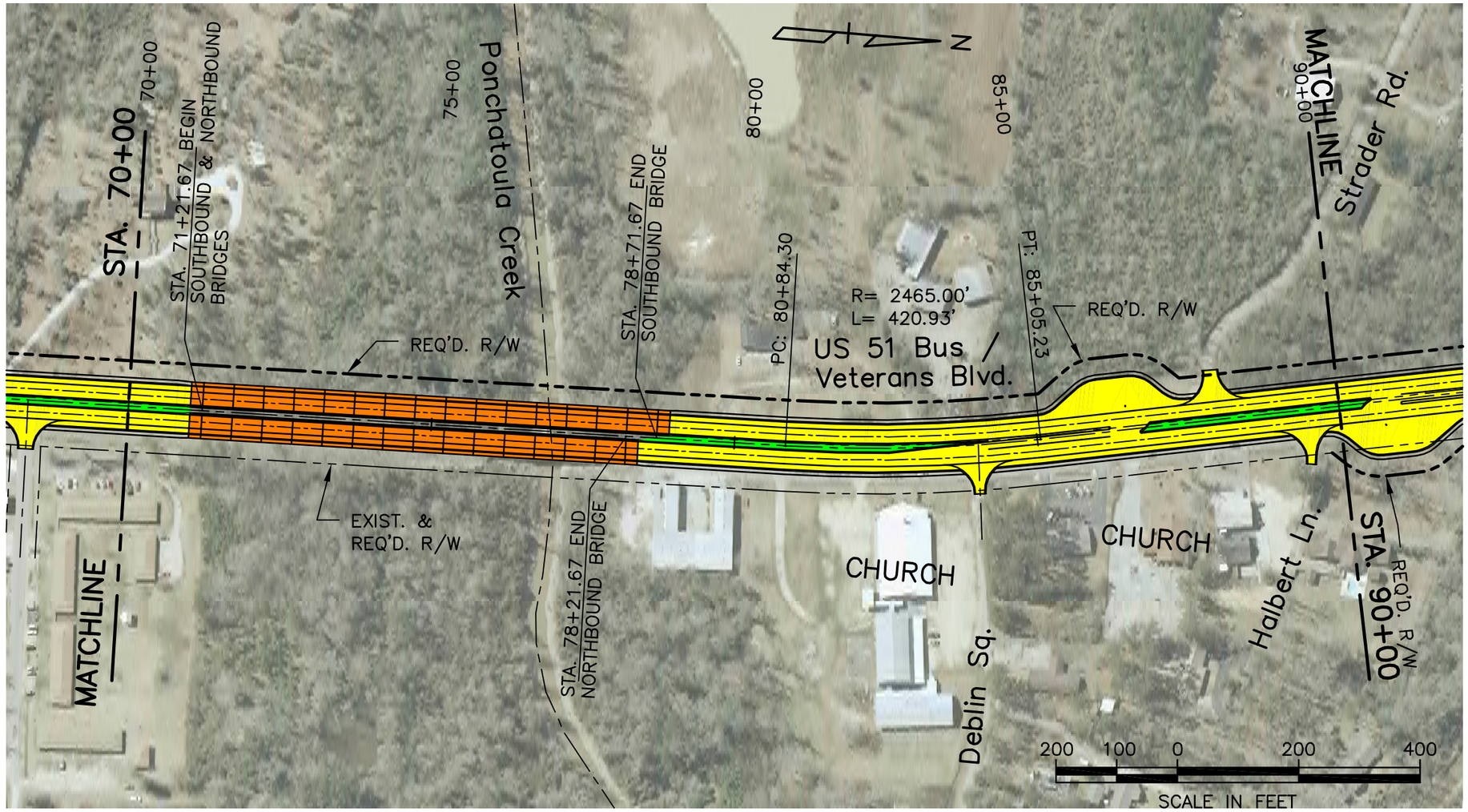

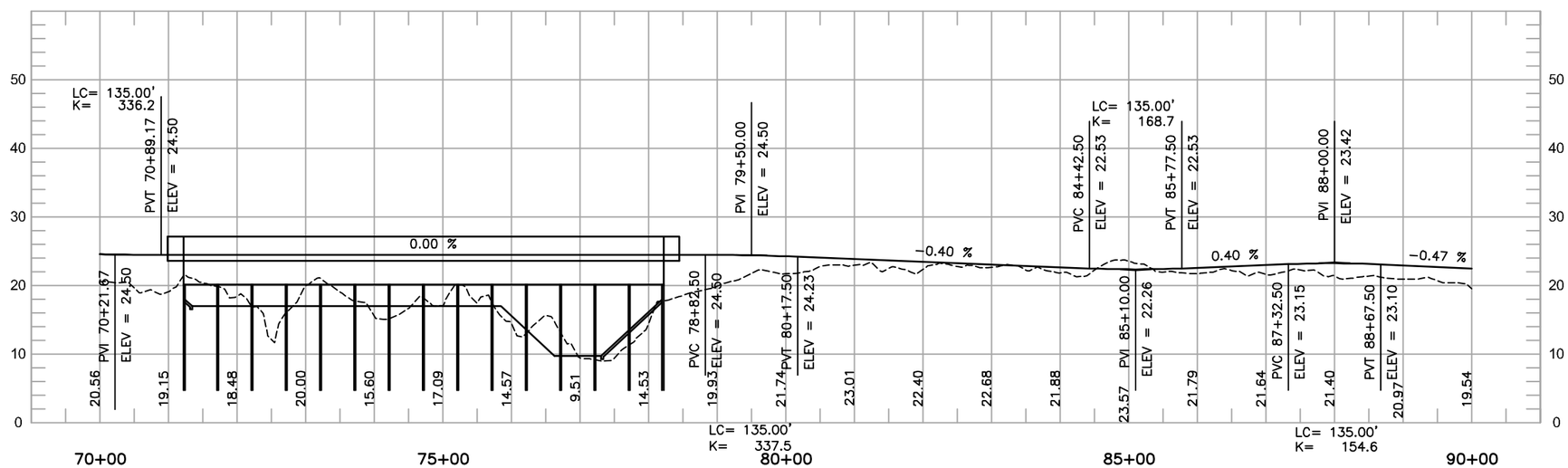

SHEET ALT. 1-4

US 51B (LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 1

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LEGEND

- PGL — PROFILE GRADE LINE
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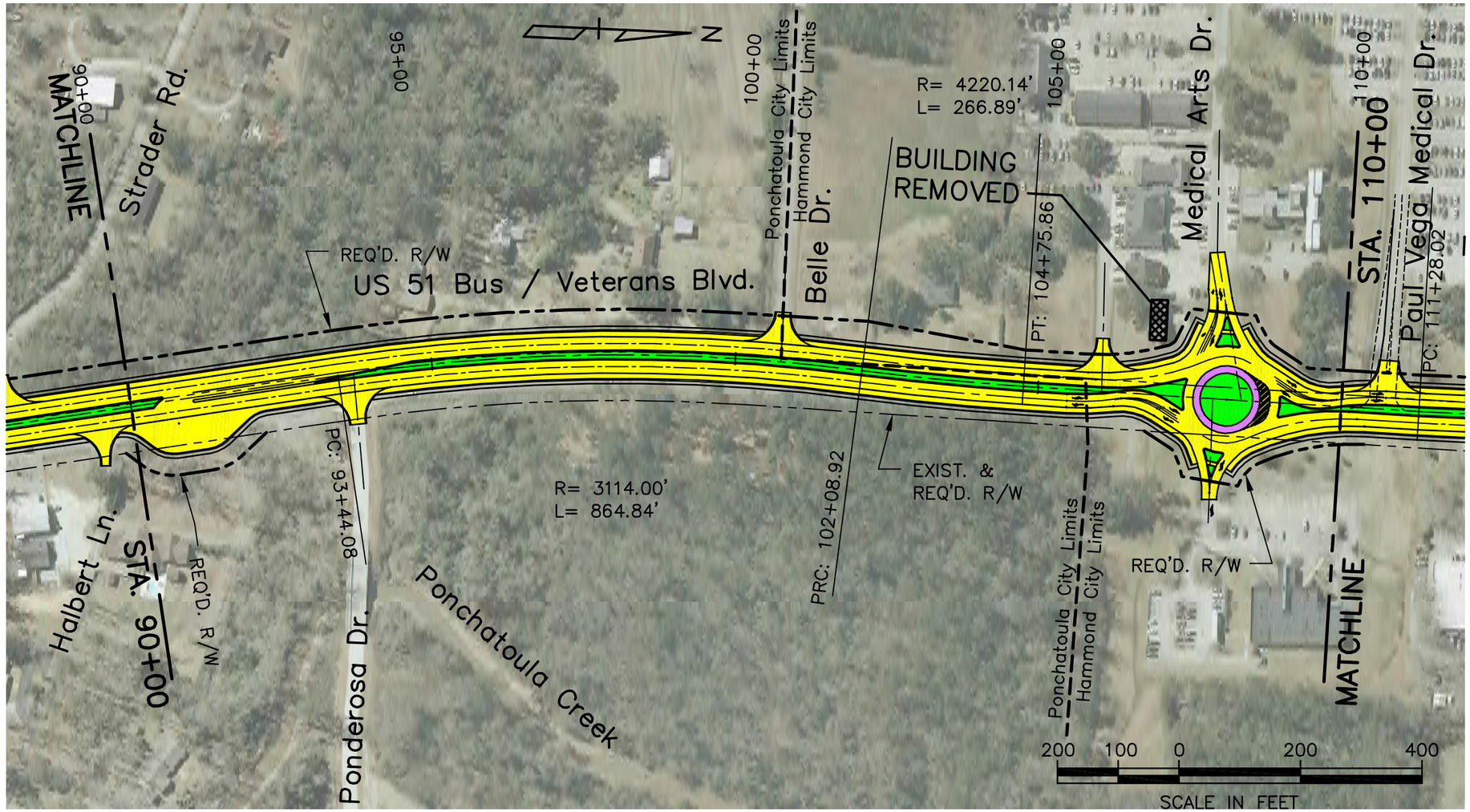

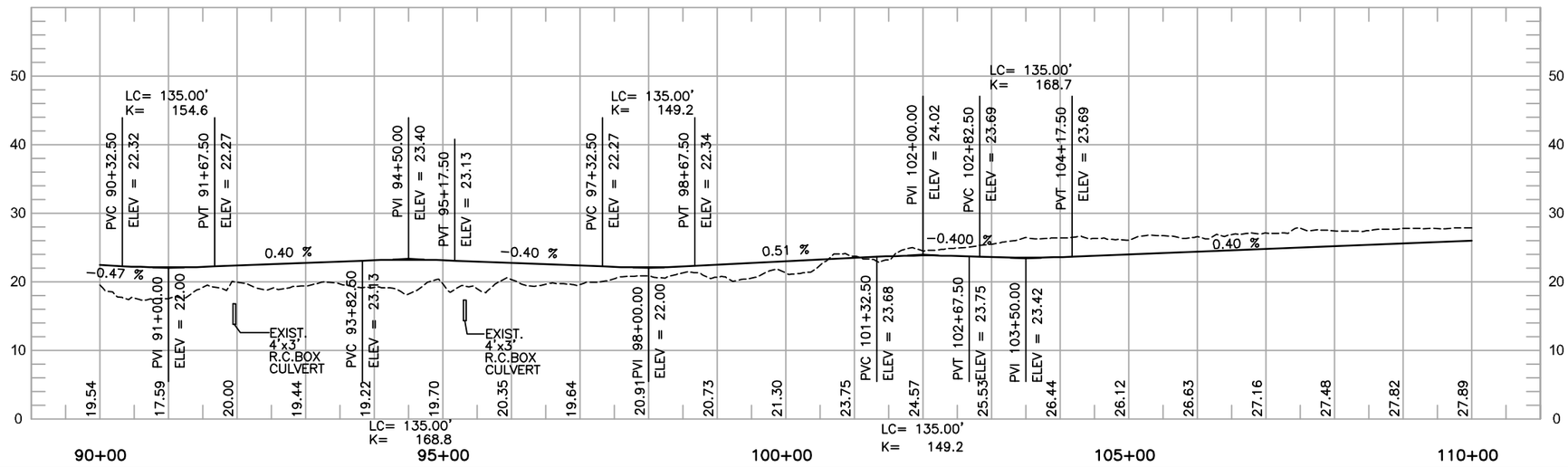

SHEET ALT. 1-5

US 51B (LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 1

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LEGEND

- PGL — PROFILE GRADE LINE
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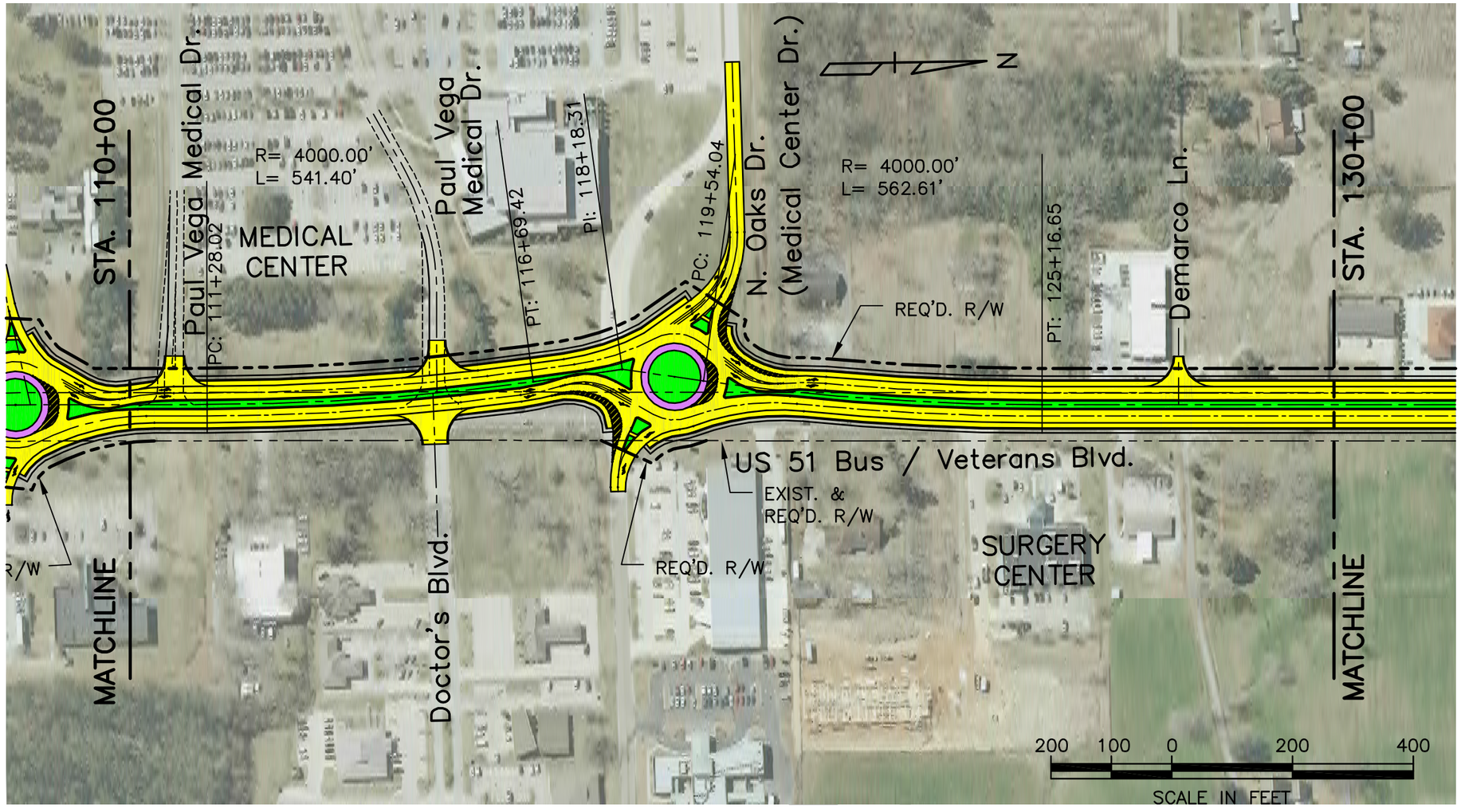

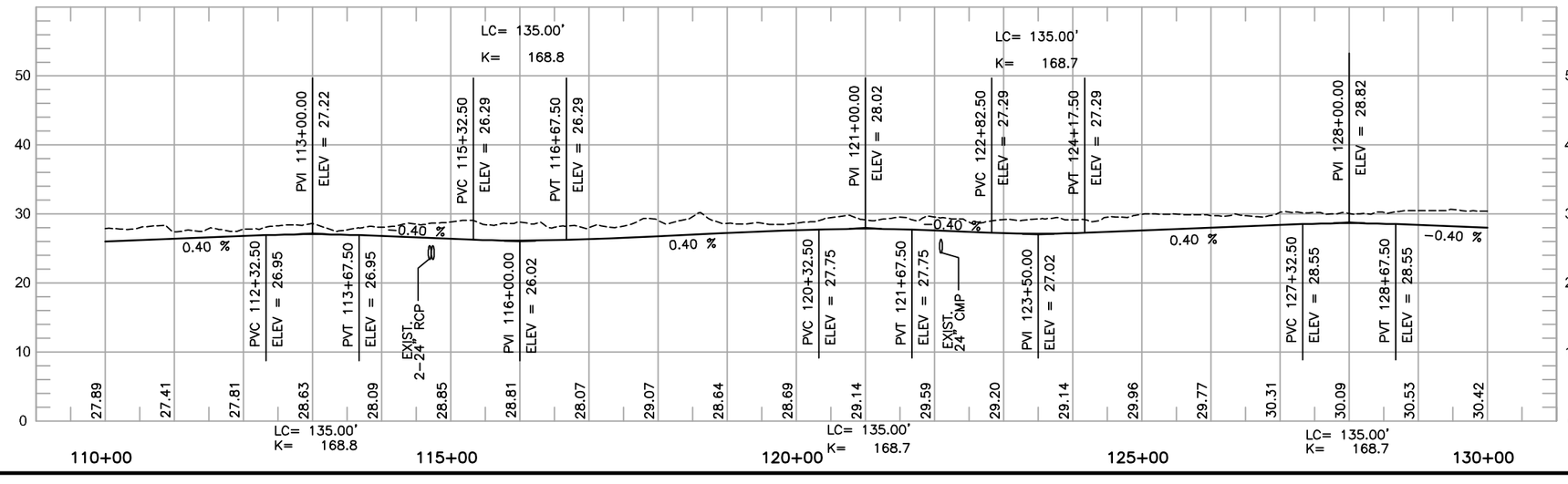

SHEET ALT. 1-6

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 1

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LEGEND

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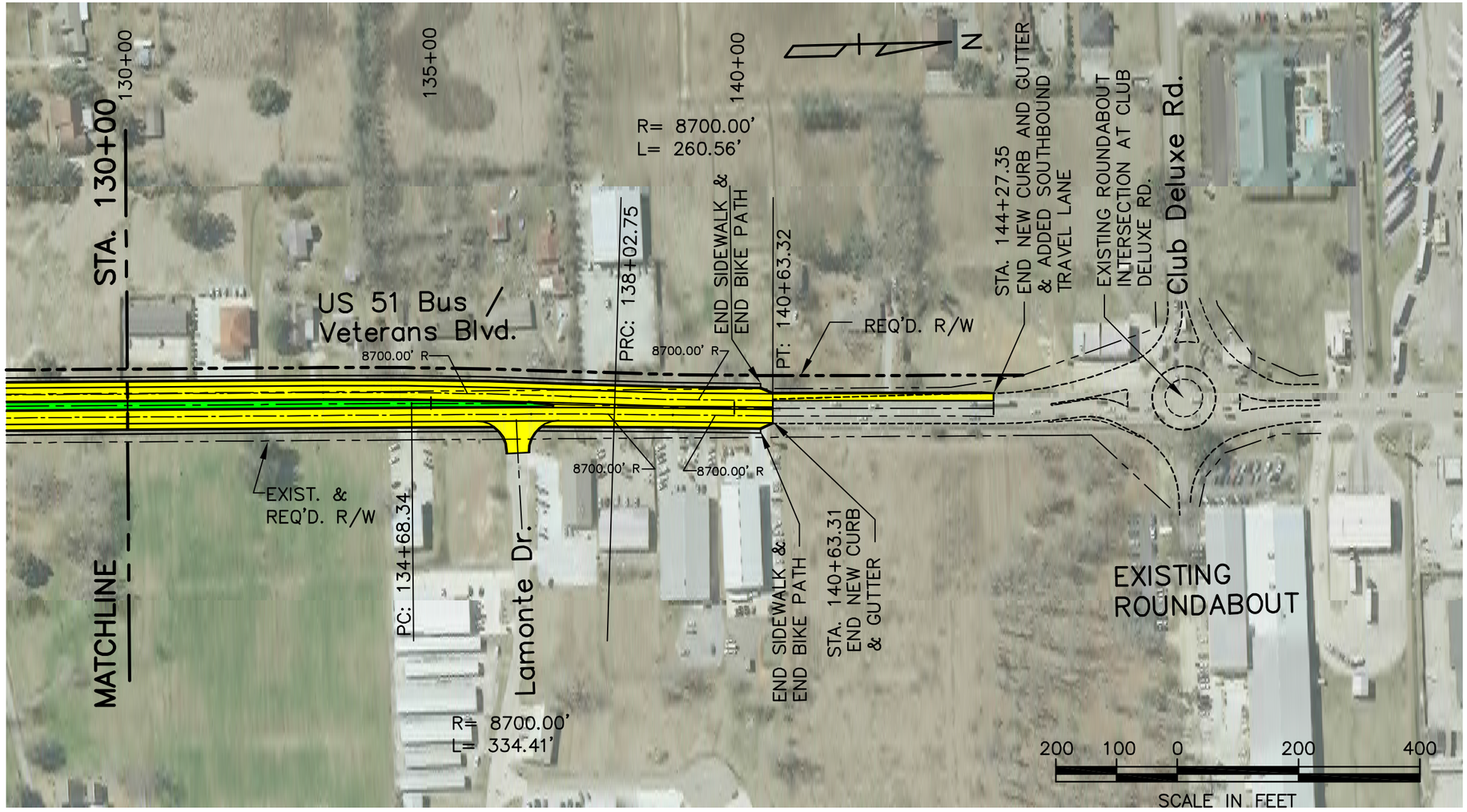

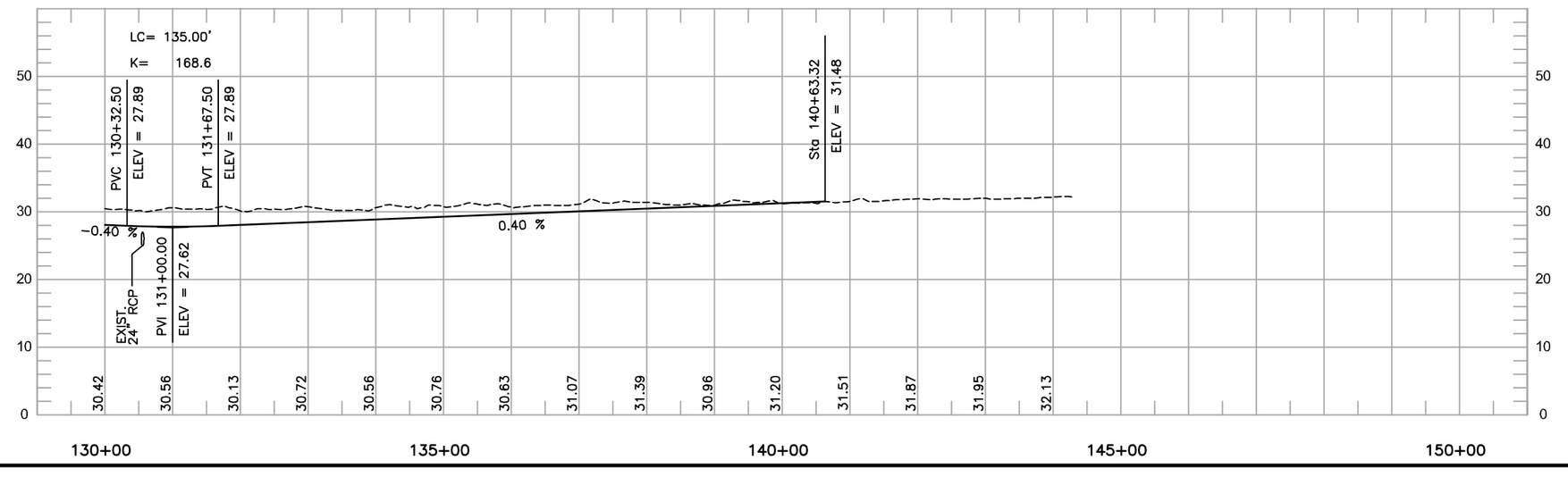

SHEET ALT. 1-7

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 1

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LEGEND

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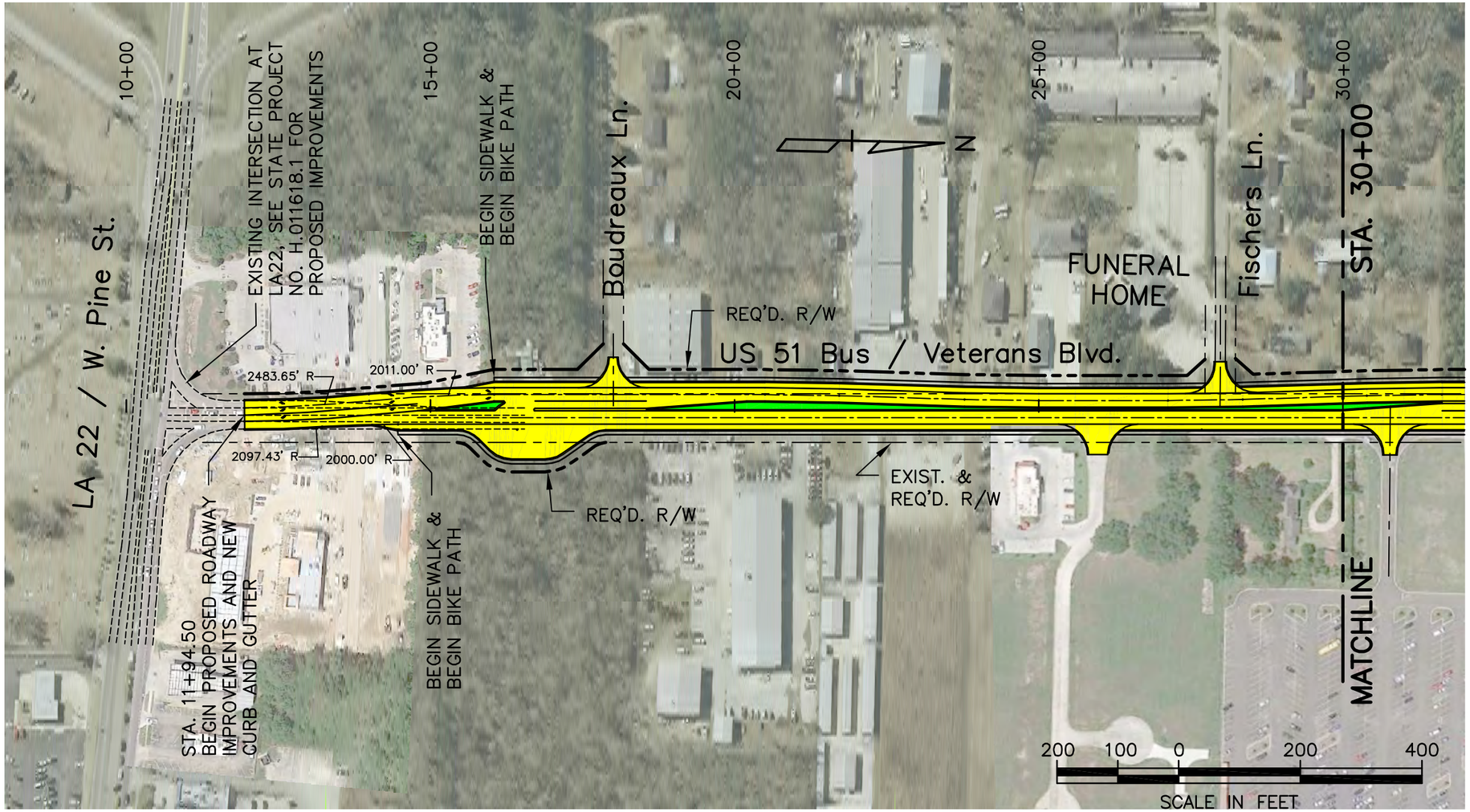

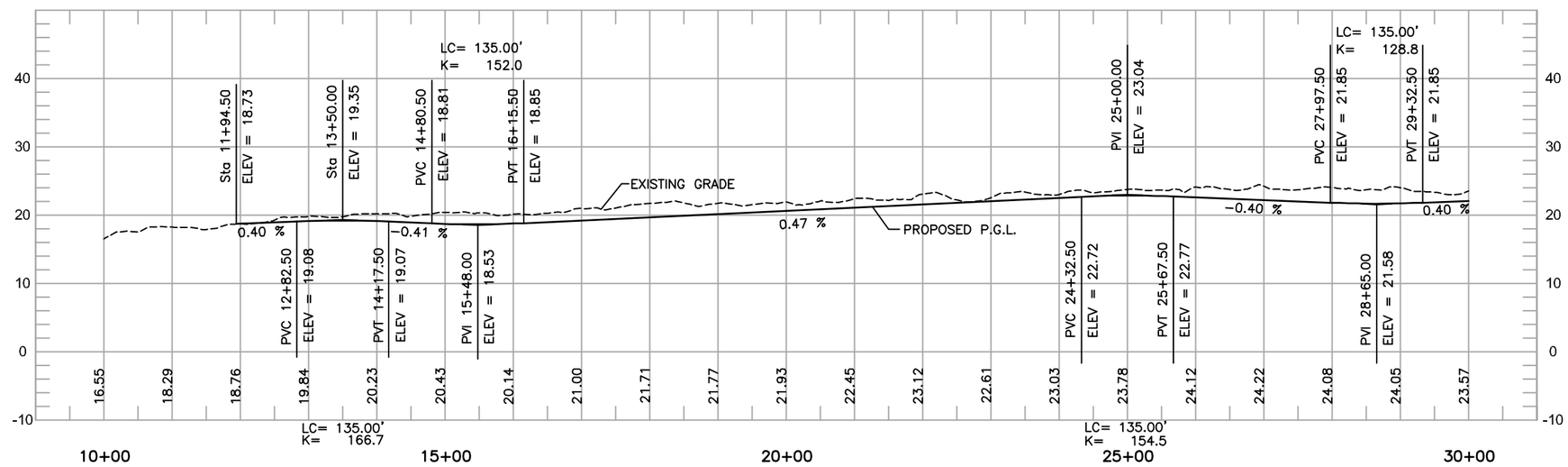

SHEET ALT. 2-1

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 2

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LEGEND

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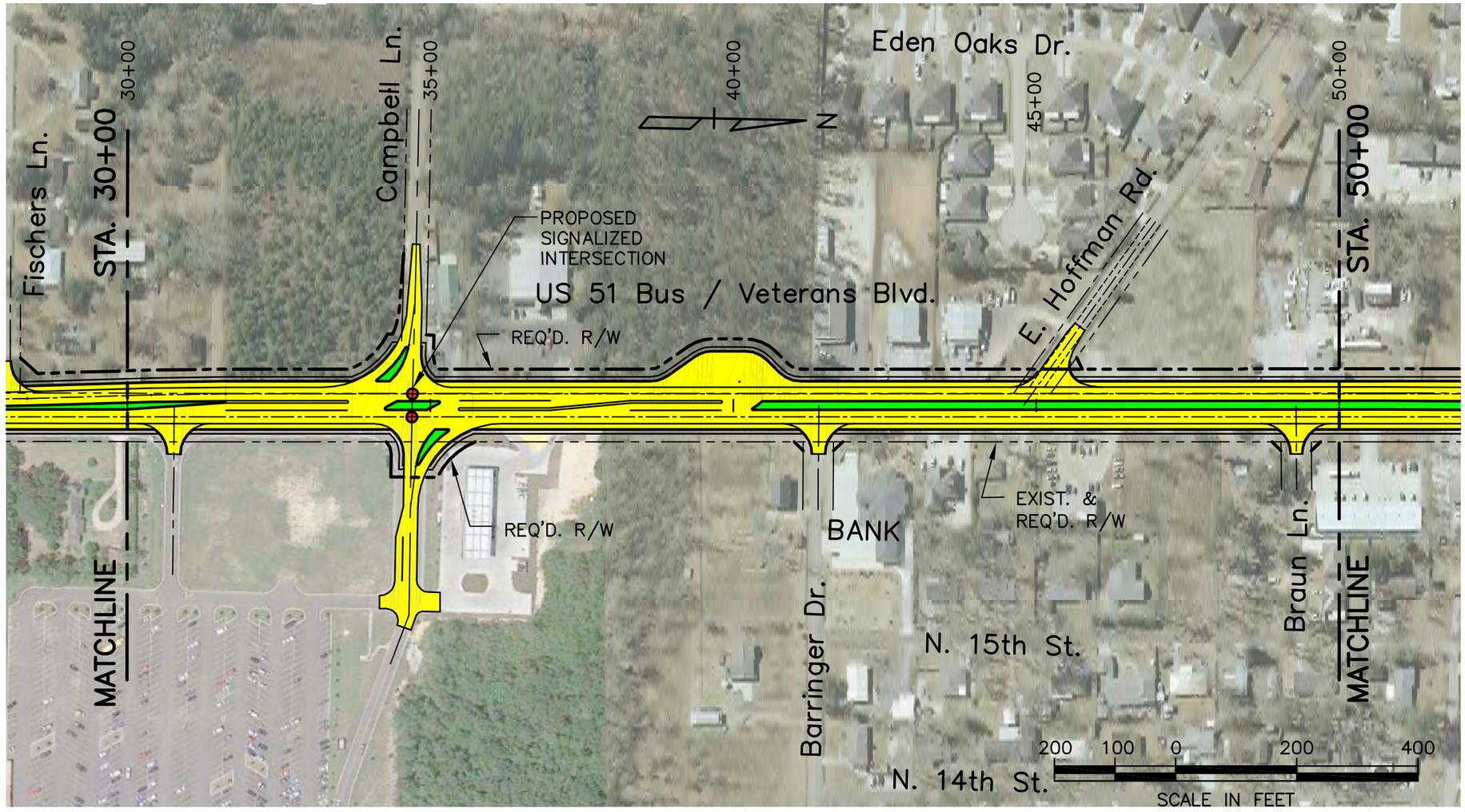

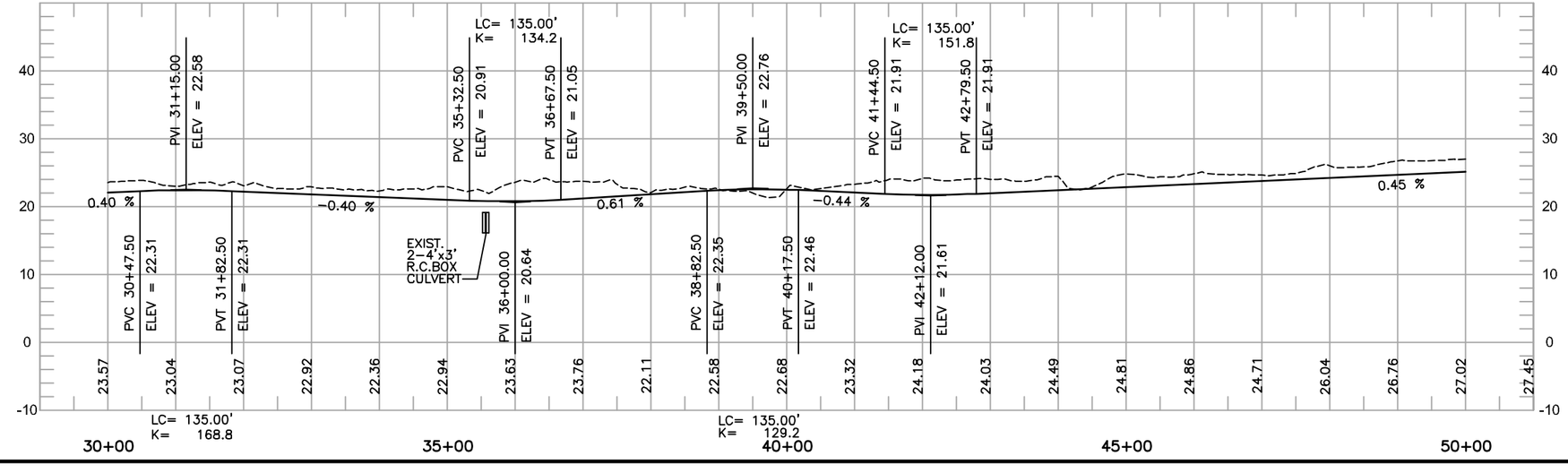

SHEET ALT. 2-2

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 2

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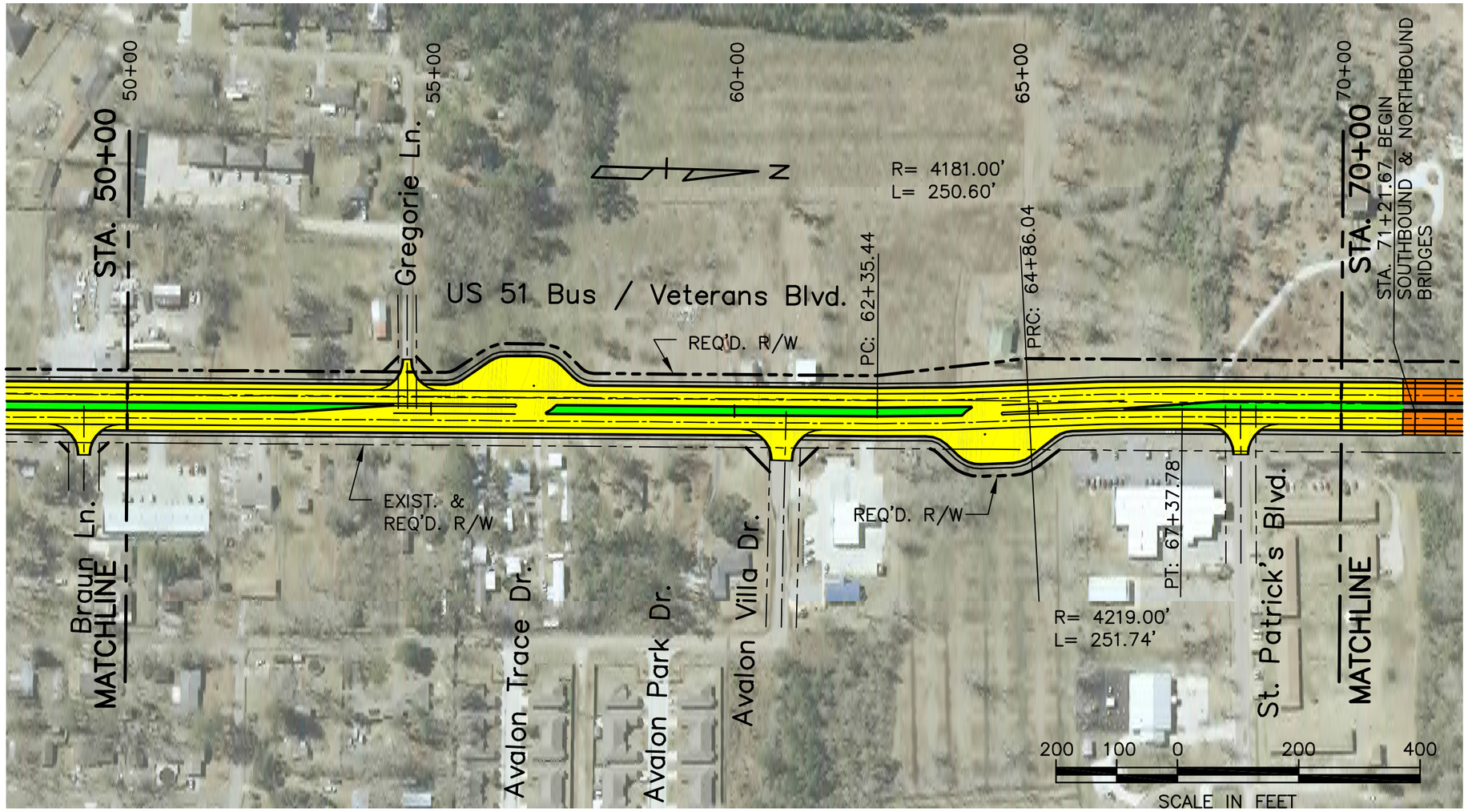

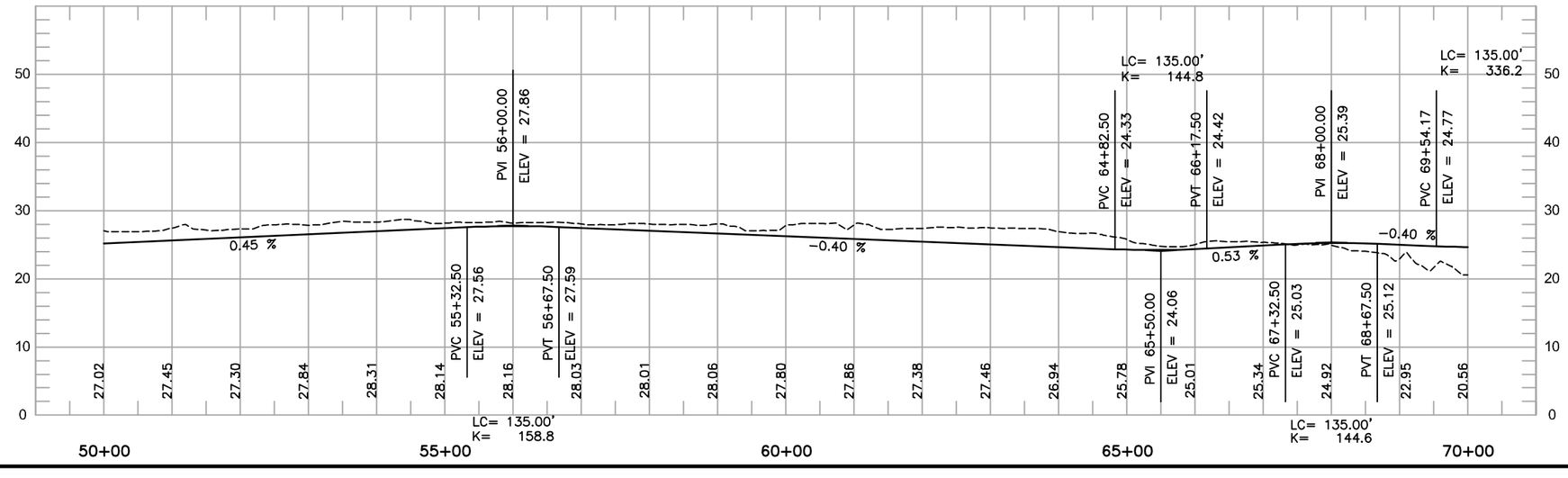

SHEET ALT. 2-3

US 51B (LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 2

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LEGEND

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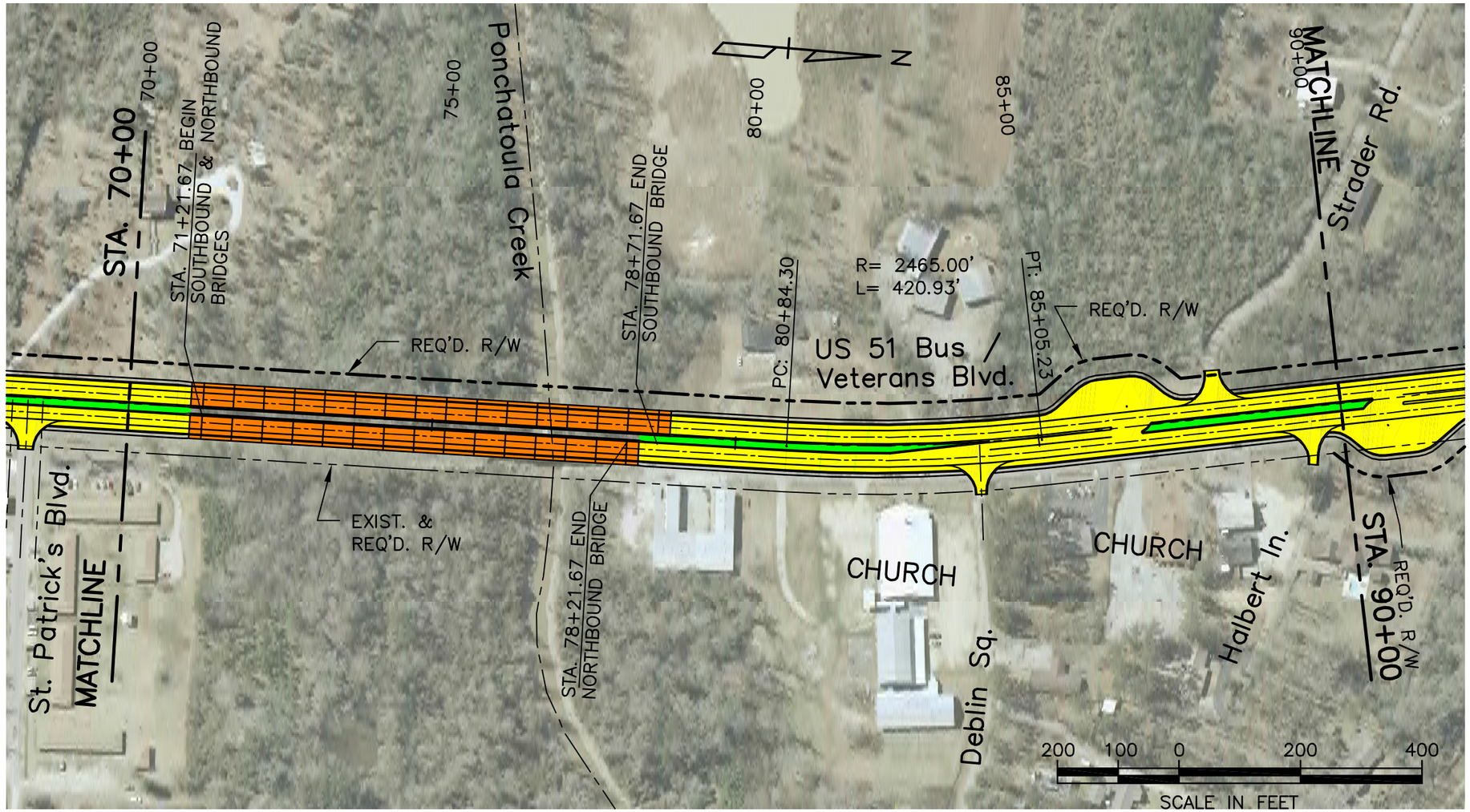

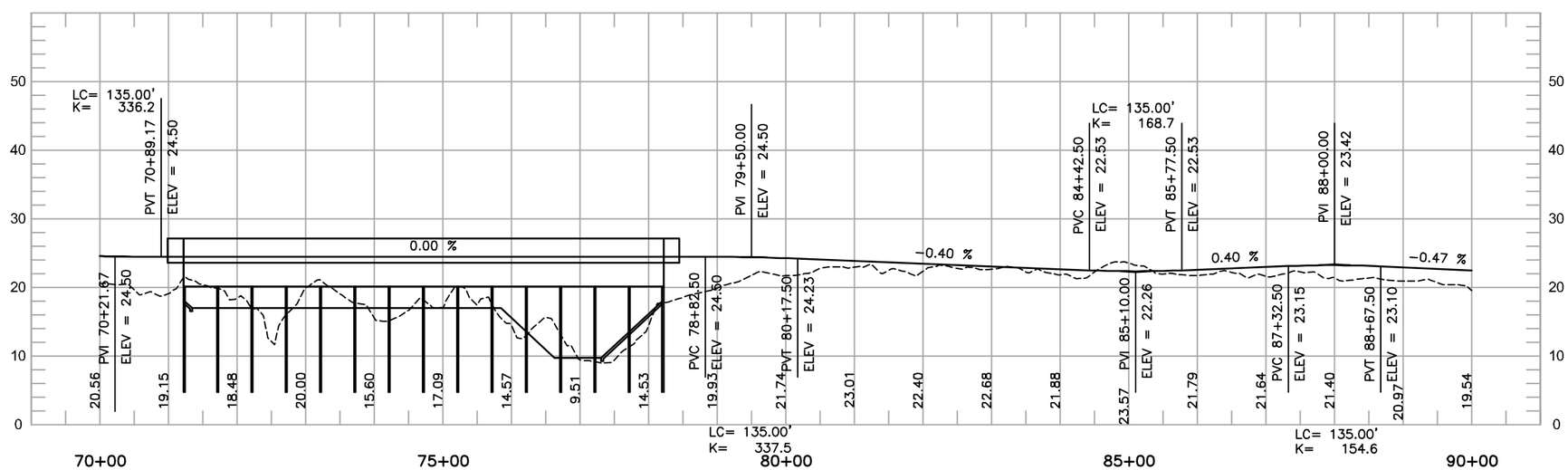

Source (Citation) for 2010 six inch pixel Imagery GeoTIFFs

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Imagery Information: The red, green, blue (true color) and near infrared four-band aerial imagery was captured between February 10th and April 14th of 2010 (re flights for any corrections flown until April 28th, 2010) by Sanborn Map Company, Inc.

The Imagery is projected to UTM 15 NAD 83, unit of measure is meters. The spatial resolution is approximately a six inch pixel. Any use of the data must be accompanied with this citation and accompanying seals and logos embedded within.

SHEET ALT. 2-4

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 2

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TANGIPAHOA PARISH GOVERNMENT

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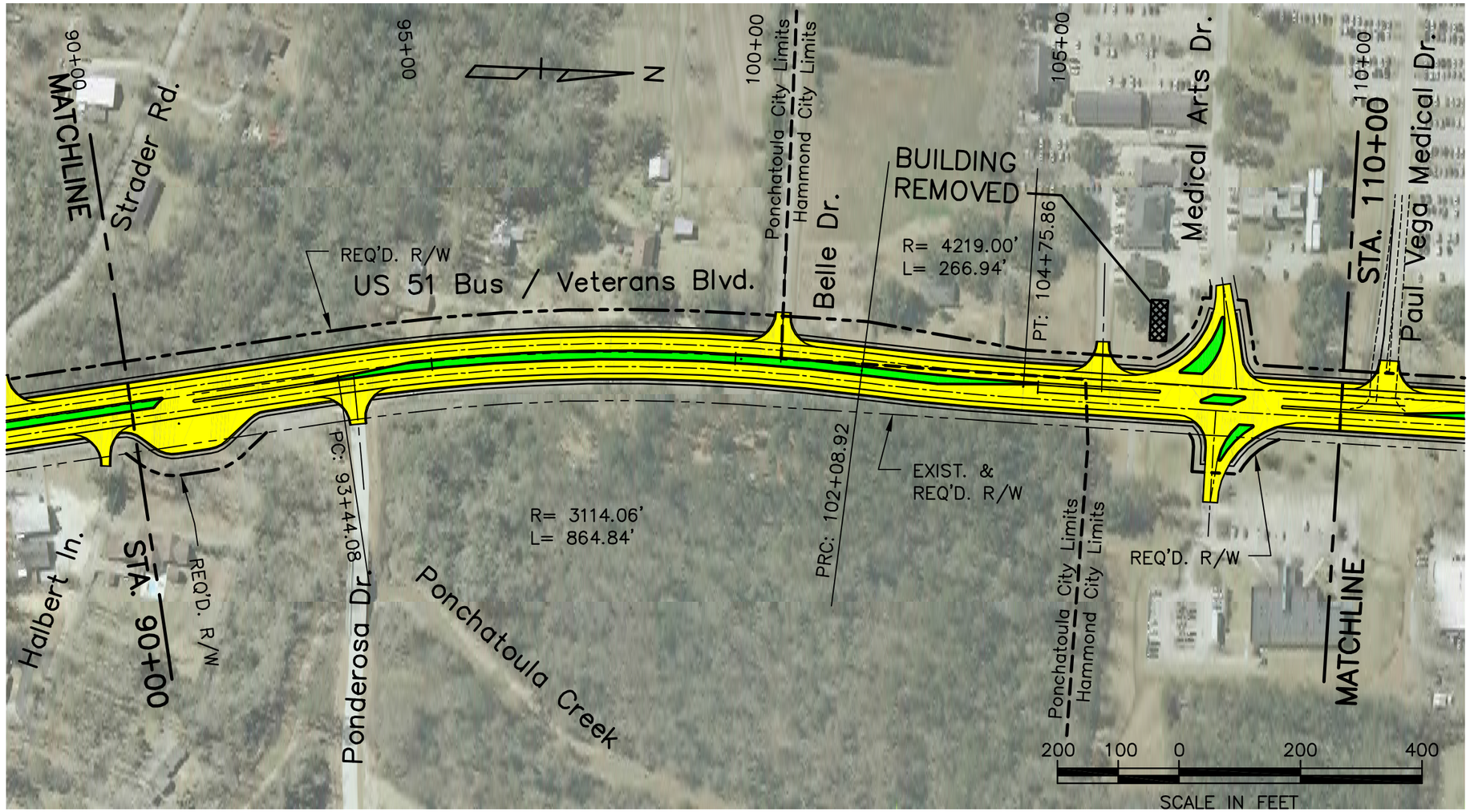
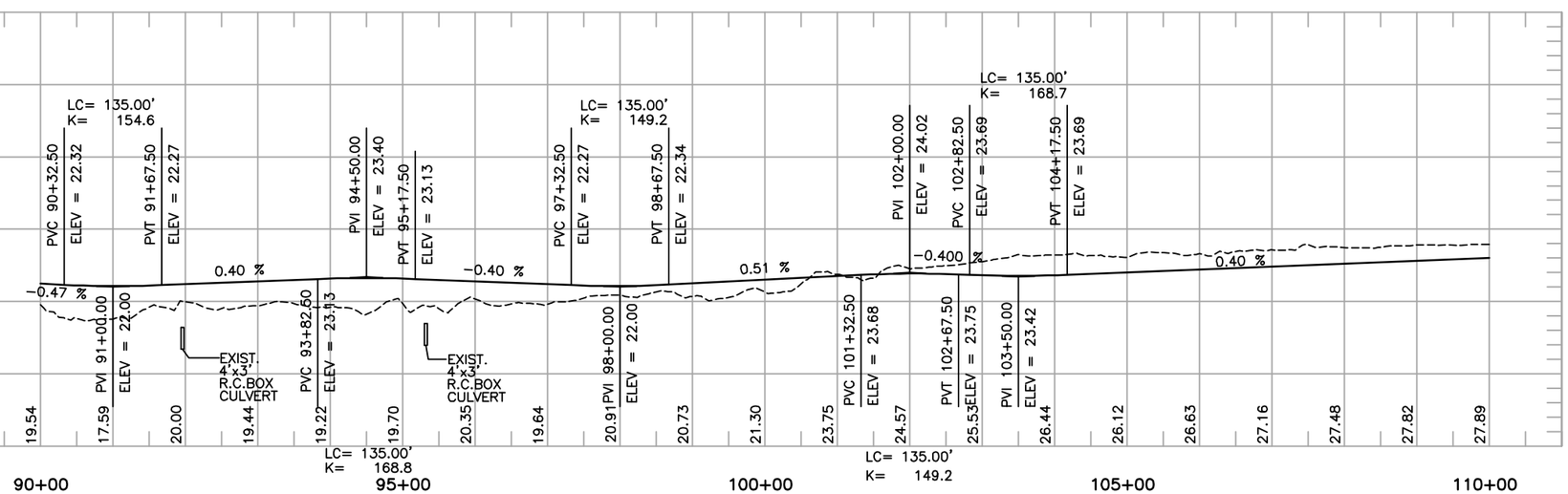
RPC REGIONAL PLANNING COMMISSION

DOTD LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

LEGEND

- PGL — PROFILE GRADE LINE
- C/L PROPOSED ROADWAY
- PROPOSED BRIDGE STRUCTURE
- PROPOSED AT–GRADE ROADWAY
- PROPOSED MEDIAN
- PROPOSED ROUNDABOUT TRUCK APRON
- PROPOSED REQ'D. R/W
- APPARENT EXIST. R/W
- MATCHLINE
- PROPOSED SIGNALIZED INTERSECTION





Source (Citation) for 2010 six inch pixel Imagery Geotiffs

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SHEET ALT. 2-5

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

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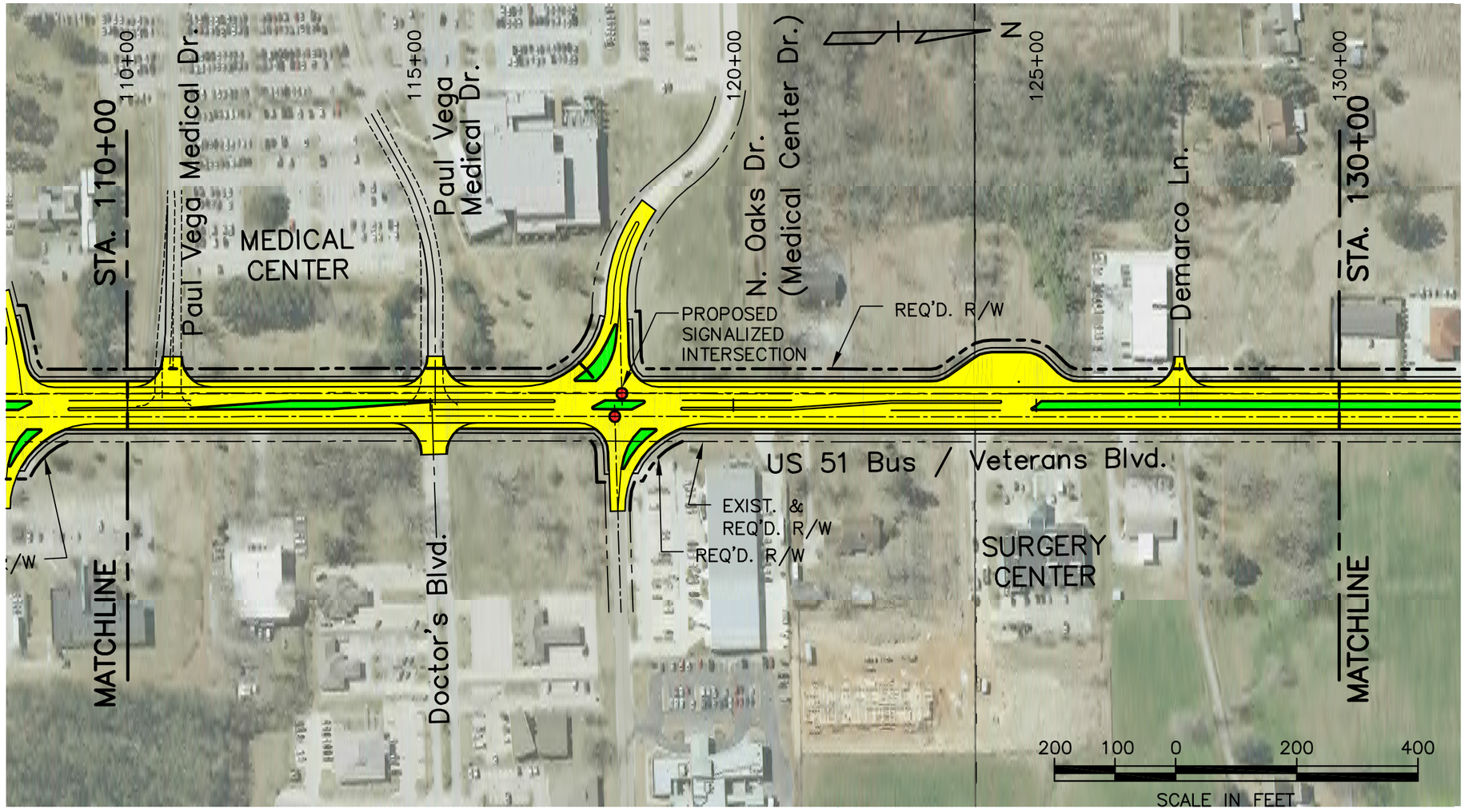

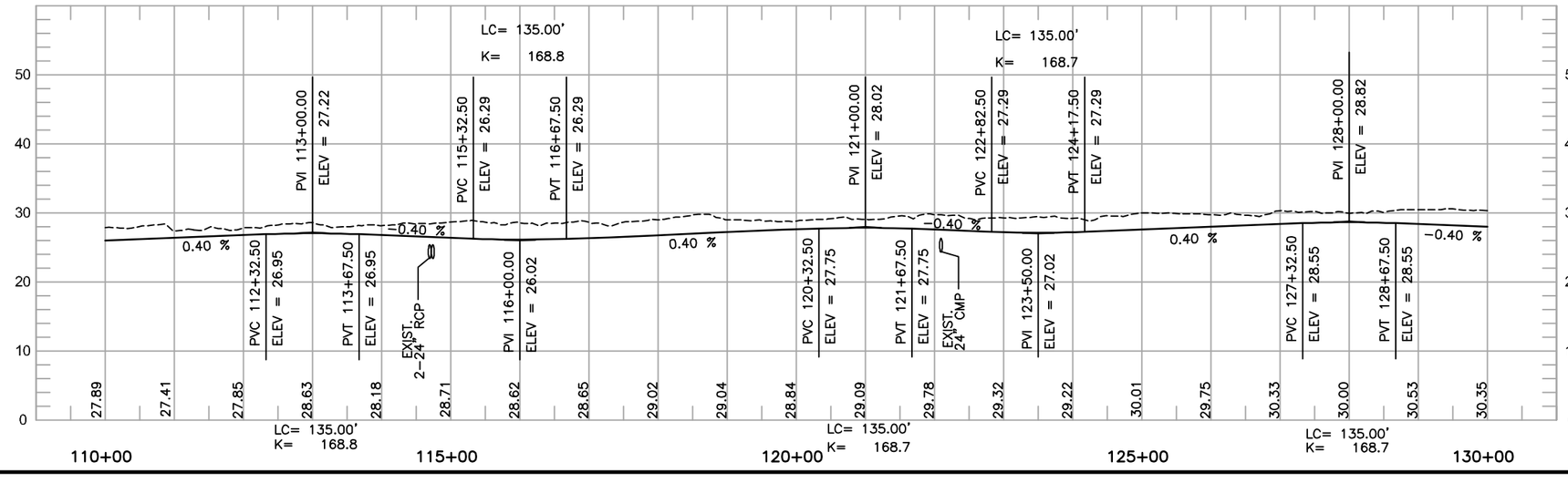

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SHEET ALT. 2-6

US 51B (LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 2

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LEGEND

- PGL — PROFILE GRADE LINE
- C/L PROPOSED ROADWAY
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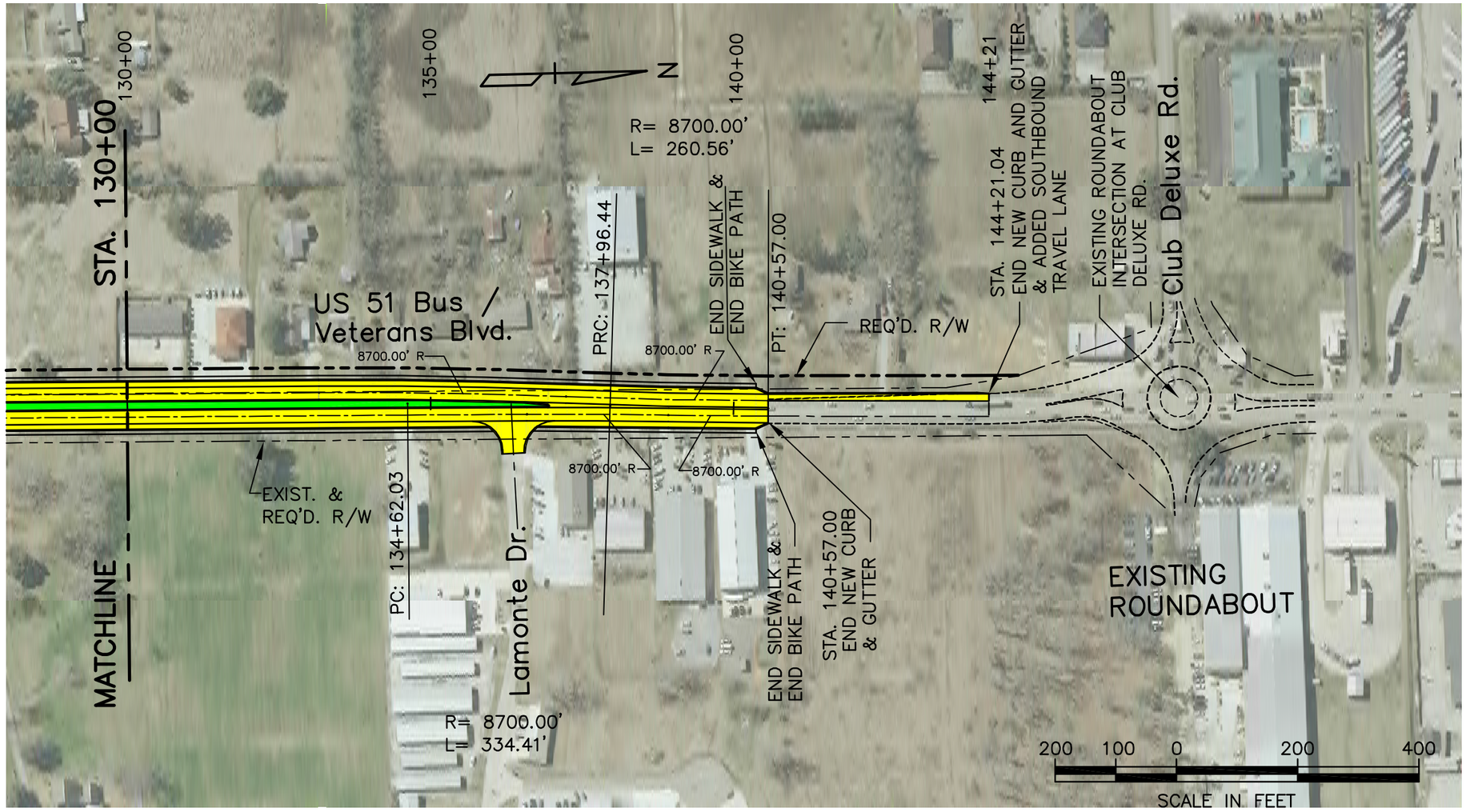
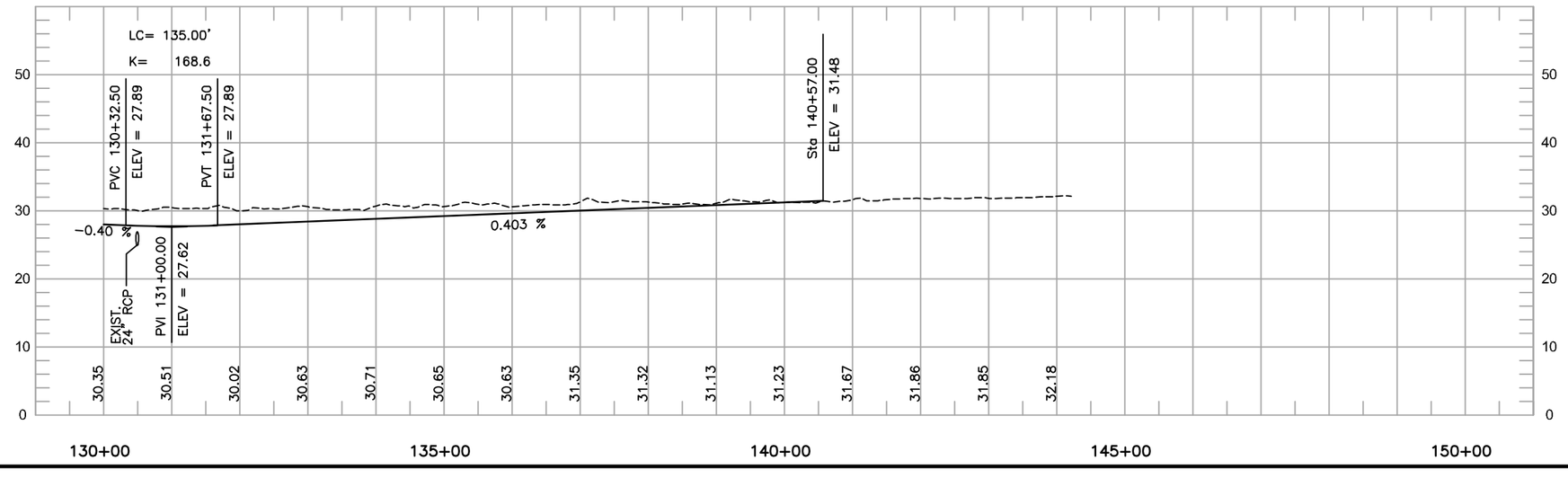
- PROPOSED REQ'D. R/W
- APPARENT EXIST. R/W
- MATCHLINE
- PROPOSED SIGNALIZED INTERSECTION





SHEET ALT. 2-7

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 2

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LEGEND

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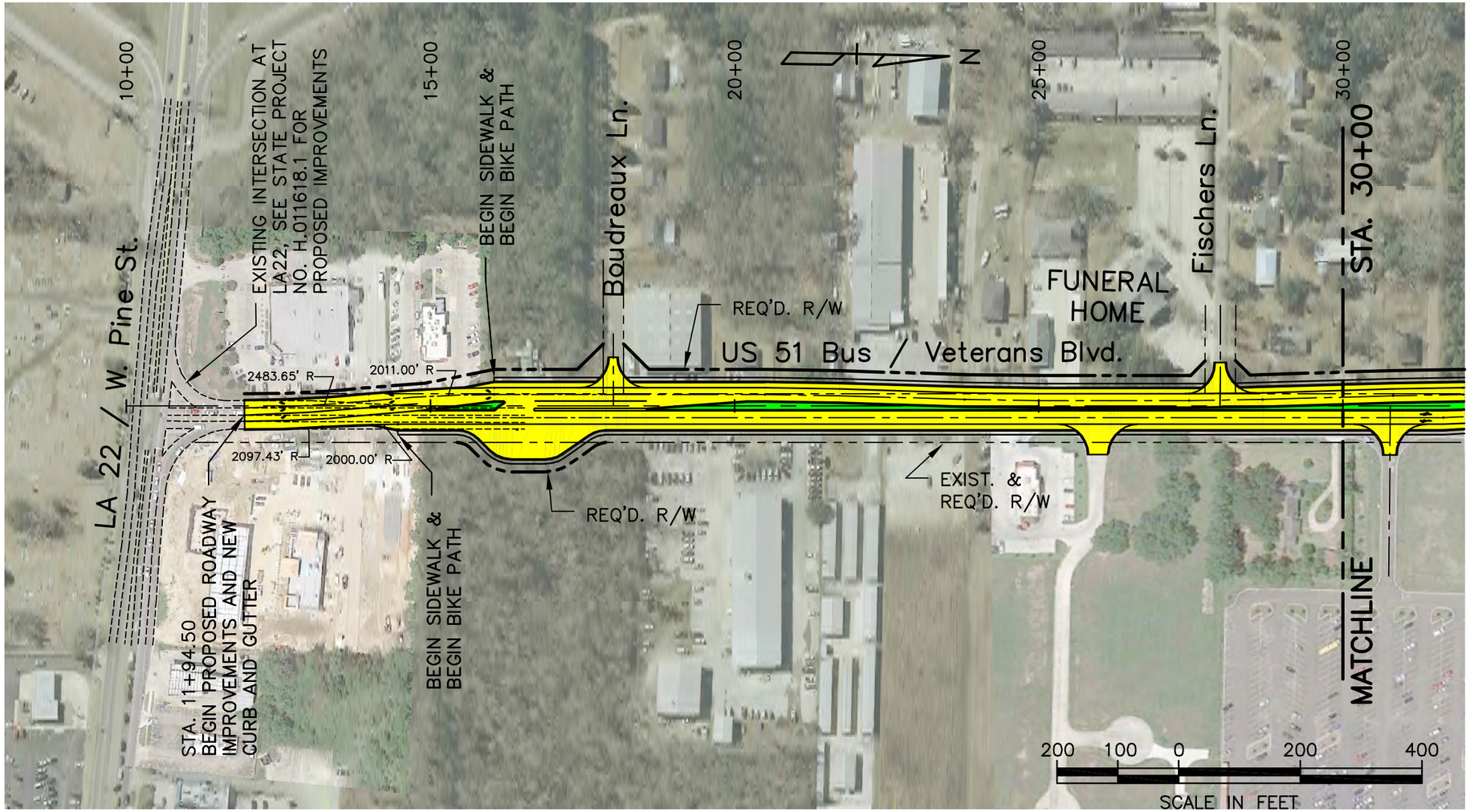
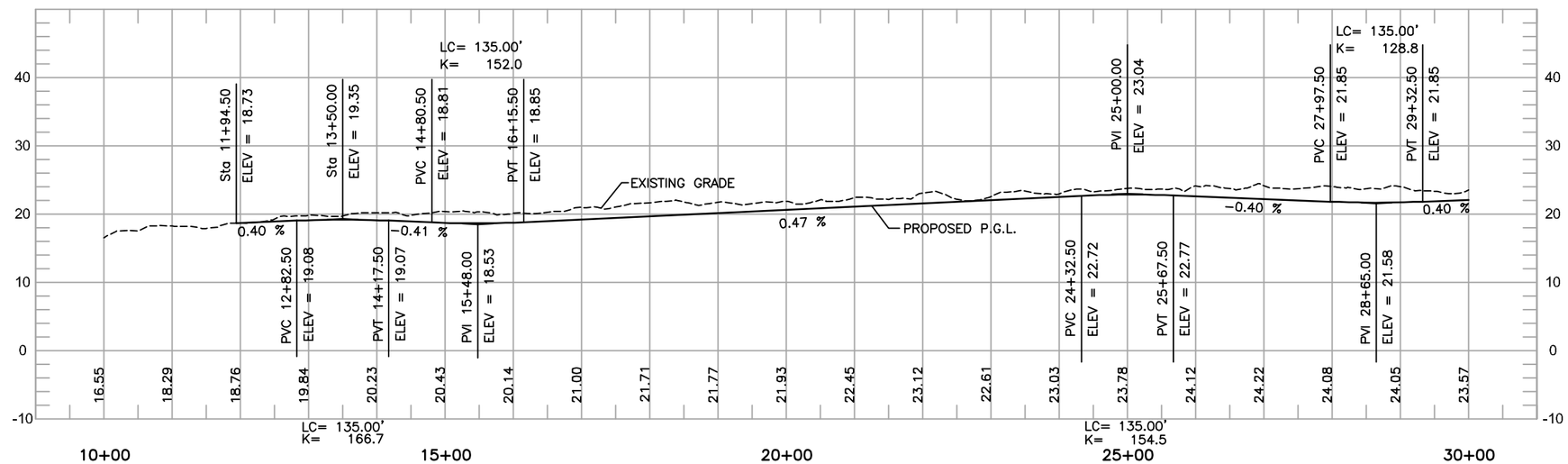
- APPARENT EXIST. R/W
- MATCHLINE
- PROPOSED SIGNALIZED INTERSECTION





SHEET ALT. 3-1

US 51B (LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 3

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LEGEND

- PGL — PROFILE GRADE LINE
- C/L PROPOSED ROADWAY
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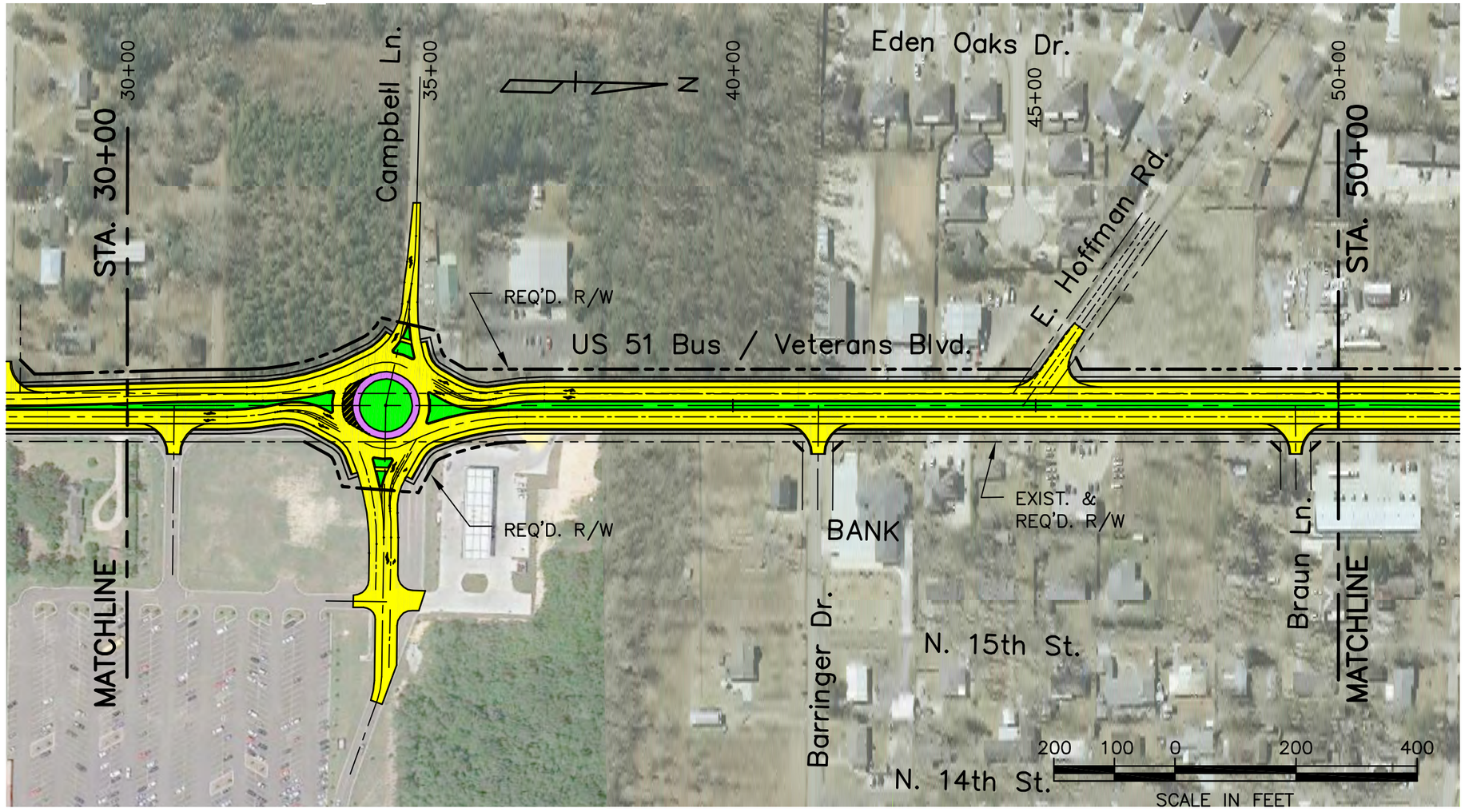

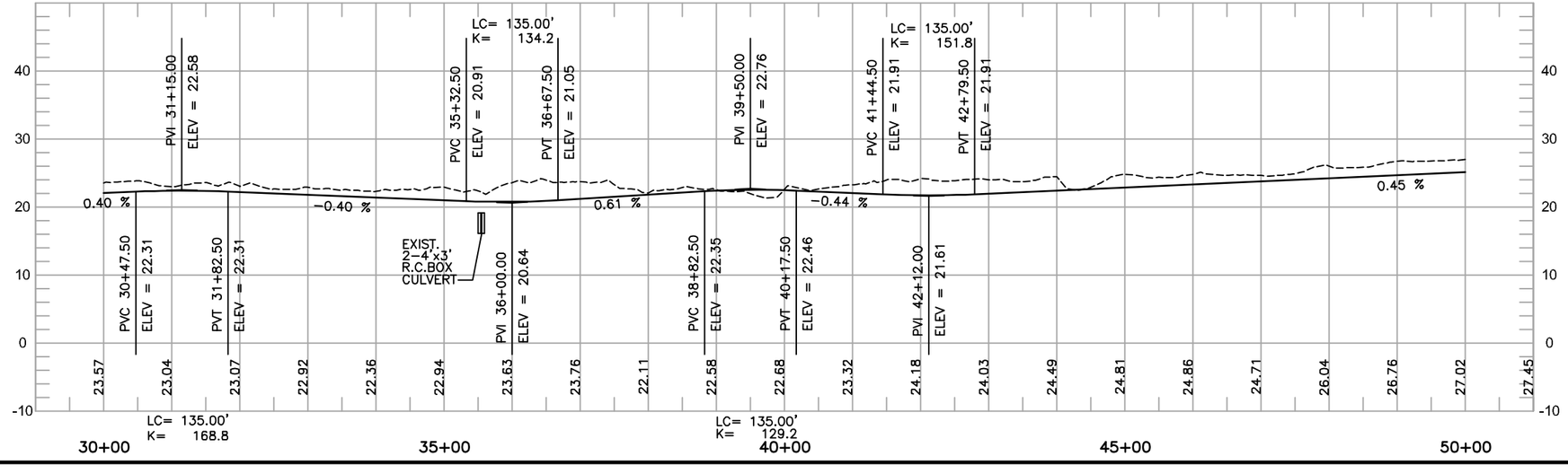

SHEET ALT. 3-2

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 3

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LEGEND

- PGL — PROFILE GRADE LINE
- C/L PROPOSED ROADWAY
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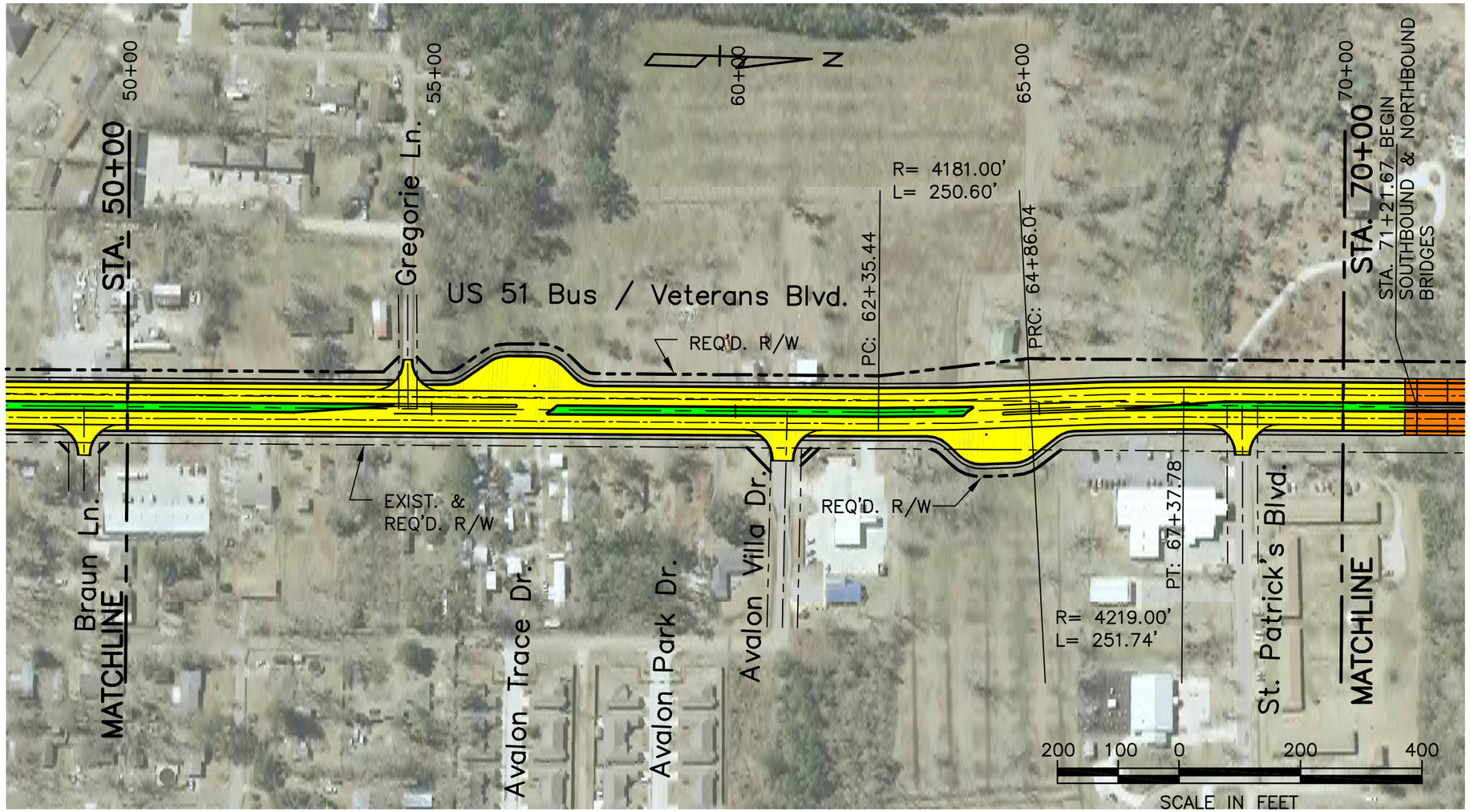

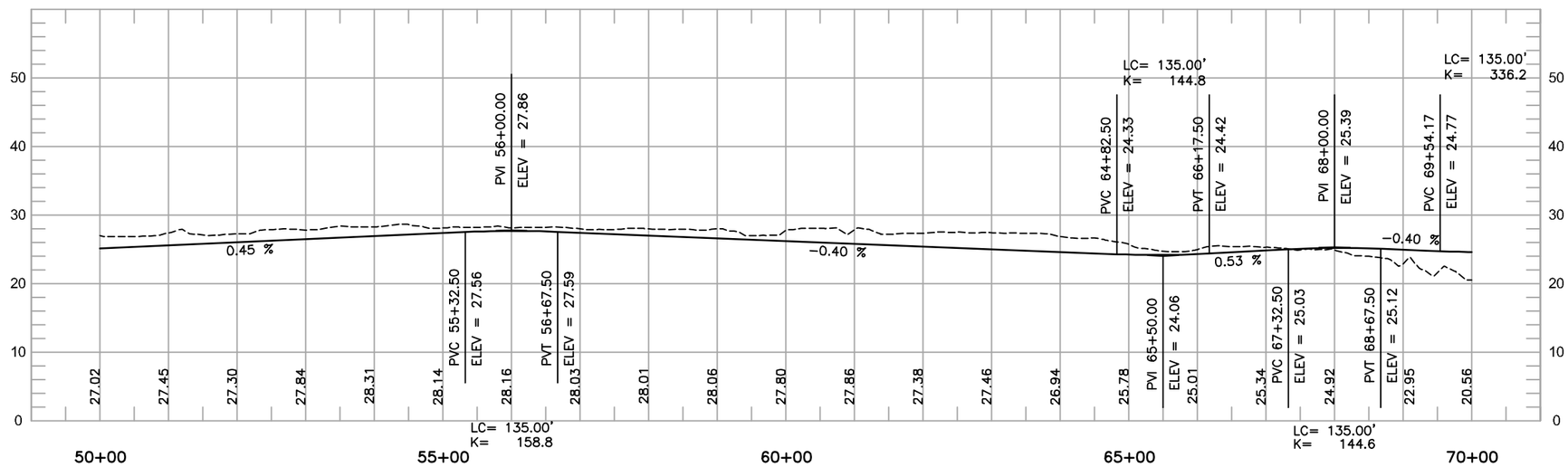

SHEET ALT. 3-3

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

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LEGEND

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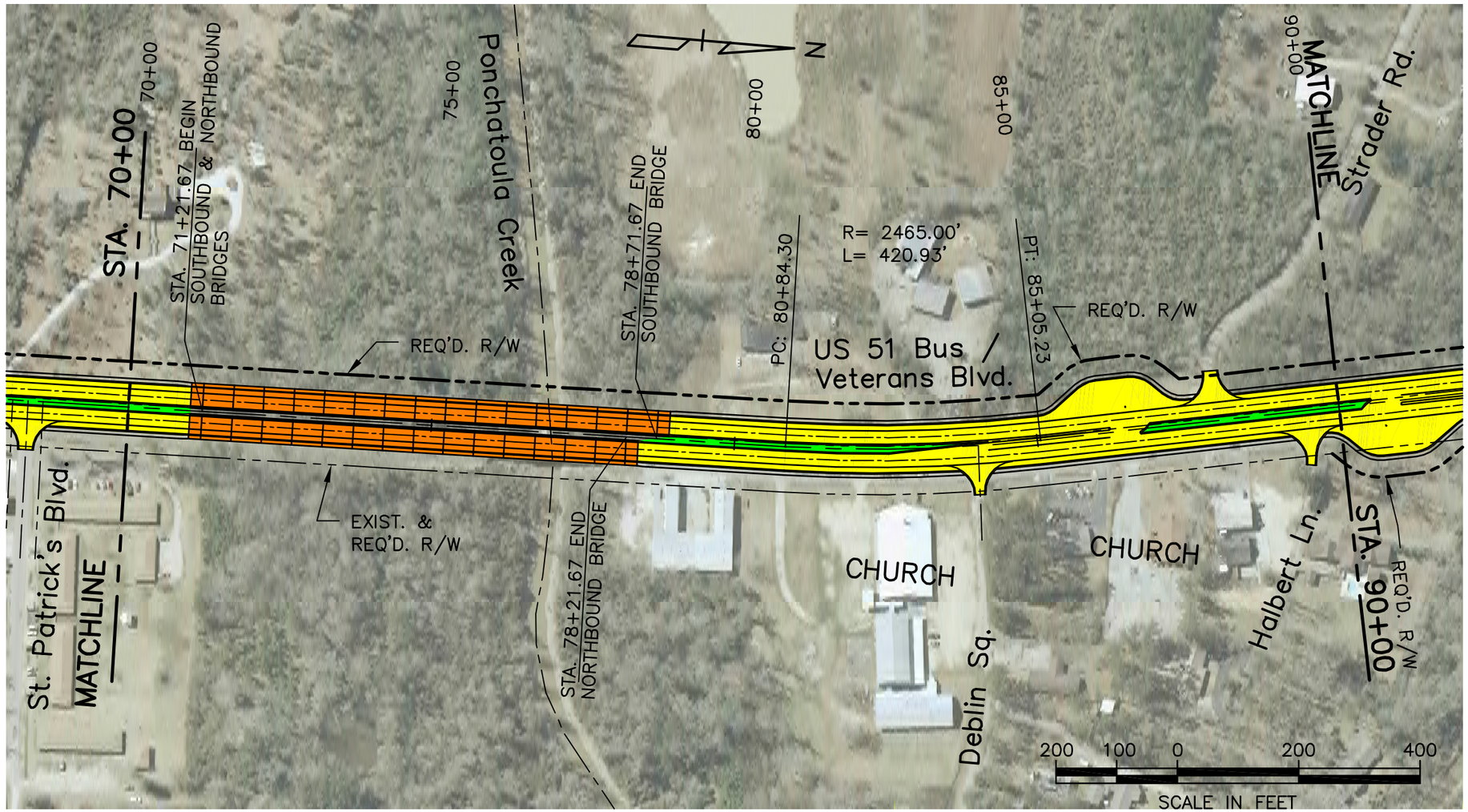

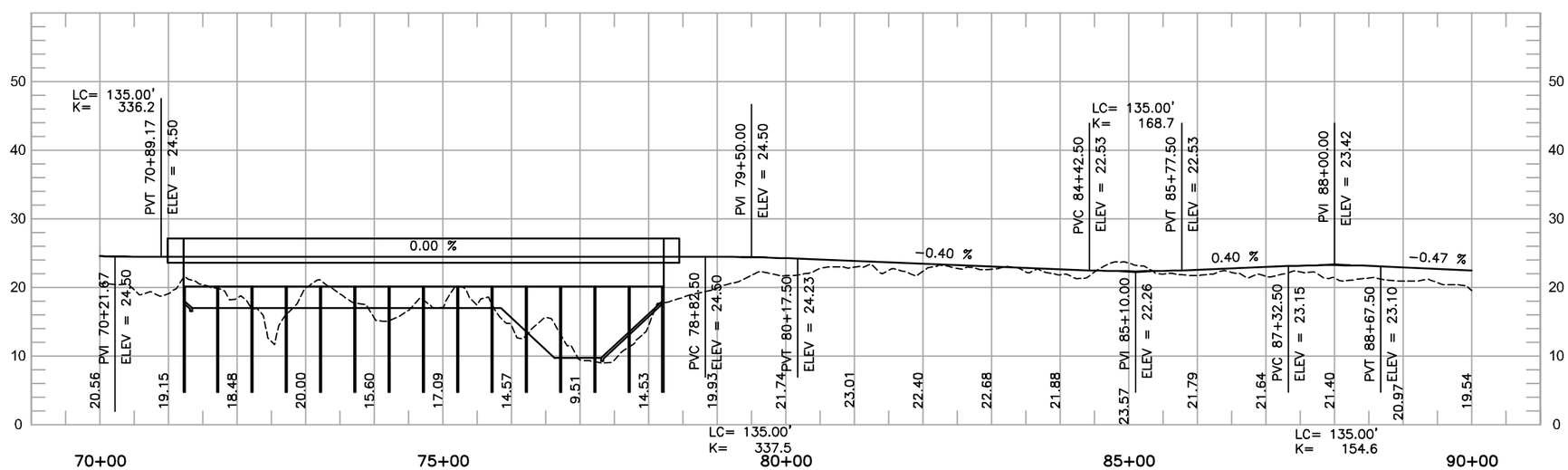

SHEET ALT. 3-4

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 3

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LEGEND

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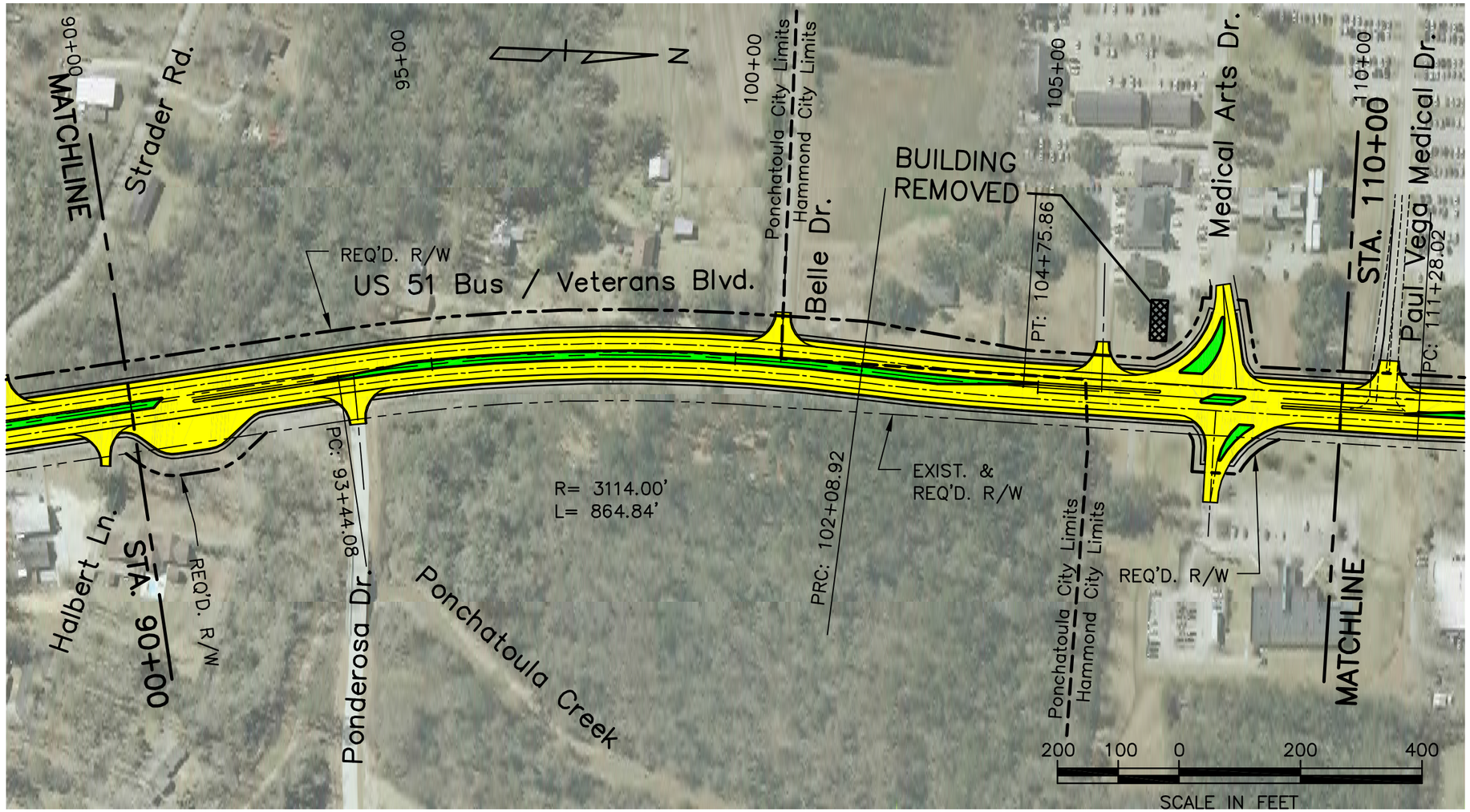

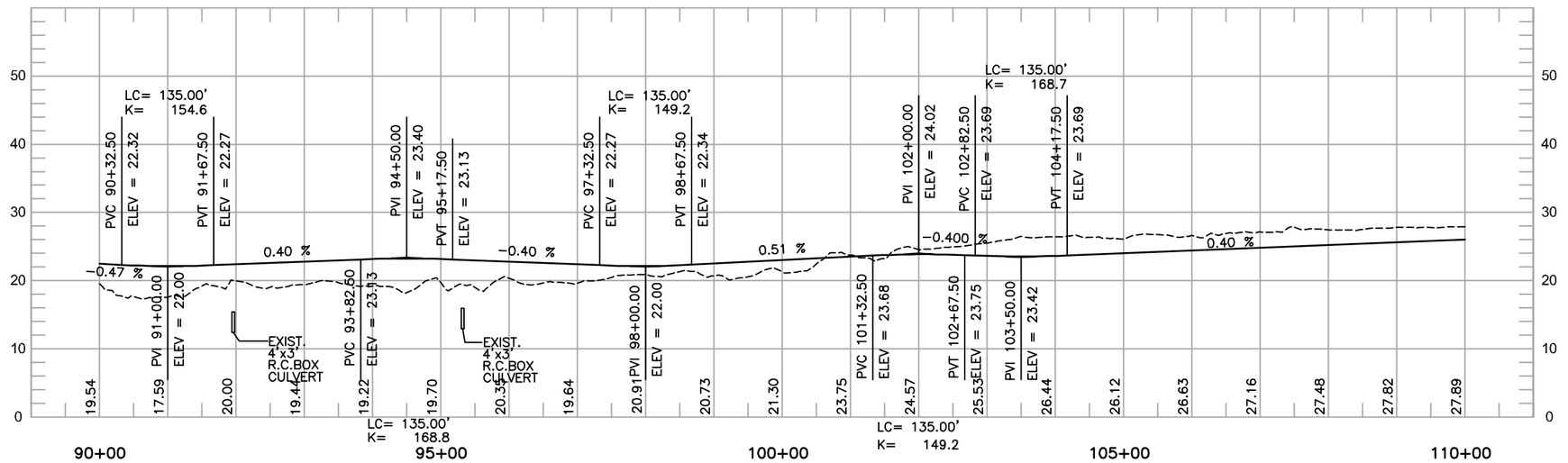

SHEET ALT. 3-5

US 51B (LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

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DOTD — LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

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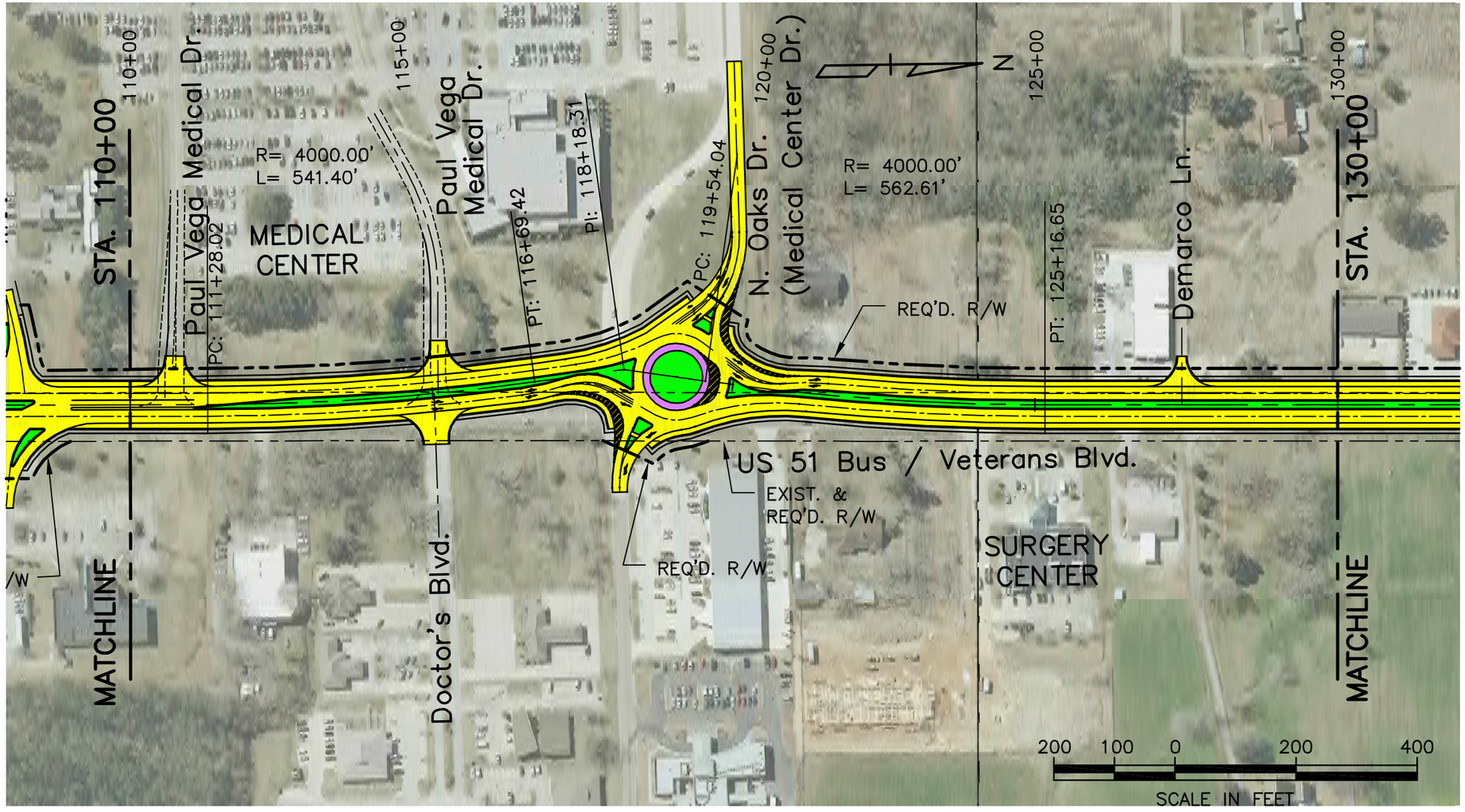

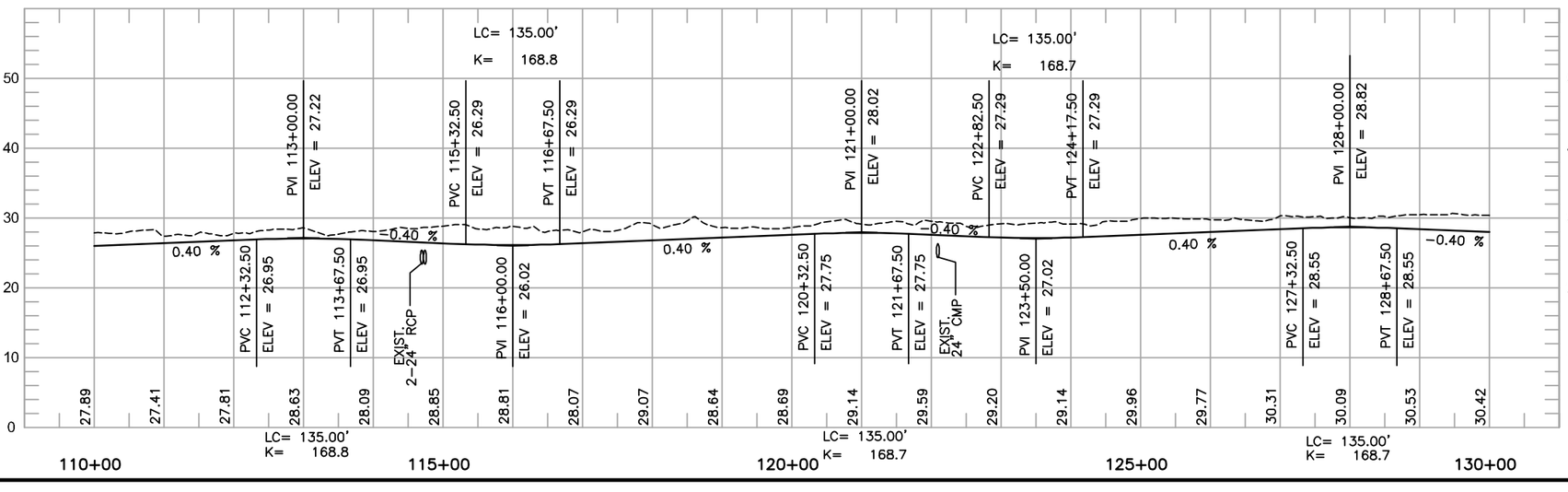

SHEET ALT. 3-6

US 51B (LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT – ALTERNATE 3

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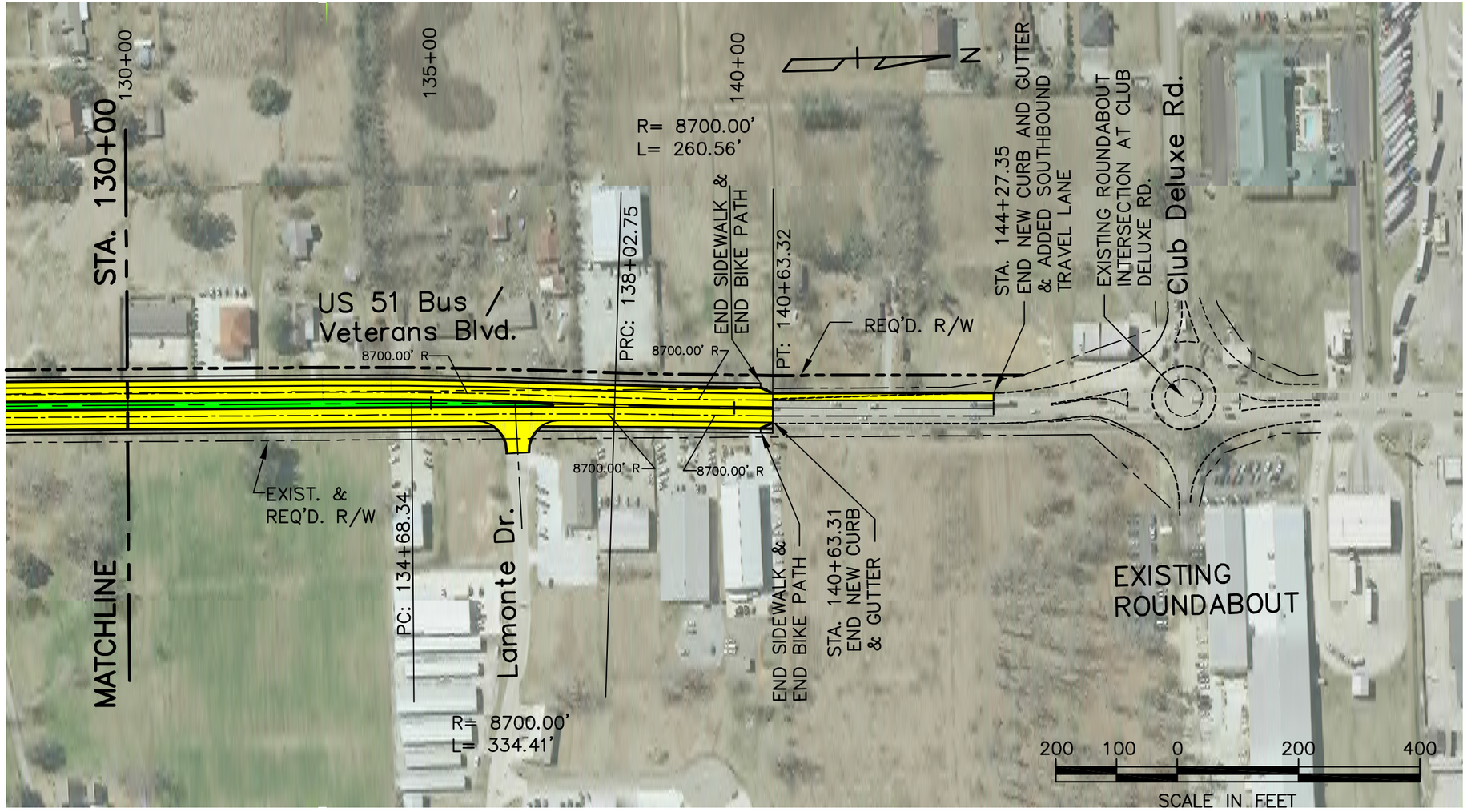

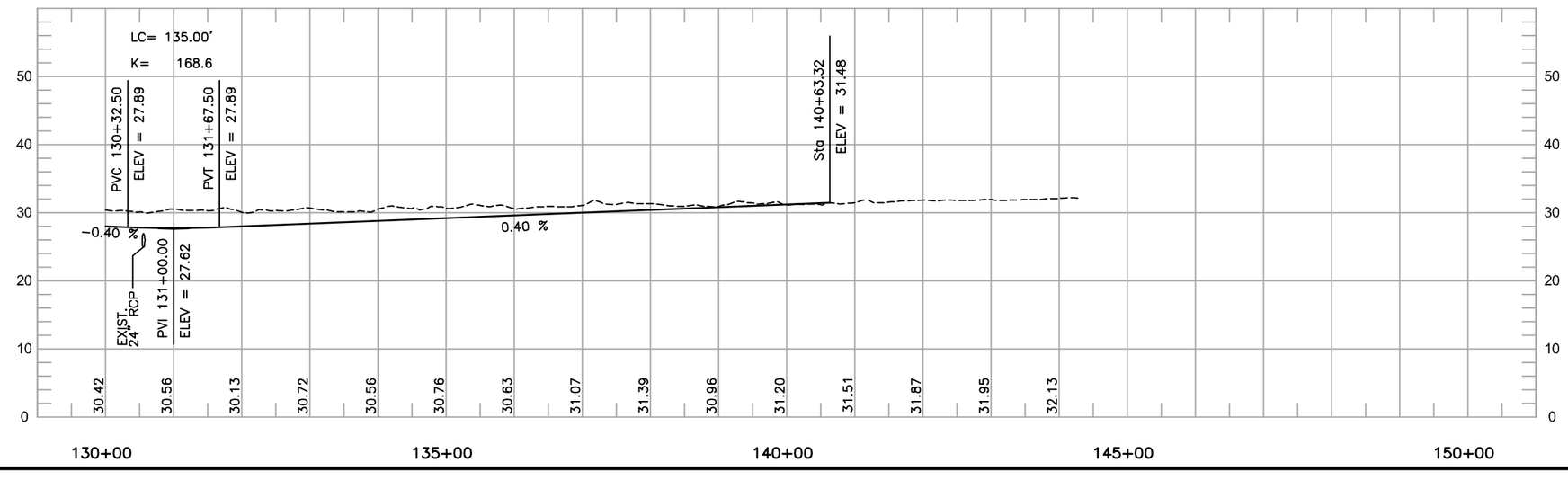

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SHEET ALT. 3-7

US 51B (LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

PLAN LAYOUT - ALTERNATE 3

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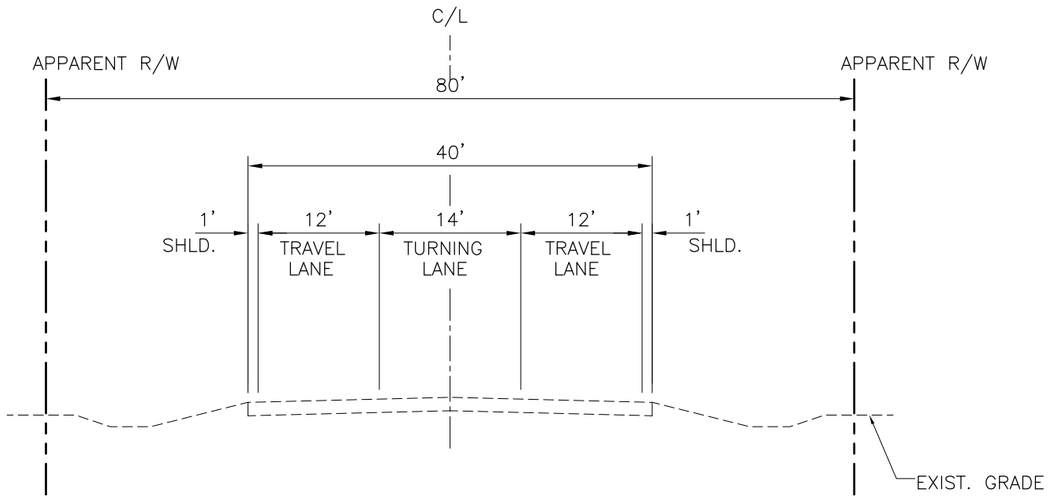
DOTD LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



EXISTING THREE LANE SECTION

15 0 15 30

SCALE IN FEET

SHEET T-1

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

TYPICAL SECTIONS

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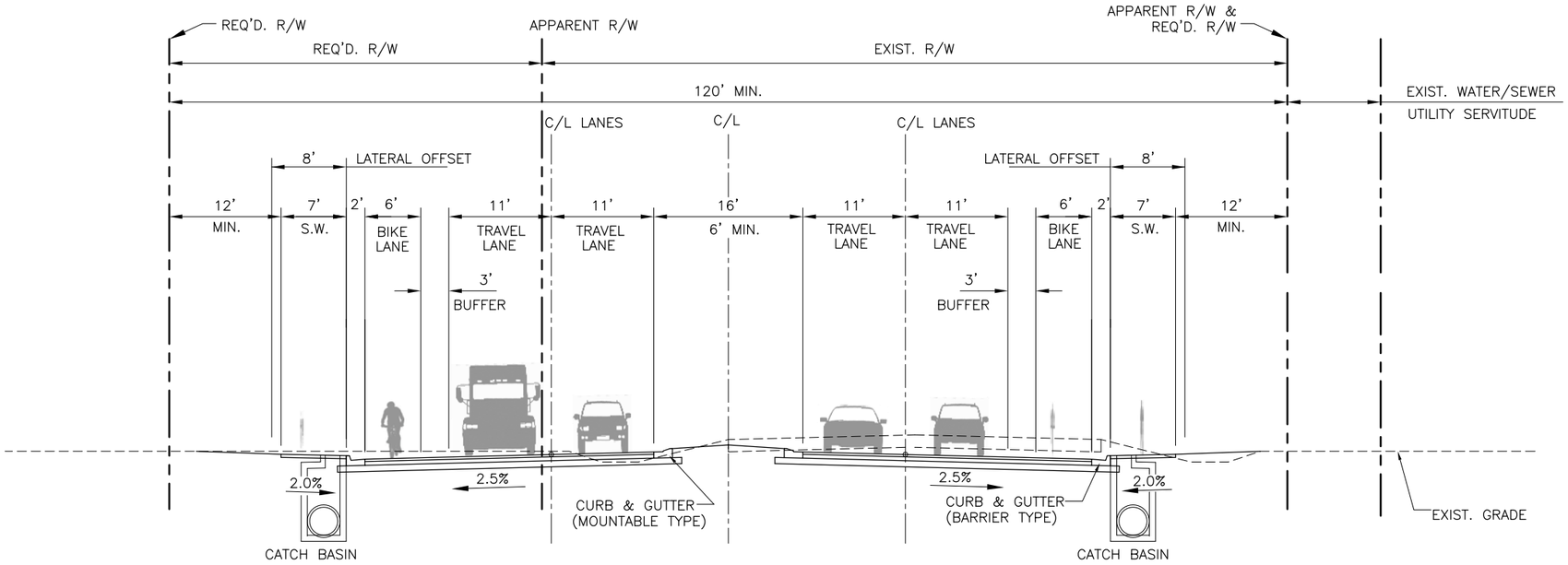
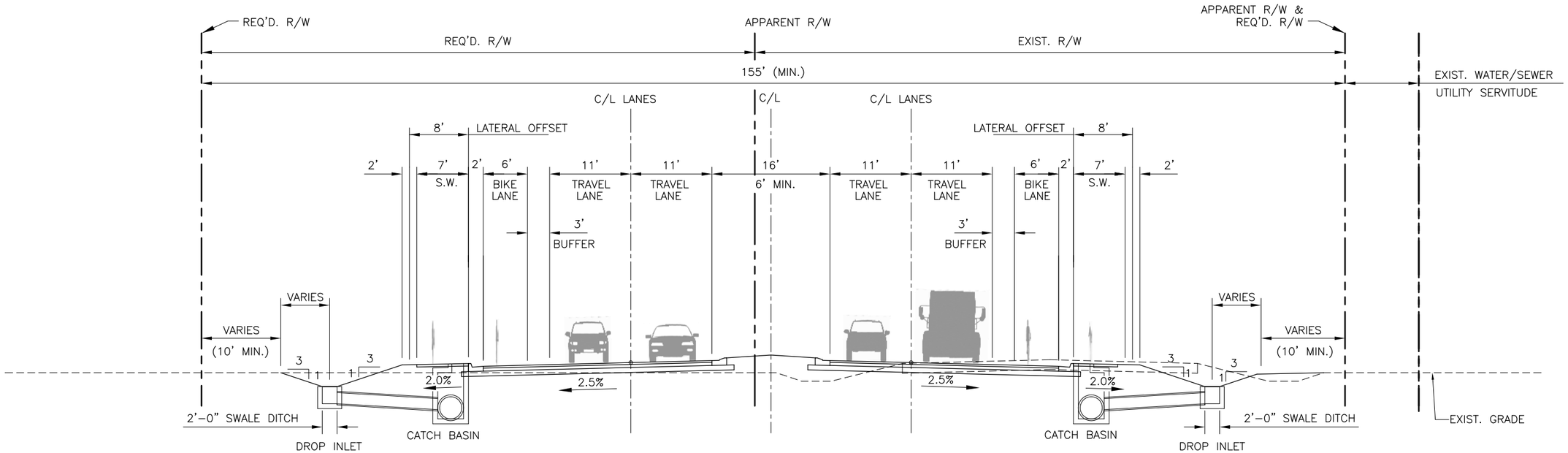


TYPICAL SECTION – FOUR LANES WITH CONC. CURB AND GUTTER LOOKING NORTH
IN CUT (45 mph)(URBAN ARTERIAL)



TYPICAL SECTION – FOUR LANES WITH CONC. CURB AND GUTTER LOOKING NORTH
IN FILL (45 mph)(URBAN ARTERIAL)

15 0 15 30
SCALE IN FEET

SHEET T-2

US 51B(LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

TYPICAL SECTIONS

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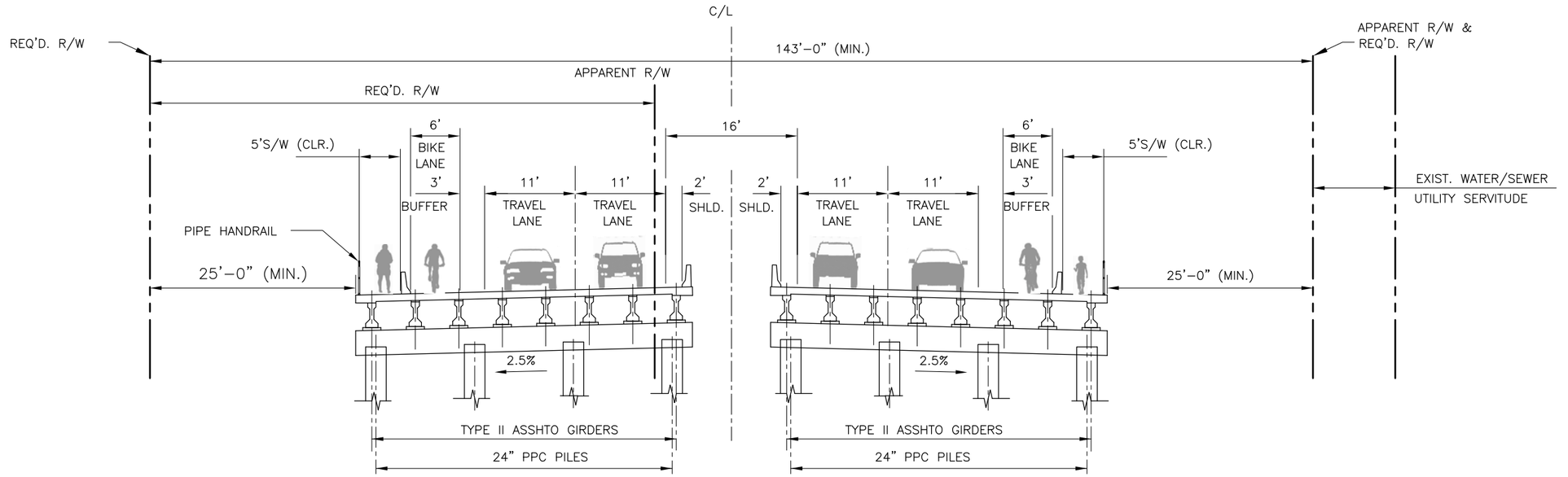
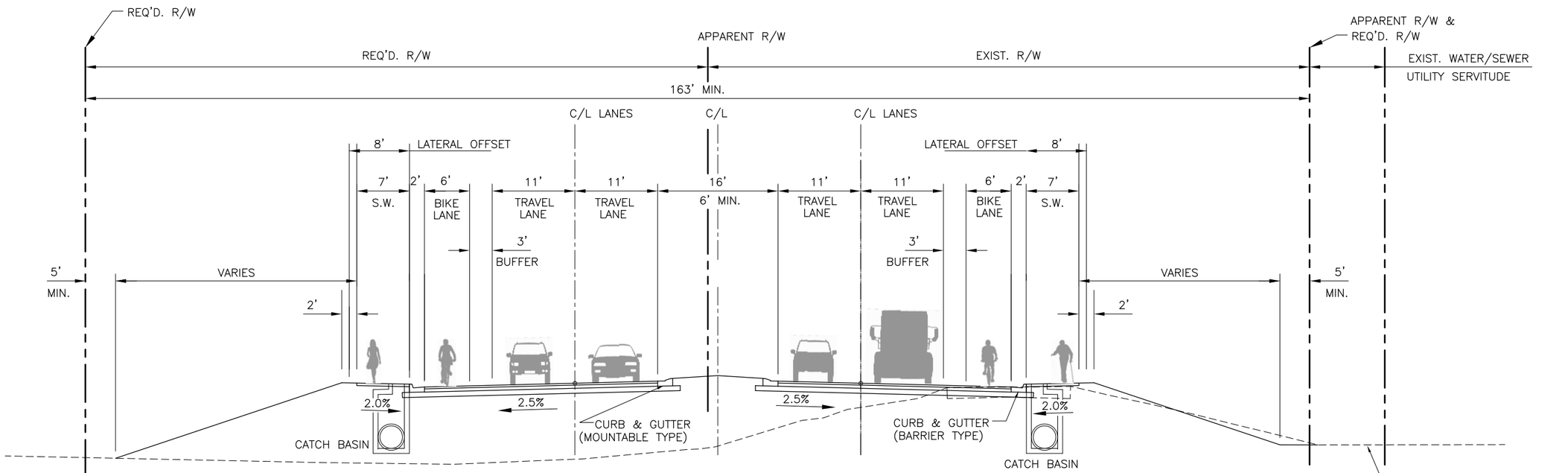


TYPICAL SECTION – PONCHATOULA CREEK BRIDGE
FOUR LANES WITH 6' BIKE LANE, 3' BUFFER AND 2' INSIDE SHOULDER (45 mph)(URBAN ARTERIAL)



TYPICAL SECTION – FOUR LANES WITH CONC. CURB AND GUTTER LOOKING NORTH
BRIDGE APPROACH, SOUTH SIDE (45 mph)(URBAN ARTERIAL)

△ TO BE CONSTRUCTED FREE OF OBSTRUCTIONS

15 0 15 30
SCALE IN FEET

SHEET T-3

US 51B (LA 22 TO CLUB DELUXE ROAD)
STAGE 1 – ENVIRONMENTAL ASSESSMENT
TANGIPAHOA PARISH, LOUISIANA
STATE PROJECT No. H.008399 RCP: US51 TAN1

TYPICAL SECTIONS

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CHAPTER III

THE AFFECTED ENVIRONMENT

In this chapter, the project corridor and study area are first delineated and described. The existing transportation system, including highways and roadways, rail, transit and pedestrian facilities are presented. The Chapter concludes with an examination of the affected human and natural environment for the project. For purposes of analysis, the affected environment is divided into the following categories and sub-categories:

EXISTING TRANSPORTATION SYSTEM
- Roadway Network
- Rail Network
- Transit
- Pedestrian and Bicyclist Conditions

EXISTING HUMAN ENVIRONMENT
- Demographics
- Land Use
- Public Facilities and Services
- Neighborhood And Community Cohesion
- Hazardous and Solid Waste Sites
- Cultural Resources
- Visual/Aesthetic Conditions
- Flood Zones / Floodplains

EXISTING NATURAL ENVIRONMENT
- Scenic Rivers
- Wetlands
- Water Resources (Sole Source Aquifers)
- Soils / Prime Farmland
- Fish and Wildlife Critical Habitat / Threatened and Endangered Species
- Coastal Zone Status

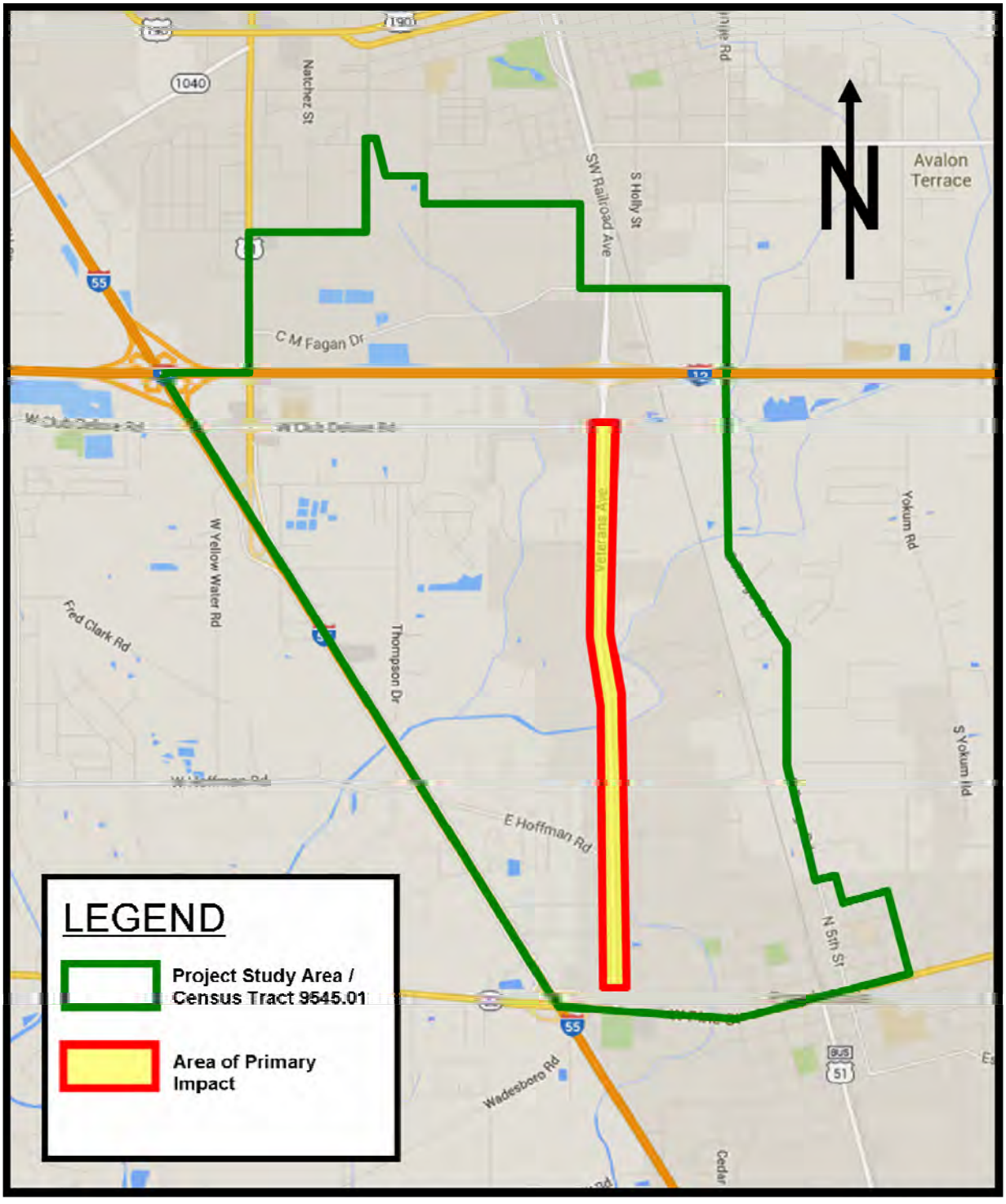
PROJECT AREA

AREA OF PRIMARY IMPACT

The area of primary impact deals with the “footprint” of the project which includes a narrow corridor along existing US 51 Business (Veterans Avenue/SW Railroad Avenue) between W. Club Deluxe Road and LA 22.

Figure III-1, on the following page, provides a visual display of the area of primary impact.

Figure III-1 Project Study Area and Area of Primary Impact



source: Google Maps

Within the primary area of impact, direct impacts associated with the project "footprint" will be assessed and explored. These include such impact factors as noise, hazardous and solid waste sites, parks and recreational facilities, visual/aesthetic impacts, construction-period impacts, and most natural environment impacts.

PROJECT STUDY AREA

The project study area is a larger area surrounding the primary area of impact. This area will be examined in order to assess larger impacts that are less directly affected by project construction and more influenced by project implementation, inclusive of traffic impacts and community, social, and economic impacts. Exploration of the project study area also provides an accurate depiction of surrounding neighborhoods for use in examining impacts to the human environment.

The project study area mirrors the boundaries of the United States (US) census tract 9545.01, which is used in the demographic analysis. The western boundary is I-55, I-12 and US 51, while the southern boundary is LA 22. The eastern boundary generally consists of N. 2nd Street, and N. 5th Street/S. Range Road. The northern boundary includes E. Minnesota Park Road, W. Minnesota Park Road, S. Magnolia Street, Hewitt Road, J.W. Davis Drive, Phoenix Square, Mooney Avenue, and Palmetto Road.

See **Figure III-1** for a visual display of the overall project study area.

EXISTING TRANSPORTATION SYSTEM

ROADWAY NETWORK IN STUDY AREA

The proposed improvements to US 51 Business are located in the cities of Ponchatoula and Hammond and a small portion of unincorporated Tangipahoa Parish, with a roadway network originally constructed to service low-density residential, commercial and agricultural development. US 51 Business is one of the older highways in the area and was the original route of US 51, which runs from LaPlace, LA to the Wisconsin-Michigan border. This stretch of roadway was later supplanted as the primary north-south highway in the area by “new” US 51 and later I-55.

The project corridor extends from W. Club Deluxe Road on the north and ends at LA Hwy 22 on the south. Major transportation arteries are located west of the project corridor with north-south running I-55 and US 51 (which share alignment in most of the project area). I-12 is a major east-west running interstate highway in the north of the study area, while LA Hwy 22 is a major thoroughfare running along the south side of the project area.

RAIL NETWORK IN STUDY AREA

The Canadian National Rail Line lies along the eastern edge of the project area.

TRANSIT IN STUDY AREA

The Cities of Hammond and Ponchatoula provide deviated-fixed bus routes within the city limits at designated stops. Tangipahoa Public Transportation (TPT) service is operated by the Tangipahoa Voluntary Council on Aging with a grant provided by the LA

Dept. of Transportation and Development through Parish Government. Its hours of operation are limited, Monday - Friday, 8:00a.m. - 4:00p.m., and the bus does not operate in dangerous weather conditions or on standard holidays. The bus does travel along most of the project area stretch of US 51 Business.

BICYCLE AND PEDESTRIAN FACILITIES IN STUDY AREA

The US 51 Business corridor does not presently include any bicycle or pedestrian facilities. There are also no designated bicycle trails, routes or paths within the project study area.

EXISTING HUMAN ENVIRONMENT

DEMOGRAPHICS

Methodology

This section examines existing conditions of the human environment in the study area. The methodology employed involved research of data that define the human environment analyzing socioeconomic demographics from the 2010 United States Census records, the most recent counts available at the time this writing.

The demographic analysis[1] examines indices by census tract for the following data sets in the study area:

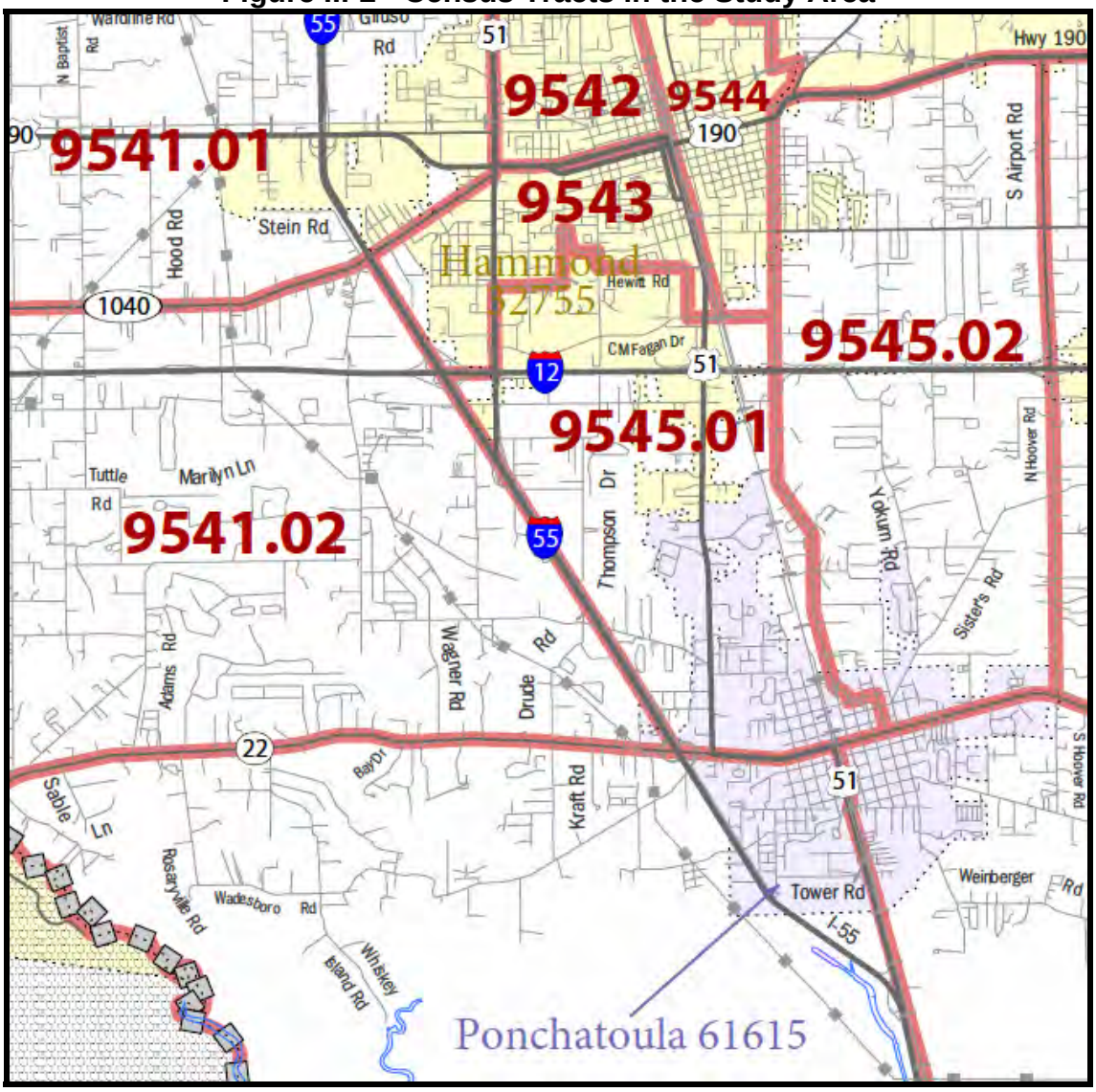
- Population
- Housing
- Business and Economy

Population

The study area is located in Tangipahoa Parish, Louisiana on that portion of US 51 Business situated south of I-12 and west of I-55 from W. Club Deluxe Road on the north to LA 22 on the south. This demographic analysis focuses on the one census tract – 9545.01- that captures the US 51 study corridor and the surrounding areas that could be impacted by the project. **Figure III-2**, on the following page, illustrates the census tract boundaries.

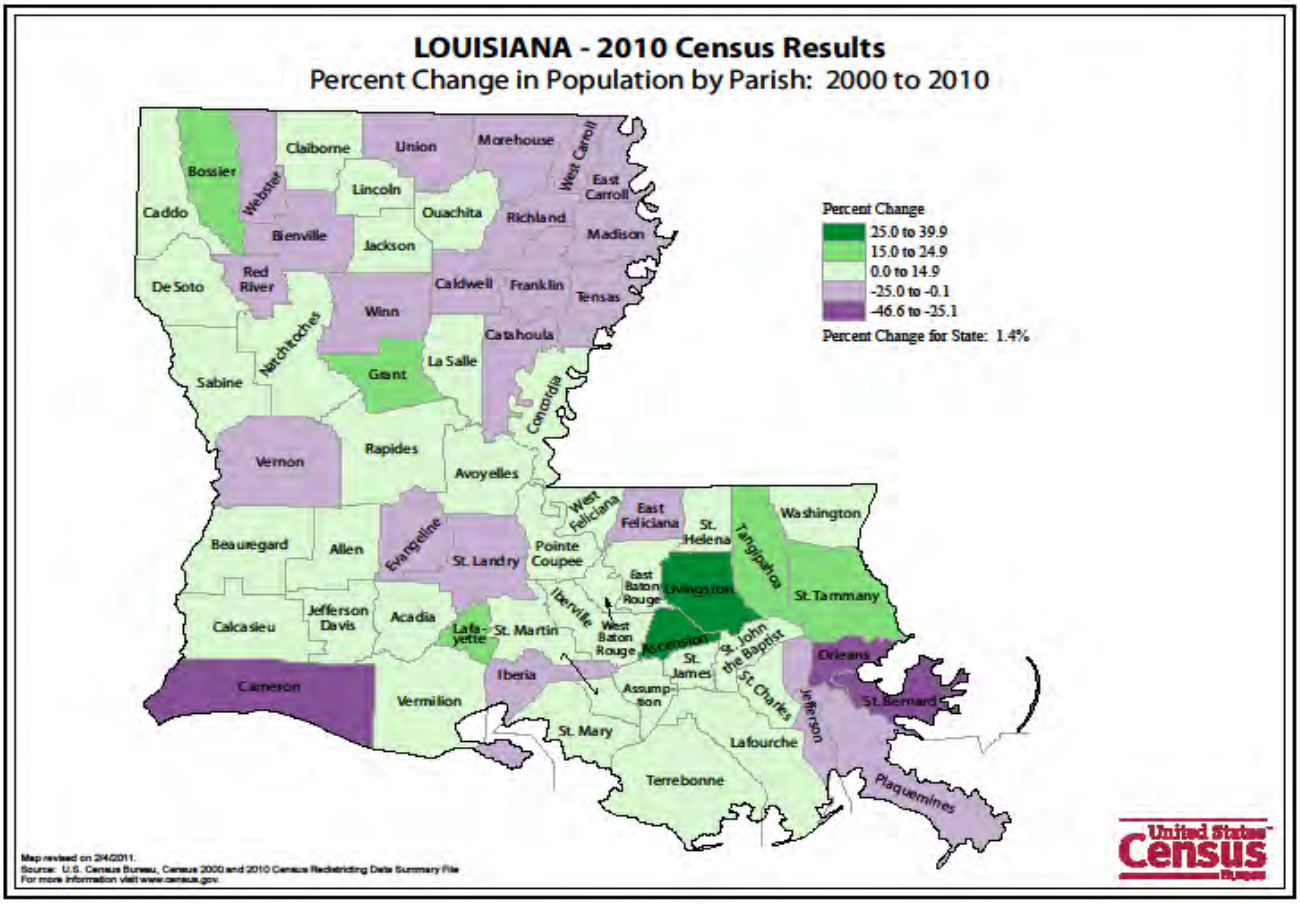
[1] *www.census.gov, 2010 Census.*

Figure III-2 - Census Tracts in the Study Area



The total population of the project study area census tract is 5,301 persons as of the 2010 Census. The project area and Tangipahoa Parish have seen considerable growth. **Figure III-3**, on the following page, illustrates the changes in population from the year 2000 to 2010 for all parishes in Louisiana.

Figure III-3 - 2010 Louisiana Population Percent Change by Parish



Tangipahoa Parish experienced significant growth from 2000 to 2010. Tangipahoa Parish had a total population of 100,588 in the year 2000. By 2010, the Parish had a population of 121,097, a growth of **16.94**%.

The project study area had an even higher rate of growth during this time period. Tract 9545 was only one tract in 2000 and the total population in 2000 was 9,189. The tract was split in two for the 2010 census, with a 2010 population of 5,301 for tract 9545.01 (the study area), and a 2010 population of 6,760 for tract 9545.02, for a total of 12,061. That correlates to a growth rate during that time period of **31%**.

Housing

Table III-1 on the following pages explores housing stock[2] in the project by census tract for occupancy and tenure. The project study area contains 2,701 housing units, with 85% owner occupied and 15% vacant. Owners or people that are buying their house account for 61% of occupied units and renters account for 39%.

[2] *http://factfinder.census.gov, 2013 Community Survey.*

Table III-1 - Housing in the Project Study Area

	Census Tract 9545.01	% of the Project Study Area
HOUSING OCCUPANCY		
Total housing units	2,701	100%
Occupied housing units	2,305	85%
Vacant housing units	396	15%
HOUSING TENURE		
Occupied housing units	2,305	100%
Owner-occupied	1,408	61%
Renter-occupied	897	39%
Average household size of owner-occupied unit	2.44	- -
Average household size of renter-occupied unit	1.96	- -

Table III-2 examines the value of owner-occupied housing units in the project study area, which ranges from less than $50,000 to $499,999. The average median value of housing in the census tract is $135,900.

Table III-2
Value of Owner-Occupied Housing Units in the Project Study Area

	Census Tract 9545.01
Owner-occupied units	1,408
Less than $50,000	425
$50,000 to $99,999	108
$100,000 to $149,999	282
$150,000 to $199,999	368
$200,000 to $299,999	189
$300,000 to $499,999	36
$500,000 to $999,999	0
$1,000,000 or more	0
Median (dollars)	$135,900

Business and Economy

This section looks at income and employment for the project study area.

Income

Table III-3 shows the range of income and benefits by household for the study area, which are similar to Louisiana state household income levels. The (average) median household income for the census tracts in the project study area equals $40,053, slightly less than the $44,874 Louisiana household median income in 2013 inflation-adjusted dollars.

Table III-3 - Income in the Project Study Area

Income and Benefits(in 2013 inflation-adjusted dollars)	Census Tract 9545.01
Total households	2,305
Less than $10,000	151
$10,000 to $14,999	400
$15,000 to $24,999	272
$25,000 to $34,999	291
$35,000 to $49,999	228
$50,000 to $74,999	477
$75,000 to $99,999	232
$100,000 to $149,999	137
$150,000 to $199,999	69
$200,000 or more	48
Median household income (dollars)	$40,053

Employment

Table III-4 examines employment by occupation for the work force in the project study area in 2013. Primary occupations in the study area are management, business, science and arts, which accounts for 37% of the work force, sales and office with 25%, and service, with 17%.

Table III-4. Occupations in the Project Study Area

Occupation	Census Tract 9545.01	% of Project Study Area
Civilian employed population 16 years and over	2,458	100%
Management, business, science, and arts occupations	917	37%
Service occupations	412	17%
Sales and office occupations	617	25%
Natural resources, construction, and maintenance occupations	218	9%
Production, transportation, and material moving occupations	294	12%

Table III-5 reviews industries employing the work force in the project study area by census tract. Educational services, and health care and social assistance account for 32% of industries in the area, with 16% retail trade and 10% manufacturing.

Table III-5 - Industries in the Project Study Area

Industry:	Census Tract 9545.01	% of Project Study Area
Civilian employed population 16 years and over	2,458	100%
Agriculture, forestry, fishing and hunting, and mining	60	2%
Construction	169	7%
Manufacturing	252	10%
Wholesale trade	0	0%
Retail trade	397	16%
Transportation and warehousing, and utilities	74	3%
Information	62	3%
Finance and insurance, and real estate and rental and leasing	231	9%
Professional, scientific, and management, and administrative and waste management services	98	4%
Educational services, and health care and social assistance	772	32%
Arts, entertainment, recreation, accommodation and food services	165	7%
Other services, except public administration	83	3%
Public administration	95	4%

LAND USE AND ZONING

Land Use

Analysis of the existing land use was derived from a windshield survey and examination of Google maps[3] of the US 51 Business project study corridor from W. Club Deluxe Road on the north to LA 22 on the south.

[3] *https://www.google.com/maps*

Figure III-4 - Aerial View of Land Use in Project Study Area, Part 1

Beginning at the northern boundary of the project study area, heavy commercial development is present on US 51 Business, also referred to as "Veterans Avenue" between W. Club Deluxe Drive and I-12 to service the interstate corridor including restaurants, gas stations, travel centers and truck service facilities. A professional plaza is situated on the south side of W. Club Deluxe Drive west of US 51 Business. A large office warehouse complex is located on the north side of West Club Deluxe Road east of US 51 Business.

Figure III-5 - Aerial View of Land Use in Project Study Area, Part 2

Continuing south on US 51 Business, the commercial development reverts to a rural development pattern with commercial uses on the highway including portable building sales, retail, bank and health services interspersed with vacant land. To the east and west of the highway, rural low density residential development exists with large swatches of vacant tracts and some heavily forested undeveloped property.

Figure III-6 - Aerial View of Land Use in Project Study Area, Part 3

Continuing south, Lamonte Drive located on the east side of US 51 Business contains a series of industrial warehouses with fabrication, tools and service and supply facilities.

Figure III-7 - Aerial View of Land Use in Project Study Area, Part 4

Continuing south on US 51 Business, N. Oaks/Medical Center Drive, particularly on the west side of the highway, has a significant health services complex including a medical center and support uses. On the east side of US 51 Business, a large single family subdivision is situated off of Ponderosa Drive.

Figure III-8 - Aerial View of Land Use in Project Study Area, Part 5

More single family residential development is located on either side of US 51 Business off of E Hoffman Road and Barringer Drive. Continuing south on US 51 Business, a large big box retail store and automobile dealership are located on the east side of the highway.

A concentration of commercial development is present at the southern terminus of the project study area at the intersection of US 51 Business and LA 22. US 51 Business near the intersection contains a drug store and fast food restaurant. The I-55/LA 22 cloverleaf is located west of the intersection. The north side of LA 22 east of US 51 Business contains a fast food restaurant and a building supply store. The southwest corner of the intersection contains a cemetery. The south side of LA 22 east of US 51 has a hotel and more restaurants.

ZONING

Zoning regulation in the project study area is present in two jurisdictions, the City of Hammond and the City of Ponchatoula. Tangipahoa Parish presently has no zoning regulations.

The northern most portion of the project corridor is situated in Hammond and extends from W. Club Deluxe Drive incorporating the medical center complex located on US 51 Business (Veterans Avenue) to Belle Drive on the west side of the highway and Doctor's Boulevard on the east side. The remainder of the project study corridor is located in Pontchatoula extending from Bell Drive all the way to LA 22 at the southern terminus of the project study area.

Figure III-9 on the following page illustrates the zoning classifications in that portion of the US 51 project study area located in Hammond, Louisiana. The zoning primarily consists of Commercial Highway (C-H), indicated in red. A swatch of Heavy Industrial (IH), indicated in purple, is present on W. Club Deluxe Road west of US 51. A small amount of Single Family Residential-Agriculture (RS-11.A) is located south of W. Club

Deluxe Road and indicated in green. The North Oaks Hospital Special District (S-3) is indicated in grey[4].

Figure III-9 - Zoning of the Project Study Area in Hammond, LA

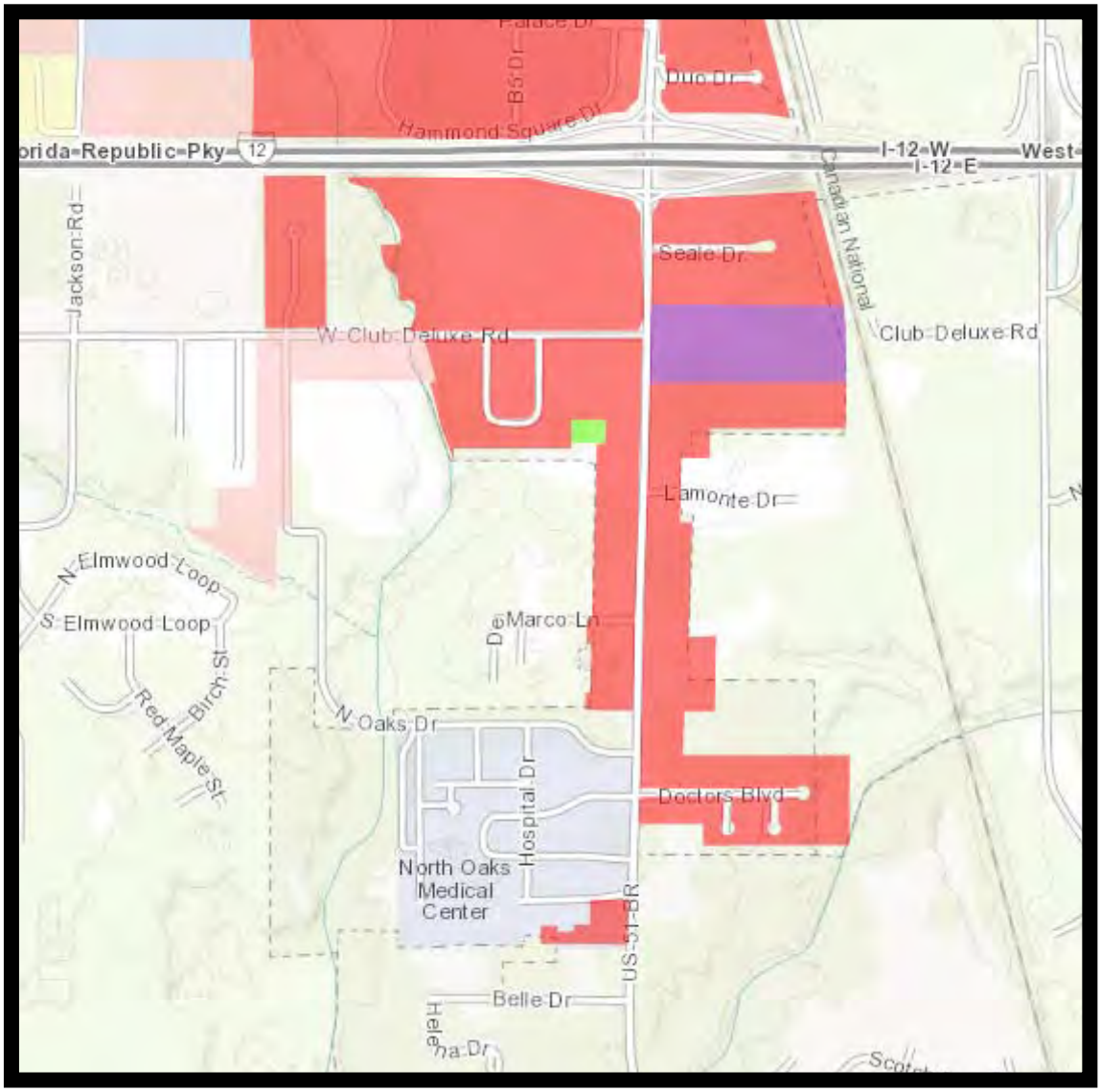
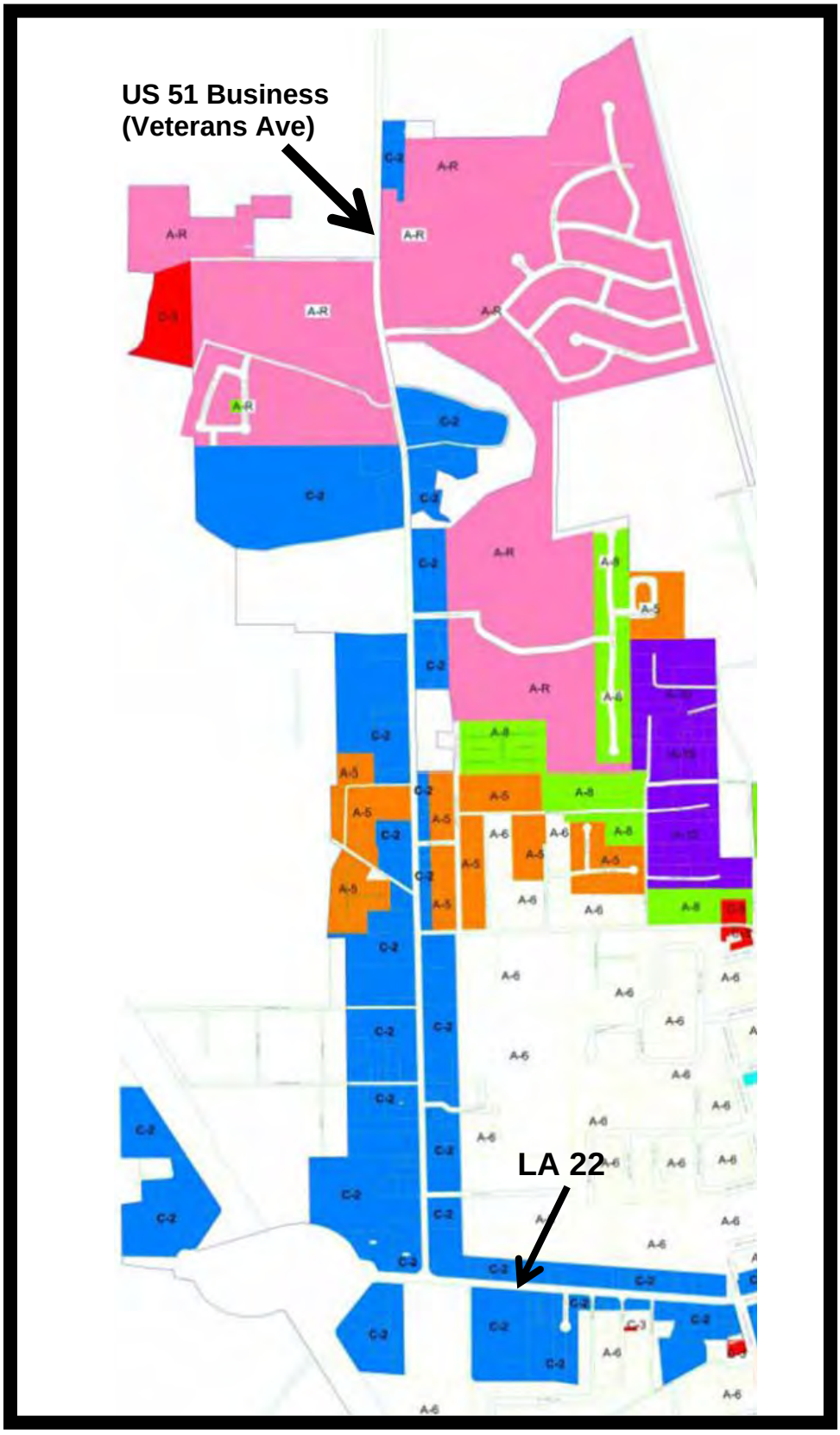


Figure III-10[5] on the following page depicts the zoning classifications for that portion of the US 51 project study area that is located in Ponchatoula, Louisiana. Much of the US 51 (Veterans Avenue) and LA 22 is zoned Commercial (C-2) as indicated in blue. Remaining zoning districts located on US 51 include Rural District (A-R), indicated in pink, Single Family Residential (A-5) indicated in orange, and Single Family Urban (A-6). Zoning districts present in the project study area but not directly on US 51 consist of Apartment District (A-9) indicated in green, Mobile Home (A-10) indicated in purple and Neighborhood Commercial (C-3).

[4] *City of Hammond, LA City Planner Mr. Josh Taylor, November 18, 2015.*
[5] *http://www.cityofpontchatoula-zoning0map.html.*

Figure III-10
Zoning of the Project Study Area in Ponchatoula, LA



PUBLIC FACILITIES & SERVICES

Methodology

Locations for and lists of addresses for public facilities were obtained from Google maps[6], Google Earth, TransWestern Publishing Yellow Pages and field reconnaissance.

Findings

The project study area has a number of public facilities offering a wide range of public services located on or in close proximity to the project study area on Veterans Avenue between I-12 to the north and LA 22 to the south. Analysis of the project study area indicates the following public facilities: 2 government buildings, 4 police stations, 4 fire stations, 2 post offices, 6 public schools, 5 hospitals, 12 churches, and 2 cemeteries. Following are lists of public facilities and services located in the project study area with addresses.

Cemeteries

- Parklawn Memorial Garden, 41372 Thompson Drive
- Ponchatoula Cemetery, US-51 BUS

Churches

- All Saints Episcopal Church, 250 N 8th Street
- Bible Baptist Church, 42363 Happywoods Road
- Christian Life Assembly of God, 2575 Veterans Avenue
- First Baptist Church of Ponchatoula, 325 E Pine Street
- Kingdom Hall Jehovah's Witness, 2535 Veterans Avenue
- The Mission Church, 41347 1-55 Frontage Road
- St Joseph Catholic Church, 255 N 8th Street
- Still Water Baptist Church, 22010 LA Hwy 22
- The Well United Methodist Church, 21400 I-12 Service Road
- Wesley Chapel United Methodist, 39731 S Thibodeaux Road
- Westside Baptist Church, 40375 West I-55 Service Road
- Woodland Park Baptist Church, 1909 JW Davis Drive

Fire Stations

- Hammond Fire Department, 405 S Oak Street
- Ponchatoula Fire Department, 201 NW Railroad Avenue; 610 E Pine Street; 21275 LA Hwy 22

[6] *http://maps.google.com*

Hospitals and Clinics

- Cypress Point Surgical Hospital, 42570 S Airport Road
- North Oaks Cardiology Clinic, Doctor's Circle
- North Oaks Medical Center, 15790 Medical Arts Drive
- Ochsner Clinic, 41676 Veterans Avenue
- Post-Acute Specialty Hospital of Hammond, 42074 Veterans Avenue

Law Enforcement

- Hammond Police Department, 120 S Oak Street
- Ponchatoula City Police Department, 110 W Hickory Street
- Tangipahoa Sheriff's Office, 15475 W Club Deluxe Road
- Tangipahoa Parish Prison, 101 Campo Lane

Parish Services

- Tangipahoa Permit Office, 15481 W Club Deluxe Road
- Tangipahoa Parish Section 8, 111 N Bay Street
- Tangipahoa Landfill, 57510 Hano Road

Post Offices

- U.S. Post Offices, 275 N 5th Street; 105 NW Railroad Avenue

Public Schools

- D.C. Reeves Elementary School, 18026 Sister's Road
- Martha Vinyard Elementary School, 40105 Dunson Road
- Ponchatoula High School, 19452 Hwy 22 East
- Ponchatoula Junior High School, 315 East Oak Street
- Tucker Memorial Elementary School, 310 South Third Street

HAZARDOUS AND SOLID WASTE SITES

Methodology

The consultant team conducted a Phase I Environmental Site Assessment (ESA) in order to identify recognized environmental conditions within the project corridor through review of available records, site reconnaissance, and interviews. This assessment is intended to reflect a commercially prudent and reasonable inquiry on behalf of RPC and LADOTD to qualify these parties for LLP to CERCLA liabilities.

The environmental assessment was conducted in accordance with the ASTM Standard Practice E1527-13, which defines a recognized environmental condition as: "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment; 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions."

Records review included properties identified in the Environmental Data Resources, Inc. (EDR) report issued 20 February 2015. Sites listed on federal, state, and EDR proprietary databases were located by EDR within ASTM minimum search distances as shown on the map provided in Appendix A. Preliminary site reconnaissance focused on properties identified by EDR as adjacent to the existing highway.

Information gathered from evaluation of the EDR site listings was used to inform further research of state databases, and other readily available data, and to focus the field survey and site reconnaissance.

The ESA 1 investigation consisted of the identification of potentially contaminated sites that could affect the sale of the property. The investigation was conducted with the objective of identifying: (1) potential, abandoned hazardous and solid waste sites, (2) active hazardous waste generators, (3) facilities that treat, store, and/or dispose of hazardous wastes, and (4) underground and above-ground storage tanks.

The consultant team conducted the site reconnaissance on 24 March 2015, 20 May 2015, and 3 November 2015. New development along the corridor was observed at each reconnaissance date. Between March and November, two new gas stations were constructed and were added to the list of sites investigated for this ESA. Corridor development abutting the existing highway is mixed commercial and residential interspersed with undeveloped parcels of forested land. Records were reviewed for sites within a 1 mile buffer of the project corridor. A windshield survey identified over 100 structures adjacent to US 51 Business within the project corridor. Research and reconnaissance eliminated over half of these because of the lack of evidence of environmental issues. Approximately 30 individual sites were investigated further and most of these were also eliminated because the distance from the project corridor would not likely impact the proposed right-of-way. Interviews with property owners or their representatives were conducted for the remaining sites with the potential for environmental issues.

Results

ELOS conducted a review of reasonably ascertainable and usable records to help identify recognized environmental conditions in connection with the property. Information sources fall into the following categories: (1) Standard Environmental Record Sources that are specific lists of facilities typically involving hazardous substances or petroleum products and are regulated or recorded by federal, state, or tribal regulatory agencies; (2) Regulatory Agency File and Record Sources that are

typically used to further research facilities identified by the Standard Environmental Record Sources; (3) Other Environmental Record Sources that may include previous assessments of the property; (4) Physical Setting Sources that provide information about the geologic, hydrogeologic, hydrologic, or topographic characteristics primarily used to evaluate the potential for contaminant migration from facilities identified by the Standard Environmental Record Sources; and (5) Standard Historical Sources, which have the primary objective to identify property land use from the present, back to the property's first developed use, or back to 1940, whichever is earlier. Information on available records is provided in the following sections.

Standard Environmental Record Sources

Third-party providers of database searches such as EDR typically yield a large number of sites and a significant volume of environmental information. ASTM requires the Environmental Professional to evaluate the data and use their judgment regarding the level of detail to discuss and present regarding each of the listed sites. While numerous sites may be within the ASTM minimum search distance, many are located at significant distances from the subject property and based on this distance and other site-specific characteristics (site geology/hydrogeology, gradient, drainage, etc.) are unlikely to impact the subject property and therefore may be reasonably dismissed from further discussion in this section at the discretion of the Environmental Professional.

A total of 25 map identification numbers (MAP ID #) were generated by an EDR report issued 20 February 2015 for the US 51 project corridor. The MAP ID #'s represent approximately 30 individual sites. Several of these were eliminated from consideration because further investigation determined that these are not located within the search boundary or were mapped incorrectly. Several more were eliminated because of redundancy. A third set of sites was eliminated because, even though they are located within the ASTM search boundary, the distance from the actual location to the project corridor would likely eliminate the possibility of the site impacting the proposed right-of-way.

The information presented in **Table III-6**, presented on the following page represents a summary of the remaining sites that retained for further investigation and the reason. The table lists the MAP ID #'s, associated sites, and database references.

Table III-6 - EDR-Identified Sites to Be Evaluated

EDR Map ID #	Site Name and Address	Database Reference(s)	Reason for Evaluation
1	Hammond Tire and Auto Care[A] 2000 SW Railroad Ave	SPILLS, REM, EDR US Hist Auto Sta	Business type may involve use of hazardous substances.
5	Hosanna Assembly of God 2575 SW Railroad Ave	FINDS	Not located at Map ID location, but two church sites with similar names and addresses may warrant further investigation.
7	Whiskey Bin 42357 Veterans Hwy	UST, ASBESTOS	Reported presence of USTs.
9	Not Reported 42296 Veterans Ave	EDR US Hist Auto Sta	Reported business type may involve use of hazardous substances.
15	Amerigas Propane 1540 Hwy 51	SPILLS	Reported release of potentially hazardous substances.
15	Ponchatoula Muffler and Brake Service 1529 Hwy 51	RCRA NonGen / NLR, FINDS	Reported presence of hazardous waste.
17	Hudson Construction – Walmart 1331 Hwy 51	NPDES	Business type may involve use of hazardous substances.
18	Gateway Ford 1133 Hwy 51	RCRA-CESQG, FINDS	Reported presence of hazardous waste.
	Express Auto Sales & Service 1163 Hwy 51	SPILLS, FINDS	Reported presence of waste storage.
	Not reported[B] 1529 Hwy 51	EDR US Hist Auto Sta	Reported business type may involve use of hazardous substances.
	Kennedy's Grocery 1571 Hwy 51	UST	Reported presence of USTs.
19	Not reported 1331 Hwy 51[C]	EDR US Hist Auto Sta	Reported business type may involve use of hazardous substances.
20	Not reported 1163 Hwy 51[D]	EDR US Hist Auto Sta	Reported business type may involve use of hazardous substances.
21	Berrytown Cleaners 1070 W Pine St	EDR US Hist Cleaners, RCRA-CESQG, FINDS, DRYCLEANERS	Business type and reported presence of hazardous substances.

[A] *Also listed under Map ID #5 and #9*
[B] *Same address as Ponchatoula Muffler and Brake Service*
[C] *Same address as Gateway Ford*
[D] *Same address as Express Auto Sales and Service*
Database definitions and source of data information for each type of site it's provided in the EDR report provided in Appendix A. Database acronyms and abbreviations are listed in Section 8 of this report.

Regulatory Agency File and Record Sources

LDEQ provides data for sites within its regulatory jurisdiction through it online service, Environmental Data Management System (EDMS). LDNR provides information on oil and gas wells and other natural resource assets through its online service, Strategic Online Natural Resource Information System (SONRIS). These databases were searched to augment and/or clarify the information gathered from the EDR report.

Other Environmental Record Sources

In 2004, a Phase I ESA was prepared and incorporated into an Environmental Assessment (EA) with Finding of No Significant Impact (FONSI) prepared by LDOTD for US 51 from LA 22 to I-12. This document was reviewed by ELOS for the Phase I ESA.

Two UST sites identified in the 2004 EA with FONSI were considered:

- A site associated with Deluxe Deli, Inc. with a reported address of 42357 Veteran's Hwy, and
- A site associated with Kennedy's Grocery with a reported address of 1571 Hwy 51.

A cross-check with the 20 February 2015 EDR report identified an establishment called the Whiskey Bin (Map ID #7) at the Deluxe Deli Map ID location. However, field reconnaissance determined that this site has been cleared of all structures and part of the property is inside the right-of-way for a roundabout that was constructed at Club Deluxe Road and US 51 in the summer of 2015.

According to the 2004 EA, the second site was located at the corner of US 51 and Braun Lane, across US 51 from Amerigas. A 2001 field inspection found pipes / possible vent pipes, but no other surface indications of USTs at the location. No surface indications of contamination were observed. 2015 site reconnaissance identified a strip mall at the corner of Braun Lane and US 51. Review of historical aerials indicates that a strip mall was constructed at this location between 1998 and 2004. A strip mall is mentioned in the 2004 EA as being located at the site associated in the EDR report with Kennedy's Grocery. Possible pipes were identified, but no other indications of tanks or contamination were found.

A cross-check with the 20 February 2015 EDR report (Appendix A) identified Kennedy's Grocery at 1571 Hwy 51 as a UST site. The current EDR map locates the site (Map ID #18) approximately 0.25 mile north of LA 22 between Fischers Lane and Boudreaux Lane. Other sites listed at Map ID #18 in the EDR report are summarized in **Table III-7**. Research through existing phone directories and online sources identified a more current name, address, and physical location for some of these sites. This information was then field verified.

Table III-7 -Sites at Map ID #18

EDR Name and Address	Site Name and Address	Field Verified Location	Type of Site
Gateway Ford 1133 Hwy 51	Gateway Ford 1133 Hwy 51	0.20 mi north of LA 22 at Boudreaux Lane	RCRA-CESQG FINDS
Express Auto Sales and Service 1163 Hwy 51	Popeye's 1163 Hwy 51	0.27 mi north of LA 22 south of Fischers Lane	SPILLS
Not Reported 1529 Hwy 51	Automotive Plus 1529 Hwy 51	0.67 mi north of LA 22 north of E Hoffman Road	EDR US Hist Auto Stat
Kennedy's Grocery 1571 Hwy 51	Unknown	Unknown	UST

Physical Setting Sources

The project corridor was mapped on a 1998 USGS 7.5 minute quadrangle map for Ponchatoula, LA. The northern terminus of the project corridor is approximately 0.25 mile south of the I-12 exit for US 51 exit at Hammond, LA. The southern terminus of the project corridor is approximate 0.25 mile east of the Interstate 55 (I-55) exit for LA 22 at Ponchatoula.

This mapping shows that the Ponchatoula Creek bisects the corridor at its midpoint. The area on either side of the creek is wooded and mostly undeveloped. Other undeveloped tracts are scattered among low density residential and higher intensity commercial development.

The EDR map was also reviewed to identify topographic features of interest. On this map, Ponchatoula Creek and its floodway is identified. National Wetlands Inventory (NWI) are identified within portions of the creek's floodway including the reach that crosses US 51 Business. Other wetlands within the EDR search boundary are located in the northwest quadrant along a tributary to the creek. This map illustrates another drainage feature that starts at US 51 Business at Campbell Road and travels east towards Ponchatoula then arcs south crossing LA 22 near the city limits, then arcs west converging with another drainage feature before crossing I-55 south of the Ponchatoula interchange and eventually draining into the Joyce Wildlife Management Area. The general direction of flow in these water features is south and southwest.

The 1994 Phase I ESA map also illustrates the streams described above as well as 20- and 25-foot contour lines showing that the project corridor elevation is mainly flat remaining at approximately 25 feet above sea level sloping down to 20 feet as it approaches LA 22.

Standard Historical Sources

Another source researched for past site conditions and activities was historical U.S. Geological Survey (USGS) Topographical Maps which show details on surface features, including buildings and other structures, but also show terrain topography and water bodies. Project study corridor historical topographical maps reviewed for the Ponchatoula Quadrangle include those from the following years:

- 1935
- 1951
- 1968
- 1972
- 1979
- 1994

No features or structures that would indicate the past existence of sources of contamination were observed on any of the historical maps.

Historical aerial photography was reviewed for indications of site conditions or activities that could indicate the use, storage, disposal, or manufacture of hazardous materials or petroleum products. Such indications may be pits, ponds, tanks (cylinder or round), soil staining, vegetation stress, concrete pads, wells (oil, gas, or water), smoke stacks, or other non-natural appearances. Photographs of the project study corridor from the following years were carefully reviewed and considered:

- 1989
- 1994
- 1998
- 2004
- 2006

Other than two concrete pads that were determined to have since been removed and new structures built in their place, no indications were observed in the historic aerial photos.

Site Reconnaissance

The objective of the site reconnaissance was to verify the sites adjoining the project corridor identified and mapped by EDR, and visually observe adjoining properties for any uses or conditions that would indicate recognized environmental conditions in connection with the property. A ground-level inspection was conducted to the extent not obstructed by bodies of water, structures, and other restrictions.

A windshield survey was performed in 31 December 2014 and all structures observed were mapped and attributed with street addresses, then assigned a site identification number (Site ID #). Several sites that were not identified in the EDR report were added to the list. These sites were then matched with the MAP ID #'s presented in Table III-6 to the extent possible.

Site reconnaissance was conducted on 24 March 2015 by ELOS. Of particular interest during the property observations were the businesses and sites in Table III-7 that were identified by the EDR report as being reported on environmental databases. Investigation of other properties focused on the type of business on site, the condition of any structures, and other features that might constitute a recognized environmental condition. The current condition of undeveloped or inactive properties, along with the presence of any indications of the type of past uses that might constitute a recognized environmental condition, were also investigated during this site reconnaissance.

A follow-up field survey was conducted by ELOS on 20 May 2015 to determine the location of Kennedy's Grocery and Hosanna Assembly of God. Reconnaissance revealed a new gas station under construction on the outparcel of the recently constructed Walmart.

Four named sites listed in the EDR report could not be located during site reconnaissance at the map locations provided:

1. Kennedy's Grocery, 1571 Hwy 51 (Map ID #18) could not be physically located in the project corridor. Reconnaissance of an abandoned property between a residence at 1561 Hwy 51 and Ameracare Family Hospice at 1579 Hwy 51 did not uncover any signs of USTs or other recognized environmental condition. Inquiries at establishments between the abandoned property and Braun Lane suggest that a grocery / convenience store was located on the site that is now a strip mall. This information agrees with the data provided in the 2004 EA prepared by LADOTD.
2. No church is located at the mapped location for Hosanna Assembly of God, 2575 SW Railroad Ave (Map ID #5). However, two churches are located at 2575 Hwy 51 and at 2535 Hwy 51 and were investigated during the site reconnaissance. Neither property yielded any evidence of recognized environmental conditions.
3. The structure at Whiskey Bin (Map ID #7 / Site ID #0) has been demolished and the land has been cleared for construction of a roundabout at Club Deluxe Road and US 51.
4. Berry Town Cleaners (Map ID #21) no longer operates from the mapped location at 1070 W. Pine Street (LA 22), but site reconnaissance discovered a Berry Town Cleaners at 1545 Hwy. 51, Suite 2, in the strip mall north of Braun Lane identified as Site #61. No evidence of any recognized environmental condition was found.

The summary descriptions of each are presented in **Table III-8** beginning below

Table III-8 - Results of Site Research and Reconnaissance

Site ID #	EDR Map ID #	Field Verified Name and Address	Site Visit	Inter-view	Results
48a	Not identified	RaceTrac 1000 W. Pine St	Yes	No	Gas station with USTs installed in 2015; no record of evidence of any REC.
49	18	Gateway Ford 1133 Hwy 51	Yes	Yes	AST on site containing waste oil to be recycled; no record or evidence of UST or other REC.
51	18	Popeye's Chicken 1163 Hwy 51	Yes	No	Formerly Express Auto Sales/Master Lube Express. No evidence of any REC.
53	17	Walmart 1331 Hwy 51	Yes	No	New Walmart completed construction in late 2014. Building, including tire and lube service station, is set back approximately 750 feet from the highway. No evidence of any REC.
53A	Not identified	Murphy's Express 1225 Hwy 51	Yes	No	Gas station with USTs installed in 2015; no record of evidence of any REC.
58	15, 18	Automotive Plus 1529 Hwy 51	Yes	Yes	Active auto repair shop with solid waste service bin. Waste oil tank and solvent cabinet for parts cleaning located inside garage on concrete floor. Poor housekeeping, but no evidence of any REC.
28	15	AmeriGas 1540 Hwy 51	Yes	Yes	Propane supply company. No evidence of any REC.

Table III-8 - Results of Site Research and Reconnaissance (cont.)

Site ID #	EDR Map ID #	Field Verified Name and Address	Site Visit	Inter-view	Results
61	21	Berry Town Cleaners, 1545 Hwy 51	Yes	Yes	Former location at 1070 W Pine St was closed with no incidents reported; new location does not perform dry cleaning; no evidence of hazardous substance or other REC.
91	1	Hammond Tire and Auto Care 2595 Hwy 51	Yes	No	Closed and abandoned tire and lube shop; no evidence of hazardous substances or other REC.
92	5	Christian Life Assembly of God 2575 Hwy 51	Yes	No	New church; no evidence of any REC.
94	Not identified	Dominion and Power 2535 Hwy 51	Yes	No	Old church; no evidence of any REC.
115	5	Twin Tire Auto Care 42296 Veterans Ave	Yes	Yes	No record or evidence of UST or other REC.
00	7	Vacant Site 42357 Veterans Ave	Yes	No	Formerly Whiskey Bin. Site was cleared for construction of roundabout; no evidence of any REC.

The locations of the sites identified through site research and reconnaissance are shown in **Figures III-11 through III-14** on the following pages.

Electrical transformers on utility poles and ground installed were observed for signs of leaks on the transformers and on the ground below or surrounding. Cooling oils in old transformers can contain poly-chlorinated biphenyls (PCBs), a carcinogen, which if released to the environment must be remediated. All transformers observed appeared to be in good condition, with no signs of leaks or surface staining under or around the mounting bases and no PCB decals were observed to be attached.

Interviews

The following facility representatives were interviewed for their knowledge of current and past operations and facility features:

- Twin Tire Auto Care (Map ID #1 / Site #115) – Spoke with Mr. Keith Williams, manager, (985-345-9704) who stated that the facility is about 7 years old, was an undeveloped site prior to that, and does not presently or has ever contained any underground storage tanks.

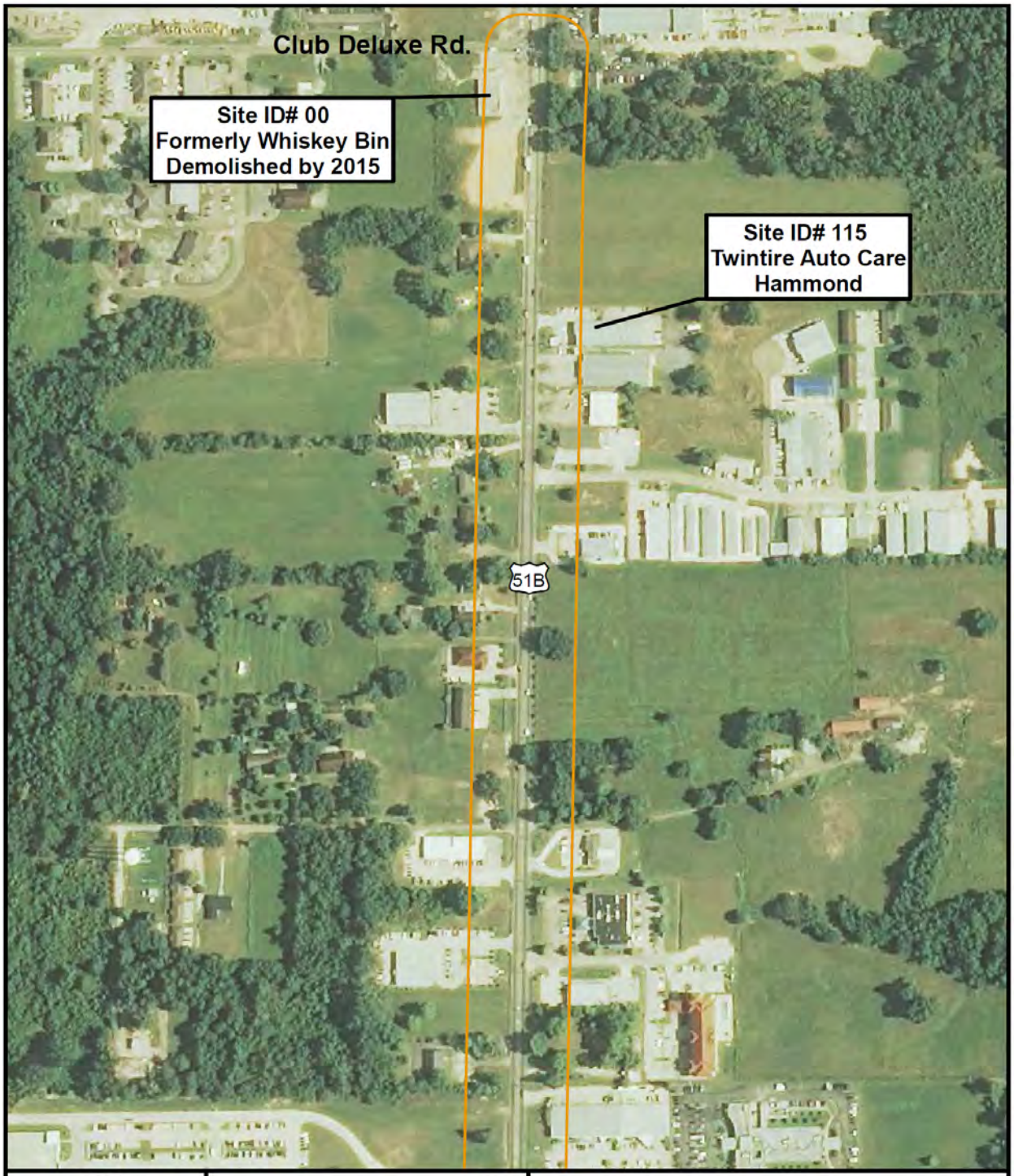
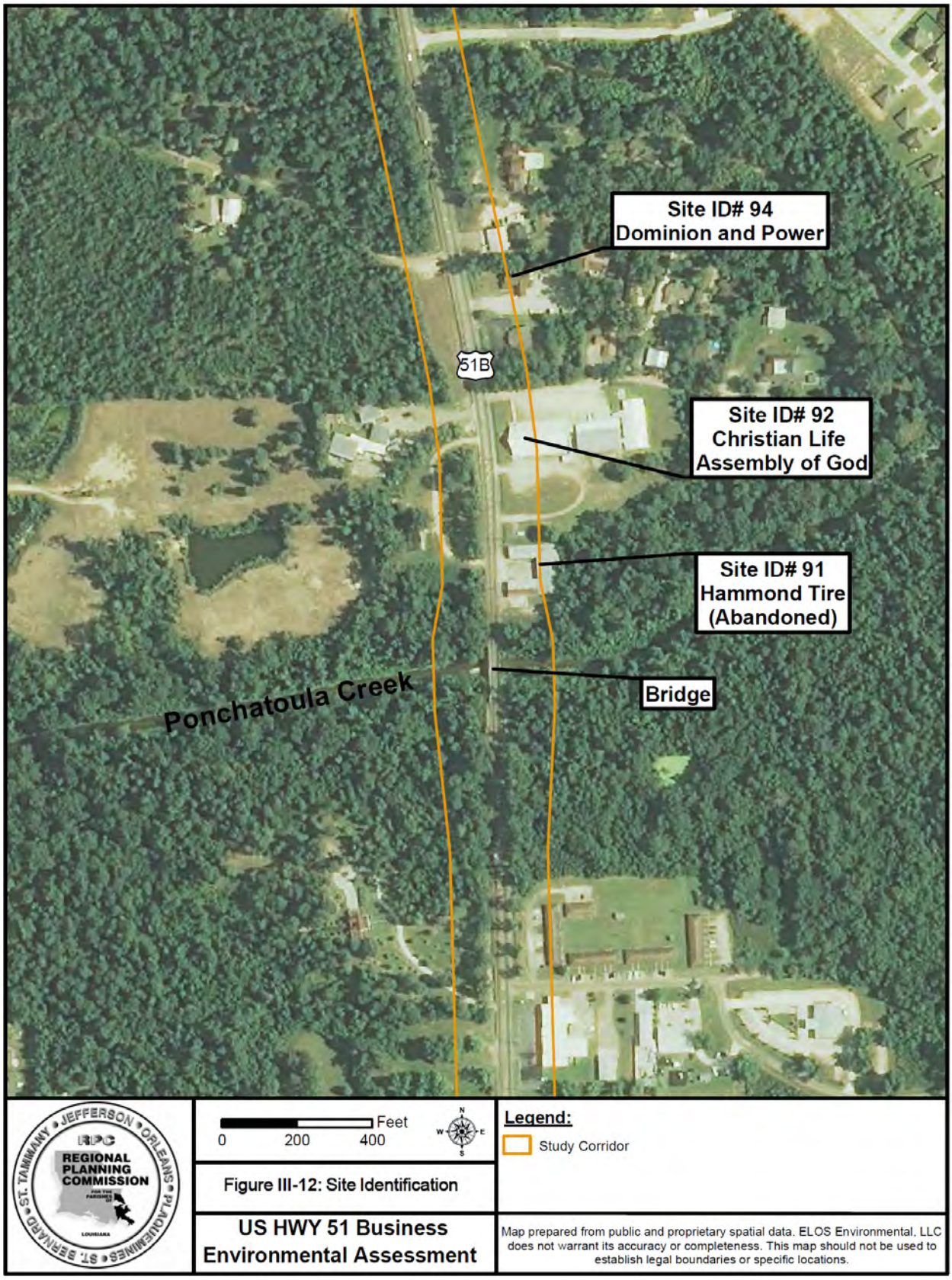
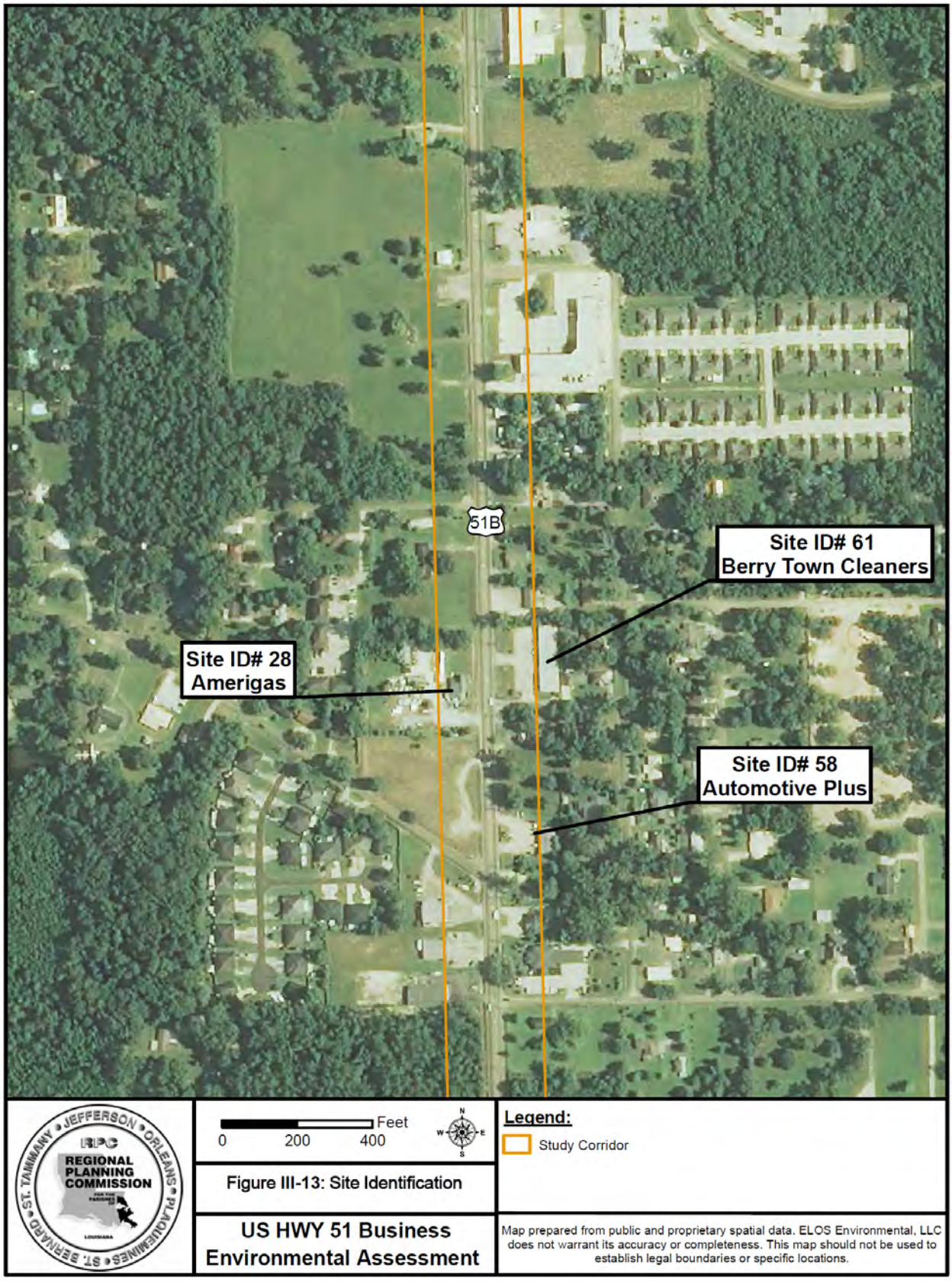


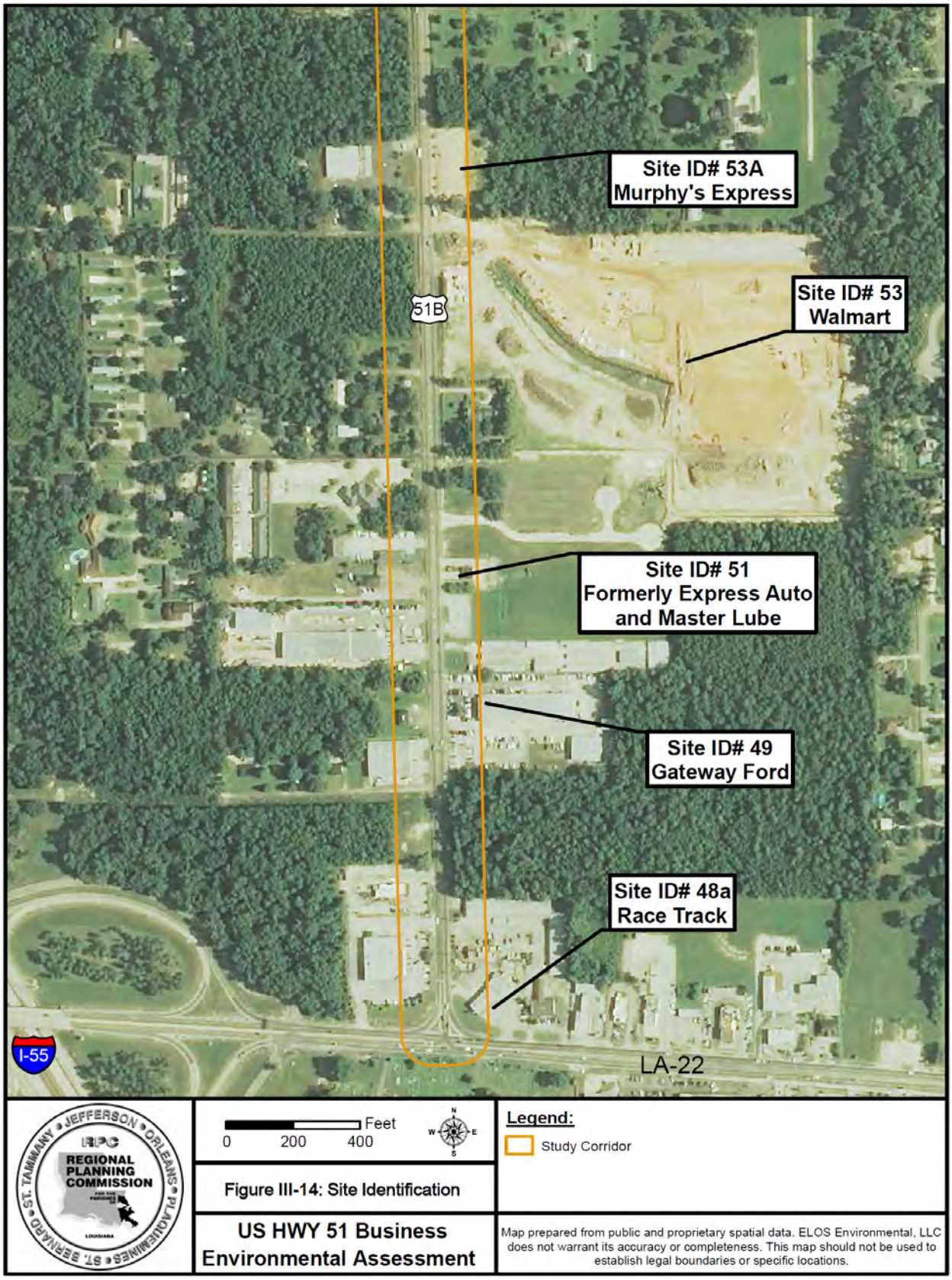
Figure III-11: Site Identification

US HWY 51 Business Environmental Assessment

Map prepared from public and proprietary spatial data. ELOS Environmental, LLC does not warrant its accuracy or completeness. This map should not be used to establish legal boundaries or specific locations.


Site ID# 94
Dominion and Power
51B
Site ID# 92
Christian Life
Assembly of God
Site ID# 91
Hammond Tire
(Abandoned)
Ponchatoula Creek
Bridge
Feet
0
200
400
N
W
E
S
Legend:
Study Corridor
RPC
REGIONAL
PLANNING
COMMISSION
JEFFERSON
ORLEANS
PLAQUEMINES
ST. BERNARD
ST. TAMMANY
LOUISIANA
Figure III-12: Site Identification
US HWY 51 Business
Environmental Assessment
Map prepared from public and proprietary spatial data. ELOS Environmental, LLC does not warrant its accuracy or completeness. This map should not be used to establish legal boundaries or specific locations.


51B
Site ID# 61
Berry Town Cleaners
Site ID# 28
Amerigas
Site ID# 58
Automotive Plus
JEFFERSON • ORLEANS • PLAQUEMINES • ST. BERNARD • ST. TAMMANY
RPC
REGIONAL PLANNING COMMISSION
LOUISIANA
0 200 400 Feet
N
W E
S
Legend:
Study Corridor
Figure III-13: Site Identification
US HWY 51 Business
Environmental Assessment
Map prepared from public and proprietary spatial data. ELOS Environmental, LLC does not warrant its accuracy or completeness. This map should not be used to establish legal boundaries or specific locations.


Site ID# 53A
Murphy's Express
Site ID# 53
Walmart
51B
Site ID# 51
Formerly Express Auto
and Master Lube
Site ID# 49
Gateway Ford
Site ID# 48a
Race Track
I-55
LA-22
0
200
400
Feet
N
W
E
S
Legend:
Study Corridor
Figure III-14: Site Identification
US HWY 51 Business
Environmental Assessment
Map prepared from public and proprietary spatial data. ELOS Environmental, LLC does not warrant its accuracy or completeness. This map should not be used to establish legal boundaries or specific locations.

- AmeriGas Propane (Map ID #15 / Site #28) – Spoke with Mr. Brett Caminita (985-201-4926) who stated that the facility does not presently or has ever contained any underground storage tanks, only contains a 10,000 gallon above ground storage tank for liquid propane (not considered a surface or sub-surface contaminant). Although the facility is listed on the SPILLS database, he was not aware of any spills of petroleum contaminants that have occurred on site.

- Gateway Ford (Map ID #18 / Site #49)– Spoke with Mr. Gregg Waddell, general manager, who stated that the facility does not currently or has ever contained any underground storage tank, but does have one approximately 500 gallon above ground storage tank for waste motor oil that is recycled. He stated that the above ground tank is located approximately 300 feet from the edge of the highway.

- Berry Town Cleaners (Map ID #21 / Site ID #61) – Spoke with Ms. Amanda Piediscalzo, who stated that the current location is a new one having recently moved the business (1 year ago) from its former location at 1070 W. Pine St., and they no longer provide dry cleaning services on site. Clothes requiring dry cleaning are sent to another location at 211 Charles St., Ponchatoula. Therefore, dry cleaning solvents are no longer stored or used on site and to her knowledge no spills have ever occurred at the old location, which is close to the southern project terminus.

- Automotive Plus (Map ID #15 & 18 / Site #58) – Spoke with Mr. Leon Guidry at his office, who has owned and operated a car repair business on the site for 17 years. He is not the property owner; he pays rent to a rental management company. He stated that he believes that a car repair business was operated at the location prior to his occupancy. He stated that there are no underground storage tanks on the property. He also stated that the parts are cleaned with carburetor cleaner, which is stored in a fireproof cabinet. The waste oil collected in the tank is recycled. Solid waste generated by the business is picked up by a private waste management company.

CULTURAL RESOURCES

The consultant team performed a Phase I Cultural Resources Survey for the proposed improvements to U.S. Highway 51 Business (US 51B) in the Hammond-Ponchatoula area, Tangipahoa Parish. The work was undertaken for the Regional Planning Commission (RPC), the Louisiana Department of Transportation and Development (LADOTD), and the Federal Highway Administration (FHWA).

Project Area Description

The project area is located in the Hammond-Ponchatoula area in Section 36 of Township 6 South, Range 7 East (T6S, R7E) and sections 1, 12, 59 of T7S, R7E. The Area of Potential Effect (APE) for the archaeological survey was restricted to the required right-of-way (ROW), combining the three alternatives, associated with the proposed improvements. This is also referred to as the direct APE, as it is the area that

will be impacted directly by construction. The architectural survey included the direct APE and the associated indirect APE consisting of a 250 foot (ft) (76 meter [m]) diameter buffer around the direct APE boundaries. This indirect APE was sufficient to address issues of proximity impacts and property viewsheds.

The project area is a mixed commercial and residential sector on the west side of Ponchatoula.

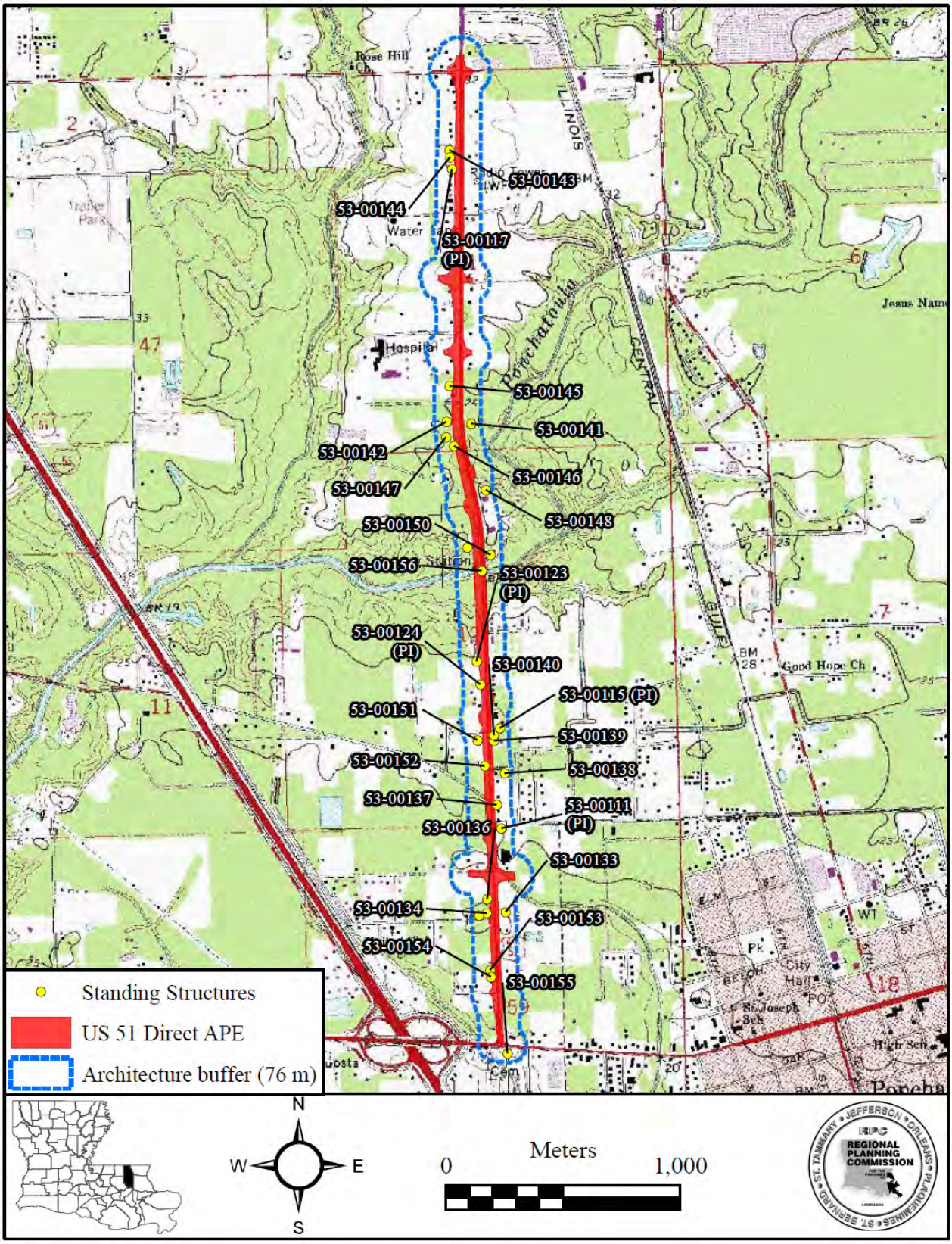
Findings

The architectural survey was completed on March 30, 2016. The archaeological survey was performed on April 4-5, 2016, by one Project Manager, one Assistant Project Manager, and two Archaeological Technicians.

Prior to fieldwork, ESI undertook background research utilizing the files maintained by the Louisiana Divisions of Archaeology (DOA) and Historic Preservation (DHP). This research concentrated on the prior cultural resources investigations and archaeological sites already recorded in the vicinity of the project corridor. Additionally, previously recorded standing structures older than 50 years of age were noted. **Figure III-15**, on the following page, shows the direct APE, 76 meter/250 ft. architectural buffer, and standing structure locations.

Field investigations resulted in the identification of no new archaeological sites. During the architectural survey, a total of 29 standing structures greater than or approaching 50 years of age were documented. Four of the structures are recommended eligible for nomination to the NRHP (36CFR 60.4 [c]). They are all within the indirect APE of the combined alternatives. The circa 1940 Tudor Revival Cottage at 1221 US 51 North (53-00133) is 21 m (69.5 ft) from the combined direct APE of all three alternatives. The circa 1899 center hall cottage at 2450 Southwest Railroad Ave. (53-00142) is 11.5 m (38 ft) from the combined direct APEs. The previously investigated vernacular cottage at 495 Barringer Dr. (PI53-00111) is 16 m (53 ft) from the combined direct APEs. The vernacular cottage at 1210 US 51 North (53-00136) is only 1.2 m (4 ft) from the combined direct APE.

Figure III-15 - Standing Structures, Direct APE, and Architectural Buffer



VISUAL /AESTHETIC CONDITIONS

The study area corridor presents an interesting visual spectrum with developed commercial areas on each end, to more dispersed residential and commercial uses moving towards the center, and containing a mostly wooded floodplain and a creek in the center.

The south side of the corridor begins at the LA 22 intersection, and features considerable low-scale commercial development along with a well-tended cemetery south of LA 22. As the project corridor heads northward, it consists of almost entirely flat land with medium- to low-density residential and some commercial/light industrial development. The majority of the interior of the corridor is also very arboreal, with trees and wooded areas often extending right up to the US 51 Business right-of-way.

Ponchatoula Creek, which divides the two areas, has a low-lying, relatively narrow (about 1/10th of a mile in width) wooded floodplain along its banks, and currently can only be seen in the project corridor from private property and existing bridge crossings at US 51 Business and Ponderosa Drive. The creek itself in the project area is rather nondescript; it is rather small and has been channelized into a relatively straight path in the vicinity of the US 51 Business bridge.

On the northern side of the creek, the land remains generally flat, but is slightly more rolling. Just north of the creek there is medium- to low-density residential and some commercial/light industrial development, which increases in number and scope the further north one travels. The large North Oaks Medical Center is near the northern end of the project corridor. As one approaches the northern project terminus at W. Club Deluxe Road and beyond to the I-12 interchange the vista is much less pastoral and one of nearly complete development, including retail establishments, truck stops, restaurants, motels, businesses and light industrial uses.

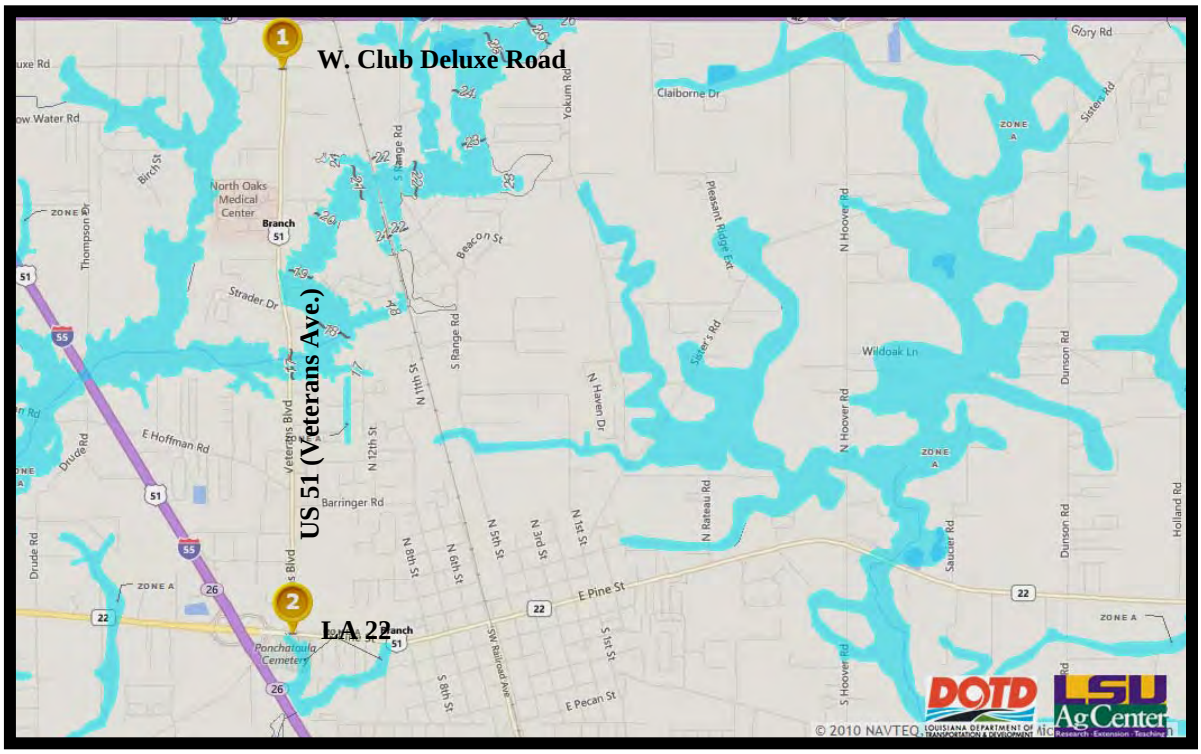
FLOOD PLAINS / FLOOD ZONES

The National Flood Insurance Program (NFIP) was adopted by Congress in 1968 to provide flood insurance to homeowners, renters and business owners. Communities that participate in the NFIP agree to adopt and enforce ordinances meeting or exceeding standards established by the Federal Emergency Management Agency (FEMA) to reduce the risk of flooding. The NFIP regulates development within floodplains for substantial improvements to ensure projects do not present new obstructions to water flows or alter drainage.[7]

Flood Insurance Rate Maps (FIRMs) are official maps on which FEMA has delineated both special flood hazard areas and flood risk zones applicable to a community. FIRMs were examined for Tangipahoa Parish to determine flood risk in the project study area. **Figure III-16**[8] depicts flood zones in the project study area.

[7] *http://www.floods.org/index.asp?menuID+651&firstlevelmenuID=187&siteID=1.*
[8] *www.maps/lsuagcenter.com/floodmaps/?FIPS=22105.*

Figure III-16 - Flood Zones in the Project Study Area



Findings indicate the project study area is primarily composed of Flood Zone "X, shown as unshaded in the figure above, with minimal to moderate risk for flood. The Flood Zone "X" is interspersed with some Flood Zones "A" and AE", shown in blue, which have a high risk for flooding and require mandatory federal flood insurance.

Definitions of the FEMA flood zone designations[9] found in the project study area are as follows:

- "Flood Zone X (unshaded)" is an area of minimal flood hazard, usually depicted as above the 500-year flood level (0.2% chance of flooding in any given year).

- "Flood Zone X (shaded)" is a moderate flood hazard area in the 500-year floodplain, and areas of lesser hazards such as areas protected by levees from a 100-year flood, shallow flooding areas with average depths of less than one foot, or drainage areas less than 1 square mile.

- "Flood Zones AE" and "A" are high risk areas in which mandatory flood insurance is required with a 1% annual chance of flooding (100-year or "base" flood) and a 26% chance of flooding over the life of a 30-year mortgage.

The US 51 Business project improvements may involve construction near high risk flood areas requiring federal, state and local permits.

[9] *https://msc.fema.gov/webapp/wcs/stores/servlet/info?storeId=10001&catalogId=1001&la...*

EXISTING NATURAL ENVIRONMENT

SCENIC RIVERS

The Louisiana Natural and Scenic Streams System of the Louisiana Department of Wildlife and Fisheries (LDWF) does not list any wild and scenic rivers within the project area. Additionally, the United States Geological Survey Maps do not denote any wild or scenic rivers.

WETLANDS

The consultant team prepared a Wetland Finding Report for use in evaluating impacts to wetlands as part of the Stage 1-Environmental Assessment, and to support any future request for jurisdictional determination (JD) and Section 404 of the Clean Water Act (CWA) permit application. The information can be used by the RPC and LADOTD and the engineering team to compare impacts from preliminary alternatives and revise the designs in order to avoid and minimize impacts to wetlands and other waters of the U.S. to the extent practicable.

Field Survey

Preliminary Data Gathering

Prior to conducting fieldwork, project team personnel mapped information sources, depicting the survey corridor, potential wetlands, and potential waters of the U.S. Desktop data reviewed included USGS 7.5-minute topographic map; color DOQQ's from 2008, 2010, and 2013; a modified version of the Tangipahoa Parish Soil Survey; a Digital Elevation Model (DEM); a Hydrologic Unit Map; and National Wetlands Inventory (NWI) maps.

Fieldwork

In January and February 2015, ELOS personnel inspected and made observations along the 260-foot project corridor. Fourteen sample locations were chosen to characterize conditions within this area. At each sample location, vegetation species were recorded and dominance was estimated, soil samples were collected and examined for identification and determination of hydric properties, and observations were made of the hydrologic conditions. Photographs were taken to document site conditions.

Sample locations were taken inside the 260-foot project corridor and were chosen to represent the different plant communities present. A handheld global positioning system (GPS) was used to mark sample locations and delineation boundaries where possible. The corridor boundaries were verified by manually measuring its width in multiple locations and by use of the hand held GPS.

Soils

The soil survey illustrates non-hydric Abita silt loam and hydric Guyton silt loam soils along the project area. Variations of these soil types were found along the survey corridor; however, the soils associated with the roadbed have been altered during construction of US 51. According to the NRCS:

- Abita silt loam is nearly level and somewhat poorly drained, and is found in slightly raised positions of broad stream or marine terraces. It has a dark grayish brown silt loam surface layer of about four inches with a subsoil layer of brownish yellow to light yellowish brown mottled silt loam in the upper part, mottled strong brown, gray, and red silt loam in the middle part, and light brownish gray mottled silt loam in the lower part.

- Guyton silt loam is level and poorly drained, usually found on broad stream terraces. It typically has a five inch surface layer of dark grayish brown silt loam, with a subsurface layer grayish brown mottled silt loam.

Vegetation

The site consists primarily of forested areas, commercial segments, rural/suburban area, and moderately high density residential segments. Vegetation found on the site included: Live oak (*Quercus virginiana*), White oak (*Quercus alba*), American beech (*Fagus grandifolia*), Cherokee rose (*Rosa laevigata*), Dewberry (*Rubus trivialis*), Magnolia (*Magnolia grandiflora*), Sweetgum (*Liquidambar styraciflua*), Yellow thistle (*Cirsium horridulum*), Privet (*Ligustrum sinense*), Blackberry (*Rubus argutus*), Iron wood (*Carpinus caroliniana*), Water oak (*Quercus nigra*), Yaupon (*Ilex vomitoria*), Christmas berry (*Ardisia crenata*), Loblolly pine (*Pinus taeda*), Red maple (*Acer rubrum*), American holly (*Ilex opaca*), Japanese climbing fern (*Lygodium japonicum*), Big leaf greenbriar (*Smilax rotundifolia*), St. Johnswort (*Hypericum hypericoldes*), Broomsedge bluestem (*Andropogon virginicus*), Yellow jessamine (*Gelsemium sempervirens*), American elm (*Ulmus americana*), Dwarf palmetto (*Sabal minor*), Slender woodoats (*Chasmanthium laxum*), Elderberry (*Sambucus nigra*), Redbay (*Persea borbonia*), Marsh flatsedge (*Cyperus pseudovegetus*), Laurel oak (*Quercus laurifolia*), Cypress (*Taxodium distichum*), Black Willow (*Salix nigra*), and Common rush (*Juncus effuses*).

Hydrology

According to the topographic map provided by USGS and the DEM, the subject tract is generally flat between 10 to 15 feet National Geodetic Vertical Datum of 1929 (NGVD). Under the CWA, ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are generally not jurisdictional (http://www.usace.army.mil/cw/cecwo/reg/cwa_guide/cwa_guide.htm).

Based on this stipulation, portions of the roadside ditches along the project corridor are not jurisdictional; however, ditches that drain wetlands are considered wetlands and are

jurisdictional. This area is part of the Tickfaw Watershed (USGS Hydrologic Unit Code [HUC] #08070203) and the Lake Maurepas Watershed (HUC #08070204). Evidence of hydrology is present in areas including high water table, saturated soils, drift deposits, water stained leaves, aquatic fauna, oxidized rhizospheres along living roots, thin muck surface, drainage patterns, and crayfish burrows.

Findings

Evidence observed and documented regarding wetlands in the project corridor indicates that the area proposed for the US 51 Business improvement project contains both wetland and non-wetland areas. Wetlands were identified along both sides of US 51 Business. The bottomland hardwood wetland polygons were found along US 51 Business in a few forested, noncommercial areas. The tree species in these areas consist of *Acer rubrum, Quercus nigra, Quercus laurifolia, Pinus taeda, Quercus virginiana, Liquidambar styraciflua, Magnolia grandiflora, Quercus alba,* and *Fagus grandifolia.*

The sites had hydrology indicators of high water table, saturated soils, drift deposits, water stained leaves, aquatic fauna, oxidized rhizospheres along living roots, thin muck surface, drainage patterns, and crayfish burrows.

The presence of soils with hydric characteristics were confirmed to be present in the sites identified as wetlands during the field delineation.

Accordingly, it was determined that approximately 1.65 acres of wetlands and 0.3 acre of other waters of the U.S. are potentially present within the project corridor.

WATER RESOURCES (SOLE SOURCE AQUIFERS)

According to the U. S. Environmental Protection Agency (EPA), the project area is located on the Southern Hills Aquifer system, which is designated a sole source aquifer by that agency.[10]

SOILS / PRIME FARMLANDS

Soils

Soil surveys conducted for Tangipahoa Parish[11] by the Unites States Department of Agriculture (USDA) Soil Conservation Service in cooperation with the Louisiana Agricultural Experiment Station were analyzed to derive the types of farmland and soil.

Prime farmland is recognized by the USDA in soil surveys to acknowledge land suitability for cultivation, pasture, and woodland but not for urban and built-up land or

[10] *S.O.V. response from Omar Martinez, USEPA, 3-9-2015*
[11] *http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/louisiana/LA105/0/gsm.pdf*

water areas. Conversion of farmlands to urban and industrial uses in some portions of the project study area has put pressure on the development of marginal lands for agricultural purposes, which are generally more erodible, droughty, less productive and not easily cultivated. The suitability of prime farmlands is also described for the project study area.

Soils in the project study area consist of only one soil type, *Guyton-Abita*, which is described as level to gently sloping, poorly drained and somewhat poorly drained, soils that are loamy throughout. This soil type is well-suited for use as woodland and pasture, and moderately well-suited to crops.

Prime Farmland

The construction areas in the project study corridor have been designated as within urban areas by the National Resources Conservation Service, and are therefore exempt from the rules and regulations of the Farmland Protection Policy Act.[12]

FISH AND WILDLIFE CRITICAL HABITAT/ THREATENED AND ENDANGERED SPECIES

Methodology

ELOS Environmental, LLC conducted a Biological Survey Report (BSR) to evaluate the potential effects of the US 51 Business project on the federally listed Threatened and Endangered (T&E) species and species of concern known to occur in or have the potential to occur in Tangipahoa Parish, Louisiana. ELOS conducted a desktop investigation of all federally and state listed T&E species and species of concern within the project corridor collecting data from the LNHP database and other resources and by coordination with US Fish and Wildlife Service (USFWS) and the Louisiana Department of Wildlife and Fisheries (LDWF). The field team then performed a field investigation to look for T&E species and their habitat, as well as rare animals, rare plants, and natural communities of concern in the project corridor.

Findings

Correspondence with agencies indicated that the LDWF determined no impacts to rare, T&E species or critical habitats are anticipated. The USFWS listed the gopher tortoise as the only species of concern in the project corridor. All species of concern identified by FWS and LNHP in the project corridor are discussed below.

ELOS used information collected from the LDWF Species by Parish List to evaluate the federally listed T&E species known to occur in or have the potential to occur in

[12] *S.O.V. response from Kevin Norton, USDA State conservationist, 2-27-2015*

Tangipahoa Parish. **Table III-9** identifies the federal and state ranking and the results from FWS agency correspondence.

Table III-9 - Federally Listed T&E Species

Scientific Name	Common Name	State Rank	State Status	Federal Status	Agency Comments	Potential Impacts
Acipenser oxyrinchus	Gulf sturgeon	S1	T	T	Not identified by FWS or LDWF	No suitable habitat
Gopherus polyphemus	Gopher tortoise	S1	T	T	Identified by FWS per consultation	No suitable habitat
Picoides borealis	Red-cockaded woodpecker	S2	E	E	Not identified by FWS or LDWF	No suitable habitat
Trichechus manatus	Manatee	S1N	E	E	Not identified by FWS or LDWF	No suitable habitat
Haliaeetus leucocephalus	Bald eagle	S3	E	Delisted	Not identified by FWS or LDWF	No suitable habitat
Alosa alabamae	Alabama shad	S1		C	Not identified by FWS or LDWF	No suitable habitat

Key: C = Candidate T = Threatened E = Endangered
Delisted = Delisted under the ESA, but still protected by the Bald and Golden Eagle Protection Act
S1 = Critically imperiled in LA because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation
S2 = Imperiled in LA because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extirpation
S3 = Rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations)
Modifiers B or N may be used as qualifier of numeric ranks and indicating whether the occurrence is breeding or non-breeding (LDWF 2015b)

COASTAL ZONE STATUS

The Louisiana Department of Natural Resources (DNR) is charged with the development of local coastal zone management programs in the 20 existing coastal parishes. Tangipahoa is considered a Coastal Parish. The project corridor is located within the Parish's Coastal Zone boundary.

CHAPTER IV

ENVIRONMENTAL IMPACTS OF THE CONSIDERED ALTERNATIVES AND SELECTION OF PREFERRED ALTERNATIVE

In this chapter, the impacts of the considered alternatives (No Build Alternative and the Build Alternatives) are assessed relative to the evaluation categories of transportation and traffic, human environment, and the natural environment. Impact assessment categories include:

IMPACTS ON TRANSPORTATION AND TRAFFIC

IMPACTS ON THE HUMAN ENVIRONMENT

- Displacements/Relocations
- Environmental Justice
- Neighborhood / Community Cohesion
- Land Use and Zoning
- Access to Community Facilities and Services
- Impacts to Parks and Recreation Facilities
- Historic/Cultural Resources
- Visual/Aesthetic Impacts
- Air Quality Impacts
- Traffic Noise and Impacts
- Construction Period Impacts
- Hazardous and Solid Waste Sites

IMPACTS ON THE NATURAL ENVIRONMENT

- Vegetation
- Wetlands
- Natural and Scenic Rivers
- Threatened and Endangered Species
- Hydrology, Floodplains & Flooding
- Water Quality
- Prime Farmland and Soils

The chapter then provides a comparative analysis between the four alternatives based on their ability to meet the project Purpose and Need as well as the impacts of each, and describes the selection of the Preferred Alternative.

IMPACTS ON TRANSPORTATION AND TRAFFIC

TRAFFIC IMPACTS

As part of the Environmental Assessment, a *Traffic Analysis Report* was completed for the project. Portions of the report are included herein to help describe the traffic-related impacts of the project. The report provided a comprehensive traffic review of the US 51 Business corridor, including automatic traffic volume counts at key intersections, manual peak period turning movement counts at all intersections, driveway counts for all commercial and institutional establishments identified along the corridor, a determination of current Levels of Service (LOS), an analysis of future land use patterns, estimating the 20-year traffic projections (Year 2035) for the study corridor, projections of future LOS, synchro analysis, alternatives analysis and safety analysis.

No Build Alternative

The No Build 20-year traffic projections (i.e. Year 2035 post-development volumes) were obtained by growing the Year 2015 existing traffic volumes by 2.5% for 20 years to obtain post-development peak hour volumes.

Mainline Roadway

Based on the 20-year growth projections, the year 2035 traffic volumes along this corridor are expected to range from 22,382 vpd to 27,837 vpd. A two-lane analysis for the Year 2035 traffic volumes with existing geometry was performed using HCS 2010 software. **Table IV-1** on the following page includes a summary of the two-lane analysis:

TABLE IV-1
YEAR 2035 HCS CAPACITY ANALYSIS (TWO-LANE GEOMETRY)

Roadway Segment	AM		PM	
	v/c	LOS	v/c	LOS
LA 22 to Boudreaux Lane	0.81	E	0.74	E
Fischers Lane to Campbell Lane	0.74	E	0.7	E
Campbell Lane to Barringer Drive	0.69	E	0.63	E
Barringer Drive to E. Hoffman Road	0.79	E	0.68	E
Avalon Villa Drive to St. Patrick's Boulevard	0.77	E	0.64	E
Belle Drive to Medical Arts Drive	0.78	E	0.7	E
Paul Vega Medical Drive to Paul Vega Drive/ Doctors Boulevard	0.76	E	0.7	E
Paul Vega Medical Drive/ Doctors Boulevard to North Oaks Drive	0.67	E	0.77	E
Lamonte Drive to Club Deluxe Road	0.81	E	0.85	E

Table IV-1 demonstrates that with no improvements, all segments of the two-lane divided roadway section is projected to operate at LOS "E", falling short of the required LOS criteria for the US 51 Business corridor under Year 2035 AM and PM peak hour conditions.

Intersections

The future Year 2035 weekday peak hour operations at study intersections were analyzed using Synchro 9 software with the existing roadway geometry and projected Year 2035 traffic volumes. As shown in the **Table IV-2** below, without improvements, many movements at the Study Area intersections will operate at LOS "F" during weekday AM and PM peak hours.

TABLE IV – 2 - NO BUILD ALTERNATIVE - INTERSECTION LEVELS OF SERVICE

INTERSECTION	TRAFFIC CONTROL TYPE	MOVEMENT CLASS		LEVEL OF SEVICE (DELAY)	
				AM	PM
US 51B AT LA 22	**SIGNALIZED**	EASTBOUND	LEFT	E (74.4)	F(95.1)
			THRU	A (8.6)	B(10.0)
			RIGHT	N.A	N.A
			OVERALL	C(26.2)	C(34.6)
		WESTBOUND	LEFT	N.A	N.A
			THRU	F (254.5)	F(464.7)
			RIGHT	N.A	N.A
			OVERALL	F (254.5)	F(464.7)
		SOUTHBOUND	LEFT	C (23.4)	E(73.5)
			THRU	N.A	N.A
			RIGHT	C (20.3)	C(23.1)
			OVERALL	C (22.5)	E(55.3)
		OVERALL		**F(126.8)**	**F(218.4)**
US 51B AT BOUDREAUX LN.	**UNSIGNALIZED**	EASTBOUND		B(14.2)	D(26.6)
		NORTHBOUND	LEFT	A(8.5)	B(12.6)
			THRU	N.A	N.A
		SOUTHBOUND		**N.A****	
		OVERALL		**B(0.1)**	**D(0.1)**
US 51B AT FISCHER LN.	**UNSIGNALIZED**	EASTBOUND		C(19.3)	F(80.6)
		NORTHBOUND	LEFT	A(8.8)	C(20.6)
			THRU	N.A	N.A
		SOUTHBOUND		**N.A****	
		OVERALL		**C(1.5)**	**D(2.5)**
US 51B AT CAMPBELL LN.	**SIGNALIZED**	EASTBOUND	LEFT	N.A	N.A
			THRU	C(24.1)	C(21.6)
			RIGHT	N.A	N.A
			OVERALL	C(24.1)	C(21.6)
		WESTBOUND	LEFT	N.A	N.A
			THRU	C(27.7)	E(65.4)
			RIGHT	C(24.1)	C(22.1)
			OVERALL	C(25.9)	D(51.0)
		NORTHBOUND	LEFT	A(9.7)	B(18.1)
			THRU	F(105.7)	F(203.2)
			RIGHT	A(0.0)	A(0.1)
			OVERALL	F(98.2)	F(181.7)
		SOUTHBOUND	LEFT	C(21.0)	C(26.2)
			THRU	A(8.8)	F(101.3)
			RIGHT	N.A	N.A
			OVERALL	B(10.9)	F(86.9)
		OVERALL		**E(64.6)**	**F(114.7)**
US 51B AT BARRINGER DR.	**UNSIGNALIZED**	WESTBOUND		F(125.6)	F(159.0)
		NORTHBOUND		**N.A***	
		SOUTHBOUND	LEFT	C(15.9)	B(14.7)
			THRU	N.A	N.A
		OVERALL		**E(16.0)**	**D(12.9)**
US 51B AT E. HOFFMAN RD.	**UNSIGNALIZED**	EASTBOUND		F(55.0)	F(430.8)
		NORTHBOUND	LEFT	A(8.8)	C(23.9)
			THRU	N.A	N.A
		SOUTHBOUND		**N.A****	
		OVERALL		**C(6.9)**	**F(34.6)**
US 51B AT BRAUN LN.	**UNSIGNALIZED**	WESTBOUND		D(25.7)	C(22.2)
		NORTHBOUND		N.A	N.A
		SOUTHBOUND	LEFT	B(11.2)	A(9.7)
			THRU	N.A	N.A
		OVERALL		**C(1.1)**	**D(0.6)**

TABLE IV – 2 (continued)
NO BUILD ALTERNATIVE - INTERSECTION LEVELS OF SERVICE

INTERSECTION	TRAFFIC CONTROL TYPE	MOVEMENT CLASS		LEVEL OF SEVICE (DELAY)	
				AM	PM
US 51B AT GREGORIE LN.	UNSIGNALIZED	EASTBOUND		B(12.5)	C(27.3)
		NORTHBOUND	LEFT	A(8.5)	A(12.9)
			THRU	N.A	N.A
		SOUTHBOUND		**N.A****	
		OVERALL		**D(0.2)**	**E(0.3)**
US 51B AT AVALON VILLA DR.	UNSIGNALIZED	WESTBOUND		C(23.9)	C(23.4)
		NORTHBOUND		**N.A***	
		SOUTHBOUND	LEFT	B(11.2)	A(9.5)
			THRU	N.A	N.A
		OVERALL		**C(0.8)**	**D(0.8)**
US 51B AT ST.PATRICK'S BLVD.	UNSIGNALIZED	WESTBOUND		D(33.3)	F(54.3)
		NORTHBOUND		**N.A***	
		SOUTHBOUND	LEFT	B(11.7)	A(9.9)
			THRU	N.A	N.A
		OVERALL		**C(2.6)**	**D(3.4)**
US 51B AT DUBLIN SQ .	UNSIGNALIZED	WESTBOUND		C(20.5)	C(23.3)
		NORTHBOUND		**N.A***	
		SOUTHBOUND	LEFT	B(11.3)	N.A
			THRU	N.A	N.A
		OVERALL		**C(0.3)**	**D(0.1)**
US 51B AT STRADER RD.	UNSIGNALIZED	EASTBOUND		B(13.9)	D(26.3)
		NORTHBOUND	LEFT	A(8.4)	B(12.7)
			THRU	N.A	N.A
		SOUTHBOUND		**N.A***	
		OVERALL		**A(0.5)**	**D(0.4)**
US 51B AT HALBERT LN .	UNSIGNALIZED	WESTBOUND		C(19.5)	A(0.0)
		NORTHBOUND		**N.A***	
		SOUTHBOUND	LEFT	B(11.4)	A(9.2)
			THRU	N.A	N.A
		OVERALL		**C(0.3)**	**C(0.0)**
US 51B AT PONDEROSA DR.	UNSIGNALIZED	WESTBOUND		D(27.9)	C(24.7)
		NORTHBOUND		**N.A***	
		SOUTHBOUND	LEFT	B(11.6)	A(9.4)
			THRU	N.A	N.A
		OVERALL		**C(1.7)**	**D(0.7)**
US 51B AT BELLE DR.	UNSIGNALIZED	EASTBOUND		B(15.4)	F(117.8)
		NORTHBOUND		A(9.0)	C(22.1)
		SOUTHBOUND		**N.A****	
		OVERALL		**A(1.1)**	**D(3.5)**
US 51B AT MEDICAL ARTS DR.	SIGNALIZED	EASTBOUND	LEFT	N.A	N.A
			THRU	D(43.7)	D(40.9)
			RIGHT	D(40.0)	C(32.9)
			OVERALL	D(42.3)	D(37.3)
		WESTBOUND	LEFT	N.A	N.A
			THRU	D(41.0)	C(32.7)
			RIGHT	N.A	N.A
			OVERALL	D(42.9)	D(36.5)
		NORTHBOUND	LEFT	A(4.3)	B(19.9)
			THRU	C(22.3)	B(11.6)
			RIGHT	N.A	N.A
			OVERALL	C(20.9)	B(11.8)
		SOUTHBOUND	LEFT	C(29.3)	A(6.3)
			THRU	A(4.2)	F(117.9)
			RIGHT	N.A	N.A
			OVERALL	A(8.1)	F(117.3)
		OVERALL		**B(16.8)**	**E(75.4)**

TABLE IV – 2 (continued)
NO BUILD ALTERNATIVE - INTERSECTION LEVELS OF SERVICE

INTERSECTION	TRAFFIC CONTROL TYPE	MOVEMENT CLASS		LEVEL OF SERVICE (DELAY)	
				AM	PM
US 51B AT DOCTOR'S BLVD.	UNSIGNALIZED	EASTBOUND	LEFT	C(24.3)	F(74.6)
			THRU	N.A	N.A
			RIGHT	B(14.7)	E(48.3)
			OVERALL	C(18.6)	F(59.8)
		WESTBOUND	OVERALL	C(19.8)	F(449.2)
		NORTHBOUND	LEFT	B(11.3)	C(15.8)
			THRU	N.A	N.A
		SOUTHBOUND	LEFT	B(12.6)	B(10.2)
			THRU	N.A	N.A
		OVERALL		**C(2.0)**	**D(22.0)**
US 51B AT N. OAKS ST.	SIGNALIZED	EASTBOUND	LEFT	N.A	N.A
			THRU	D(42.4)	E(72.9)
			RIGHT	C(30.1)	C(27.6)
			OVERALL	D(37.7)	D(54.7)
		WESTBOUND	LEFT	N.A	N.A
			THRU	D(37.2)	C(31.8)
			RIGHT	N.A	N.A
			OVERALL	D(37.2)	C(31.8)
		NORTHBOUND	LEFT	C(22.9)	C(25.5)
			THRU	B(16.0)	C(24.0)
			RIGHT	N.A	N.A
			OVERALL	B(16.8)	C(24.1)
		SOUTHBOUND	LEFT	A(9.5)	B(14.4)
			THRU	D(46.8)	F(91.5)
			RIGHT	N.A	N.A
			OVERALL	D(44.1)	F(88.0)
		OVERALL		**C(31.9)**	**E(58.0)**
US 51B AT DeMARCO LN.	UNSIGNALIZED	EASTBOUND		C(23.3)	D(29.5)
		NORTHBOUND	LEFT	B(11.4)	B(11.4)
			THRU	N.A	N.A
		SOUTHBOUND		**N.A****	
		OVERALL		**C(0.1)**	**C(0.0)**
US 51B AT LAMONTE DR.	UNSIGNALIZED	WESTBOUND		C(19.1)	C(23.8)
		NORTHBOUND		**N.A***	
		SOUTHBOUND	LEFT	B(10.1)	B(11.2)
			THRU	N.A	N.A
		OVERALL		**C(0.1)**	**C(0.2)**

** LOS not applicable as there in no Eastbound Approach*

*** LOS not applicable as there in no Westbound Approach*

Alternative 1

Under Alternative 1, the following improvements are proposed to be implemented to add physical and operational capacity and accommodate projected traffic growth on the US 51 Business corridor:

- Widen US 51 Business from a two-lane divided roadway with continuous center turning lane to a four-lane divided roadway with a continuous center median (between LA 22 and Club Deluxe Road).
- All side street approaches at Study Area intersections along US 51 Business (unless otherwise specified) will function as right-in/right-out only accesses due to the continuous center median.
- U-turn bays will be provided at multiple locations along US 51 Business in order to accommodate traffic movements across the north-south corridor.
- Install roundabouts at the following intersections:
  - US 51 Business at Campbell Lane
  - US 51 Business at Medical Arts Drive
  - US 51 Business at North Oaks Drive/Medical Center Drive

The weekday peak hour operations at Study Area intersections for the Alternative 1 scenario were analyzed using Sidra 6 software. The comparison of Alternative 1 with the No Build Alternative of these two alternatives shows that Alternative 1 succeeds in improving the capacity and efficiency of the roadway corridor intersections:

TABLE IV-3 - YEAR 2035 CAPACITY RESULT COMPARISON

INTERSECTIONS	INTERSECTION LOS (DELAY)	
	NO BUILD	ALTERNATIVE 1
AM		
CAMPBELL LN.	E (64.5)	A (7.2)
MEDICAL ARTS DR.	B (16.8)	A (7.9)
NORTH OAKS DR./ MEDICAL	C (31.9)	A (6.2)
PM		
CAMPBELL LN	F (114.7)	A (9.8)
MEDICAL ARTS DR.	E (75.4)	A (7.1)
NORTH OAKS DR./ MEDICAL	E (58.0)	A (7.2)

The proposed widening of US 51 Business from a three-lane facility which combines one-way traffic in each direction and a continuous center left-turn lane to four lanes with the aforementioned intersection improvements is expected to accommodate the projected growth in traffic over the next 20 years and maintain the LOS standards for this corridor.

Alternative 2

Under Alternative 2, the following improvements are proposed to be implemented to add physical and operational capacity while also accommodating the projected traffic growth along the US 51 Business corridor:

- Widen US 51 Business from a three-lane facility which combines one-way traffic in each direction and a continuous center left-turn lane to a four-lane median divided roadway with intermittent left-turn and possible U-turn bays (between LA 22 and Club Deluxe Road).
- All side street approaches at Study Area intersections along US 51 Business (unless otherwise specified) will function as right-in/right-out only accesses due to the continuous center median.
- U-turn bays will be provided at multiple locations along US 51 Business in order to accommodate traffic movements across the north-south corridor.
- Upgrade the signal systems to J-Turns at the following intersections:
  - US 51 Business at Campbell Lane (signalized)
  - US 51 Business at Medical Arts Drive (unsignalized)
  - US 51 Business at North Oaks Drive /Medical Center Drive(signalized)

The weekday peak hour operations at Study Area intersections for the Alternative 2 scenario were analyzed using Sidra 6 software. The comparison of Alterntive 2 with the No Build Alternative shows that Alternative 2 succeeds in improving the capacity and efficiency of the roadway corridor intersections:

TABLE IV-4 - YEAR 2035 CAPACITY RESULT COMPARISON

INTERSECTIONS	INTERSECTION LOS (DELAY)	
	NO BUILD	ALTERNATIVE 2
AM		
CAMPBELL LN.	E (64.5)	B (11.0)
MEDICAL ARTS DR.	B (16.8)	A (1.6)
NORTH OAKS DR./ MEDICAL	C (31.9)	B (16.0)
PM		
CAMPBELL LN	F (114.7)	B (11.6)
MEDICAL ARTS DR.	E (75.4)	A (1.7)
NORTH OAKS DR./ MEDICAL	E (58.0)	B (14.6)

Alternative 3

Alternative 3 is a combination of the two previous alternatives. Under Alternative 3, the following improvements are proposed to be implemented to add physical and operational capacity while also accommodating the projected traffic growth along the US 51 Business corridor:

- Widen US 51 Business from a three-lane facility which combines one-way traffic in

each direction and a continuous center left-turn lane to a four-lane median divided roadway with intermittent left-turn and possible U-turn bays (between LA 22 and Club Deluxe Road).

- All side street approaches at Study Area intersections along US 51 Business (unless otherwise specified) will function as right-in/right-out only accesses due to the continuous center median.
- U-turn bays will be provided at multiple locations along US 51 Business in order to accommodate traffic movements across the north-south corridor.
- Install roundabouts at the following intersections:
  - US 51 Business at Campbell Lane
  - US 51 Business at North Oaks Drive/Medical Center Drive
- Upgrade the signal systems to J-Turns at the following intersection:
  - US 51 Business at Medical Arts Drive (unsignalized)

The weekday peak hour operations at Study Area intersections for the Alternative 3 scenario were analyzed using Sidra 6 software. The comparison of Alternative 3 with the No Build Alternative shows that Alternative 3 succeeds in improving the capacity and efficiency of the roadway corridor intersections:

TABLE IV-5 - YEAR 2035 CAPACITY RESULT COMPARISON

INTERSECTIONS	INTERSECTION LOS (DELAY)	
	NO BUILD	ALTERNATIVE 3
AM		
CAMPBELL LN.	E (64.5)	A (7.2)
MEDICAL ARTS DR.	B (16.8)	A (1.6)
NORTH OAKS DR./ MEDICAL	C (31.9)	A (6.2)
PM		
CAMPBELL LN	F (114.7)	A (9.8)
MEDICAL ARTS DR.	E (75.4)	A (1.7)
NORTH OAKS DR./ MEDICAL	E (58.0)	A (7.2)

Safety Benefits

As part of the *Traffic Analysis Report,* a crash analysis was performed along US 51 Business between LA 22 and Club Deluxe Road in accordance with Guidelines for Crash Data Analysis (DOTD, 2014). The effort entailed:

- Obtaining and reviewing crash reports from the DOTD for years 2013 and 2014.
- Segregating the reports by selected intersections.
- Determining the crash type, pavements surface conditions, lighting conditions and whether alcohol was a factor.
- Displaying the crash trends in charts and comparing them to applicable statewide averages in accompanying tables in terms of crash type, pavements

surface conditions, lighting conditions and whether alcohol was a factor. For analysis purposes, the intersections were designated as “Urban Three-Lane” based on the existing lane configuration.

- Calculating intersection crash rates.

Results

In general, most of the crashes are rear-end during daylight, with dry pavement conditions, where alcohol was not a factor. The highest percentage of crashes is rear-end at LA 22, Campbell Ln., North Oaks Dr. and Lamonte Dr. Left-turn crashes are the most common at the LA 22 intersection.

Based on worksheets for existing and future completed as part of the crash analysis:

- The total number of crashes have the potential to be reduced by the proposed improvements.
- The existing number of crashes expected was approximately 36, with property damage crashes being 22.
- Expected crashes after improvements is estimated to be 22, with property damage crashes being 15.

While the average number of crashes did exceed the number of expected crashes, the number of future crashes is expected to be reduced by approximately a third. The additional travel lane, left turn bay at U-turns, restriction at some intersections with right-in and right-out only should reduce the number of rear-end crashes which are the majority of the type of crashes along this corridor. The placement of roundabouts at three intersections would also reduce the severity of crashes.

POTENTIAL TRUCK TRAFFIC IMPACTS

No Build Alternative

The No Build Alternative will maintain the status quo relative to truck traffic.

Build Alternatives

The Build Alternatives should better accommodate truck traffic than the highway does currently. Trucks tend to accelerate slower than standard automobiles, which on a two lane road can add to congestion. By adding a second travel lane in each direction, cars can pass slower accelerating trucks allowing all traffic to flow better along the roadway.

POTENTIAL RAIL AND TRANSIT IMPACTS

No Build Alternative

No adverse impacts in the US 51 Business project corridor are anticipated in the No Build Alternative.

Build Alternatives

No rail lines are present in the US 51 Business project corridor. Consequently, none of the build alternatives will have a detrimental impact on these services.

The Tangipahoa Public Transportation (TPT) service which offers service and regular stops along US 51 Business, will benefit from reduced congestion and better traffic flow (along with the rest of vehicular traffic) via the capacity and intersection improvements.

POTENTIAL IMPACTS TO BICYCLE AND PEDESTRIAN FACILITIES

No Build Alternative

The US 51 Business corridor currently does not contain bicycle and pedestrian access. No adverse impacts are anticipated with the No Build Alternative.

Build Alternatives

The build alternatives for the US 51 Business project corridor will have a positive impact on bicycle and pedestrian access, by including a Complete Streets typical section with bicycle lanes and sidewalks in each direction. Pedestrians and bicycles alike will have a safe and complete route extending from LA 22 to W. Club Deluxe Road.

IMPACTS ON THE HUMAN ENVIRONMENT

DISPLACEMENTS/RELOCATIONS

Legal Requirements

Various federal statutes have been enacted to establish a uniform policy for the fair and equitable treatment of persons displaced, and from whom land is acquired as a result of programs designed and funded for the benefit of the public as a whole. Some of the applicable laws that guide government actions for acquisitions, displacements and relocations are:

- 49 CFR Part 24, Department of Transportation implementing regulations for: "The Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970," as amended.
- National Environmental Policy Act of 1969 (NEPA)

These laws provide for a process that is fair and requires practical and financial assistance in helping individuals and businesses transition into a comparable situation. Any private property acquisition required for this project would be in compliance with the identified laws and statutes.

For housing units, these laws require that replacement housing must be "decent, safe and sanitary" and must be functionally equivalent to the number of rooms, living space, location, and general improvements of the displaced units. Replacement dwellings must also meet all of the minimum housing requirements established by federal regulations and conform to occupancy codes.

Relocation benefits may also be available for businesses, farms, and non-profit organizations. Payment may be made for:

- Moving costs
- Tangible personal property loss as a result of relocation or discontinuance of an operation
- Re-establishment expenses
- Costs incurred in identifying a replacement site

Businesses, farms or non-profit organizations may be eligible for fixed payments in lieu of moving and reestablishment costs.

No Build Alternative

Under the No Build alternative, existing conditions would be maintained. The No Build Alternative would not require any displacements or relocations and, thus, would not result in any direct or indirect impact(s) to the study area. In addition, no property acquisitions would be required with the No Build Alternative.

Build Alternatives

All three build alternatives will displace an estimated five (5) families with an average number of four (4) members. Indications are that all displaced families are of low-medium to medium income range and it does not appear that any of those to be displaced are of a minority race. It is believed that all of the families anticipated to be displaced, with the exception of possibly one (1), are owner occupants. Estimated values of the residences range from $30,000 to $220,000 with an average being $130,000. All but one of the residences are of frame construction while one is brick veneer. All residences appear to be well maintained and it is believed that all meet decent, safe, and sanitary standards. It is estimated that eight (8) businesses and three

(3) on-premise signs will be displaced under Alternatives 1 and 3. Under Alternative 2, it is estimated that eight (8) businesses and two (2) on-premise signs will be displaced.

No special or unusual conditions have been identified. No discussions have been held with local officials or community groups regarding potential displacements. It is anticipated that there is adequate housing available for the potential displaced occupants, and in some cases there may be adequate room on remainder property upon which they may choose to relocate.

ENVIRONMENTAL JUSTICE

Background[1]

Environmental justice policy was established in 1994 by Executive Order 12898, which required federal agencies to identify and address disproportionately high and adverse human health or environmental effects of programs, projects and activities on minority and low income populations in the United States.

In 2012, the United States Department of Transportation (DOT) and the Federal Highway Administration (FHWA) adopted order numbers 5610.2(a) and 6640.23A, respectively, updating and clarifying environmental justice procedures. Environmental justice is required to be incorporated early in the development of the programs, policies or activities to identify the risk of discrimination and disproportionately high and adverse effects on minority and low income populations so that positive corrective action can be taken. Under these orders, analysis of environmental justice issues will consider:

- Examination of environmental, public health and interrelated social and economic effects of programs, policies and activities.

- Mitigation and enhancement measures and potential offsetting benefits to the affected minority and low income populations will be taken into account in determining whether a particular program, policy or activity will have disproportionately high and adverse effects.

- Solicitation of public involvement opportunities including affected minority and low income populations in considering alternatives.

- Consideration of alternatives to proposed programs, policies and activities that would avoid, minimize and/or mitigate disproportionately high and adverse environmental or public health effects and interrelated social and economic effects.

- Programs, policies and activities that are determined to have disproportionately high and adverse effects on minority and low income populations will only be carried out if:

[1] *http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/order_56102a/inde...*

1. A substantial need for the program, policy or activity exists based on the overall public interest.

2. Further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effects are not practicable. In determining whether a mitigation measure or alternative is practicable, the social, economic (including costs) and environmental effects of avoiding or mitigating the adverse effects will be taken into account.

3. Alternatives that would have less adverse effects on these populations have severe adverse social, economic, environmental or human health impacts.

4. Alternatives that would have less adverse effects on these populations involve increased costs of an extraordinary magnitude.

Methodology

The methodology employed in this section conforms to DOT and FHWA environmental justice policies in analyzing the US 51 Business project in relation to potential disproportionate adverse impact to the minority and low-income population in the study area ("low income" is defined as a population whose median household income is at or below the Department of Health and Human Service poverty guidelines).

As noted previously in the section on Socio-Economic Data, the US 51 Business project study area contains 1 census tract in Tangipahoa Parish. The key demographic elements measured in relation to environmental justice are race and poverty status.

This analysis examines key demographic indicators for race and poverty status in the project study area to ascertain if the proposed project raises any issues relative to environmental justice as follows:

- Race
- Educational attainment
- Median household income
- Households with cash public assistance
- Households with food stamp / Supplemental Nutrition Assistance Program (SNAP)

Findings

Table IV-6 looks at percentages of the racial groups by census tract in the project study area. The data on race indicate no concentrations of minority groups in the project study area. The project study area contains a variety of races, primarily “White” with percentages for Black or African American and Hispanic or Latino similar to state levels.

Table IV-6 - Race and Population in the Project Study Area

	Project Study Area (Census Tract 9545.01)	% of Study Area	State of Louisiana	% of State
White	3,287	62%	2,836,192	63%
Black or African-American	1,671	32%	1,452,396	32%
Hispanic or Latino	176	3%	192,560[2]	4%
Asian	64	1%	70,132	2%
American Indian and Alaska Native	17	0.3%	30,579	1%
Native Hawaiian and Other Pacific Islander	1	0.02%	1,963	0.04%
Some Other Race	13	0.2%	69,227	2%
Two or More Races	72	1%	72,883	2%
Total	**5,301**	**100%**	**4,533,372**	**100%**

Table IV-7 examines educational attainment in the project study area by census tract in the project study area and Louisiana. The percentage of high school graduates or higher in the project study area is in line with state totals, as is the percentage of the population with a bachelor degree or higher. Census Tract 9545.01 has slightly higher percentages than the state totals in educational attainment.[3]

Table IV-7 - Educational Attainment in the Project Study Area

Subject	Project Study Area (Census Tract 9545.01)	Louisiana Total
Population 25 years and over	3,318	3,010,828
Less than 9th grade	2.70%	6.10%
9th to 12th grade, no diploma	10.60%	11.10%
High school graduate (includes equivalency)	29.30%	33.90%
Some college, no degree	23.90%	21.40%
Associate's degree	6.40%	5.30%
Bachelor's degree	17.80%	14.70%
Graduate or professional degree	9.30%	7.40%
Percent high school graduate or higher	**86.70%**	**82.80%**
Percent bachelor's degree or higher	**27.10%**	**22.10%**

Table IV-8 analyzes the median household income and the number of households receiving cash public assistance and food stamp/SNAP benefits by census tract. The average median household income in the project study area is lower than state levels. 13.19% percent of the households in the project study received cash assistance or

[2] *The Hispanic or Latino category consists of any race and is not included in the total population for Louisiana.*

[3] *U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates were the source for educational attainment, income and public assistance levels.*

Food Stamps/SNAP area over the last twelve months, slightly less than the state percentage. Similarly, the percentage of families in the project study area with income below the poverty level is 13%, slightly less the state average.

Table IV-8 - Income and Poverty in the Project Study Area

	Project Study Area (Census Tract 9545.01)	Louisiana Total
Number of Households	2,221	1,718,876
Median Household Income	$37,714	$44,991
Households With Cash Public Assistance or Food Stamps/SNAP	293 (13.19%)	287,604 (17%)
Percentage of Families with Income Below the Poverty Level	13.00%	15.10%

In conclusion, key factors for race, educational attainment, income and poverty analyzed in the project study area do not indicate a disproportionate potential impact of the proposed project on minority and low-income residents. Following is a summary of the environmental justice analysis:

- Minority and ethnic populations generally mirror state levels and do not indicate large concentrations of such populations in the project study area.

- Educational attainment is similar to the state with the highest education achieved in the project study area at the high school level.

- Income and poverty in the project study area are mixed, with household income less than the state average. However, households with public assistance and living below the poverty level are at slightly less levels than the state average.

US 51 Business is semi-rural in nature with commercial structures and vacant land bordered by low-density residences. Consequently, adverse project impacts from the project alternatives are not anticipated to disproportionately impact minority or low-income populations in the project study area.

NEIGHBORHOOD AND COMMUNITY COHESION

The study area consists largely of medium-density to low-density residential development and commercial development, along with assorted public uses. Neighborhood and community cohesion in these areas is more in terms of area-wide cohesion or sense of city or regional community, rather than on a “neighborhood” basis. However, within the corridor, there are some distinct subdivisions and housing developments, each of which has a sense of neighborhood identity and cohesion.

No Build Alternative

Neighborhood and community cohesion in the project study area will not be adversely impacted by the no build alternative.

Build Alternatives

Neighborhood and community cohesion in the project study area is defined by its semi-rural character with US 51 Business serving the area as a main roadway for access and egress, as well as a location for commercial and other services. The three build alternatives are not anticipated to adversely affect the neighborhood and community cohesion in the study area. While the addition of two (2) lanes to existing US 51 Business does create a wider distance between the two residential sides of the highway, the overwhelming majority of residential neighborhoods are in subdivisions or housing developments on one side of the highway, and widening should not affect cohesion within those subdivisions.

LAND USE AND ZONING

No Build Alternative

The No Build Alternative will not impact the land use and zoning in the project study area.

Build Alternatives

The Build Alternatives are not anticipated to adversely impact the land use and zoning in the project study area.

In the Hammond portion of the project area, the *Hammond Comprehensive Master Plan*[4] is a guiding force covering land use, zoning, connectivity and future development in the project study area and beyond:

- "Ensure that future development preserves and enhances existing neighborhoods, encourages a high-quality mix of uses in a traditional neighborhood form; respects the natural environment and agricultural areas; and discourages sprawl development.
- Encourage sustainable design that enhances and expands the existing community character and identifies Hammond as a special place.
- Provide sage and convenient mobility and support a multi-modal transportation system that provides linkages to neighborhoods, schools and other community facilities and uses; at the same time the city will efficiently provide for and equitably fund quality infrastructure facilities.

[4] *www.hammond.org/wp-content/uploads/2013/01/masterplan.pdf.*

- Identify and foster opportunities for expanded cooperation with the Parish, including intergovernmental and annexation agreements, to manage growth, promote economic development, create gateways that impart a positive image of the city, and form a rational city pattern.
- Provide community services and facilities that meet the physical, educational, economic, and recreational needs of all segments of Hammond's community."

In terms of zoning, the project corridor in Hammond is zoned commercially and in a special hospital district intended to protect the operations of the North Oaks Medical Center, facilitate its expansion and insure compatible development. No major development is anticipated in the project study area at the time of this writing[5].

The City of Ponchatoula does not currently have a master plan. The majority of the project corridor is zoned commercial with some Agriculture-Rural (A-R), which supports rural commercial and residential. Major development expected in the next year in the project study area involves the "Pine Island" subdivision, a large single family residential development located off of Ponderosa Drive which has just opened a Phase 2, with Phase 3 to follow[6].

In general and in the long term, the enhanced access provided by a four-lane facility may provide impetus to further development of vacant areas along the US 51 Business corridor, both commercial uses and residential subdivisions.

ACCESS TO COMMUNITY FACILITIES & SERVICES

Community facilities and services define a community and further characterize its cohesion and sense of place. A vital factor in the utilization of these facilities and distribution of services is their access.

No Build Alternative

While the No Build alternative is not anticipated to adversely impact access to community facilities and services, conversely it will not contribute to enhancing service levels of the road network or improving through traffic to community facilities and services outside of the study area. The No Build Alternative will not improve access to public facilities and services.

Build Alternatives

The development of any of the three Build Alternatives is expected to have a positive impact on access to community facilities and services. By improving local and regional access, residents and businesses will be better able to reach necessary facilities and services. Additionally, emergency vehicle access, including fire and police response

[5] *City of Hammond, LA City Planner Mr. Josh Taylor, November 18, 2015.*
[6] *City of Ponchatoula Department of Zoning, November 20, 2015.*

and emergency medical service to trauma medical facilities at North Oaks Medical Center, will be enhanced.

The Proposed Action would also provide quicker and safer access to area amenities, such as parks, playgrounds, other recreation facilities and services, and community centers. Those amenities are vital to the quality of life a community needs to sustain itself.

IMPACTS TO PARKS AND RECREATION FACILITIES

No Build Alternative

The No Build Alternative is not anticipated to adversely impact parks and recreation facilities in the US 51 Business project corridor.

Build Alternatives

The Build Alternatives are not anticipated to adversely impact parks and recreation facilities in the US 51 Business project corridor. The project improvements will likely enhance access to parks and recreation facilities in the area.

HISTORIC / CULTURAL RESOURCES

No Build Alternative

The No Build Alternative would have no impact on the historic/cultural resources of the project area.

Build Alternatives

An archaeological survey was conducted of the proposed alternatives rights-of-way in 2016. No archaeological sites were recorded, and field investigations resulted in the identification of no new archaeological sites. Therefore, none of the build alternatives would have any impact on any archaeological sites.

An architectural survey was completed in March 2016 and previously recorded standing structures older than 50 years of age were noted. There are four structures that demonstrate qualities suggesting eligibility for nomination to the National Register of Historic Places (NRHP) in the indirect Area of Potential Effect (APE). These are a Tudor Cottage at 1221 US 51 Business North (53-00133), a vernacular cottage 1210 US 51 Business North (53-00136), a vernacular cottage at 495 Barringer Dr. PI53-00111, and a vernacular cottage at 2450 Southwest Railroad Ave. (53-00142). None of the structures that appear to be eligible for nomination to the NRHP are in the direct APE of any alternative.

The circa 1940 Tudor Revival Cottage at 1221 US 51 Business North (53-00133) is 21 m (69.5 ft) from the combined direct APE of all three alternatives. The circa 1899 center hall cottage at 2450 Southwest Railroad Ave. (53-00142) is 11.5 m (38 ft) from the combined direct APEs. The previously investigated vernacular cottage at 495 Barringer Dr. (PI53-00111) is 16 m (53 ft) from the combined direct APEs. The vernacular cottage at 1210 US 51 Business North (53-00136) is only 1.2 m (4 ft) from the combined direct APE. Since the structures are all in the combined indirect APE, no direct adverse effects to the structures are foreseen. Further, the viewsheds of 53-00133, 53-00142, and PI53-00111 will not be impacted because they are a sufficient distance from the combined direct APEs and any new work is occurring in the general corridor of a roadway that has existed for over 50 years. Additionally, the structures all have a buffer of green space or vegetation around the house that shields them from the roadway.

Alternatively, the close proximity of 53-01136 to the direct APE is of concern. The cottage is located in the indirect APE approximately 1.2 m or 4 feet from the edge of the proposed new right of way line. Due to the short distance from the direct APE, Earth Search advises that any damage to 53-01136, including vibrations during construction and/or increased vibrations associated with increased proximity be avoided. The existing road has been in front of the house for such a length of time that work in the existing roadbed should not harm the viewshed. However, as the corridor of the road is being moved closer to the cottage in this location there is concern over how the proximity will impact the viewshed. The residence currently is separated from the road by a small yard, shrubbery, and trees. If some of the vegetation could possibly be avoided or replaced to provide a buffer from the highway then there will be no adverse effect to the viewshed. If avoidance is not possible, consultation among the RPC, LADOTD, FHWA, and SHPO to develop appropriate mitigation measures is recommended. Such measures could include vibration analysis and reduction, as well as maintaining a vegetative screen between the roadway and the structure, or even physically moving the structure further back on the parcel it rests on.

VISUAL / AESTHETIC IMPACTS

No Build Alternative

Under the No Build Alternative, there will be little if any visual and aesthetic impacts related to the completion of some planned projects and projects under construction, as most of these are not in the vistas or sightlines of the area of primary impact.

Build Alternatives

The construction of any of the Build Alternatives would have a limited visual / aesthetic impact on the project area.

The project involves widening of an existing two-lane highway for all build alternatives, so visual/aesthetic impacts would be minimal. Some commercial buildings may be removed along with several residential buildings along the highway. The appearance of

the corridor will be a bit wider and expansive, as those areas with trees and wooded areas extending right up to the US 51 Business right-of-way will be cut back to accommodate the widened highway right-of-way.

AIR QUALITY IMPACTS

This section summarizes the results of an analysis of the potential air quality effects of the project. The purpose of this analysis is, first, to address the potential for the project to affect air quality standards including transportation conformity requirements; and second, to address the potential Mobile Source Air Toxics (MSATs) effects of the project.

National Ambient Air Quality Standards (NAAQS)

The United States Environmental Protection Agency (EPA) has established allowable concentrations and exposure limits called the National Ambient Air Quality Standards (NAAQS) for various "criteria" pollutants. These pollutants include carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), sulfur oxides (SO_x), and lead (Pb).

In accordance with the Clean Air Act Amendments of 1990 (CAAA of 1990), EPA identified those areas that did not meet the NAAQS for the criteria pollutants and designated them as "nonattainment" areas. Once a nonattainment area meets the NAAQS, it is redesignated as a "maintenance" area.

Tangipahoa is currently in attainment of air quality standards as established in the Clean Air Act.

Transportation Conformity

Transportation conformity is a process required of Metropolitan Planning Organizations (MPOs) pursuant to the Clean Air Act Amendments of (CAAA) of 1990. CAAA require that transportation plans, programs, and projects in nonattainment or maintenance areas that are funded or approved by the Federal Highway Administration (FHWA) be in conformity with the State Implementation Plan (SIP), which represents the State's plan to either achieve or maintain the NAAQS for a particular pollutant.

The proposed project is not located in a non-attainment area, so transportation conformity does not apply to this project

Carbon Monoxide (CO)

Transportation projects have the potential to affect air quality by changing the number of vehicles at specific locations. Tailpipe emissions from vehicles could result in increases in ambient concentrations of carbon monoxide (CO) near the project.

Carbon monoxide (CO) is a colorless, odorless gas that interferes with the delivery of oxygen to a person's organs and tissues. The health effects of CO exposure depend on the duration and intensity of exposure as well as a person's health. CO concentrations are usually higher during the winter months because vehicles emit higher CO emissions in cold weather due to the characteristics of internal combustion engines.

The state of Louisiana is in attainment statewide for CO. Project CO concentrations are not anticipated to cause or contribute to an exceedance of the CO NAAQS.

Mobile Source Air Toxics (MSATs)

On February 3, 2006, FHWA released "*Interim Guidance on Air Toxic Analysis in NEPA Documents."* The purpose of this guidance is to advise on when and how to analyze Mobile Source Air Toxics (MSATs) in the NEPA process for highways. This guidance is interim because MSAT science is still evolving. As the science progresses, FHWA will update the guidance.

A qualitative analysis of the potential MSAT emissions impacts of this project was completed in accordance with this Interim Guidance.

Technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions. The qualitative assessment presented below has been prepared in accordance with FHWA's Interim Guidance derived in part from a study conducted by the FHWA entitled *"A Methodology for Evaluating Mobile Source Air Toxic Emissions among Transportation Project Alternatives."*

FHWA's Interim Guidance groups projects into the following categories:

- Exempt Projects or Projects with no Meaningful Potential MSAT Effects;
- Projects with Low Potential MSAT Effects; and,
- Projects with Higher Potential MSAT Effects.

Examples of projects with low potential MSAT emissions include minor widening projects and new interchanges, such as those that replace a signalized intersection on a surface street, or where design year traffic projections are less than 140,000 to 150,000 annual average daily traffic (AADT).

The Build Alternatives include the widening of US 51 Business and meet the definition of a project with low potential MSAT effects as the highest design year AADT on US51 is substantially lower than the FHWA criterion and therefore a qualitative analysis is appropriate.

For the No-Build and Build Alternatives, the amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such

as fleet mix are the same for each alternative. On a roadway network, system-wide basis the expected VMT for the Build Alternatives will be higher than the VMT for the No-Build Alternative because of the increased vehicle traffic; however, the project will create shorter trip lengths and shorter trip times. Therefore, it is expected that there would be no appreciable difference in overall MSAT emissions between the No-Build and Build Alternatives.

Additionally, travel speeds for the Build Alternative will be higher than for the No-Build Alternative. According to EPA's MOVES emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases will offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent from 2000 to 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated for the Build Alternative will have the effect of moving some traffic closer to nearby homes and churches; therefore, under the Build Alternative there may be localized areas where ambient concentrations of MSATs could be higher than under the No-Build Alternative. However, as discussed above, the magnitude and the duration of these potential increases compared to the No-Build Alternative cannot be accurately quantified due to the inherent deficiencies of current models.

In sum, when a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No-Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Substantial construction-related MSAT emissions are not anticipated for this project as construction is not planned to occur over an extended building period. However, construction activity may generate temporary increases in MSAT emissions in the project area.

TRAFFIC NOISE AND IMPACTS

A study has been prepared in accordance with the FHWA noise standards, *Procedures for Abatement of Highway Traffic and Construction Noise*, *23 CFR 772* and the

Louisiana Department of Transportation and Development (LADOTD) *Highway Traffic Noise Policy*, revised in 2011. The noise analysis included the following tasks:

1. Identification of noise-sensitive areas and associated receptors (discrete or representative locations in an NSA for the land uses listed in 23 CFR 772) within 500 feet of the project;
2. Determination of existing sound levels at selected receptors to characterize the existing noise environment in the project area;
3. Prediction of future sound levels with and without the project at the receptors;
4. Determination of impacted receptors;
5. Evaluation of noise abatement for impacted areas;
6. Discussion of construction noise; and
7. Coordination with local officials.

Traffic Noise Terminology

Traffic noise levels are expressed in terms of the hourly, A-weighted equivalent sound level in decibels (dBA). A sound level represents the level of the rapid air pressure fluctuations caused by sources such as traffic that are heard as noise. A decibel is a unit that relates the sound pressure of a noise to the faintest sound the young human ear can hear. The A-weighting refers to the amplification or attenuation of the different frequencies of the sound (subjectively, the pitch) to correspond to the way the human ear "hears" these frequencies.

Generally, when the sound level exceeds the mid-60 dBA range, outdoor conversation in normal tones at a distance of three feet becomes difficult. A 9-10 dBA increase in sound level is typically judged by the listener to be twice as loud as the original sound while a 9-10 dBA reduction is judged to be half as loud. Doubling the number of sources (i.e., vehicles) will increase the hourly equivalent sound level by approximately 3 dBA, which is usually the smallest change in hourly equivalent A-weighted traffic noise levels that people can detect without specifically listening for the change.

Because most environmental noise fluctuates from moment to moment, it is standard practice to condense data into a single level called the equivalent sound level (L_{eq}). The L_{eq} is a steady sound level that would contain the same amount of sound energy as the actual time-varying sound evaluated over the same time period. The L_{eq} averages the louder and quieter moments, but gives much more weight to the louder moments in the averaging. For traffic noise assessment purposes, L_{eq} is typically evaluated over the worst one-hour period and is written as $L_{eq}(h)$.

Criteria for Determining Impacts

Noise impacts are determined by comparing future "design year" project worst-hour $L_{eq}(h)$ values at areas of frequent human use to: (1) a set of Noise Abatement Criteria (NAC) for different land use categories, and (2) existing $L_{eq}(h)$ values. The FHWA noise standards (23 CFR 772) and DOTD's noise policy state that when traffic noise impacts have been identified, then noise abatement should be considered.

Table IV-9 below shows the land uses that are classified as Activity Categories A - G and the corresponding NAC.

Specifically, a receptor is impacted in either of two ways:

1. The predicted, worst hour, design year $L_{eq}(h)$ approaches or exceeds the NAC, even if there is not a substantial increase over the existing levels. "Approach" is defined by DOTD as 1 dBA less than the appropriate NAC. As an example, the NAC for Activity Category B and C land uses is 67 dBA. An impact would occur if the design year $L_{eq}(h)$ is predicted to be 66 dBA or higher at a point of frequent exterior human use for a land use in either category.

2. The predicted, worst hour, design year $L_{eq}(h)$ exceeds the existing $L_{eq}(h)$ by 10 dBA or more, even if the NAC is not approached or exceeded.

Table IV-9 - Noise Abatement Criteria in 23 CFR 772

Activity Category	***Activity $L_{eq}(h)$***	***Evaluation Location***	***Activity Description***
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.
B[1]	67	Exterior	Residential
C [1]	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.
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.
E [1]	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
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.
G	–––	–––	Undeveloped lands that are not permitted.

[1] *Includes undeveloped lands that are permitted for this activity category.*

Identification of Noise Sensitive Receptors

A review of available electronic mapping as well as field reconnaissance identified residences on both sides of US51. A total of 161 single family residences, apartments, mobile home trailers or RVs were found within 500 feet of the proposed edge of roadway. The NAC for Activity Category B will apply to these noise-sensitive land uses. Noise impacts will be identified and noise abatement will be evaluated if future sound levels are 66 dBA or higher, or if an increase of 10 dBA or more is predicted over existing sound levels.

Also within 500 feet of the project with an exterior use is the Christian Life Assembly of God playground. The NAC for Activity Category C will apply to this noise-sensitive land use. Noise impacts will be identified and noise abatement will be evaluated if future sound levels are 66 dBA or higher, or if an increase of 10 dBA or more is predicted over existing sound levels.

The interior NAC for Activity Category D applies to several medical facilities along the project as well as the Jehovah's Witness Church Kingdom Hall (which has no exterior use areas). Noise impacts will be identified if interior sound levels are 51 dBA or higher, or if an increase of 10 dBA or more is predicted over existing sound levels.

There are several tracts of undeveloped Activity Category G lands along the project. These undeveloped lands are not noise-sensitive and have not been included in the noise analysis. However, noise impacts could occur in the future if noise-sensitive land uses are constructed near US51. A discussion of future sound levels and the need for noise-compatible land use planning is provided later in this section.

Several commercial land uses (potential Activity Category E uses) were noted during the field reconnaissance, however, since none of these commercial properties had exterior uses they were not included as part of this study.

Under most situations, a single building structure is considered a single receptor. Structures that contain multiple residential units are considered to have one receptor per residential unit.

Measurement of Existing Sound Levels

Noise measurements were conducted at several DOTD approved noise-sensitive land uses in the project area on April 29-30, 2015. **Table IV-10** summarizes the measured equivalent sound levels at each of the measurement locations. The figures in Appendix C show the noise measurement locations. The individual locations' noise measurement results are provided in Appendix A.

Short-term noise measurements at these locations were conducted by making a series of consecutive measurements in one-minute intervals for at least 15 minutes at each site during both a peak and an off-peak traffic period. Background noises (i.e., local traffic, dog barking, sirens, etc.) during these measurements were noted, and the

corresponding one-minute measurement intervals were eliminated from the calculation of the measured sound level for the overall measurement period.

As indicated in **Table IV-10** below the existing sound levels at the exterior measurement locations were between 59 dBA and 62 dBA. The lower sound levels were recorded at the more distant measurement locations from US51 and the sound levels in the low 60s dBA range were recorded at the first row residences closest to US51 during peak traffic volumes.

Table IV-10
Measured Existing Equivalent Sound Levels at Measurement Locations

Address/Location	*Distance to US51 (ft)*	*Period*	*Measured L_{eq}(dBA)*
42249 US51	90	6:40-7:00AM	62.3
		1:50-2:10PM	60.6
41124 US51	120	4:53-5:09PM	61.5
		11:05-11:25AM	60.5
16013 Halbert Lane	130	7:21-7:41AM	62.0
		3:50-4:10PM	60.9
St Patricks Boulevard Apartment	100	5:50-6:05PM	61.1
		10:30-10:50AM	58.9
1210 Fisher Lane	80	5:26-5:41PM	60.6
		2:40-3:00PM	59.7

LADOTD policy requires validation of the FHWA Traffic Noise Model (TNM 2.5) computer program that is used to calculate worst-hour equivalent sound levels. Validation involves making noise measurements at a few representative locations near the existing roadway while making simultaneous vehicle classification counts of the traffic and estimating travel speed. Then, the traffic counts are factored up to be hourly volumes, and along with the speeds, are entered into a TNM 2.5 model that has been created for the existing situation. The modeled levels are compared to the measured levels, and if they are within 3 dB(A) of the measured levels, the model is said to be validated.

The TNM model predictions for the noise measurements were within the 3 dB criteria for validation and the model is considered validated for this project.

Determination of Existing and Future One-Hour Equivalent Sound Levels

The FHWA TNM 2.5 computer program was then used to calculate worst-hour equivalent sound levels for the receptors in each NSA for the existing case and the future alternatives. These receptors included the measurement locations as well as numerous other locations.

Traffic data was provided by a traffic consultant on the project for use in the noise modeling. Morning and afternoon peak hour traffic projections, including truck

percentages, were provided for both directions of US51, for the Existing case, Build Alternatives and No Build Alternative.

Each direction of travel was modeled as a separate TNM "roadway," with the traffic divided evenly across all lanes in the same direction. The posted speeds of 45 mph were used for US51.

Receptors were modeled by TNM "receiver" points at areas of frequent human use of a property. For single-family residences, that area could be the front or back yard. For apartments and condominiums, that area could be a patio or balcony or a common use area. A TNM receiver could represent more than one receptor, such as in the case of a multi-family dwelling or apartment building.

Large buildings were modeled as noise barriers to properly account for the shielding of the traffic noise that they provide to the receptor. Single-family houses were modeled as either individual noise barriers or as rows of buildings to account for the shielding that they would provide. Significant terrain features were also modeled. The default ground surface of lawn grass was used, with any large areas of paved ground specifically modeled as pavement.

Tables of predicted results and figures showing the Build Alternatives, modeled receiver points and noise impact designations area available in the separately bound technical report.

A summary of predicted sound levels and impacts is shown in **Table IV-11** below and the resulting impacts are discussed in the following section.

Table IV-11 - Summary of Noise Impacts

Prediction Case	Range of Predicted Leq(h) (dBA)	Range of Increases over Existing Leq(h) (dB)	Impacts
Existing (2015)	44-69	N/A	3 residences
Build Alternative 1(2035)	47-71	0-7	21 residences
Build Alternative 2(2035)	47-71	0-6	21 residences
Build Alternative 3(2035)	47-71	0-fs7	21 residences
No Build Alternative(2035)	46-70	1-2	9 residences

Existing Year 2015

The TNM model that was developed for the validation testing was used to predict worst noise hour equivalent sound levels for the Existing Year conditions at the noise-

sensitive land uses in the project area, including the measurement locations. The posted speeds of 45mph on US51 were modeled.

As shown in **Table IV-11**, predicted worst noise hour L_{eq} (h) for the Existing Year 2015 case ranged from 44 dBA up to 69 dBA at the closest residences to the existing US51.

A total of three residences are impacted in the Existing Year 2015 case.

Build Year 2035

The noise levels for the three Build Alternatives were determined by modeling the proposed US51 geometry and traffic within TNM and then calculating the L_{eq}(h) for each TNM receiver. Future speeds of 45 mph on US 51 Business were modeled for both directions. The medians were modeled as areas of grass.

The Predicted L_{eq}(h) for the three Build Alternatives, summarized in **Table IV-11**, ranged from 47 dBA up to 71 dBA. Though there are differences in geometry for the three Build Alternatives (specifically near the North Oaks/Medical Center Drive, Medical Arts Drive and Campbell Road intersections) those differences do not produce any significant changes in the predicted noise levels when the alternatives are compared.

Increases over existing noise levels for the three Build Alternatives generally range from 0 to 7 dBA.

A total of twenty one residences are impacted by traffic noise for each of the Build Alternatives. All of these impacts are caused by an exceedance of the 66 dBA NAC for Category B land uses. No Activity Category C or D impacts are predicted. No impacts are created by a 10 dBA increase over the Existing noise levels.

No Build Year 2035

The TNM model that was used for the Existing case was modified to predict worst noise hour equivalent sound levels for the No Build Year 2035 conditions at the noise-sensitive land uses in the project area, including the measurement locations. The posted speed of 45mph on US51 was modeled.

As shown in **Table IV-11**, predicted worst noise hour L_{eq} (h) for the No Build Year 2035 case ranged from 46 dBA up to 70 dBA.

A total of nine residences are impacted in the No Build Year 2035 case. All of these impacts are caused by an exceedance of the 66 dBA NAC for Category B (residential) land uses. No impacts are created by a 10 dBA increase over the Existing noise levels.

Noise Abatement Evaluation

In accordance with criteria in the LADOTD noise policy, noise abatement needs to be studied first for "feasibility" and, if feasible, for "reasonableness." Noise barriers must be both feasible and reasonable for them to be deemed likely for construction.

Feasibility includes acoustical and engineering considerations. Acoustical feasibility means that a noise barrier will provide at least a 5 dBA reduction in the one-hour equivalent sound level for at least 75% of the first-row, impacted receptors. If a barrier cannot meet this criterion, abatement is considered to not be acoustically feasible. Additionally, the noise barrier should be feasible from an engineering perspective. Engineering feasibility takes into account topography, drainage, safety, barrier height, utilities, and access and maintenance needs (which may include right-of-way considerations). If a barrier poses engineering problems, it may be judged as not feasible even if it meets the acoustical feasibility criterion, and it will not be recommended for construction.

If feasible, then the barriers are assessed for reasonableness in accordance with the criteria in DOTD's noise policy. All proposed noise abatement must meet the following three criteria to be considered reasonable by LADOTD. If any of the criteria is not met, noise abatement measures will not be constructed.

1. *Noise Reduction Design Goal:* At a minimum, at least one receptor must receive an 8 dBA reduction for the noise abatement system to be reasonable.
2. *Cost-Effectiveness:* If the estimated cost of constructing a noise barrier (including installation and additional necessary construction such as foundations or guardrails) divided by the number of benefited receptors (those who would receive a reduction of at least 5 dBA) is $35,000 or less per benefited receptor, a barrier is considered to be cost-effective.
3. *Consideration and Obtaining Views of Residents and Property Owners*: The viewpoints of the affected property owners and residents are important. For those barriers found to be reasonable by the Cost-Effectiveness and Design Goal criteria above, viewpoints of the benefited receptors and affected property owners will be sought.

According to the FHWA noise standards and LADOTD policy, abatement needs to be evaluated when impacts are predicted to occur. Noise barriers must be shown to be both feasible and reasonable, as described earlier, for them to be deemed likely for construction.

In general, noise abatement measures may include noise barriers, alteration of horizontal and vertical alignment, and traffic management measures (such as reducing speed limits or prohibition of heavy trucks). The latter two forms of abatement have already been considered during the planning phases for this project. US51 serves many medical facilities through the project corridor so restricting truck traffic is not possible. The posted speed limits along the project are 45mph. Reducing speeds for US51 would only reduce the predicted noise levels by an estimated 1 dBA.

Noise barriers were determined to be the best available potential abatement measure to reduce noise levels for impacted receptors for this project. As stated earlier, barriers must pass acoustical feasibility and reasonableness tests. Acoustical feasibility means that any noise barrier will provide at least a 5 dBA reduction in traffic noise levels for 75% of the first-row impacted receptors.

For this project all of the impacted, first row receptors are either isolated single residences or small groups of 2-5 residences with driveway access through the right of way where a noise barrier would need to be constructed. The expense of protecting a single residence with a noise barrier will not pass the cost-effectiveness test of the reasonableness determination. For the groupings of 2-5 residences with needed driveway access LADOTD policy states, “noise barriers that block existing driveways are considered unfeasible”. Therefore, there are no noise barriers that are considered feasible or reasonable for this project.

Construction Noise

The construction of the project would result in temporary noise increases for the residences and noise-sensitive land uses along US51. Any other noise-sensitive land uses that are located farther from the project area would likely experience little, if any, increase in noise levels because of the background noise of the US51 traffic, traffic on other roads, and other community noise sources. The construction noise would be generated primarily from heavy equipment used in hauling materials and accomplishing the widening of the roadway.

The construction contractor has the responsibility for protection of the general public in all aspects of construction throughout the life of the project. All construction equipment will be required to comply with OSHA Regulations as they apply to the employees' safety, and in accordance with the DOTD Standard Specifications. All construction equipment used in the construction phase of the project should be properly muffled and all motor panels should be shut during operation. In order to minimize the potential for impacts of construction noise on the local residents, the contractor should only operate, whenever possible, between the hours of 7:00 AM and 5:00 PM.

Coordination with Local Officials

LADOTD encourages local communities and developers to practice noise compatibility planning in order to avoid future noise impacts. Two guidance documents on noise compatible land use planning are available from FHWA.

Table IV-12 presents future predicted equivalent sound levels based on an assumed at-grade situation for areas along US51 where vacant and possibly developable lands exist. Noise predictions were made at several distances from centerline of closest travel lane of US51 for the design year 2035 PM peak hour. The results showed exterior residential activities would be considered to be impacted in terms of a level of 66 or more dBA out to a distance of roughly 110 feet from centerline of the nearest

travel lane of US51. These values do not represent predicted levels at every location at a particular distance back from the roadway. Sound levels will vary with changes in terrain and other site conditions. This information is being included to make local officials and planners aware of anticipated highway noise levels so that future development will be compatible with these levels.

Table IV-12
Design Year (2035) Predicted One-Hour Equivalent Sound Levels for Undeveloped Areas

Distance*	***L_{eq} (1h), dBA***
25 feet	71.6
50 feet	69.4
75 feet	67.7
100 feet	66.3
125 feet	64.4
150 feet	62.4

** Perpendicular distance to the centerline of the nearest travel lane of US51.*

CONSTRUCTION PERIOD IMPACTS

During construction of the proposed US 51 Business widening, constructing new roadway lanes, intersections and structures would result in various construction-related effects. The population that would be most affected includes local residents whose neighborhoods are located adjacent to the proposed improvements. Vehicular traffic along the existing route and intersecting streets would inevitably experience some delays and minor inconveniences as a result of construction.

No Build Alternative

The No Build Alternative includes one possible intersection improvement at the south end of the study area. This is the LA 22 intersection with US 51 Business which is being studied for possible improvement. This project may produce construction impacts within the study area.

Build Alternatives

All of the Build Alternatives include construction of a widened, four-lane divided roadway, including construction of new at-grade roadways, medians, and subsurface drainage. This construction will produce disturbances such as noise, vibration, excavation, debris and will require construction staging areas. Short-term construction traffic impacts will also be present under this alternative.

All alternatives also include construction of a new bridge across Ponchatoula Creek.

The construction impacts for the Proposed Action are described for each type of impact below:

Construction Period Noise and Air Quality

As mentioned in the previous section, the construction of the Build Alternatives would result in temporary noise level increases within the study area. The noise would be generated primarily from heavy equipment used in hauling materials and building the roadway and bridges. Sensitive areas located close to the construction alignments may temporarily experience increased noise levels; however, there are currently no areas within the study area where quiet is of extraordinary significance, and therefore no such areas should be significantly impacted by construction noise.

The construction of the Build Alternatives could result in short-term air quality impacts, particularly related to particulate matter (dust) during project construction. To minimize potential air quality impacts, particularly related to control of particulate matter, the contractor shall comply with all applicable state, federal and local laws and regulations.

Construction Period Vibration

The proposed bridge structures will require pile driving. Pile driving will cause vibrations that may affect nearby structures, pavements and underground utilities. Peak particle velocities due to pile driving operations should be monitored with a seismograph at critical structures, pavements and utilities. The record of peak particle velocities will provide information in assessing potential damage and the need for changes in the pile driving operations.

Peak particle velocities of 0.25 in./sec, as measured by a seismograph, are generally regarded as the minimum vibration level uncomfortable to humans. In addition, sustained peak particle velocities of 0.25 in./sec may densify cohesionless fill materials. This densification may result in settlement and damage to structures, pavements or utilities founded in or over these types of materials. Peak particle velocities in excess of 0.5 in./sec, as measured at a structure, may induce damage to the structure.

Excavations, Fill Material, Debris and Spoil

Excavated material for roadway and foundation is not anticipated to require specialized disposal. A Phase I ESA was conducted for this study and a summary of this report is included as a part of this document. Fill material for the project is readily available locally. Construction debris from the project will require disposal. No anticipated construction debris is anticipated to require specialized disposal.

Construction Staging Areas

Construction staging areas will be needed for construction. Substantial amounts of vacant, privately-held land exist along the project route and will likely need to be leased as staging areas.

HAZARDOUS AND SOLID WASTE SITES

No Build Alternative

The No Build Alternative would have no impact on facilities/sites with recognized environmental conditions.

Build Alternatives

From the records review and site reconnaissance efforts of the Phase I ESA, no evidence of USTs is indicated within the project corridor, except at Murphy's Express (Site ID #53A), which was under construction in May 2015. The new underground storage tanks are located 150-250 feet east of the edge of the existing US 51 Business right-of-way. The pump island is approximately 30 feet from the right-of-way. This property should not have any effect on the proposed project.

At the north project terminus at Club Deluxe Road, construction of a roundabout was recently completed; therefore, although Whiskey Bin (Site ID #00) was recorded as a UST site, the assumption is this site does not constitute a recognized environmental condition. For this same reason, sites outside the project corridor to the north listed in SPILLS, REM, and UST databases were not evaluated.

Active businesses involved in auto fueling, service, and repair are located on properties adjacent to the project corridor right-of-way. With the exception of Automotive Plus, these are relatively new establishments operating in compliance with current regulations for use, storage, transportation, and disposal of hazardous and petroleum substances. Automotive Plus is an older business on a property that reportedly has operated as auto repair garage for several decades. Minor spills of waste oil surrounding the waste oil tank were observed during site reconnaissance. However, the tank stands on a concrete slab floor inside the garage. No evidence of migration or disposal of oil or other hazardous substances to the ground outside the garage was found. The vegetation is in good condition and the concrete pad was clean.

An abandoned tire and lube shop was also investigated (Site ID #91). No records of incidents or releases were found in the review of environmental databases. The site was identified in the records review of gas stations/filling stations/service stations compiled by EDR and was evaluated based on the reported type of business. Inspection of the property perimeter did not reveal any signs of recognized environmental conditions, but inspection inside the garages was not possible. The building on this property is approximately 30 feet from the edge of the US 51 Business

right-of-way and the beginning of the northern approach to the Ponchatoula Creek Bridge. Although no signs of any recognized environmental conditions were observed, if the need to widen the bridge would impact the building, further investigation may be warranted.

Having found no evidence of potential contamination or sources of contamination in or near the project corridor through the completion of this Phase I ESA, it is determined that no recognized environmental conditions exist within or near the project corridor. If the conceptual plans are revised and the abandoned building located on Site ID #91 falls within the required right-of-way for the project prior to construction, further investigation may be warranted.

IMPACTS ON THE NATURAL ENVIRONMENT

VEGETATION

No Build Alternative

No impacts to vegetation in the project area are foreseen under the No Build Alternative.

Build Alternatives

The widening portion of this project passes through an area that is mostly cleared for development along either side of US 51 Business, although there are some areas where secondary-growth forests predominate, and other areas of trees which may have been left or planted for screening of residential and other uses. As the three alternatives generally require around 40 feet of right-of-way from the western side of the current roadway, there will be some trees and other vegetation removed as part of the project. At the new parallel bridge crossing the wooded floodplain of Ponchatoula Creek, the clearing of all trees within the project footprint is required in a right-of-way corridor roughly 143 feet wide (or 60 feet more than what is cleared currently).

Significant Trees

LADOTD EDSM No: I.1.1.21, Treatment of Significant Trees in DOTD Right-Of-Way (9-03-2004) covers the treatment of treatment of significant trees by the Department within the highway right-of-way, zone of construction or operational influence.

For the purposes of this policy, a significant tree is a Live Oak, Red Oak, White Oak, Magnolia or Cypress that is considered aesthetically important, 18" or greater in diameter at breast height (4'-6" above the ground), and having a form that separates it from the surrounding vegetation or is considered historic. A historic tree is a tree that stands at a place where an event of historic significance occurred that had local, regional, or national importance. A tree may also be considered historic if it has taken on a legendary stature to the community; mentioned in literature or documents of

historic value; considered unusual due to size, age or has landmark status. Significant trees must be in good health and not in a declining condition.

LADOTD's Landscape Architectural staff (or consultant designee) shall identify significant trees during the scoping and/or environmental phase. During roadway design, the Design Section shall indicate significant trees on the plans and implement a context sensitive design (i.e. preservation, specified limited impact, or special treatment) to accommodate these trees where practical.

A survey was taken of the trees along the proposed route which may fit the definition of significant trees, and which would be affected by the Build Alternatives. Most of the trees to be removed in the proposed new right-of-way did not fit the species criteria for significant trees; these included water oaks, pin oaks, pines, maples, pecans and other non-significant varieties. However, the survey revealed seven (7), possibly nine (9) trees that meet the first criteria of significance (size and species) that would be directly impacted by right-of-way acquisition and construction of the new roadway. All but one were live oaks.

All of these trees are located on the western side of the highway. A list of these ten trees with location is provided below, from south to north, along with a further description of each related to its qualification for being considered significant:

- One (1) live oak, unnumbered address residence along US 51 Business directly across from Gateway Ford. While this tree fits the definition for species and size, it does not necessarily have a form that separates it from the surrounding vegetation, thus it is not considered significant.

- One (1), possibly three (3) live oaks in front of the Brandon G. Thompson Funeral Home, 1190 US-51 Business. Altogether, there are seven (7) live oaks in front of the funeral home. One of these is within the US 51 Business right-of-way; the other six are on the funeral home property. These six could be considered “significant”, as they constitute a small oak grove that stands out from the surrounding vegetation in the area, and five of the six trees on the property are registered with the Live Oak Society of the Louisiana Garden Club Federation: the Bret Oak, the Neil Oak, the Sarah Oak, the Margot Oak and the Hippocratic Oak. Of the six significant trees on private property, one (1) would be impacted (removed) by the widening of US 51 Business. Two more oaks may be impacted as their trunks will likely be out of the right-of-way, but their canopies would extend over the right-of-way.

- Two (2) live oaks along front of Pugh residence, just north of US 51 Business intersection with St. Patrick’s Blvd. While these trees fits the definition for species and size, they are part of a line of different varieties of trees along a boundary wall, and do not have a form that separates them from the surrounding vegetation, thus they are not considered significant.

- One (1) Red Oak in wooded area across from 16013 Halbert Drive. While this tree fits the definition for species and size, its presence in a heavily wooded area

does not separate it from the surrounding vegetation, thus it is not considered significant.

- Two (2) live oaks on vacant lot just north of Demarco Lane intersection. While these trees fit the definition for species and size, they do not necessarily have a form that separates them from the surrounding vegetation – they are apparently "left over" trees on a previously developed grassy parcel. Thus, they are not considered significant.

WILDLIFE

No Build Alternative

Construction of the No Build Alternative should not adversely affect the native wildlife types as they are abundant in number and are adaptable on an individual basis.

Build Alternatives

Construction of the proposed action should not adversely affect the native wildlife types as it occurs in rather developed area. The native wildlife types are abundant in number and are adaptable on an individual basis. Any wildlife present should be able to re-establish itself in new locations rather easily.

WETLANDS

Wetland maps, including wetland and water body areas in acres for each of the three alternatives, are presented on aerial photo base maps in **Figures IV-1 through IV-4** on the next four pages.

No Build Alternative

The No Build Alternative would not impact the area's wetlands because there would be no acquisition of additional ROW and clearing for construction of road infrastructure and maintenance of the ROW. The existing growth rates in Tangipahoa Parish are expected to continue to diminish existing wetlands as a result of the development.

Alternative 1

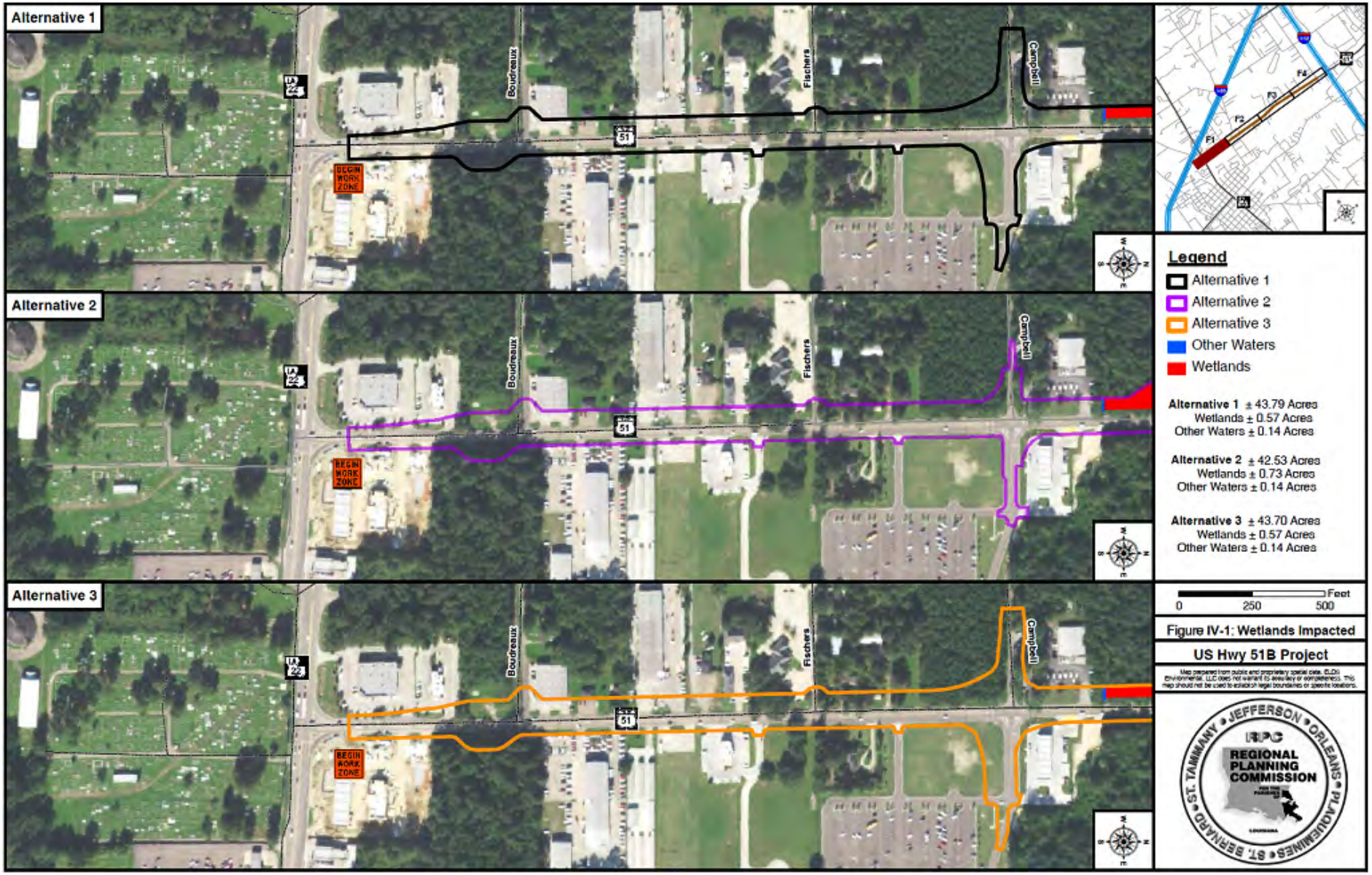
Construction of Alternative 1 would directly impact .57 acres of bottomland hardwood wetlands and .14 other waters of the US through the initial cutting of trees and grading of existing vegetated landscapes.

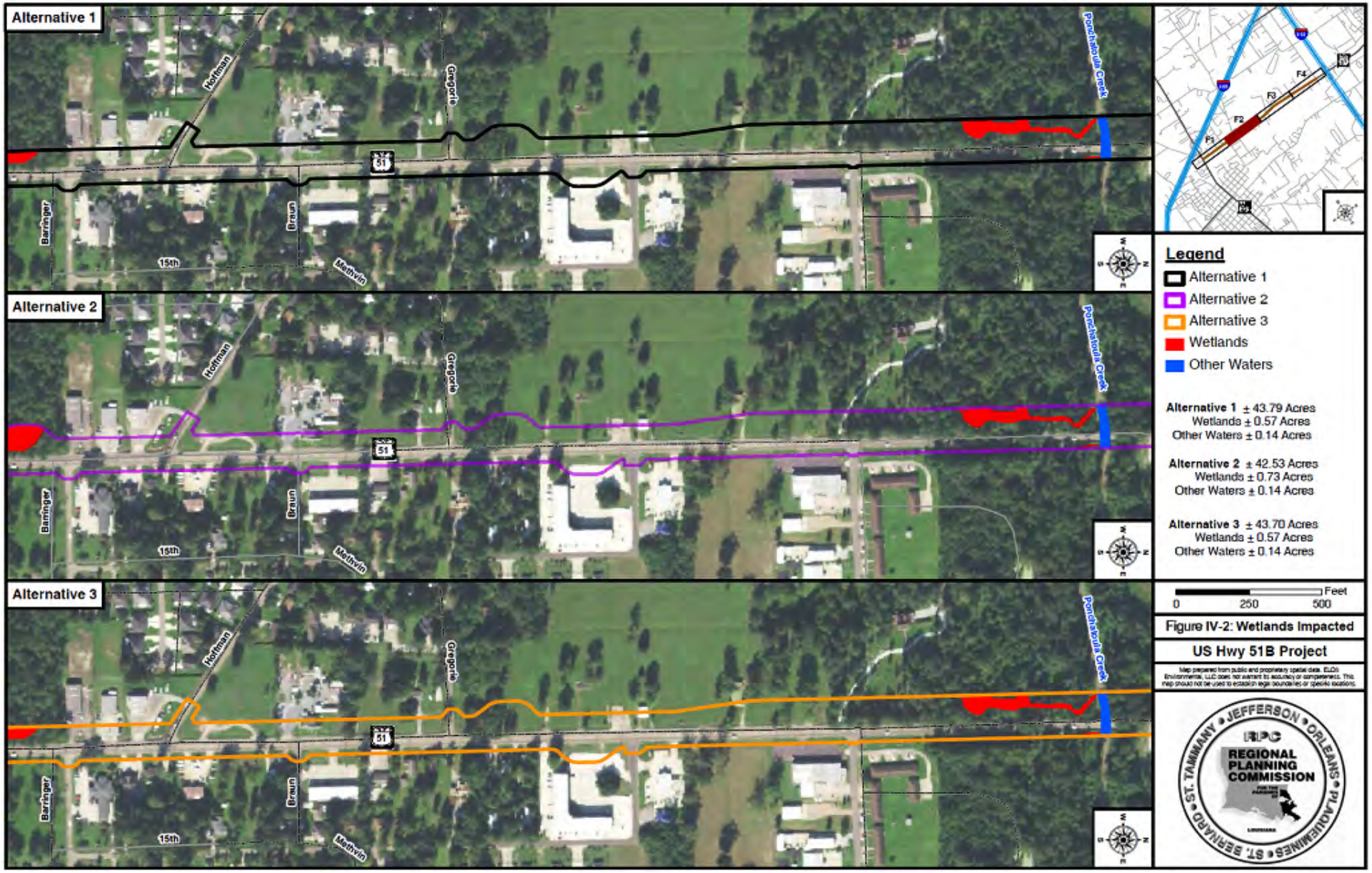
Alternative 2

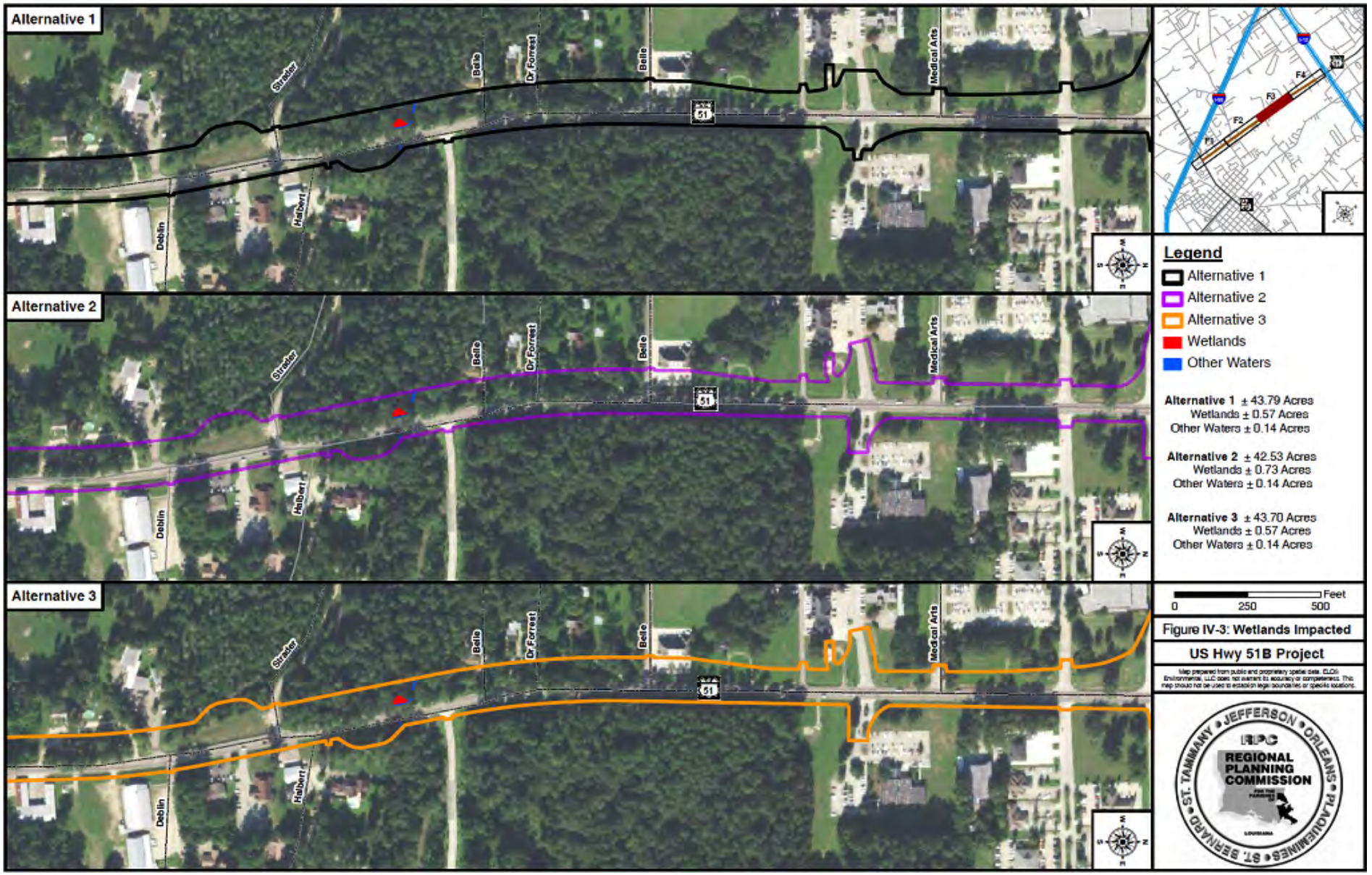
Construction of Alternative 2 would directly impact .73 acres of bottomland hardwood wetlands and .14 other waters of the US through the initial cutting of trees and grading of existing vegetated landscapes.

Alternative 3

Construction of Alternative 3 would directly impact .57 acres of bottomland hardwood wetlands and .14 other waters of the US through the initial cutting of trees and grading of existing vegetated landscapes.


Alternative 1
Alternative 2
Alternative 3
Boudreaux
Fischers
Campbell
LA 22
US 51
BEGIN WORK ZONE
F1
F2
F3
F4
Legend
Alternative 1
Alternative 2
Alternative 3
Other Waters
Wetlands
Alternative 1 ± 43.79 Acres
Wetlands ± 0.57 Acres
Other Waters ± 0.14 Acres
Alternative 2 ± 42.53 Acres
Wetlands ± 0.73 Acres
Other Waters ± 0.14 Acres
Alternative 3 ± 43.70 Acres
Wetlands ± 0.57 Acres
Other Waters ± 0.14 Acres
Feet
0
250
500
Figure IV-1: Wetlands Impacted
US Hwy 51B Project
Map prepared from public and proprietary spatial data. ELDO Environmental, LLC does not warrant its accuracy or completeness. This map should not be used to establish legal boundaries or specific locations.
RPC
REGIONAL PLANNING COMMISSION
ST. TAMMANY • JEFFERSON • ORLEANS • PLAQUEMINES • ST. BERNARD


Alternative 1
Alternative 2
Alternative 3
Hoffman
Gregorie
Ponchatoula Creek
Barringer
Braun
15th
Methvin
51
Legend
Alternative 1
Alternative 2
Alternative 3
Wetlands
Other Waters
Alternative 1 ± 43.79 Acres
Wetlands ± 0.57 Acres
Other Waters ± 0.14 Acres
Alternative 2 ± 42.53 Acres
Wetlands ± 0.73 Acres
Other Waters ± 0.14 Acres
Alternative 3 ± 43.70 Acres
Wetlands ± 0.57 Acres
Other Waters ± 0.14 Acres
Feet
0
250
500
Figure IV-2: Wetlands Impacted
US Hwy 51B Project
ST. TAMMANY • JEFFERSON • ORLEANS • PLAQUEMINES • ST. BERNARD
LRPC
REGIONAL PLANNING COMMISSION


Alternative 1
Alternative 2
Alternative 3
Strader
Belle
Dr Forrest
Medical Arts
Deblin
Halbert
51
F1
F2
F3
F4
Legend
Alternative 1
Alternative 2
Alternative 3
Wetlands
Other Waters
Alternative 1 ± 43.79 Acres
Wetlands ± 0.57 Acres
Other Waters ± 0.14 Acres
Alternative 2 ± 42.53 Acres
Wetlands ± 0.73 Acres
Other Waters ± 0.14 Acres
Alternative 3 ± 43.70 Acres
Wetlands ± 0.57 Acres
Other Waters ± 0.14 Acres
Feet
0
250
500
Figure IV-3: Wetlands Impacted
US Hwy 51B Project
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RPC
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Legend
Alternative 1
Alternative 2
Alternative 3
Wetlands
Other Waters
Alternative 1 ± 43.79 Acres
Wetlands ± 0.57 Acres
Other Waters ± 0.14 Acres
Alternative 2 ± 42.53 Acres
Wetlands ± 0.73 Acres
Other Waters ± 0.14 Acres
Alternative 3 ± 43.70 Acres
Wetlands ± 0.57 Acres
Other Waters ± 0.14 Acres
Feet
0
250
500
Figure IV-4: Wetlands Impacted
US Hwy 51B Project
JEFFERSON • ORLEANS • PLAQUEMINES • ST. BERNARD • ST. TAMMANY
REGIONAL PLANNING COMMISSION
Alternative 1
Alternative 2
Alternative 3
Club Deluxe
Lamonte
De Marco
Seale
END WORK ZONE
51

NATURAL AND SCENIC RIVERS

No Build Alternative

No impacts to the area's natural or scenic rivers would occur under the No Build Alternative.

Build Alternatives

No scenic rivers are present within a 1-mile radius of the project area. Therefore, the project will have no adverse impacts on natural and scenic rivers.

THREATENED AND ENDANGERED SPECIES

No Build Alternative

There would be probably be no adverse impacts to threatened or endangered species under the No Build Alternative because none was identified in the project area during the field investigations.

Build Alternatives

After careful review of the agency responses, field investigation, and research, no impacts to threatened or endangered species are expected.

The US Fish and Wildlife Service (USFWS) reviewed the project and commented, expressing the concern for gopher tortoise (*Gopherus polyphemus*), which is threatened. The project corridor does not appear to be a suitable habitat for the gopher tortoise. Coordination on the potential presence of and impacts to the gopher tortoise or its habitat, within the project corridor of potential effect, occurred between Mr. Michael Sealy, FWS, Lafayette Field Office lead GT biologist, and Mr. Patrick MacDanel, ELOS Environmental, LLC, wildlife biologist experienced in gopher tortoise surveying. The coordination was primarily by telephone on 17 April 2015. Mr. Sealy stated that he had reviewed the NRCS soils map of the project corridor, and he was very familiar with the area. Due to a lack of suitable soils, food, and conditions, he felt certain that there are neither gopher tortoises nor suitable habitat for them present within the project corridor. He also stated that it was his determination that no further assessment would be necessary.

A response letter from the Louisiana Department of Wildlife and Fisheries (LDWF) stated that *"After careful review of our database, no impacts to rare, threatened, or endangered species or critical habitats are anticipated for the proposed project. No state or federal parks, wildlife refuges, scenic streams, or wildlife management areas are known at the specified site within Louisiana's boundaries."*

Best management practices should be put into effect to prevent turbidity in the downstream region of the creek.

Prior to construction of the bridge, the water bottom of the creek should be surveyed by a qualified biologist to determine if any of the following species are present: Rayed creekshell (Anodontoides radiatus), Southern pocketbook mussel (Lampsilis ornate), and Southern rainbow mussel (Villosa vibex).

HYDROLOGY, FLOODPLAINS AND FLOODING

No Build Alternative

The No-Build Alternative would not affect the current floodplain designations, nor would it likely affect the hydrology or flooding of the project area.

Build Alternatives

Similar to the No-Build Alternative, the hydrology in the project area is unlikely to be affected by the construction or operation of the projects included in any of the Build Alternatives. The new parallel bridge structure across Ponchatoula Creek is proposed to accommodate a 100-year flood, and should allow sufficient pass-through of water so as not to collect debris that would result in damming.

As noted in the **Drainage** section of *Chapter II* and as shown on the plan view drawings at the end of that chapter, all existing cross-drains under existing roadways are proposed to be increased as required during design. As a result, existing flooding problems reported during the public informational meeting may be improved by the project.

WATER RESOURCES (SOLE SOURCE AQUIFERS)

No Build Alternative

The No Build Alternative would not adversely affect water quality or sole source aquifers.

Build Alternatives

None of the Build Alternatives would affect water quality in the project area. Correspondence from the US EPA, Ground Water UIC section received in response to the *Solicitation of Views* stated that the project as proposed should not have an adverse effect on the quality of ground water underlying the project site.[7]

[7] *S.O.V. response from Omar Martinez, USEPA, 3-9-2015*

PRIME FARMLAND AND SOILS

No Build Alternative

There would be no impacts to study area soils or geology if the No Build Alternative is selected. No mitigation would be proposed or required with this alternative.

Build Alternatives

The construction areas in the project study corridor have been designated as being within urban areas by the National Resources Conservation Service, and are therefore exempt from the rules and regulations of the Farmland Protection Policy Act.[8]

COMPARATIVE ANALYSIS OF THE ALTERNATIVES

EVALUATION MEASURES

Aspects of the stated purpose and need for of the project identified in *Chapter I* are used as the first two evaluation measures or criteria to assess the effectiveness of the alternatives considered (the No Build Alternative and the Build Alternatives) in addressing the purpose and need for the project. Additionally, the comparative impacts of each alternative are also used to evaluate from among the alternatives.

Evaluation Measure 1: Traffic Factors *(reduce existing traffic congestion and minimize travel delays; address projected traffic increases and congestion; manage access and provide an efficient flow of traffic in the project area).*

Each of the three Build Alternatives would provide improvements relating to traffic factors, while the No Build Alternative would not. As was illustrated in the Purpose and Need portion of Chapter I and in the traffic impact section of this Chapter, without improvements such as those planned under the Build Alternatives, by the Design Year of 2035 the corridor will fall short of acceptable LOS criteria, in many cases with intersections operating at a failing level of Service (LOS F).

Evaluation Measure 2: Enhance alternative transportation methods (pedestrian and bicycle) by including installation of a complete streets cross-section.

Each of the three Build Alternatives would enhance alternative transportation methods (pedestrian and bicycle) by including installation of a complete streets cross-section, while the No Build Alternative would not. As noted earlier in this Chapter, the build alternatives for the US 51 Business project corridor will have a positive impact on bicycle and pedestrian access, by including bicycle lanes and sidewalks in each

[8] *S.O.V. response from Kevin Norton, USDA State conservationist, 2-27-2015*

direction. Pedestrians and bicycles alike will have a safe and complete route extending from LA 22 to W. Club Deluxe Road.

Evaluation Measure 3: Other comparative impacts relative to each Alternative

Upon completion of the impact analyses, impacts of each of the alternatives can be compared to each other to judge relative impact. There are seven (7) non-traffic and non-bicycle/pedestrian categories which have some definitive impact differences between the No Build Alternative and the three Build Alternatives:

1. Relocations
2. Access to Community Facilities and Services
3. Historic/Cultural Resources
4. Noise Impacts
5. Vegetation Impacts
6. Wetlands
7. Hydrology, Floodplains and Flooding

Each of these categories are described beginning below:

Relocations

The No Build Alternative would result in no relocations, while the Build Alternatives, would result in 5 residential relocations and 8 business relocations. Alternative 2 has one less on-premise sign affected than the other two Alternatives.

Access to Community Facilities & Services

The No Build Alternative will not improve access to public facilities and services, while the development of any of the three Build Alternatives is expected to have a positive impact on access to community facilities and services. By improving local and regional access, residents and people utilizing businesses will be better able to reach necessary facilities and services. Additionally, emergency vehicle access, including fire and police response and emergency medical service to trauma medical facilities at North Oaks Medical Center, will be enhanced.

Historic/Cultural Resources

While the No Build Alternative would have no impact on historic/cultural resources, the Build Alternatives would result in the new roadway right-of-way being only 4 feet from an NRHP-eligible structure. It should be noted that any impacts could be mitigated by keeping or replacing screening vegetation, or even physically moving the house further back on the parcel.

Noise Impacts

While the noise impacts of the Build Alternatives did not result in noise barrier options that passed both the tests of acoustic feasibility and reasonableness, all of them did have a number of residences that are projected to be impacted by noise under future conditions. Only 9 were projected to be impacted under the No Build Alternative, while the number of projected residences with impacts under all of the Build Alternatives was 21 residences.

Vegetation

While the No Build Alternative is expected to have no impact on vegetation, each of the Build Alternatives will definitely impact one (1) and possibly three (3) significant trees as defined under LADOTD policy.

Wetlands

The Wetland Delineation completed as part of the impact analysis provides qualitative figures for projected wetlands impacted (in terms of acreage). The No Build Alternative would affect no wetlands. Construction of Alternatives 1 and 3 would directly impact .57 acres of bottomland hardwood wetlands, while Alternative 2 would impact .73 acres. All three build alternatives would each impact .14 acres of other waters of the US.

Hydrology, Floodplains and Flooding

As noted earlier in this chapter, under each of the Build Alternatives, drainage in the US 51 Business widening area may be improved due to new cross drains being added with roadway construction for that widening. This positive impact would not occur under the No Build Alternative.

Summary of Analysis

Table IV-13, on the following page, presents a summary matrix of comparative analysis of each alternative.

TABLE IV-13
SUMMARY MATRIX OF COMPARATIVE ANALYSIS OF EACH ALTERNATIVE

Impact Category	No Build Alternative	Alternative 1	Alternative 2	Alternative 3
Conceptual Project Cost	N/A	$58,0425,90	$57,237,890	$57,834,015
Traffic Factors	Will not improve; future Levels of Service B, C, E and F at the three major intersections	Will improve, future provided Levels of Service A, A, and A at the three major intersections	Will improve, future provided Levels of Service B, A, and B at the three major intersections	Will improve, future provided Levels of Service A, A, and A at the three major intersections
Enhance alternative transportation methods (pedestrian and bicycle)	Does not enhance	New bicycle lanes and sidewalks in each direction.	New bicycle lanes and sidewalks in each direction.	New bicycle lanes and sidewalks in each direction.
Relocations	No Impact	5 residential, 1 business	5 residential, 1 business	5 residential, 1 business
Access to Community Facilities and Services	Does not improve	Improves local and regional access; emergency vehicle access, to trauma medical facilities at North Oaks Medical Center will be enhanced.	Improves local and regional access; emergency vehicle access, to trauma medical facilities at North Oaks Medical Center will be enhanced.	Improves local and regional access; emergency vehicle access, to trauma medical facilities at North Oaks Medical Center will be enhanced.
Historic/Cultural Resources	No impact	New roadway right-of-way will be only 4 feet from an NRHP-eligible structure	New roadway right-of-way will be only 4 feet from an NRHP-eligible structure	New roadway right-of-way will be only 4 feet from an NRHP-eligible structure
Noise Impacts	9 residences impacted	21 residences impacted	21 residences impacted	21 residences impacted
Vegetation Impacts	No Impact	Will definitely impact one (1) and possibly three (3) significant trees	Will definitely impact one (1) and possibly three (3) significant trees	Will definitely impact one (1) and possibly three (3) significant trees
Wetlands	No Impact	Would directly impact .57 acres of bottomland hardwood wetlands and .14 acres of other waters of the US	Would directly impact .73 acres of bottomland hardwood wetlands and .14 acres of other waters of the US	Would directly impact .57 acres of bottomland hardwood wetlands and .14 acres of other waters of the US
Hydrology, Floodplains and Flooding	No drainage improvements	Drainage may be improved due to new cross drains being added	Drainage may be improved due to new cross drains being added	Drainage may be improved due to new cross drains being added

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

In looking at the Comparative Analysis above, it is evident that the No Build Alternative does not meet either of the first two evaluation measures based on the Purpose and Need for the project (traffic factors and enhancement of alternative transportation methods). As such, the Preferred Alternative would be identified from amongst the three Build Alternatives.

In looking at the comparative impacts, there is very little to differentiate between the Build Alternatives, as they are only different at the three major intersections. Alternative 2 has slightly more wetlands impacted than the other two, but has one less relocation than the other two (an on-premise sign).

However, in returning to the primary evaluation measures based on the Purpose and Need for the project, Alternative 2 does not improve traffic factors as well as Alternatives 1 and 3. It provided Levels of Service B, A, and B at the three major intersections, while the other two Build Alternatives provide "A" levels of service at all three of those intersections.

Alternatives 1 and 3 best meet the purpose and need of the project and have similar impacts, but of the two, there was a clear consensus shown by elected officials and the Public that Alternative 1 was preferred. **Therefore, Alternative 1 is identified as the Preferred Alternative.**

SELECTED ALTERNATIVE

Following public and agency review of the draft EA document, the FHWA has determined that Build Alternative 1 (the Preferred Alternative) will not have any significant impact on the human environment, and was fully analyzed in the Environmental Assessment (EA), which has been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed improvements and appropriate mitigation measures. As such, it is further identified as the **Selected Alternative**.

CHAPTER V

THE PREFERRED ALTERNATIVE: IMPACT SUMMARY, MITIGATION MEASURES, COMMITMENTS AND PERMITS

The Direct Impacts to the transportation system and the human and natural environments as a result of the implementation of the Preferred Alternative are listed. For unavoidable adverse impacts, this chapter provides a discussion of mitigation measures recommended to reduce those adverse effects. The indirect and cumulative impacts of the Preferred Alternative are also examined in this chapter. Any commitments made to further the project are then described. The Chapter concludes with a section in which the permits required to complete the project are listed.

DIRECT IMPACTS NOT REQUIRING MITIGATION

As outlined in *Chapter IV*, implementation of the Preferred Alternative (Alternative 1 - widening of US 51 Business to a four-lane divided section and installation of roundabouts at the three current signalized intersection) are projected to have some direct impacts within the project study area. Four (4) of these impact categories are considered non-adverse/beneficial, and require no mitigation measures. They include:

- Traffic Impacts
- Impacts to Bicycle and Pedestrian Facilities
- Access to Community Facilities and Services
- Hydrology, Floodplains and Flooding

DIRECT IMPACTS REQUIRING MITIGATION

Five other impact area categories listed below are considered unavoidable, adverse social, economic, or natural environmental impacts that require some form of mitigation:

- Relocations
- Cultural Resources
- Construction Period Impacts
- Vegetation Impacts
- Wetlands

A discussion of the proposed mitigation measures for each is provided below:

As the proposed Build Alternative is currently planned, the total number of **relocations** is 13 (five residential and 8 commercial, along with 3 commercial on-premise signs). It is anticipated that many of the commercial tenants can be relocated to other locations in their immediate vicinity.

In developing the layouts for each alternative, minimizing the number of relocations was a key criterion. Consequently, there has been some impact mitigation occurring in the planning phase.

In regards to relocations occurring as a result of this project, the LADOTD is committed to following the federal rules and regulations in providing relocation assistance for all displaced households, including the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* (Uniform Act) as amended."

Under these regulations, homeowners are eligible for the fair market value for any real property purchased, payment of moving expenses, payment of closing costs on any new residence purchased, and possibly a housing differential payment (which would cover the gap between the fair market value of their current home and the cost to purchase a comparable home). Tenants who are relocated may be eligible for either rental assistance payments or down payment assistance payments, and payment of moving expenses. When appropriate housing cannot be provided by using replacement housing payments, the Uniform Act provides for "housing of last resort." Housing of last resort may involve the use of replacement housing payments that exceed the Uniform Act maximum amounts. Housing of last resort may also involve the use of other methods of providing comparable decent, safe, and sanitary housing within a person's financial means.

The previous Chapter describes possible **cultural resource impacts**. The close proximity of Site 53-01136 (1210 US 51 Business) to the direct Area of Primary Effect (APE) is of concern. This site contains a National Register of Historic Places cottage, which is located in the indirect APE approximately 1.2 m or 4 feet from the edge of the proposed new right of way line.

Several mitigation measures have been suggested for this structure. These measures include:

- Vibration analysis and the reduction of vibration during construction to prevent physical damage to the structure;
- Maintain or replace the vegetative screen between the roadway and the structure to provide a buffer from the highway and prevent adverse effects to the viewshed; and,
- Physically moving the structure on its parcel further back from the right-of-way line.

Consultation among the RPC, LADOTD, FHWA, and SHPO to implement appropriate mitigation measures such as those listed above or any other is recommended prior to design and construction. It should be noted that SHPO has already concurred with a no adverse effect with the appropriate mitigation measures being implemented in the project design and construction.

In terms of mitigation of **construction period impacts** (noise, air quality and vibration), several mitigation steps should be taken and proper procedures followed. To minimize noise impacts, all construction equipment used in the construction phase of the project

shall be properly muffled and all motor panels should be shut during operation. In order to minimize the potential for impacts of construction noise on the local residents, the contractor shall operate, whenever possible, between the hours of 7:00 a.m. and 5:00 p.m. To minimize potential air quality impacts, particularly related to control of particulate matter, the contractor shall comply with all relevant State, Federal and local laws and regulations. To minimize vibration impacts, pile driving operations should be monitored at critical structures, pavements and utilities during all pile driving operations.

To minimize impacts to drainage channels (such as Ponchatoula Creek), the following procedures should be followed:

- Channel work should be minimized and the rerouting of stream segments should be avoided. If channel work is necessary, precautions should be taken to avoid channel degrading from head-cutting. For example, grades at the culverts and bridges should remain at their existing grade.

- Minimize impacts to the riparian corridor, especially forested areas. For new crossings, prior cleared areas in the floodplain should be used when possible.

- To reduce the width of impact through the floodplain/riparian area, the entire right-of-way through the riparian area of the floodplain should not be cleared. Only clear what is needed for access and construction. Avoid constructing feeder roads across floodplains.

- Minimize impacts to the creek banks (soil and vegetation). Stabilize and replant disturbed banks as soon as construction at that specific site is finished.

- Best Management Practices (BMPs) should be used to avoid and minimize water quality impacts and to minimize erosion of banks and bare soil and the siltation of streams. BMPs can be non-structural (procedural) or structural. An example of a procedural BMP is to ensure the stabilization and revegetation of bare soil as soon as possible following (or if possible, just prior to completion of) construction. Structural BMPs include use of such items as silt fencing, fiber rolls, sediment traps, check dams, and hay bales during construction.

- Wetlands or forested floodplains should not be used for staging or storage area.

- Contractors should be thoroughly briefed on all permit conditions. Copies of the issued permit should be posted at the project site during construction for easy reference to avoid misunderstanding and inadvertent violations.

In terms of **vegetation impacts,** a survey was taken of the trees along the proposed route which may fit the definition of significant trees, and which would be affected by the Build Alternatives. Most of the trees to be removed in the proposed new right-of-way did not fit the species criteria for significant trees; these included water oaks, pin oaks, pines, maples, pecans and other non-significant varieties. However, the survey revealed one (1), possibly two (2) trees that would be considered significant that would be impacted by right-of-way acquisition and construction of the new roadway. All of these trees are live oaks.

Mitigation measures for these significant trees may take the form of replacing/replanting trees of the same species in the same general location. Mitigation may also include avoidance measures and/or or implementing soil compaction avoidance measures within the drip zone to protect the 2 remaining significant trees.

As fully described in Chapter IV, the proposed project's **wetlands impacts** are projected to consist of just over ½ an acre of jurisdictional wetlands that lie within the proposed right-of-way. Onsite mitigation of wetland impacts could include clearing and maintenance of the minimum area of right-of-way. Installing adequate cross-drains underneath the facility will facilitate maintenance of current surface water movement. For unavoidable wetland impacts, compensatory mitigation is required. During the Section 404 permitting process, the USACE-New Orleans District will determine the appropriate form and amount of required mitigation. Methods of providing compensatory mitigation include Permittee-Responsible Mitigation through aquatic resource restoration, establishment, enhancement, and in certain circumstances, preservation activities; and third-party compensation through obtaining credits from an approved wetlands mitigation bank.

INDIRECT (SECONDARY) IMPACTS

The indirect or secondary impacts discussed in this section concern possible future conditions following construction of the US 51 Business project.

As noted earlier in the document, population growth has increased tremendously in Tangipahoa Parish. But even without the improvements to US 51 Business, this trend of residential (and commercial) development is expected to continue over the next twenty years. With improved access in place, there is also an opportunity for further economic growth than that which is anticipated-- perhaps commercial or other growth.

Some may see this economic growth as a positive trend, an economic boon to the area. Others see the growth as an encroachment of sprawl, and a degradation of the natural setting that makes this area of Tangipahoa Parish and the cities of Ponchatoula and Hammond so appealing. Depending on point of view, growth can be a positive or negative impact.

Transportation is, of course, tied into this growth. Without a transportation network there can be no growth. But transportation in and of itself does not and cannot create the growth-- there are several other factors at work, such as desirability of location, presence of utilities and other infrastructure, issuance of development permits by appropriate agencies, etc. Transportation developments, such as widening of a highway, can only *affect* this growth.

Normally, the mitigation measures for handling growth-related impacts are already in the public's hands, and the public sector will lead the way in determining the limit and scope of mitigation. The most common public process mechanism to do so is via *planning* and *zoning*. Both the City of Hammond and City of Ponchatoula, which

comprise most of the land along the route, have zoning in place. Hammond also has the *Hammond Comprehensive Master Plan* in place to guide future growth.

CUMULATIVE IMPACTS

METHODOLOGY

The Code of Federal Regulations (Title 40, Section 1508.7), states that cumulative effects are *"…impacts which result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions, …"* The assessment will determine the impact(s) upon quality of life and environmental quality. Consideration of past, present, and foreseeable future actions in conjunction with anticipated effects of the Preferred Alternative is required. The point of the assessment is to determine the past impacts that have occurred, the present impact implications, and future impacts to the entire study area.

Past Actions

The methodology of assessing the cumulative impacts of the Preferred Alternative also considers the impacts from past projects within the study area. Cumulative past impacts include the completion of intersection improvements (conversion to roundabouts) at the US 51 Business/I-12 ramps and at W. Club Deluxe Road.

Current Projects

The methodology of assessing the cumulative impacts of the Preferred Alternative also considers the impacts on other major current projects within the study area. Current, ongoing projects or developments that are included in the Preferred Alternative's cumulative impact analysis include the LADOTD study of the LA 22/ US 51 Business intersection.

Future Projects

The methodology of assessing the cumulative impacts of the Preferred Alternative also considers the impacts on future foreseeable projects or developments within the study area. Several roadway and highway projects programmed for development are included as part of the No Build Alternative and described in detail in *Chapter II*. These include the Tangipahoa Parish Railroad Safety Improvements project, the construction of access management improvements on US 51 from I-12 to Minnesota Park Rd., upgrading/minor widening, and drainage improvements to W. Club Deluxe Rd. between US 51 Business and US 51 (S. Morrison), and interchange improvements at the LA 22 / I-55 Interchange.

CUMULATIVE IMPACTS EVALUATION AND SUMMARY

Transportation/Traffic Circulation

The cumulative impact of this project on the roadway system is that the proposed widening and intersection improvements will serve as a supplement to that system. The project's cumulative impact on the surrounding routes is positive in that it would provide better connectivity between Hammond and Ponchatoula by improving an existing route, and one that services bicyclist and pedestrians as well as motorized vehicles.

The new median in the widened highway and the use of roundabouts at the three (3) existing signalized intersections is also expected to increase safety.
Residual impacts may include enhancements such as new landscaping.

Land Use Development/Redevelopment

New land use development and redevelopment of uses could be a positive residual effect as a result of the Preferred Alternative. New land use opportunities could entail further residential and possibly commercial, office, or light industrial uses. It is anticipated that land use patterns would continue in a similar manner as past development. Substantial change is not anticipated to occur relative to the entire study area's land use character.

Summary

The overall cumulative impacts of the Preferred Alternative on past, current, and foreseeable future projects in the project area would be generally beneficial. The additional transportation utility of the Preferred Alternative would assist in and could encourage and increase new land use opportunities.

COMMITMENTS

Refer to *Summary of Mitigation, Commitments and Permits* at front of this report document.

PERMITS REQUIRED

- A Section 401 Permit (Water Quality Certification) will be required from the Louisiana Department of Environmental Quality.

- Because the project affects wetlands, a Section 404 Permit will be required from the U. S. Army Corps of Engineers, New Orleans District.

- According to the US Army Corps of Engineers, Ponchatoula Creek is a navigable waterway and a DA Section 10 Permit will be required prior to any work in that waterway.

CHAPTER VI

PUBLIC PARTICIPATION, AGENCY COMMENTS AND COORDINATION

This chapter describes the public participation process for the project, including documentation of public meetings, public hearings, and coordination efforts associated with the development of the project. These efforts included meetings with the LADOTD, FHWA, other agencies and elected officials and a *Solicitation of Views* requesting written comments on the project.

A complete record of all comments and coordination, including all responses from the *Solicitation of Views*, agency correspondence, public meeting summaries and transcripts sign-in sheets and handouts from the public meetings and all written comments received from citizens and interested parties are located in the project files of RPC.

PUBLIC PARTICIPATION

PUBLIC INFORMATIONAL MEETING

An informational public meeting was held on April 5th 2016 to familiarize area residents with the project and to obtain their input. The meeting was held at the Tangipahoa Parish Environmental Services Building on W. Club Deluxe Road in Hammond, LA, on the northern portion of the study area and a short distance from the northern terminus of the project corridor.

The meeting was advertised in the March 27 and April 3 editions of the *Hammond Sunday Star.* Notice was also sent to local radio and television stations. The Star did a story on the public meeting which was the front page item on the following day's edition. Forty (40) persons signed in for the public meeting.

The meeting was held in an "open house" format, with the public free to show up at any time during the meeting session. The meeting room featured display stations for engineering drawings, each manned by consultant staff that was available to answer questions. Each of these stations had a display of the full project alignments at 1"= 200' scale on an easel, and 24" x 36" blow-ups of the report document's 11" x 17" plan view, typical section and detail sheets (at 1"=100' scale). At another station, copies of the previous documents and reports relating to the project were available for review. These included the 2004 Environmental Assessment and the 2009 Stage 0 Feasibility Report. At another station, a transcriptionist was on hand to take any oral comments for the official record from attendees. The final station featured a PowerPoint presentation projected on a continuous loop on one side of the meeting room, and seating was

provided so that attendees could sit and watch the presentation at their leisure. The PowerPoint presentation provided an overview of the project.

Attendees were free to look at exhibits and ask questions of staff. Five (5) persons gave verbal comments to the court reporter during the open house public meeting, and seven (7) comment forms were submitted either in person, by mail, or by e-mail following the public meeting.

Public Comments and Input

Staff members who manned the stations at the public meeting made note of informal comments and questions received from attendees. Comments and questions discussed with project staff included:

- Where is this in relation to my house/property? How will it affect my property?
- Questions about access (how will the new roadway work if I want to go south/north compared to how it operates today?)
- Questions about how J-turns would work.
- Questions about (and general support for) use of roundabouts.
- Drainage concerns.
- General support for use of complete streets section (bicycle lanes and sidewalks).
- Comments on recent improvements north of project (W. Club Deluxe Road and I-12 ramp roundabout intersections.

PUBLIC HEARING

A Public Hearing was held on Tuesday September 26, 2017 at the Tangipahoa Parish Environmental Services Building on W. Club Deluxe Road in Hammond, LA, on the northern portion of the study area and a short distance from the northern terminus of the project corridor. The purpose of the Public Hearings were to receive comment and input on the Environmental Assessment Document, which had previously been made available to the public. Attendees were also afforded an opportunity to express their views concerning the proposed project's specific location, major design features, and the probable social, economic, and environmental effects involved as described in the EA document.

The meeting was advertised in the August 27 and September 17 editions of the *Hammond Sunday Star.* Notice was also sent to local radio and television stations. Thirty-nine (39) persons signed in for the Public Hearing.

The Hearing was held in an "open house" format, with the public free to show up at any time during the meeting session. The meeting room featured display stations for engineering drawings, each manned by consultant staff that was available to answer questions. Each of these stations had a display of the full project alignments at 1"= 200' scale on an easel, and 24" x 36" blow-ups of the report document's 11" x 17" plan view,

typical section and detail sheets (at 1"=100' scale). At another station, copies of the previous documents and reports relating to the project were available for review. These included the 2004 Environmental Assessment and the 2009 Stage 0 Feasibility Report. At another station, a transcriptionist was on hand to take any oral comments for the official record from attendees. Another station featured a computer display with a VISSIM video showing how traffic woudl flow once the project was complete. The VISSIM station was manned by traffic sub-consultant staff. The final station featured a PowerPoint presentation projected on a continuous loop on one side of the meeting room, and seating was provided so that attendees could sit and watch the presentation at their leisure. The PowerPoint presentation provided an overview of the project.

Attendees were free to look at exhibits and ask questions of staff. Two (2) persons gave verbal comments to the court reporter during the open house public meeting. No comment forms were submitted either in person, by mail, or by e-mail following the public meeting.

Public Comments

The formal public comments received on the draft EA document (verbal comments taken by transcriptionist) are presented below along with responses:

Jason Moulder; owner of Superior Flooring, a business along US 51B

Comment: On my property, there's a flooring store and we have several eighteen-wheeler trucks entering and exiting the property, and the front of the parking lot is the area that they turn around. According to the models, I would be losing forty foot of my front parking lot. That may be a problem with trucks being able to enter, in and out. That's it, but everything else is wonderful. I'm sure the engineers, architects, and planners can figure something out. Thank you.

Response: Comment noted.

Michelle Fitzgerald, LADOTD Right-of-Way, Real Estate Section

Comment: I am with DOTD Real Estate Section. I wanted to mention a gentleman on Belle Drive who says he's not even on here. He mentioned his name, but I didn't catch it; maybe he signed in. He is on the west side of 51 but on the north side of Belle Drive. So he's on that northwest corner. You can see here, there's nothing. Now, he says it's his law firm. It's also a building they built and it's split. The other half is Salon 51, so it's some kind of hair salon, and maybe the building is called Fleur de Lis. There's a shopping center and restaurant but that's not – that isn't there on Belle Road. Anyway, he's on Belle Road and he said, I'm not even showing up on this plan. He's seventeen-some feet from the existing right-of-way now. So, you know, we are hitting his building. There's no way, okay? I asked him, how much property? This is the size of his lot. It's only 125 feet deep by 174. So there's no way to maneuver him. He enters his building

from Belle Drive, his drive, so he's not off of 51; but, still, the size of this, we are looking at taking him. It's nowhere on here.

Response: The aerial photography used as a base in presenting the plan view roadway layouts was taken at a point in time between the demolition of the residence that was previously on the property and the construction of the new building at 41601 Veterans Avenue/US 51B. All work completed for potential relocation impacts and the Conceptual Relocation Plan included not only use of these aerials but also site visit reconnaissance.

The formal comments received via mail, e-mail, fax or given to the transcriptionist, as well as other information from both the public hearing and public meeting (including meeting notices and advertisements, handouts, sign-in sheets, and PowerPoint presentations) are also included in the stand-alone document *US 51 Business (LA 22 to Club Deluxe Road) Environmental Assessment Public Meeting and Public Meeting Report, April 5, 2016 and September 26, 2017, State Project No. H.008399,* which is referenced in the Appendix of this EA document and is available for review from the RPC.

AGENCY COMMENTS

Only one comment was received from agencies and elected officials who received review copies of the Draft EA document. In a letter dated September 6th, the Louisiana Ecological Services Office of the U.S. Fish and Wildlife Service stated that the project as proposed is not likely to adversely affect trust resources currently protected by the Endangered Species Act (specifically the Gopher Tortoise).

AGENCY AND ELECTED OFFICIAL MEETINGS

Six (6) such meetings were held on this project:

- The first of these was a Project Initiation Meeting held at the LADOTD District 62 Office on January 15, 2015. In addition to discussing procedural, schedule, coordination and other matters, the primary purpose of this meeting was to clarify items in the Scope of Work, including specifics relating to the Line and Grade Study. The definition of "Build Alternatives" for the project was discussed. As the objective in conceptually designing alternatives was the avoidance and minimization of impacts, particularly residential and commercial relocations, it was submitted that rather than explore multiple alignment possibilities (widening to the east, widening to the west, widening equally from the middle) one common widening alignment-- the one with the least impacts -- might be used for all alternatives. Build Alternatives could be differentiated by types of intersection improvements (or combination of different types of intersection improvements), and as per the Scope of Work, three (3) such alternatives would be developed.

The consultant team, RPC and LADOTD staff were in attendance at this meeting.

- On May 22nd, 2015, a brief meeting was held with RPC staff and key members of the consultant team to discuss Traffic Analysis, Alternatives, and several other project items including scheduling of the required site visit and procedures for private land access to complete impact analysis. The consultant team had completed their traffic volume projections and future conditions analyses, and they had conceptualized build alternatives which will bring future traffic conditions up to acceptable LOS levels. These conceptual alternatives were presented and discussed at this meeting.

  Consultant and RPC staff were present at this meeting.

- A project review meeting was held on September 17, 2015 at the LADOTD District 62 Office. The primary purpose of this meeting was to review key findings from *Traffic Technical Memorandum III*, and to have a discussion on the Preliminary Alternative Concepts. After preliminary research, particularly on existing utilities along the corridor and review of land use/vacant land, the approach to use a common widening alignment was confirmed at this progress meeting. For this common widening layout, as much as possible considering the design criteria and geometrics, right-of-way was to be acquired from vacant areas. At this meeting, it was also agreed that wherever possible based on the grade portion of the line and grade study, the new roadway would be constructed in cut rather than fill, with curb and gutter and a subsurface drainage system. Additional or new cross-drains would be included at key locations. This would enable less right-of-way to be required and lessen impacts.

  Different possibilities for reaching the complete streets goal were also discussed in the September 17th meeting, with the two most likely candidate cross sections being:

  - A shared use (bicycle/pedestrian) path on one side of the roadway, along with a pedestrian-only sidewalk on the opposite side; or,

  - In-street bicycle lanes in each direction, along with pedestrian sidewalks along both sides of the roadway.

  Consultant, RPC and LADOTD staff were present at this meeting.

  This meeting was followed by a joint site visit for all parties, who traversed the route from north to south to discuss key aspects of project design. Stops included the new W. Club Deluxe Road roundabout, the North Oaks Medical Center area, the north end of the Ponchatoula Creek Bridge, the Campbell Road intersection, and the LA 22 intersection.

- A follow up meeting was held on November 9th, 2015 at the office of Ponchatoula Mayor Bob Zabbia, with the top elected officials of each jurisdiction (Tangipahoa Parish President, Mayor of Hammond, and Mayor of Ponchatoula) along with RPC and LADOTD staff to discuss. At that meeting a clear consensus was reached that the second cross section (in-street bicycle lanes with pedestrian sidewalks) was preferred, and this would be used in the layout of the alternatives.

  The elected officials and consultant, RPC and LADOTD staff were present at this meeting.

- A progress meeting was held on January 28, 2016, at the LADOTD District 62 offices. At this meeting, the conceptual alternatives were accepted by the RPC and LADOTD; however, the US 51 Business/ LA Hwy 22 intersection was removed from further consideration at the request of the LADOTD as the LADOTD was studying improvements to that intersection as part of a separate project. All traffic data and analysis completed to that point was accepted by LADOTD for their use in that separate project.

  Mayor Bob Zabbia of Ponchatoula and Tangipahoa Parish President Robby Miller asked about intersections at Berringer and Hoffmann and if somehow traffic could be allowed to cross US 51 Business in that location. The consultants and LADOTD explained that the traffic numbers did not warrant a crossing or roundabout, and LADOTD District 62 staff noted there was a proximity issue to the Campbell Road intersection.

  At the meeting, local elected officials suggested that rather than improve the existing signalized intersection locations associated with the North Oaks Medical Center complex (Medical Arts Drive and N.Oaks/Medical Center Drive), the improved intersections (roundabouts or J-turns) may be better served by relocating them to a different roadway accessing the medical complex (namely Paul Vega Medical Drive, a loop road with two access points on US 51 Business that directly accesses the main entrance to the complex).

  Consultant, RPC and LADOTD staff, and local elected officials were present at this meeting.

- A meeting with North Oaks Medical Center officials was held on February 1, 2016 at Don's Seafood Restaurant, during which they were shown the proposed alternatives and at which they expressed their desire to keep the alternatives as originally developed and not relocate the intersection improvements to Paul Vega Medical Drive.

  Consultant, RPC and LADOTD staff, local elected officials, and North Oaks Medical Center were present at this meeting.

- A meeting was held at North Oaks Medical Center on Wednesday, August 10, 2016 to discuss engineering options. As a result of the meeting, the roundabout at the intersection of US 51 Business and N. Oaks Drive/Medical Center Drive was revised/reconfigured under Alternatives 1 and 3. The new configuration involved rotating the roundabout; this provides better allowance for future development on the North Oaks Medical Center site, without seriously impacting the east side of US 51 Business.

  Consultant, RPC and LADOTD staff, local elected officials, and North Oaks Medical Center were present at this meeting.

SOLICITATION OF VIEWS

Early in the planning stages of a transportation facility, views from federal, state and local agencies, organizations and individuals are solicited. The special expertise of these groups can often assist in the early identification of possible adverse economic, social, or environmental impacts or concerns.

A *Solicitation of Views* (SOV) package regarding the project was distributed by the Consultant team on March 11, 2015. The package included a map showing the general location of the project, and a preliminary project description.

Fourteen (14) responses were received from the following agencies and organizations:

- Department of the Army, Vicksburg District, Corps of Engineers
- Department of the Army, New Orleans District, Corps of Engineers
- Louisiana Department of Transportation and Development, Floodplain Management Program Coordinator
- Louisiana Department of Culture, Recreation & Tourism, Office of State Parks, Director of Outdoor Recreation
- Louisiana Department of Culture, Recreation & Tourism, Office of State Parks, Natural Resources Manager
- Louisiana Department of Culture, Recreation & Tourism, Office of Cultural Development
- US Department of Agriculture, National Resources Conservation Service (2 responses)
- Louisiana Department of Agriculture and Forestry
- Louisiana Department of Wildlife and Fisheries, Office of Wildlife (2 responses)
- Louisiana Department of Health and Hospitals, Office of Public Health
- US Environmental Protection Agency, Ground Water /UIC Section
- US Department of the Interior, Fish and Wildlife Service

Most of the responses stated that the agencies had no comment, that the project would have no impact in regards to their particular jurisdiction, or that the agency had no objections to the project.

The US Fish and Wildlife Service did state that the project area may be inhabited by the threatened Gopher Tortoise and that the project area may contain jurisdictional wetlands. The US Army Corps of Engineers also noted that wetland areas subject to Corps of Engineers jurisdiction may occur. The Louisiana Department of Culture, Recreation & Tourism, Division of Archaeology stated that a Phase I Cultural Resources survey was warranted.

A full copy of the *Solicitation of Views* responses is included in the Appendix of this document.

CHAPTER VII

REFERENCES AND APPENDIX

The Environmental Assessment concludes with this chapter. The References section lists publications, websites and other sources of information used in the writing of this document. The Appendix lists the stand-alone documents and other data which were completed as part of this EA and are considered part of this EA. The Appendix also includes copies of the responses to the *Solicitation of Views* and formal agency responses received during the Draft EA review process. Next in the appendix is the Design Report for Minimum Design Guidelines as required by LADOTD. Finally, the Appendix also includes a utility disposition table listing the public and private utilities identified within the roadway alternative alignments.

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APPENDIX:

The following are stand-alone documents which were completed as part of this EA and are considered as part of this EA. They are available for review from the RPC.

- *Draft Phase I Cultural Resources Survey for The Environmental Assessment of the US 51 (La 22 To Club Deluxe Road), Tangipahoa Parish, Louisiana.* Prepared by Earth Search, Inc. April 2016

- *Draft Biological Survey Report for US 51 (LA 22 to Club Deluxe Road) Tangipahoa Parish, LA.* Prepared by ELOS Environmental, August 2015

- *Traffic Noise and Air Quality Analysis Draft Technical Report – US 51 Widening and Improvements (LA 22 to Club Deluxe Road) Tangipahoa Parish, LA*. Prepared by Bowlby and Associates, Inc. May 2016.

- *Phase I Environmental Site Assessment for US 51 (LA 22 to Club Deluxe Road) Tangipahoa Parish, LA.* Prepared by ELOS Environmental, November 2015 (revised)

- *Wetland Finding for US 51 (LA 22 to Club Deluxe Road) Tangipahoa Parish, LA.* Prepared by ELOS Environmental, November 2015

- *US 51 Business (LA 22 to Club Deluxe Road) Stage "1" Environmental Assessment Traffic Study - Traffic Analysis Report*. Prepared by ITS Regional, LLC., May 2016.

- *Conceptual Stage Relocation Plan, State Project Number H.008399, RPC Task US51TAN1, LA 22 to Club Deluxe Road, Route US 51, Tangipahoa Parish*. Prepared by O.R. Colan Associates, Revised May 2016

- *US 51 Business (LA 22 to Club Deluxe Road) Environmental Assessment Public Meeting and Public Meeting Report, April 5, 2016 and September 26, 2017, State Project No. H.008399.* Prepared for the RPC by N-Y Associates, Inc.

Copies of the *Solicitation of Views* responses and formal agency responses during the Draft EA review process are presented beginning on the following page. Following the *Solicitation of Views* responses is the *Design Report for Minimum Design Guidelines* as required by LADOTD. Follwoing the Design Report is a *Utility Disposition Table* listing the public and private utilities identified within the roadway alternative alignments.

DEPARTMENT OF THE ARMY
VICKSBURG DISTRICT, CORPS OF ENGINEERS
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:

March 31, 2015

Regional Planning and
Environment Division South

Bruce J. Richards, AICP
Consultant Project Manager
N-Y Associates, Inc.
2750 Lake Villa Drive
Metairie, Louisiana 70002

Dear Mr. Richards:

Your letter dated March 11, 2015, regarding U.S. Highway 51 Improvements, LA Highway 22 to Club Deluxe Road, Tangipahoa Parish, Louisiana (State Project No. H.008399), has been forwarded to the U.S. Army Corps of Engineers, New Orleans District, as a matter under their jurisdiction. You can expect a reply from that office in the near future.

If you have any questions regarding this matter, please contact Mr. Dan Moore of this office (telephone (601) 631-5008).

Sincerely,

Jacob Brister
Chief, Project Management Branch

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
P. O. BOX 60267
NEW ORLEANS LA 70160-0267

REPLY TO
ATTENTION OF

JUN 17 2015

Operations Division
Operations Manager,
Completed Works

Mr. Bruce J. Richards, AICP
N-Y Associates, Inc.
2750 Lake Villa Drive
Metairie, Louisiana 70002

Dear Mr. Richards:

This is in response to your Solicitation of Views request dated March 11, 2015, on behalf of the Regional Planning Commission and Louisiana Department of Transportation and Development, concerning the U.S. Highway 51 Improvements, LA Highway 22 to Club Deluxe Road in Tangipahoa Parish, Louisiana (State Project Number H.008399).

We have reviewed your request for potential Department of the Army regulatory requirements and impacts on any Department of the Army projects.

We do not anticipate any adverse impacts to any Corps of Engineers projects.

Based on review of recent maps, aerial photography, and soils data, we have determined that wetland areas that may be subject to Corps of Engineers jurisdiction occur on this property. However, these wetlands cannot be accurately delineated without a field investigation. If an accurate delineation is needed, please furnish us with the field data concerning vegetation, soils, and hydrology that we require for all jurisdictional decisions. A Department of the Army (DA) permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into jurisdictional wetlands. Additionally, Ponchatoula Creek is a navigable waterway and subject to Corps of Engineers jurisdiction under Section 10 of the Rivers and Harbors Act. A DA Section 10 permit will be required prior to any work in this waterway.

This preliminary determination is advisory in nature. The fact that a field wetland delineation/determination has not been completed does not alleviate your responsibility to obtain the proper DA permits prior to working in jurisdictional wetlands or waters occurring on this property.

Off-site locations of activities such as borrow, disposals, haul-and detour-roads and work mobilization site developments may be subject to Department of the Army regulatory requirements and may have an impact on a Department of the Army project.

You should apply for said permit well in advance of the work to be performed. The application should include sufficiently detailed maps, drawings, photographs, and descriptive text for accurate evaluation of the proposal.

Please contact Mr. Robert Heffner, of our Regulatory Branch by telephone at (504) 862-1288, or by e-mail at Robert.A.Heffner@usace.army.mil for questions concerning wetlands determinations or need for on-site evaluations. Questions concerning regulatory permit requirements may be addressed to Mr. Michael Farabee by telephone at (504) 862-2292 or by email at Michael.V.Farabee@usace.army.mil.

Future correspondence concerning this matter should reference our account number MVN-2015-00758-SY. This will allow us to more easily locate records of previous correspondence, and thus provide a quicker response.

We apologize for missing the target date of April 15, 2015 listed in your request. Thank you for your patience in this matter.

Sincerely,

Karen L. Clement

Karen L. Clement
Solicitation of Views Manager

Office of the Secretary
PO Box 94245 | Baton Rouge, LA 70804-9245
ph: 225-379-3005 | fx: 225-379-3002

Bobby Jindal, Governor
Sherri H. LeBas, P.E., Secretary

May 8, 2015

STATE PROJECT NO.: H.008399
F.A.P. NO.: H008399
US HIGHWAY 51 IMPROVEMENTS
LA HIGHWAY 22 TO CLUB DELUXE ROAD
PARISH: TANGIPAHOA

US Highway 51 Improvements
c/o N0Y Associates, inc.
Attn: Bruce J. Richards, AICP
2750 Lake Villa Drive
Metairie, LA 70002

Subject: Solicitation of Views

Dear Mr. Richards:

Enclosed are copies of Tangipahoa Parish's Flood Insurance Rate Map (FIRM) indicating the proposed project.

During the improvements and construction, there must be allowance for the adequate flow of water and assurance that there will be no back up of water. There must be no instance of the creation of flooding where there was no flooding prior to construction. At this time, consideration must be given to the responsibility for cleaning debris and keeping the surrounding area clear so as not to interfere with its function.

In order to assure compliance with Tangipahoa Parish's requirements for the National Flood Insurance Program (NFIP), and ensure that appropriate permits are obtained, please contact the floodplain administrator for the Parish. The contact person is: Andy Currier, 15485 W. Club Deluxe, Hammond, LA 70403 and telephone no. (985) 748-3211. The proposed project also lies within the city limits of Hammond and Pontchatoula. The contact person for the City of Hammond is: Josh Taylor, 219 East Robert Street, Hammond, LA 70404 and telephone no. (985) 277-5648. The contact person for the City of Pontchatoula is: Christopher Winburn, 125 West Hickory Street, Ponchatoula, LA 70454 and telephone no. (985) 386-6484.

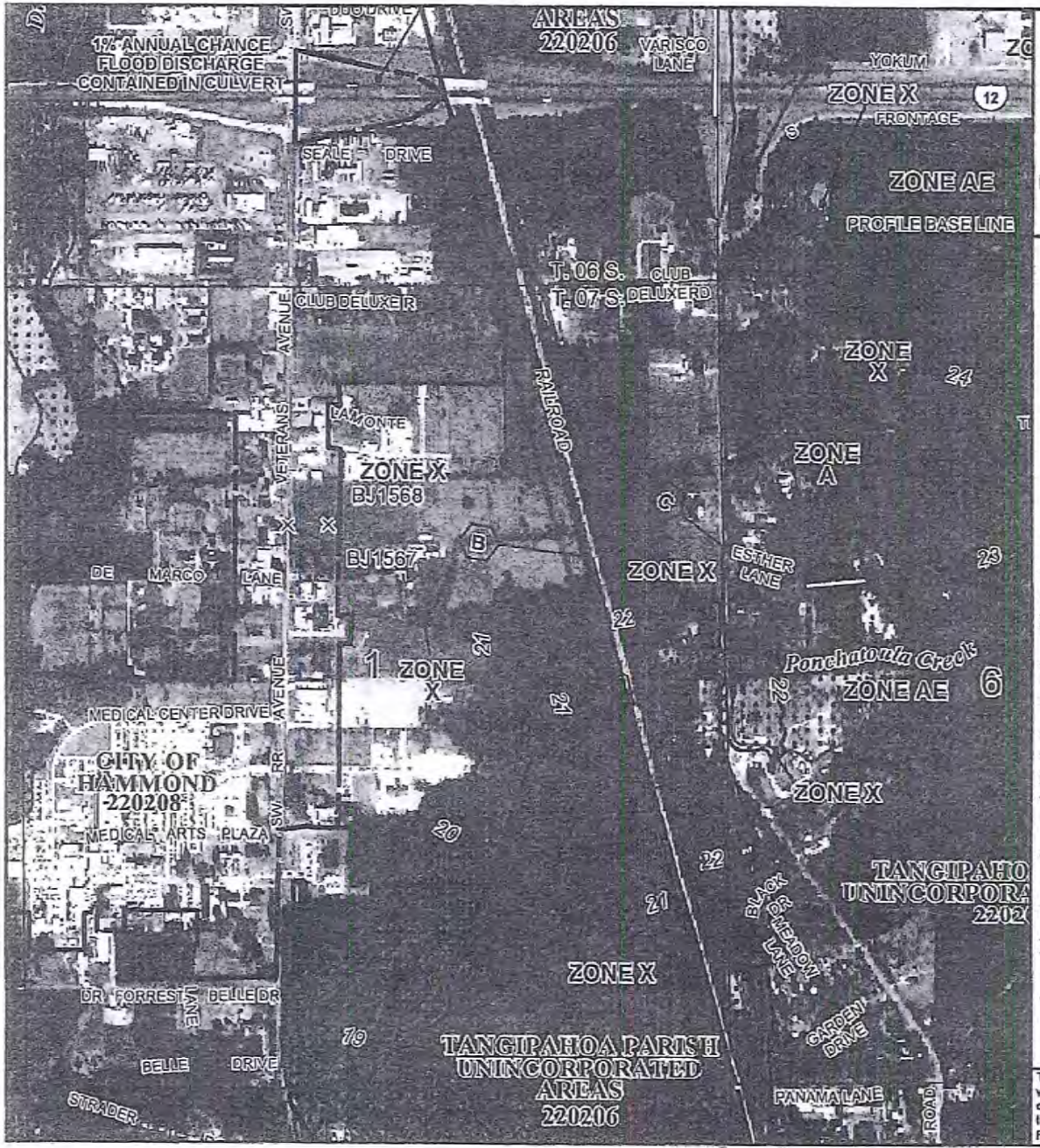
We thank you for the opportunity to comment on this project. If you need additional information, please contact our office, (225) 379-3005.

Sincerely,

Jennifer D. Rachal

Jennifer Deglandon Rachal
Floodplain Management Program Coordinator

pc: Andy Currier
Josh Taylor
Christopher Winburn



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

NFIP

PANEL 0430F

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TANGIPAHOA PARISH, LOUISIANA

AND INCORPORATED AREAS

PANEL 430 OF 650

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
TANGIPAHOA PARISH (UNINCORPORATED AREAS)	220206	0430	F
HAMMOND, CITY OF	220208	0430	F
PONCHATOULA, CITY OF	220211	0430	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

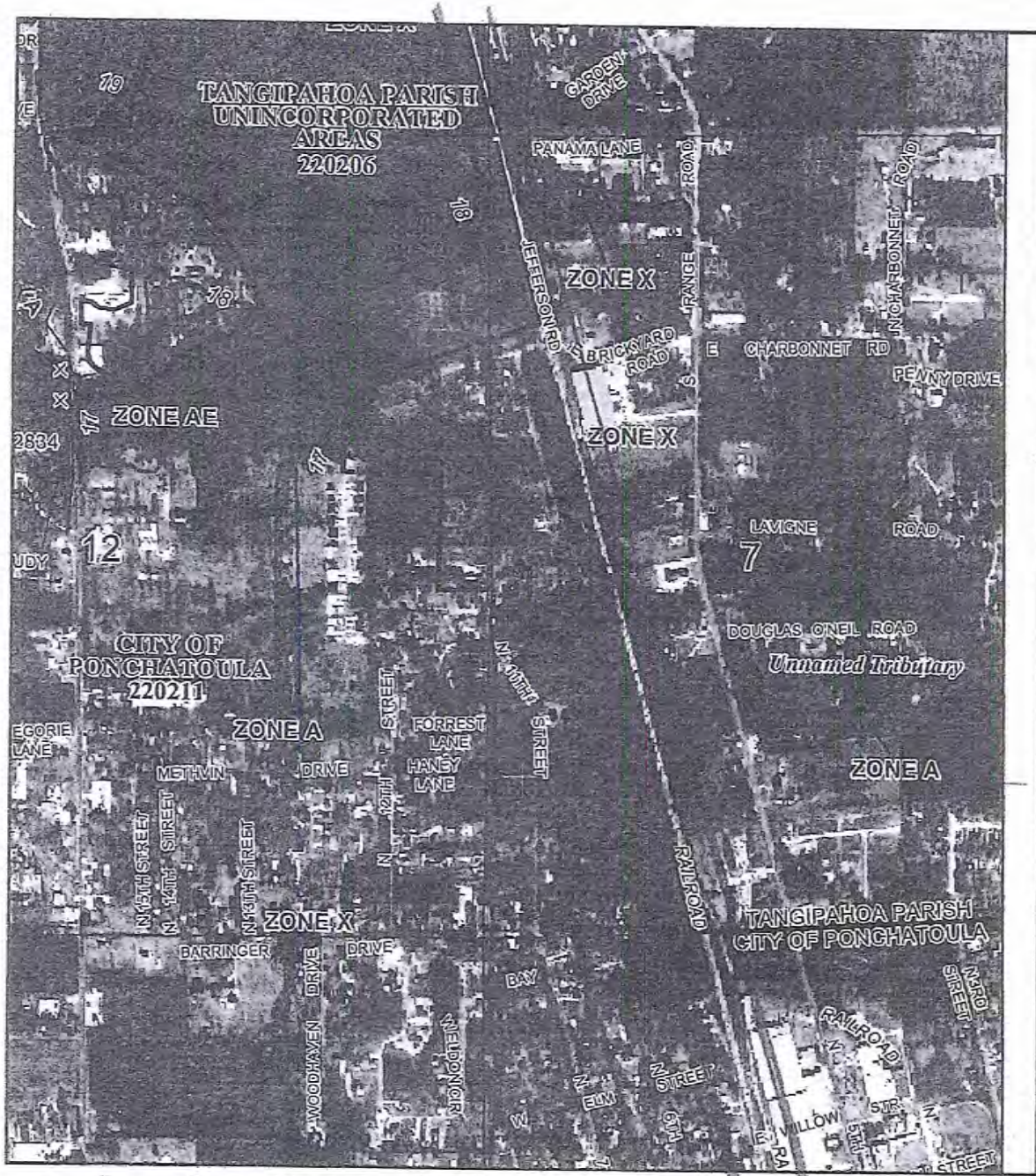
MAP NUMBER
22105C0430F

EFFECTIVE DATE
JULY 22, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

1 of 3: H.008399: US Hwy 51 improvements - LA Hwy 22 to Club Deluxe



National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

NFIP PANEL 0430F

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TANGIPAHOA PARISH, LOUISIANA

AND INCORPORATED AREAS

PANEL 430 OF 650

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
TANGIPAHOA PARISH (UNINCORPORATED AREAS)	220206	0430	F
HAMMOND, CITY OF	220208	0430	F
PONCHATOULA, CITY OF	...0211	0430	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
22105C0430F

EFFECTIVE DATE
JULY 22, 2010

Federal Emergency Management Agency

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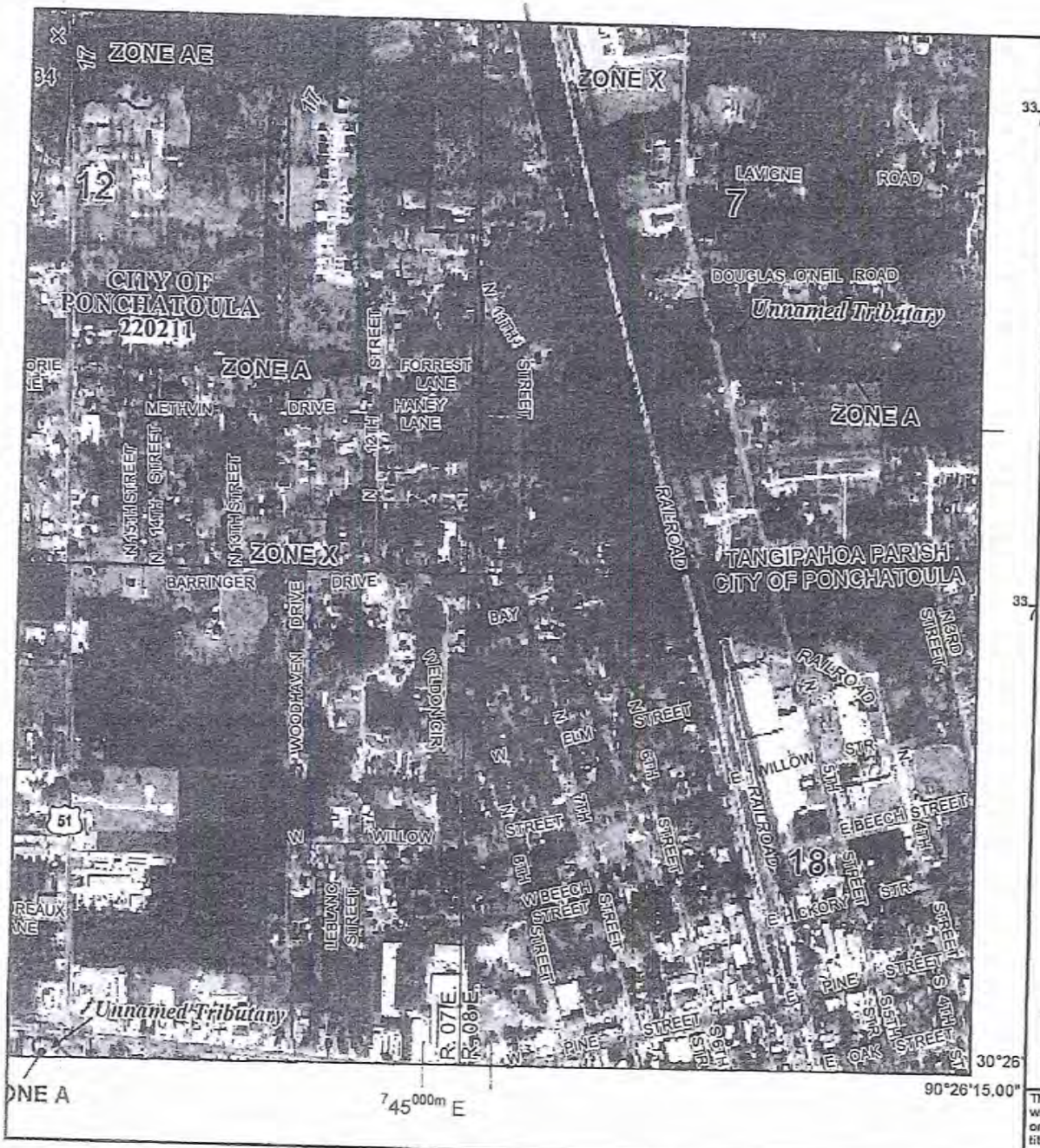
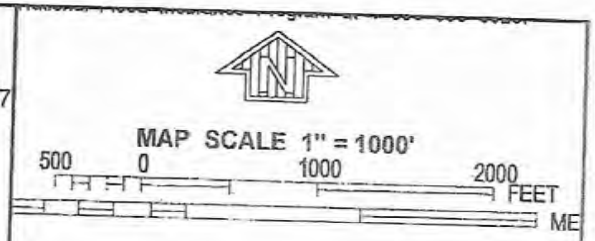
2 of 3: H.008399: US Hwy 51 Improvements - LA Hwy 22 to Club Deluxe





NFIP PANEL 0430F

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TANGIPAHOA PARISH, LOUISIANA

AND INCORPORATED AREAS

PANEL 430 OF 650

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
TANGIPAHOA PARISH (UNINCORPORATED AREAS)	220206	0430	F
HAMMOND, CITY OF	220208	0430	F
PONCHATOULA, CITY OF	220211	0430	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
22105C0430F

EFFECTIVE DATE
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Federal Emergency Management Agency

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3 of 3: H.008399: US Hwy 51 improvements - LA Hwy 22 to Club Deluxe

U. S. Department of Homeland Security
FEMA Region 6
800 North Loop 288
Denton, TX 76209-3698

FEMA

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION VI
MITIGATION DIVISION

NOTICE REVIEW/ENVIRONMENTAL CONSULTATION

☐ We have no comments to offer. ☒ We offer the following comments:

WE WOULD REQUEST THAT THE COMMUNITIES' FLOODPLAIN ADMINISTRATORS BE CONTACTED FOR THE REVIEW AND POSSIBLE PERMIT REQUIREMENTS FOR THIS PROJECT. IF FEDERALLY FUNDED, WE WOULD REQUEST PROJECT TO BE IN COMPLIANCE WITH EO13690 & EO 11990.

REVIEWER:

Mayra G. Diaz
Floodplain Management and Insurance Branch
Mitigation Division
(940) 898-5541

DATE: March 23, 2015

JAY DARDENNE
LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF STATE PARKS

CHARLES R. DAVIS
DEPUTY SECRETARY

DWIGHT LANDRENEAU
ASSISTANT SECRETARY

March 23, 2015

US Highway 51 Improvements
c/o N-Y Associates, Inc.
Attn: Bruce J. Richards, AICP
2750 Lake Villa Drive
Metairie, LA 70002

Re: State Project No. H.008399
U.S. Highway 51 Improvements
LA Highway 22 to Club Deluxe Road
Tangipahoa Parish

To Whom It May Concern:

I am in receipt of the solicitation of views request regarding improvements to U.S. Highway 51 from LA Highway 22 north to Club Deluxe Road in Tangipahoa Parish.

The Division of Outdoor Recreation in the Louisiana Office of State Parks administers the Land and Water Conservation Fund and the Recreational Trails Program for Louisiana. In this capacity we compile an inventory of recreational sites within the state for publication in the Statewide Comprehensive Outdoor Recreation Plan (SCORP) published periodically. The most recent SCORP was published for the period of 2014-2019 with an inventory developed in 2014.

Based on the information provided, our office does not find any conflict regarding the entire length of this study area with existing recreational facilities.

Sincerely,

Cleve Hardman
Director of Outdoor Recreation

JAY DARDENNE
LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT

CHARLES R. DAVIS
DEPUTY SECRETARY

PAM BREAUX
ASSISTANT SECRETARY

March 17, 2015

Bruce J. Richards
Consultant Project Manager
NY Associates, Inc.
2750 Lake Villa Drive
Metairie, LA 70002

Re: Section 106 Request for Additional Information
State Project No. H.008399
US Hwy 51 Improvements - LA 22 to Club Deluxe Road
Tangipahoa Parish, LA

Dear Mr. Richards:

Thank you for your letter of March 11, 2015, concerning the above-referenced undertaking. We are unable to complete the Section 106 review at this time due to the submittal of insufficient documentation. We will need the following information to complete our review for the aforementioned project:

☐ Name of federal agency, agency involvement (Funding, license\permit, etc. and description of the undertaking (Detailed description of project).

☐ Applicant contact information (Name, address, phone number and email address).

☐ Agency contact information (Name, address, phone number and email address).

☒ Description of the Area of Potential Effects (APE). The APE can be direct or indirect. It is defined as "the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist." (Include the latitude\longitude of the undertaking location and APE)

☒ Description of all historic properties within and adjacent to the APE. The historic standing structure is any structure fifty years of age and older. Under Section 106, it is the responsibility of the federal agency or its designee to identify all structures listed or eligible for listing in the National Register of Historic Places.

☒ Detailed project scope of work including design plans.

☒ Map and site plan showing APE and exact location of project undertaking.

☒ Photographs of the entire APE and project location. Photographs of all historic (fifty years of age and older) within the APE. Buildings should be documented showing diagonal views of front and side and rear and opposite side of the building. All photos should be keyed to a site map and project plans if applicable.

If you have any questions, please contact Mike Varnado in the Division of Historic Preservation at (225) 219-4596 or mvarnado@crt.la.gov.

Sincerely,

Pam Breaux

Pam Breaux
State Historic Preservation Officer

PB:MV:s

Cc by email: Noel Ardoin, Environmental Engineer Administrator, LDOTD

JAY DARDENNE
LIEUTENANT GOVERNOR

State of Louisiana

OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF STATE PARKS

CHARLES R. DAVIS
DEPUTY SECRETARY

DWIGHT LANDRENEAU
ASSISTANT SECRETARY

March 18, 2015

N-Y Associates, Inc.
2750 Lake Villa Drive
Metairie, LA 70002

Re: State Project No. H.008399

Dear Bruce Richards:

The Office of State Parks has reviewed your proposed project for improving US 51 Business between LA 22 and Club Deluxe Road in Tangipahoa Parish.

We have no parks, sites or other recreational areas located near this project and have no objections or concerns.

Best regards,

Britt Evans
Natural Resources Manager

BE: be

USDA United States Department of Agriculture

February 27, 2015

ELOS Environmental, LLC
Patrick S. MacDaniel
Wildlife Biologist/NEPA Specialist
pmacdaniel@elosenv.com
43177 East Pleasant Ridge Road
Hammond, Louisiana 70403

RE: U.S. Route Business 51 Improvements
Louisiana Highway 22 to Club Deluxe Road
Tangipahoa Parish, Louisiana
State Project No. H.008399

Dear Mr. MacDaniel:

I have reviewed the above referenced project for potential requirements of the Farmland Protection Policy Act (FPPA) and potential impact to Natural Resources Conservation Service (NRCS) projects in the immediate vicinity.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

The project map submitted with your request indicates that the proposed construction areas are within urban areas and therefore is exempt from the rules and regulations of the Farmland Protection Policy Act (FPPA)—Subtitle I of Title XV, Section 1539-1549. Furthermore, we predict no impact to NRCS projects in the vicinity.

For specific information about the soils found in the project area, please visit our Web Soil Survey at the following location:

http://websoilsurvey.nrcs.usda.gov/

Please direct all future correspondence to me at the address shown above.

Respectfully,

Kevin D. Norton
State Conservationist ACTING FOR

Natural Resources Conservation Service
State Office
3737 Government Street
Alexandria, Louisiana 71302
Voice: (318) 473-7751 Fax: 1-844-325-6947

USDA

United States Department of Agriculture

March 26, 2015

Mr. Bruce J. Richards, AICP
N-Y Associates, Inc.
2750 Lake Villa Drive
Metairie, Louisiana 70002

RE: US Highway 51 Improvements
LA Highway 22 to Club Deluxe Road
State Project No. H.008399

Dear Mr. Richards:

I have reviewed the above referenced project for potential requirements of the Farmland Protection Policy Act (FPPA) and potential impact to Natural Resources Conservation Service projects in the immediate vicinity.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

The project map and narrative submitted with your request indicates that the proposed construction areas are within urban areas and therefore are exempt from the rules and regulations of the Farmland Protection Policy Act (FPPA)—Subtitle I of Title XV, Section 1539-1549. Attached is completed form NRCS-CPA-106. Furthermore, we do not predict impacts to NRCS work in the vicinity.

For specific information about the soils found in the project area, please visit our Web Soil Survey at the following location: http://websoilsurvey.nrcs.usda.gov/

Please direct all future correspondence to me at the address shown above.

Respectfully,

(ACTING FOR)
Kevin D. Norton
State Conservationist

Enclosure

Natural Resources Conservation Service
State Office
3737 Government Street
Alexandria, Louisiana 71302
Voice: (318) 473-7751 Fax: 1-844-325-6947

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 3/11/15	4. Sheet 1 of _____
1. Name of Project **US Highway 51 Improvements**	5. Federal Agency Involved **DOTD**	
2. Type of Project **Road Expansion - Additional ROW**	6. County and State **Tangipahoa Parish, Louisiana**	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 3/25/15	2. Person Completing Form M. Mouton
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☑		4. Acres Irrigated | Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS 3/26/15

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment _____			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor				
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*				
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area in Nonurban Use — 15				
2. Perimeter in Nonurban Use — 10				
3. Percent Of Corridor Being Farmed — 20				
4. Protection Provided By State And Local Government — 20				
5. Size of Present Farm Unit Compared To Average — 10				
6. Creation Of Nonfarmable Farmland — 25				
7. Availablility Of Farm Support Services — 5				
8. On-Farm Investments — 20				
9. Effects Of Conversion On Farm Support Services — 25				
10. Compatibility With Existing Agricultural Use — 10				
TOTAL CORRIDOR ASSESSMENT POINTS — 160	0	0	0	0
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100	0	0	0	0
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)* — 260	0	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
			YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

(2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with $1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

BOBBY JINDAL
GOVERNOR

State of Louisiana
DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

ROBERT J. BARHAM
SECRETARY
JIMMY L. ANTHONY
ASSISTANT SECRETARY

Date	April 2, 2015
Name	Bruce J. Richards
Company	N-Y Associates, Inc.
Street Address	2750 Lake Villa Drive
City, State, Zip	Metarie, LA 70002
Project	U.S. Highway 51 Improvements LA Highway 22 to Club Deluxe Road State Project No. H.008399
Project ID	412015
Invoice Number	15040219

Personnel of the Coastal & Nongame Resources Division have reviewed the preliminary data for the captioned project. After careful review of our database, no impacts to rare, threatened, or endangered species or critical habitats within Louisiana's boundary are anticipated for the proposed project. No state or federal parks, wildlife refuges, scenic streams, or wildlife management areas are known at the specified site within Louisiana's boundaries.

The Louisiana Natural Heritage Program (LNHP) has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. The quantity and quality of data collected by the LNHP are dependent on the research and observations of many individuals. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Louisiana have not been surveyed. This report does not address the occurrence of wetlands at the site in question. Heritage reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. LNHP requires that this office be acknowledged in all reports as the source of all data provided here. If at any time Heritage tracked species are encountered within the project area, please contact the LNHP Data Manager at 225-765-2643. If you have any questions, or need additional information, please call 225-765-2357.

Sincerely,

for Carolyn Micha

Amity Bass, Coordinator
Natural Heritage Program

LOUISIANA DEPARTMENT OF AGRICULTURE & FORESTRY
MIKE STRAIN DVM
COMMISSIONER

March 24, 2015

N-Y Associates, Inc.
Attention: Bruce J. Richards, AICP
2750 Lake Villa Drive
Metairie, Louisiana 70002

RE: Solicitation of Views

STATE PROJECT NO. H.008399
U.S. HIGHWAY 51 IMPROVEMENTS
LA HIGHWAY 22 TO CLUB DELUXE ROAD
TANGIPAHOA PARISH, LOUISIANA
N-Y JOB NO. 14021.01

Dear Mr. Richards,

I have no comment at this time regarding the above referenced project.

Sincerely,

Brad Spicer KH

Bradley E. Spicer
Assistant Commissioner

BES:kh

Agricultural & Environmental Sciences
P.O. Box 3596
Baton Rouge, LA 70821
(225) 925-3770
Fax: 925-3760

Agro-Consumer Services
P.O. Box 3098
Baton Rouge, LA 70821
(225) 922-1341
Fax: 923-4877

Animal Health & Food Safety
P.O. Box 1951
Baton Rouge, LA 70821
(225) 925-3982
Fax: 925-4103

Forestry
P.O. Box 1628
Baton Rouge, LA 70821
(225) 925-4500
Fax: 922-1356

Management & Finance
P.O. Box 3481
Baton Rouge, LA 70821
(225) 922-1255
Fax: 925-6012

Soil & Water Conservation
P.O. Box 3554
Baton Rouge, LA 70821
(225) 922-1269
Fax: 922-2577

Bobby Jindal
GOVERNOR

Kathy H. Kliebert
SECRETARY

State of Louisiana

Department of Health and Hospitals
Office of Public Health

March 20, 2015

US Highway 51 improvements
c/o N-Y Associatesm, Inc.
attn: Bruce J. Richards, AICP
2750 Lake Villa Drive
Metairie, Louisiana 70002

Re: Solicitation of Views;
Off-System Highway Bridge Program;
State Project Number: H.010660; F.A.P. Number: H010660;
Tucker Road Bridge, Dyer Road Bridge, and Denham Road Bridge;
St. Charles Parish, Louisiana; BHE Project No. 13-0183

This office is in receipt of a Solicitation of Views regarding the above referenced project(s).

Based upon the information received from your office we have no objection to the referenced project(s) at this time. The applicant shall be aware of and comply with any and all applicable Louisiana State Sanitary Code regulations (LAC 51, as applicable). Furthermore, should additional project data become available to this office that in any way amend the information upon which this office's response has been based, we reserve the right of additional comments on the referenced project(s).

In the event of any future discovery of evidence of non-compliance with the Louisiana Administrative Code Title 51 (Public Health-Sanitary Code) and the Title 48 (Public Health-General) regulations or any applicable public health laws or statutes which may have escaped our awareness during the course of this cursory review, please be advised that this office's preliminary determination on this Solicitation of View of the project(s) shall not be construed as absolving the applicant of responsibility, if any, with respect to compliance with the Louisiana Administrative Code Title 51 (Public Health-Sanitary Code) and the Title 48 (Public Health-General) regulations or any other applicable public health laws or statutes.

Sincerely,

Yuanda Zhu, Ph. D., P.G.
Louisiana Department of Health and Hospitals
Office of Public Health Engineering Services
Telephone: (225) 342-7432
Electronic mail: yuanda.zhu@la.gov

BOBBY JINDAL
GOVERNOR

State of Louisiana
DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

ROBERT J. BARHAM
SECRETARY
JIMMY L. ANTHONY
ASSISTANT SECRETARY

Date	March 6, 2015
Name	Patrick S. MacDanel
Company	ELOS environmental
Street Address	43177 E. Pleasant Ridge Rd
City, State, Zip	Hammond, La 70403
Project	U.S. Route Business 51 Improvements State Project No. H.008399
Project ID	412015
Invoice Number	15030604

Personnel of the Coastal & Nongame Resources Division have reviewed the preliminary data for the captioned project. After careful review of our database, no impacts to rare, threatened, or endangered species or critical habitats are anticipated for the proposed project. No state or federal parks, wildlife refuges, scenic streams, or wildlife management areas are known at the specified site within Louisiana's boundaries.

The Louisiana Natural Heritage Program (LNHP) has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. The quantity and quality of data collected by the LNHP are dependent on the research and observations of many individuals. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Louisiana have not been surveyed. This report does not address the occurrence of wetlands at the site in question. Heritage reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. LNHP requires that this office be acknowledged in all reports as the source of all data provided here. If at any time Heritage tracked species are encountered within the project area, please contact the LNHP Data Manager at 225-765-2643. If you have any questions, or need additional information, please call 225-765-2357.

Sincerely,

for Coralee Mischa
Amity Bass, Coordinator
Natural Heritage Program

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

March 9, 2015

Mr. Patrick S. MacDanel
Wildlife Biologist/NEPA Specialist
ELOS Environmental, LLC
43177 East Pleasant Ridge Road
Hammond, LA 70403

Dear Mr. MacDanel

We have received your February 20, 2015, letter requesting our evaluation of the potential environmental impacts which might result from the following project:

U.S. Route Business 51 Improvements
LA Hwy 22 to Club Deluxe Road
State Project No. H.008399
Tangipahoa Parish
Hammond, LA

The project, funded by the Federal Highway Administration, is located on the Southern Hills aquifer system which has been designated a sole source aquifer (SSA) by the EPA. Based on the information provided for the project, we have determined that the project, as proposed, should not have an adverse effect on the quality of the ground water underlying the project site.

This approval of the proposed project does not relieve the applicant from adhering to other State and Federal requirements, which may apply. This approval is based solely upon the potential impact to the quality of ground water as it relates to the EPA's authority pursuant to Section 1424(e) of the Safe Drinking Water Act.

If you did not include the parish, project description, project location or the federal funding agency, please do so in future SSA correspondence.

If you have any questions on this letter or the SSA program please contact me at (214) 665-7133.

Sincerely yours,

Omar T. Martinez, Coordinator
Sole Source Aquifer Program
Ground Water/UIC Section

cc: Jesse Means, LDEQ

United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

March 17, 2015

Mr. Patrick S. MacDanel
ELOS Environmental, LLC
43177 East Pleasant Ridge Road
Hammond, Louisiana 70403

Dear Mr. MacDanel:

Please reference your February 20, 2015, letter regarding the proposed U.S. Route Business 51 Improvement project (State Project No. H.008399). That proposal would consist of 2.59 miles of road improvements to the federal highway U.S. Route 51 Business between its intersections with Louisiana Highway 22 and Club Deluxe Road in Ponchatoula, Tangipahoa Parish, Louisiana. The Fish and Wildlife Service has reviewed the information provided, and offers the following comments in accordance with provisions of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

Threatened/Endangered Species

Gopher Tortoise

In Louisiana, the threatened, gopher tortoise (*Gopherus polyphemus*) occurs in Washington, Tangipahoa, and St Tammany Parishes. The gopher tortoise is the only native tortoise found in the southeastern United States. This species is associated with areas that have well-drained, sandy soils appropriate for burrow establishment, ample sunlight for nesting, and understory vegetation suitable for foraging (i.e., grasses and forbs). The burrow opening is semicircular or "half-moon" in shape and a low mound of bare soil will be immediately in front of the mouth of an active burrow. Suitable soil types for gopher tortoises include Latonia and Bassfield (highly suitable), Cahaba, Ruston, and Smithdale (less suitable), and Abita, Malbis, Angie, and Prentiss (marginal). According to our records, Abita soil is within the proposed project area.

Gopher tortoises prefer "open" longleaf pine-scrub oak communities that are thinned and burned every few years. Habitat degradation (lack of thinning or burning on pine plantations), predation, and conversion to agriculture or urbanization have contributed to the decline of this species. That habitat decline has concentrated many remaining gopher tortoise populations along pipeline and power line rights-of-way (ROW) within their range. Tortoise burrows also can be found along road ROW's, and other marginal habitats; including fence rows, orchard edges, golf course roughs and edges, old fields, and pasturelands. Tortoises are often pushed into these areas due to adjacent habitat becoming unsuitable.

If suitable gopher tortoise habitat does exist within a proposed action area, those areas should be surveyed by a qualified biologist for the presence of gopher tortoises and/or their burrows. Survey areas should be divided into consecutive "sight-distance" strip transects, each of which should be traversed by walking. Transect widths may range from 10 to 50 feet, and will be determined by ground visibility within the site.

We recommend that you provide this office with a copy of the survey report, which should include the following information:

1. Survey methodology including dates, qualifications of survey personnel, size of survey area, and transect density;

2. general soil type, understory conditions, percent canopy cover, and species composition (several representative photographs should be included);

3. GPS coordinates and photographs of burrow(s) to clarify whether the hole is for tortoises or some other animal (i.e. fox, armadillo);

4. determination of burrow status as active, inactive, or old (see burrow descriptions below);

5. presence or absence of gopher tortoises outside the burrow (only permitted individuals may videoscope burrows);

6. determination of whether the burrow is part of tortoise colony. (For each burrow found, a 600 foot radius around that burrow should be surveyed for additional burrows. This process should be continued for each new burrow until no new burrows are found, and will determine the extent of the colony); and,

7. topographic maps which illustrate areas of adequate gopher tortoise habitat, individual and/or colony locations, and burrow sites relative to proposed construction activities.

All persons surveying for gopher tortoise presence/absence should be familiar with the appearance of this species and its associated burrow. All tortoise burrows encountered should be categorized according to the following scheme:

1. Active – most likely occupied by a tortoise; as evidenced by presence of tortoise, freshly dug sand, tortoise tracks, or tortoise scat.

2. Inactive – most likely not currently occupied by a tortoise; as evidenced by absence of above signs, debris in burrow entrance. Future use of Inactive burrows by tortoises occasionally occurs.

3. Old – most likely not occupied by a tortoise for many years; as evidenced by deteriorated nature of burrow entrance, (i.e. collapsed, growth of vegetation, sand washed in, etc.) Old burrows are in such a condition that they are not considered to be good candidates for future use by tortoises.

If no individual tortoises or burrows are found, a request for our concurrence with an effect determination from the federal action agency involved, and the basis for that determination, should be included with the survey report. If we concur with that determination, no further consultation with this office will be necessary. If active burrows and/or gopher tortoises are found in the surveyed area, however, further consultation with this office will be necessary.

Wetlands

The project area may contain jurisdictional wetlands. For a complete jurisdictional wetland delineation of the proposed project, please contact Mr. Robert Heffner (504/862-2274) at the New Orleans District, U.S. Army Corps of Engineers (Corps). If the Corps determines that the proposed project is within their regulatory jurisdiction, official U.S. Fish and Wildlife Service comments will be provided in response to the corresponding Public Notice.

We appreciate the opportunity to provide comments in the planning stages of this proposed project. If you need further assistance regarding the gopher tortoise, please contact Michael Sealy (337/291-3123). If you need further assistance for other matters regarding this letter, please contact Joshua Marceaux (337/774-5923).

Sincerely,

Brad S. Rieck
Deputy Supervisor
Louisiana Ecological Services Office

cc: Corps of Engineers, New Orleans, LA
LADOTD, Louisiana Department of Transportation and Development, Baton Rouge, LA
LDWF, Natural Heritage Program, Baton Rouge, LA

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Design Report
for
Minimum Design Guidelines

Status:
- ○ Preliminary
- ○ Final
- ○ Revised

Project Information:

State Project No.	H.008399
Federal Aid Project No.	H008399
Control Section(s)	853-36
Project Name	US 51 Business (LA-22 to Club Deluxe Road)
Route(s)	US 51 Business
Parish	TANGIPAHOA

Traffic

Current ADT 2015	14,000-17,000
Design ADT 2035	22,382-27,837
D	N/A
K	N/A
T	N/A
TDDHV	N/A

Route and Design Classification

☑ Urban ☐ Rural

☐ Freeway ☑ Arterial ☐ Collector ☐ Local ☐ Ramp

Work Classification

Work Type	System	Oversight
☑ New/Reconstruction	☐ NHS	☐ PoDI
☐ Major Rehabilitation	☑ Non NHS	☐ Assumed
☐ Structural Improvement		☐ None
☐ Spot Replacement		
☐ Minor Rehabilitation		
☐ Preventive Maintenance		

Description of Work (or Revision Description)

Widening of existing US 51 Business from 3 lanes to a 4-lane divided section; replacement of 2-lane posted bridge with parallel two-lane bridges carrying one way traffic; addition of a raised median, bump outs, curbs, bike lanes, sidewalks, and 3 roundabouts.

Design Waivers

Lane width, outside shoulder width, fore slope, and median width.

Design Exceptions

Signatures

Prepared by:		Recommended by:		Approved by: (DOTD Project Manager)	
Signature:	Date:	Signature:	Date:	Signature:	Date:
Title:		Title:		Title:	

Design Waivers are approved with this form by the DOTD Project Manager. All Design Exceptions must be approved by the Chief Engineer with the Design Exception form.

State Project No. H.008399 Route US-51 B Control Section 853-36 PM Initials

Roadway Features:

DESIGN FEATURE	***Design Guidelines***		*Existing Value*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
	Preferred	*Acceptable*					
Design Speed (mph)		30-60	45	45			
Lane Width (ft)	12	11	12	11	✔		Through meetings with the LADOTD, RPC, Hammond and Ponchatoula, 11' lanes will be used to provide for a 3' buffer between the travel lanes and a 6' bike lane in each direction to
Shoulder Width (ft)							
Inside	1	1	N/A	1			
Outside	4	1	1	3	✔		The 3' buffer and the 6' bike lane will be paved and this could be considered a 9' paved shoulder.
Shoulder Type							
Inside	Paved	Paved	Paved	Paved			
Outside	Paved	Paved	Paved	Paved			
Vertical Clearance (ft)		16.5	N/A	N/A			
Lateral Offset (ft)	8	1.5	Not Given	8			
Clear Zone (ft)		See Notes	Not Given	Not Given			A recovery area of 10' is required at the toe of 3:1 fore slopes. Existing and proposed clear zone width will be determined in Stage 3 (Design).
Cross Slope (%)		2.5	2.5	2.5			
Slopes (ft/ft)							
Fore Slope	4:1	3:1	Not Given	3:1	✔		
Back Slope	3:1	3:1	Not Given	3:1			
Median Width (ft)	50	6	None	16	✔		The 6' minimum median width is proposed to limit the required right-of-way in an area with significant trees. The remaining project will use a 16' raised median width is proposed to

Bridge Features:

DESIGN FEATURE	***Design Guidelines***		*Existing Value*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
	Preferred	*Acceptable*					
Bridge Width (ft)							
Curb	30*	26**	N/A	38			Proposed bridge width value also includes sidewalk width. *Preferred: "travel lanes + 4' each side." **Acceptable: "approach lanes + shoulder width"
Shoulder	N/A	N/A	24	N/A			

State Project No. H.008399 Route US-51 B Control Section 853-36 PM Initials

Geometric Features

Superelevation (Attach Calculations if applicable)	*Design Speed (mph)*	*R (ft)*	*e max (%)*	*e proposed (%)*	*Transition Length (ft)*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
Curve 1	45	4181	4	0	N/A		
Curve 2	45	4219	4	0	N/A		
Curve 3	45	2465	4	0	N/A		
Curve 4	45	3114	4	0	N/A		
Curve 5	45	4220.14	4	0	N/A		
Curve 6	45	4000	4	0	N/A		
Curve 7	45	4000	4	0	N/A		
Curve 8	45	8700	4	0	N/A		
Curve 9	45	8700	4	0	N/A		
Curve 10							

Longitudinal Grade:

Acceptable (%)	*Max Used (%)*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
5	0.61		0.40% minimum value is met.

Stopping Sight Distance: *Vertical and horizontal distances must be met.*

Do plans meet Stopping Sight Distance requirements?						*Remarks or Explanation for Proposed Value*
Yes	✔	No		Design Exception Required		

Complete Streets: *Accommodations for bikes and pedestrians must be considered. See Design Guidelines for accommodation requirements.*

Do plans meet Complete Streets accommodations?						*Remarks or Explanation for Proposed Value*
Yes	✔	No		Design Exception Required		

US 51 (LA22 to Club Deluxe Road)
SP No. H.008399 / RPC US51 Tan1
TANGIPAHOA PARISH

Sheet No.	Alt.			US 51	Water		Sewer		Gas	Communications					Power
					City of Ponchatoula	Tangipahoa Water	City of Ponchatoula	City of Hammond	Atmos Energy	AT&T	Charter Communications	Hunt TeleCom	NTS Communications	Southern Lights	Entergy
1-1, 2-1 & 3-1	1	2	3	Widening to left from southern project limits to Campbell Ln. w/ SB bump out	Relocate/Protect water main for SB bump out south of Boudreaux Ln.	Relocate water main for left widening	Relocate/Protect SFM for SB bump out south of Boudreaux Ln.		Relocate along US 51	Relocate for left widening and pole relocation for SB bump out south of Boudreaux Ln.	Relocate pole for SB bump out south of Boudreaux Ln.	Relocate for left widening	Relocate for left widening		Relocate pole for SB bump out south of Boudreaux Ln.
1-1 & 3-1	1		3	Campbell Ln. intersection - Roundabout		Relocate water main for roundabout	Adjust gravity sewer MH for roundabout		Relocate along US 51 and Campbell Ln.	Relocate pole(s) for roundabout	Relocate pole(s) for roundabout	Relocate for left widening and roundabout	Relocate for left widening and roundabout		Relocate pole(s) for roundabout
2-1		2		Campbell Ln. intersection - J-Turn		Relocate water main for J-turn	Adjust gravity sewer MH for J-turn		Relocate along US 51 and Campbell Ln.	Relocate pole(s) for J-turn	Relocate pole(s) for J-turn	Relocate for left widening and J-turn	Relocate for left widening and J-turn		Relocate pole(s) for J-turn
1-2 & 3-2	1		3	Widening to left from Campbell Ln. to Gregorie Ln.		Relocate water main for left widening			Relocate along US 51			Relocate for left widening	Relocate for left widening		
2-2		2		Widening to left from Campbell Ln. to Gregorie Ln. w/ NB bump out		Relocate water main for left widening			Relocate along US 51			Relocate for left widening	Relocate for left widening		
1-2, 2-2 & 3-2	1	2	3	Widening to left from Gregorie Ln. to Avalon Villa Dr. w/ NB bump out		Relocate water main for left widening			Relocate along US 51	Relocate pole for SB bump out south of Avalon Villa Dr.	Relocate pole for SB bump out south of Avalon Villa Dr.	Relocate for left widening	Relocate for left widening		Relocate pole for SB bump out south of Avalon Villa Dr.
1-3, 2-3 & 3-3	1	2	3	Widening to left from Avalon Villa Dr. to bridge w/ SB bump out		Relocate water main for left widening	Adjust MH for SB bump out south of Avalon Villa Dr.		Relocate along US 51			Relocate for left widening	Relocate for left widening		
1-3, 2-3 & 3-3	1	2	3	Widening to left for bridge		Relocate water main for left widening			Relocate along US 51			Relocate for left widening	Relocate for left widening		
1-3, 2-3, 3-3, 1-4, 2-4 & 3-4	1	2	3	Widening to left from bridge to Medical Arts Dr. w/ SB & NB bump out		Relocate water main for left widening			Relocate along US 51	Relocate pole for SB bump out south of Ponderaos Rd.	Relocate pole for SB bump out south of Ponderosa Rd.	Relocate for left widening	Relocate for left widening		Relocate pole for SB bump out south of Ponderosa Rd.
1-4 & 3-4	1		3	Medical Arts Drive intersection - Roundabout		Relocate water main for roundabout			Relocate along US 51 and Medical Arts Dr.	Relocate east side pole(s) for roundabout	Relocate pole(s) for roundabout	Relocate for left widening and roundabout	Relocate for left widening and roundabout		Relocate pole(s) for roundabout
2-4		2		Medical Arts Drive intersection - J-turn		Relocate water main for J-turn			Relocate along US 51 and Medical Arts Dr.		Relocate pole(s) for J-turn	Relocate for left widening and J-turn	Relocate for left widening and J-turn		Relocate pole(s) for J-turn
1-4, 2-4, 3-4, 1-5, 2-5 & 3-5	1	2	3	Widening to left from Medical Arts Drive to N. Oaks Drive		Relocate water main for left widening			Relocate along US 51			Relocate for left widening	Relocate for left widening		
1-5 & 3-5	1		3	N. Oaks Drive intersection - Roundabout		Relocate water main for roundabout		Adjust sewer MH for roundabout	Relocate along US 51 and N. Oaks Dr.	Relocate for roundabout	Relocate pole(s) for roundabout	Relocate for left widening and roundabout	Relocate for left widening and roundabout		Relocate pole(s) for roundabout
2-5		2		N. Oaks Drive intersection - J-turn		Relocate water main for J-turn		Adjust sewer MH for J-turn	Relocate along US 51 and N. Oaks Dr.	Relocate for J-turn	Relocate pole(s) for J-turn	Relocate for left widening and J-turn	Relocate for left widening and J-turn		Relocate pole(s) for J-turn
1-5, 2-5, 3-5, 1-6, 2-6 & 3-6	1	2	3	Widening to left from N. Oaks Drive to northern project limits		Relocate water main for left widening		Extend sewer casings at US 51 crossings	Relocate along US 51	Relocate for left widening		Relocate for left widening	Relocate for left widening	Relocate aerial crossing and underground crossing of US 51	
								Relocate/Protect SFM crossing from servitude and adjust sewer MH for left widening							