



ENVIRONMENTAL ASSESSMENT with Finding of No Significant Impact

WIDENING LA 28 EAST FROM LIBUSE TO HOLLOWAY RAPIDES PARISH

State Project No. H.004825.2
Federal Aid Project No. H004825



MARCH 2017



FEDERAL HIGHWAY ADMINISTRATION

FINDING OF NO SIGNIFICANT IMPACT

FOR

STATE PROJECT NO. H.004825

F.A.P. NO. H004825

LA 28 EAST WIDENING (LIBUSE to HOLLOWAY)

LA 28

RAPIDES PARISH

The FHWA has determined that Build Alternative 1a (the Selected Alternative) will not have any significant impact on the human environment. This Finding of No Significant Impact (FONSI) is based on the 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.

3/2/2017

Date



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Project Delivery Team Leader
Federal Highway Administration
Louisiana Division

SUMMARY OF PERMITS, MITIGATION, AND COMMITMENTS

SUMMARY OF PERMITS, MITIGATION, AND COMMITMENTS

Prior to the construction of the Widening Louisiana Highway (LA) 28 East project, the following actions will be required in the event the project moves forward:

- Preliminary and Final design (including studies required to complete the design, *i.e.*, geotechnical, *etc.*)
- Development of a construction sequencing and traffic management plan
- Acquisition of right-of-way (ROW)
- Obtain permits for construction (such as construction storm water discharge permit)
- Utility relocations
- Fulfillment of commitments and mitigation

The following permits, mitigation, and commitments will be implemented by the Louisiana Department of Transportation and Development (DOTD) to ensure that adverse environmental impacts as a result of the project are avoided or minimized to the maximum extent practicable.

Permits, Mitigation, and Commitments

ITEM	OVERSITE AGENCY	MITIGATION/COMMITMENT
Clean Water Act (CWA) Section 404 Permit	United States Army Corps of Engineers (USACE)	The DOTD will prepare for and submit a Section 404 permit to the USACE for the placement of fill in jurisdictional wetlands. The DOTD will implement required permit conditions to ensure compliance.
CWA Section 401 Certification	Louisiana Department of Environmental Quality (LDEQ)	The DOTD will prepare for and submit a Section 404 permit to the USACE for the placement of fill in jurisdictional wetlands, which will serve as the application for 401 Certification. The DOTD will implement required permit conditions to ensure compliance.
Louisiana Pollutant Discharge Elimination System (LPDES) Storm Water Discharge Permit	LDEQ	The DOTD will apply for an LPDES General Permit for the discharge of stormwater associated with construction of the project. A Stormwater Pollution Prevention Plan will also be prepared and followed to ensure compliance with permit conditions.
Cultural Resources	DOTD/Louisiana Department of Culture Recreation and Tourism (LDCRT)	Structures potentially eligible for listing on the National Register of Historic Places will be avoided.
Environmental Liability	DOTD/DEQ	During final design, Phase II Site Investigation/ Assessments may be conducted to assess whether environmental liability concerns exist that require remediation prior to construction. Remediation of the sites will be conducted if required.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

E.1 INTRODUCTION

E1.1. Background

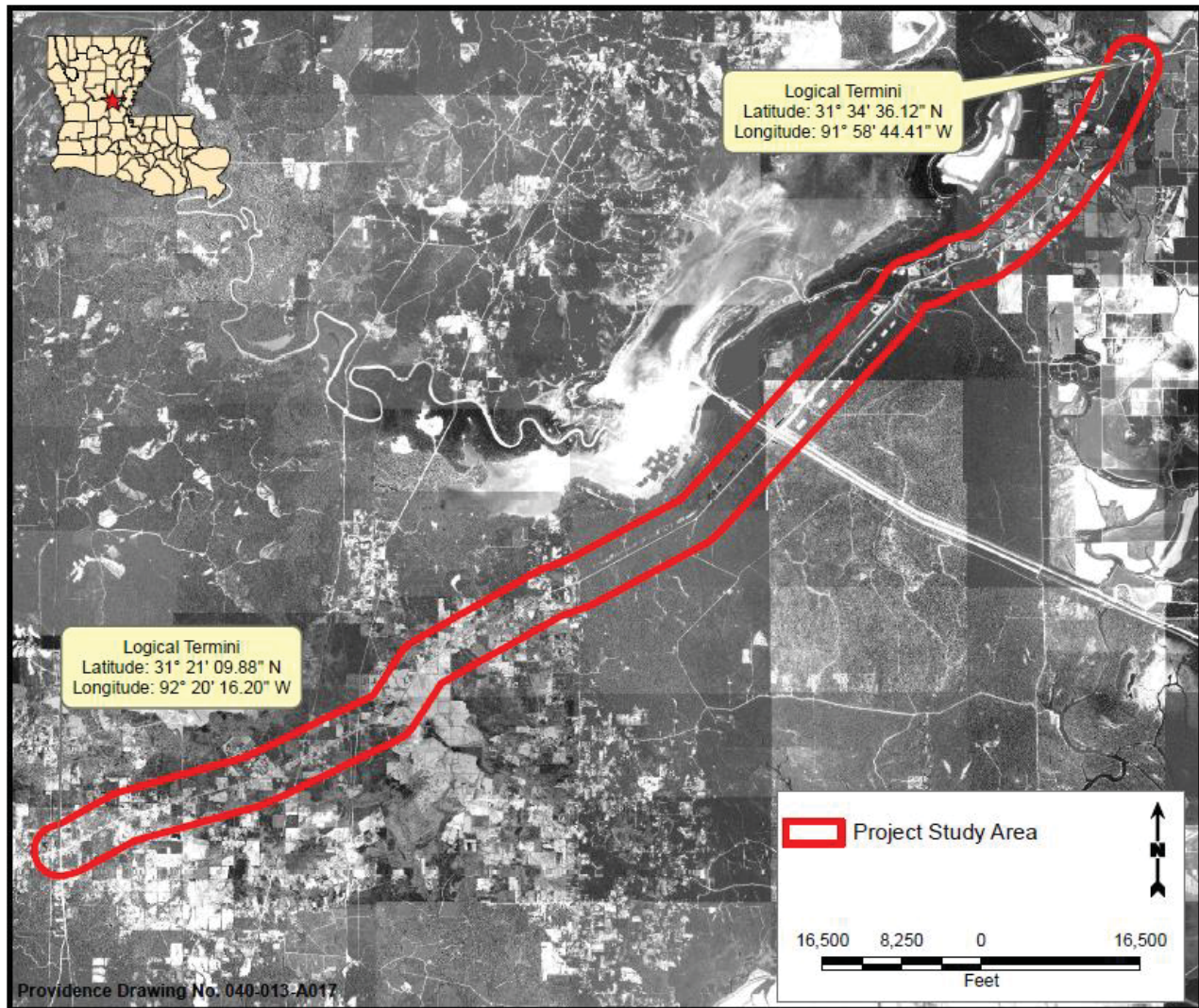
A Feasibility Study and Environmental Inventory (Feasibility Study) for the Widening of Louisiana Highway (LA) 28 East project were completed in April 2010. Copies of the Feasibility Study can be viewed or obtained from the Louisiana Department of Transportation and Development's (DOTD) Environmental Section. Acceptance of the Feasibility Study by the DOTD allowed the project to move forward into Stage 1 Planning and Environmental (Planning/Environmental). Stage 1 involves the development of an Environmental Assessment (EA) to ensure the proposed action is in compliance with the National Environmental Policy Act (NEPA), which is required for the project to move forward into funding and design.

E1.2. Project Description

The proposed project is to expand a portion of Louisiana Highway (LA) 28 East starting from its western intersection with LA 3128 (Libuse) to its eastern intersection with LA 1207 (Holloway) in Rapides Parish.—As the project also involves the review of environmental conditions/constraints on LA 28 from LA 1207 east to US 84 in Catahoula Parish, the project study area map shows the overall study area extending to US 84 (**Figure 1**). However, as no construction is proposed east of LA 1207, the project's construction study area is the primary focus of this EA.

Under the proposed project, LA 28 between LA 3128 and LA 1205 will remain an urban arterial (UA) UA-2 classified roadway with a posted speed limit of 45 miles per hour (mph). Urban arterials typically serve major activity centers, provide continuity of rural corridors, and serve intra-area travel demand. The number in the classification relates design criteria such as design speed, number of travel lanes, and shoulder and median widths. The design speed of a UA-2 roadway is 45 mph. No additional right-of-way (ROW) will be acquired between LA 3128 and LA 1205, but control of access in the form of an 18-foot wide raised median will be installed in this area. East of LA 1205, LA 28 will be widened to support four 12-foot travel lanes, three two-phased signalized J-turns, J-turns throughout with four dual lane J-turns, a dual lane roundabout at LA 1207, a variable width raised median (18 to 30 feet), and an 8-foot outside shoulder. This section of LA 28 will be classified as a UA-5 with a design speed of 60 mph. Additional ROW will be acquired from LA 1205 east to LA 1207 to accommodate the widening.

**FIGURE ES-1
PROJECT STUDY AREA**



Base map comprised of ESRI World Imagery Maps dated June 2013.

E.2 PURPOSE AND NEED

The purpose of the proposed project is to increase the capacity of the existing roadway and bring this section of LA 28 up to current design standards. The proposed project is needed because the level of service (LOS) for the design year of 2036 is not adequate to support demand (Alliance, 2015).

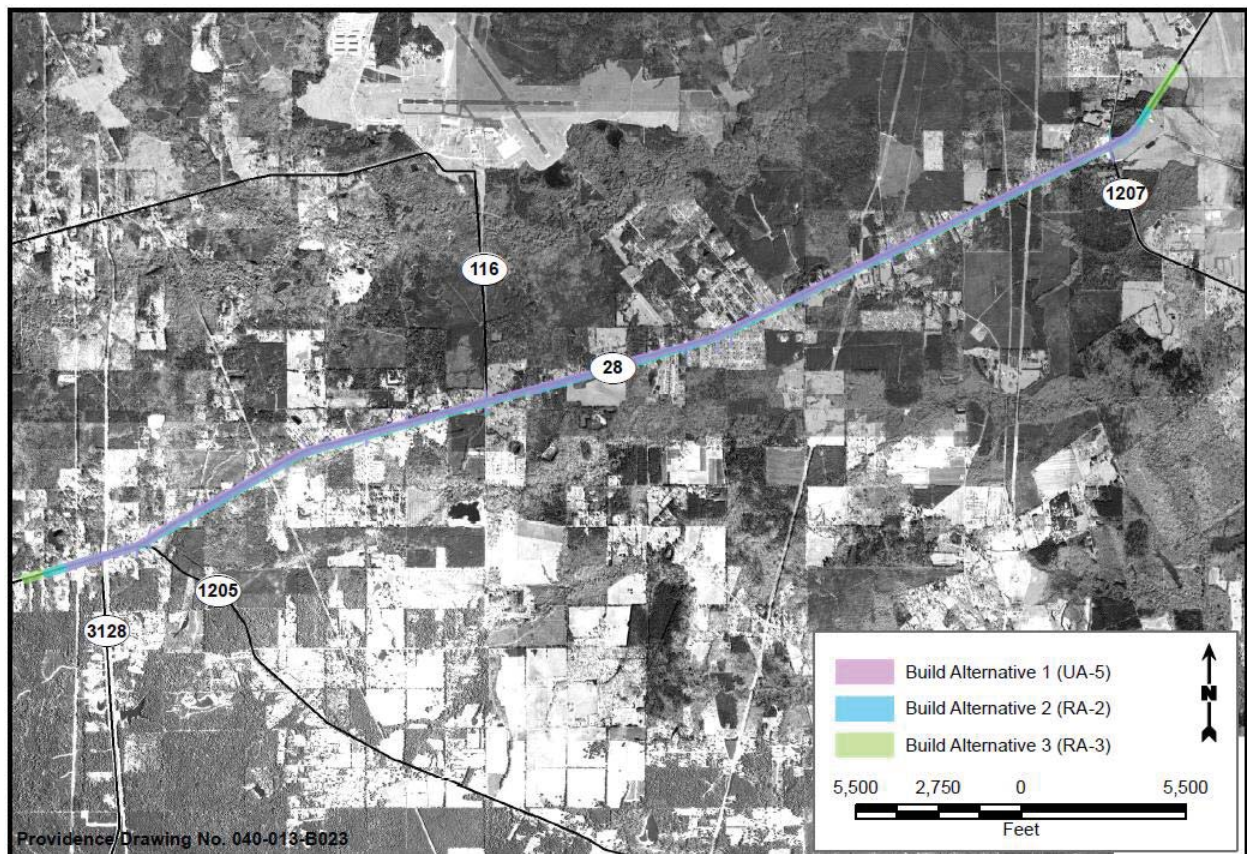
The assessment of potential engineering and environmental constraints associated with LA 28 East from LA 1207 east to US 84 was determined necessary appropriate to address future planning of widening LA 28 east to its terminus at US 84.

E.3 ALTERNATIVES DEVELOPMENT AND SCREENING

E3.1. Alternatives Considered

Three build alternatives (and the No Build Alternative) from the Feasibility Study were carried forward into the Stage 1 Planning and Environmental study and were also presented to commenting agencies and the public during first public meeting, held in April 2013. These alternatives were two rural arterials (RA) RA-2, RA-3, and an UA-4, each with four 12-foot travel lanes and dual lane roundabouts at the intersections of LA 28 at LA 3128, LA 116, and LA 1207. A rural arterial typically connects urban areas and serves corridor movements indicative to statewide travel. The RA-2 has a design speed of 60 mph, the RA-3 design speed is 70 mph. The three build alternatives carried over from the Feasibility Study are shown on **Figure ES-2**.

**FIGURE ES-2
PRELIMINARY BUILD ALTERNATIVES**



Base map comprised of ESRI World Imagery Maps dated June 2013.

After the first public meeting, the project team determined that the original three alternatives represented design options of the same general alternative and did not truly provide a range of alternative for public review. Additional traffic studies were conducted and three new alternatives were developed:

- Build Alternative 1 – UA-5 with varying raised median width (18 to 30 feet) and three roundabouts
- Build Alternative 2 – RA-2 with a 42-foot depressed median with no more than one roundabout
- Build Alternative 3 – RA-3 with a 60-foot depressed median with no more than one roundabout

The build alternatives were refined after the completion of the traffic study. The RA-3 design was eliminated because of the higher mainline ROW impacts than the RA-2 concept, which provided nearly the same design benefits with less ROW impacts.

Elimination of Build Alternative 3 resulted in developing Build Alternative 2 into two options based on intersection type at LA 1207. Build Alternative 2a incorporates a roundabout at the intersection of LA 28 and LA 1207. Build Alternative 2b maintains a signalized intersection at LA 28 and LA 1207. In the event the signalized interchange would be preferred, mitigation measures, including an additional left turn lane northbound on LA 1207 would need to be provided.

Build Alternatives 1, 2a, and 2b were presented to the public in January 2015. **Table ES-1** is a comparison matrix of these three build alternatives. **Figure ES-3** shows the general ROW associated with these alternatives as well as a fourth developed after the January 2016 public meeting.

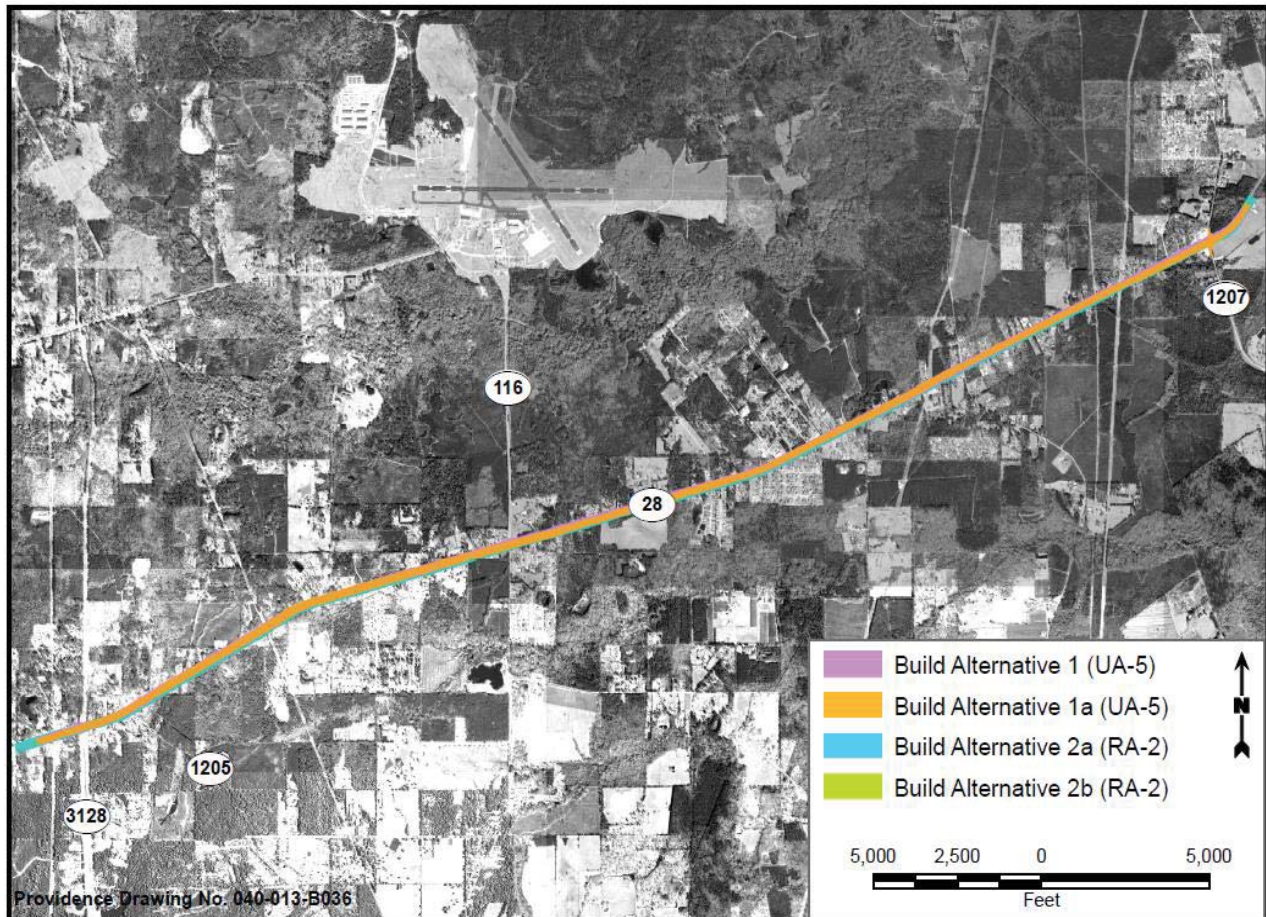
**TABLE ES-1
BUILD ALTERNATIVES COMPARISON MATRIX**

Evaluation Criteria	Build Alternative 1 (UA-5)	Build Alternative 2 (RA-2)	
		2a (Roundabout at LA 1207)	2b (Signalization at LA 1207)
Purpose and Need			
Meets Purpose and Need	Yes	Yes	Yes
Engineering			
Length (miles)	7.36	7.63	7.63
Required Right-of-Way (acres)	78.34	101.91	100.92
2030 Average Daily Traffic for Connector (Mainline)	23,100	23,100	23,100
Anticipated Level of Service for the Alternatives (Mainline)	A	A	A
Potential At-Grade Railroad Crossings	0	0	0
Potential Navigable Water Crossings	0	0	0
Constructability			
Construction Complexity ¹	Medium	Low	Low
Preliminary Construction Costs (millions) ²	\$53.4	\$53.1	\$50.8
Community Disruption/Impacts during Construction	Medium	Medium	Medium
Cultural Resources ³			
Potential to Impact Historical Resources	Low	Low	Low
Potential to Impact Archaeological Resources	Low	Low	Low
Potential Wetlands ⁴			
Freshwater Forested/Shrub Wetland (acres)	0.00	0.11	0.11
Potential Hydric Soils (acres)	18.66	20.65	20.65
Threatened/Endangered/Protected Species			
Potential Impact to Threatened and Endangered Species	None	None	None
Community Impacts			
Residential Structures	16	24	21
Commercial Property/Businesses	14 ⁵	15 ⁵	14 ⁵
Churches	1 ⁶	0	0
Recreational Areas	0	1 ⁷	1 ⁷
Other Community Facilities	0	1 ⁸	1 ⁸
Potential to Impact Transit Routes	Low	Low	Low
Land Use			
Potential Impact to Prime Farmland ⁹ (acres)	0.00	0.00	0.00
Potential Impact to the 100-yr Floodplain (acres)	5.92	7.19	7.19
Visual Quality			
Potential Visual Quality Impacts	Low	Low	Low
Environmental Liability Concerns ¹⁰			
Potential Impacts to Hazardous Sites	Medium	Medium	Medium
Active Oil and Gas Wells within 160 feet of Proposed Right-of-Way	0	0	0
Observation Relief Wells (ORWs) Affected	0	0	0
Active Water Well Locations	4	4	4
Other Environmental Concerns			
Utility Impacts ¹¹	51,850 feet	55,100 feet	55,100 feet
State Scenic Streams	None	None	None
Potential Visual Quality Impacts	Low	Low	Low
Potential Impact to Federal/State Scenic Streams	None	None	None

NOTES:

1. Construction complexity estimates the general difficulty of construction based on grade adjustments, the number of railroad crossings, the number of potential navigable water crossings, utility relocations, and ROW. Low means less complex, high is the most complex.
2. Construction costs are preliminary estimates and do not include utility relocations. A 20% contingency and 8% design fee is applied to each alternative.
3. Cultural resource estimates are based off the Louisiana Cultural Resources Map, which identifies the location of standing structures and archaeological sites.
4. Potential wetlands were defined using National Wetlands Inventory data and minimal field verification. A wetlands delineation will be conducted once a Preferred Build Alternative is selected.
5. Total number includes Exxon Outpost which contains four businesses.
6. Pioneer Baptist Church.
7. Country Livin' Gas Station & Campground.
8. Kastle for Kids.
9. Although there are prime farmland soils mapped in the project ROWs, the NRCS has stated that no prime farmland impacts are anticipated as they consider the ROWs urban land.
10. According to the LDNR SONRIS database as of 09/30/15.
11. Total number includes utilities for water, gas, and electric lines impacted throughout the length of project.

**FIGURE ES-3
BUILD ALTERNATIVES**



Base map comprised of ESRI World Imagery Maps dated June 2013.

E3.2. Preferred Alternative

After the second public meeting, the three alternatives were compared in detail along with public comments. While generally in favor of the project, the public expressed concerns with three roundabouts in Build Alternative 1 and the amount of ROW and J-turns more closely associated with the Build Alternatives 2a and 2b. Build Alternative 2b was eliminated from further consideration due to the impacts associated with the acquisition of additional ROW to conduct the mitigation measures that would be required to achieve an acceptable LOS.

Ultimately in order to resolve the public's concerns and maintain an efficient facility, a hybrid of Build Alternative 1 and Build Alternative 2a was developed. The new alternative, termed Build Alternative 1a, utilizes the UA-5 design for reduced ROW, one roundabout at LA 1207 (for the best LOS), and shifts the UA-5 ROW further south, more in alignment with the northern limits of the RA-2 to further reduce structure impacts. This shift was achievable with the removal of the roundabouts at LA 3128 and LA 116. The estimated construction cost, prior to the development of utility impacts costs for Build Alternative 1a was also lower than the other build

alternatives. For these reasons, Build Alternative 1a was selected as the Preferred Alternative. **Table ES-2** is the Preferred Alternative Decision Matrix. **Figures ES-4a, b, c, and d** present the preferred alternative.

There will be no additional ROW acquired between the western logical termini (just west of LA 3128) and LA 1205, as LA 28 is five lanes in this area. LA 28 will remain a UA-2 classification between LA 3128 and LA 1205 with a posted speed limit of 45 miles per hour (mph). Installation of an 18-foot wide raised median will occur in this area. In terms of classification, east of LA 1205, the Preferred Alternative will be a UA-5 with a design speed of 60 mph. The proposed urban arterial will have four 12-foot travel lanes, dual right turn lanes from northbound LA 1205, three two-phased signalized J-turns (at LA 3128, 116, and Barron Chapel Road), J-turns throughout with four dual lane J-turns, a dual lane roundabout at LA 1207, variable width raised median (18 to 30 feet), and an 8-foot outside shoulder. The total estimated cost for Build Alternative 1a is \$61 million dollars.

FIGURE ES-4a
PREFERRED ALTERNATIVE

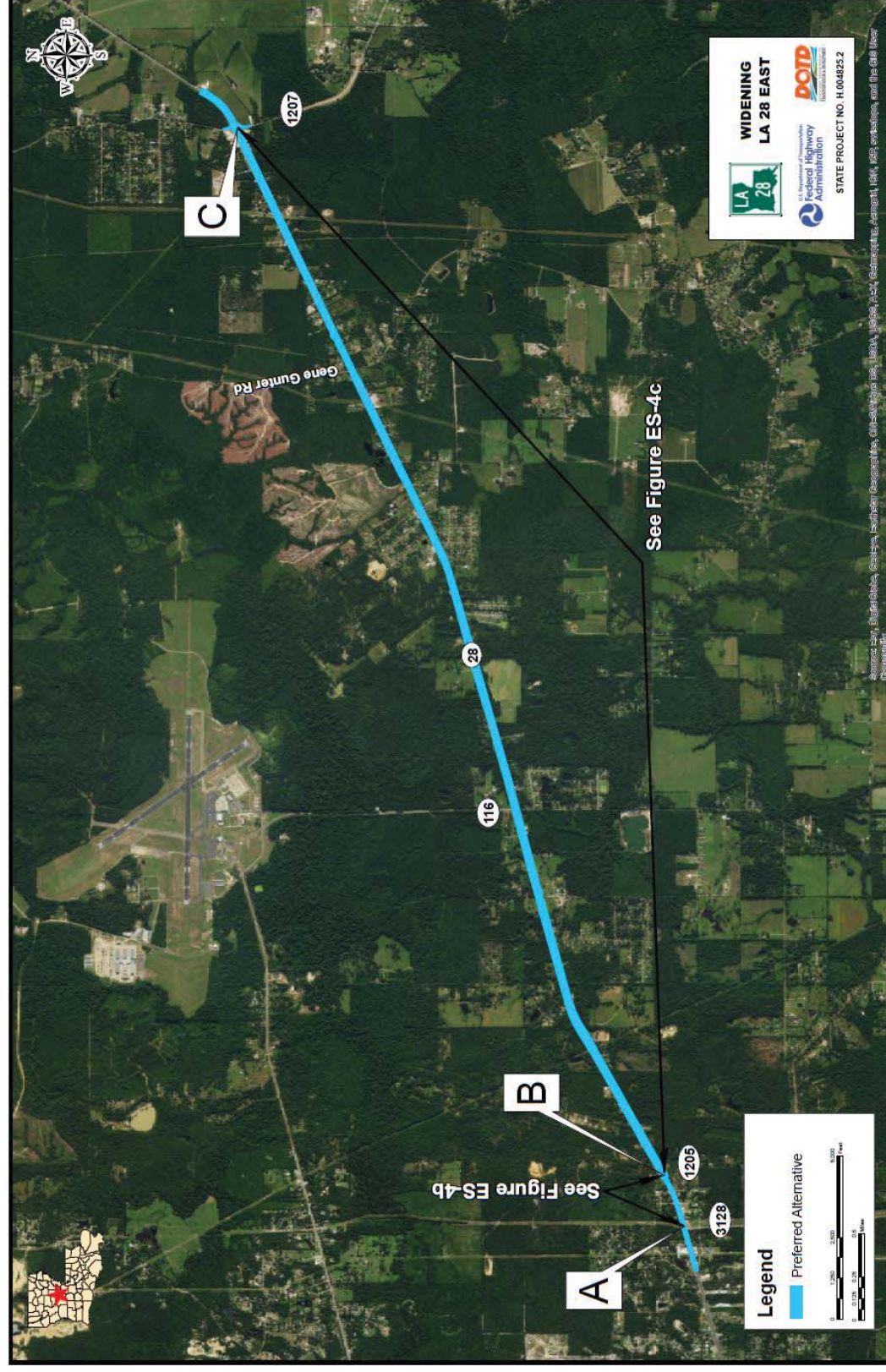


FIGURE ES-4C
PREFERRED BUILD ALTERNATIVE SECTION B TO C

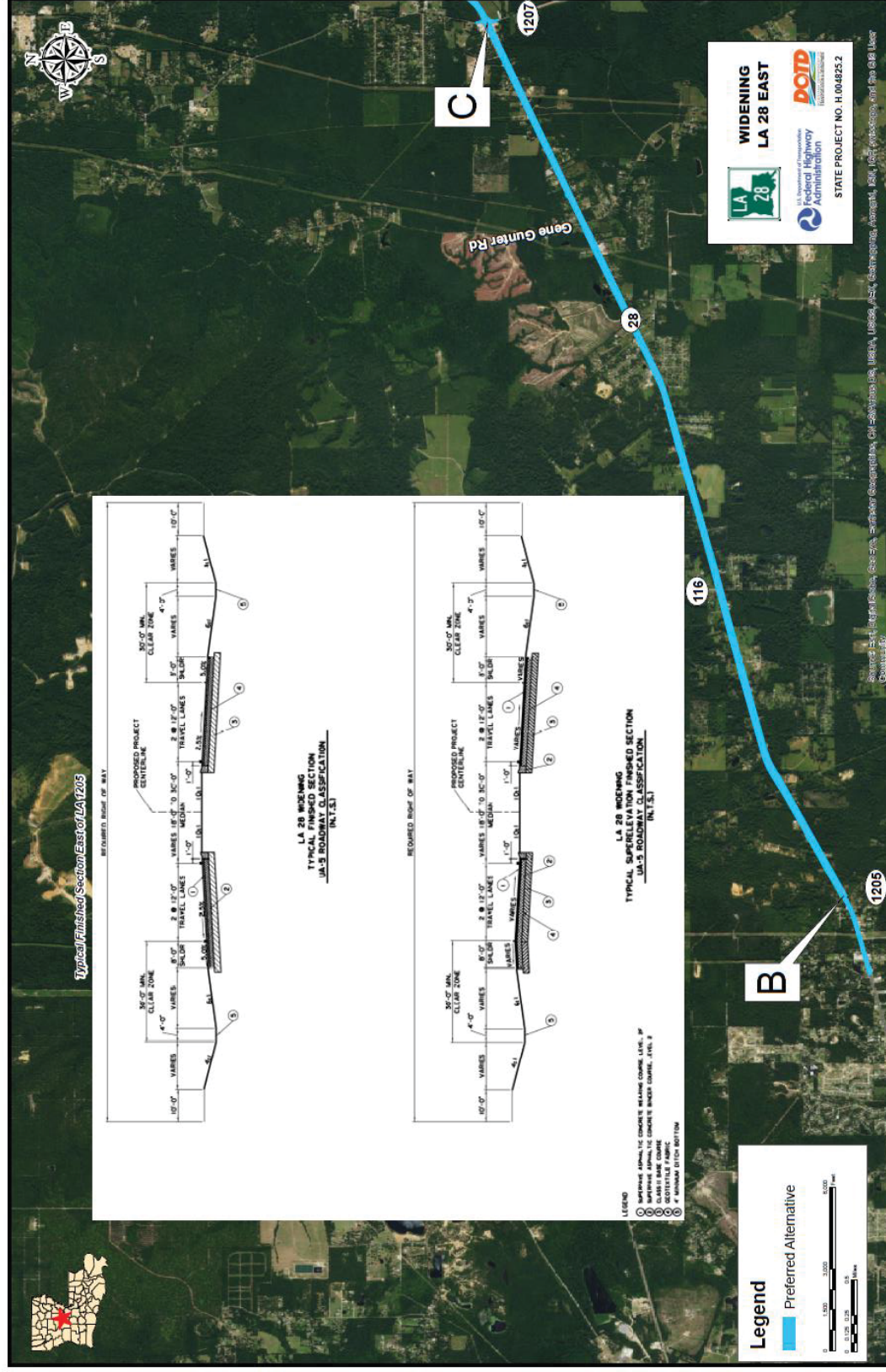


FIGURE ES-4d
PREFERRED BUILD ALTERNATIVE DETAILS

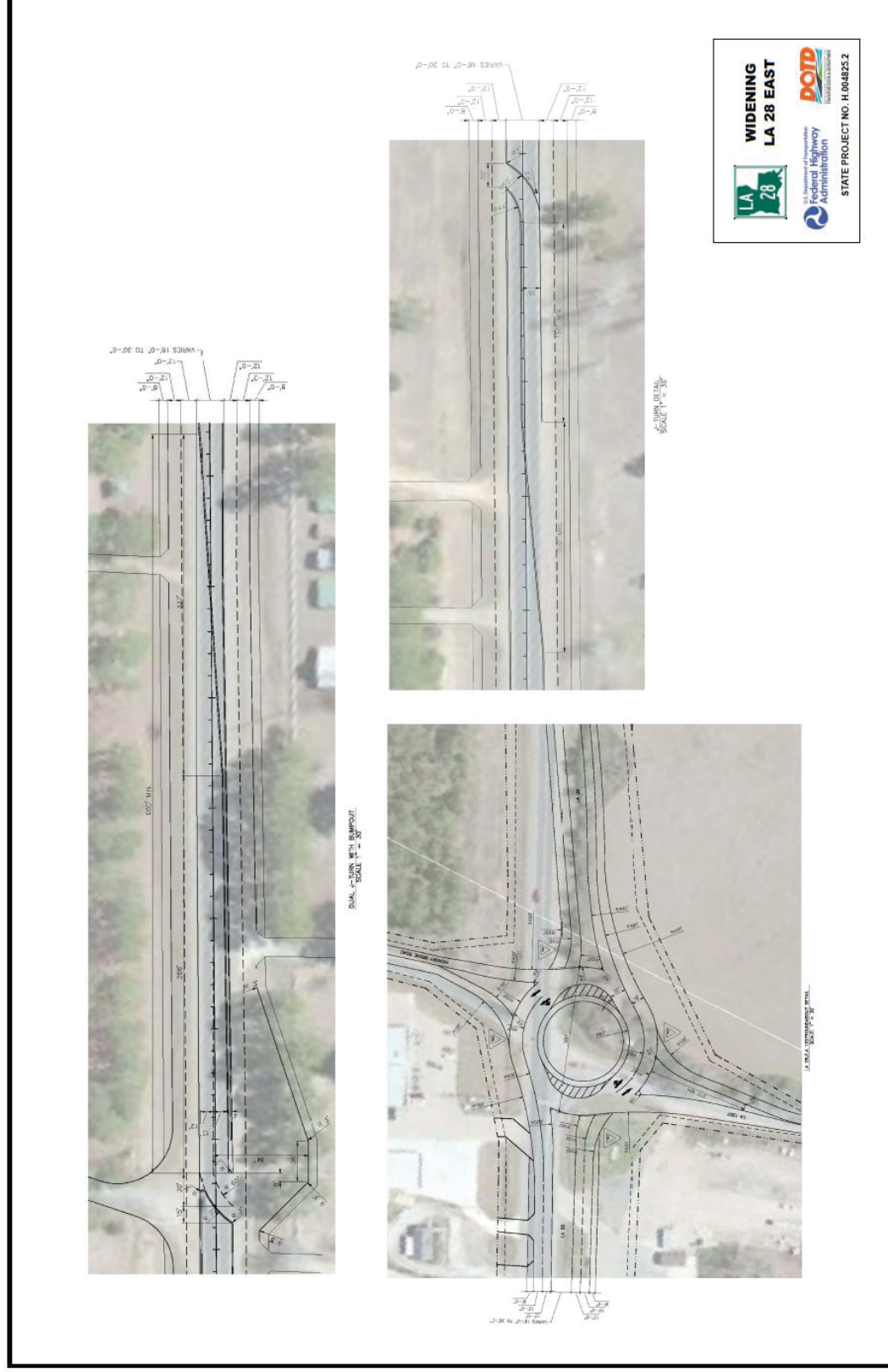


TABLE ES-2
PREFERRED ALTERNATIVE SELECTION MATRIX

Evaluation Criteria	Build Alternative 1	Build Alternative 2a	Build Alternative 2b	Build Alternative 1a
	UA 5 with 3 Roundabouts	A 2 with a Roundabout at LA 12/A 2 with Signalization at LA 12	UA 5 with a Roundabout at LA 12	PREFERRED ALTERNATIVE UA 5 with a Roundabout at LA 1207
Purpose and Need	Yes	Yes	Yes	Yes
Meets Purpose and Need	Yes	Yes	Yes	Yes
Cultural Resources ¹				
Potential to Impact Historical Resources	Medium	Medium	Medium	Medium
Potential to Impact Archaeological Resources	Low	Low	Low	Low
Potential Wetlands ²				
Freshwater Forested/Shrub (acres)	0	0.11	0.11	0
Threatened/Endangered/Protected Species				
Potential Impact to Threatened and Endangered Species	None	None	None	None
Community Impacts				
Residential Structures	16	24	21	15
Commercial Property	15 ^{3, 4}	16 ^{3, 4}	15 ^{3, 4}	13 ^{3, 5}
Churches	1 ⁶	0	0	0
Recreational Areas	0	1 ⁷	1 ⁷	0
Other Community Facilities	0	1 ⁸	1 ⁸	0
Land Use				
Prime Farmland ⁹ (acres)	0	0	0	0
100-yr Floodplain (acres)	5.97	7.19	7.19	6.23
Environmental Liability Concerns				
Potential Impacts to Hazardous Sites	Medium	Medium	Medium	Medium
Active Oil and Gas Well Locations ¹⁰	0	0	0	0
Other Environmental Concerns				
Active Water Well Locations ¹⁰	4	4	4	4
Potential Visual Quality Impacts	Low	Low	Low	Low

NOTES:

- Cultural resource estimates are based off the Louisiana Cultural Resources Map, which identifies the location of standing structures and archaeological sites. The Cultural Resource Survey indicated that no resources would be adversely affected by the Preferred Alternative.
- Potential wetlands were defined using National Wetlands Inventory data.
- Total number includes Exxon Outpost, which supports 4 businesses.
- Total number includes Holloway General Store, however, alternative only impacts pump island not the structure.
- Country Livin' Gas Station impact is confined to the pump island only.
- Pioneer Baptist Church.
- Country Living Campground may be affected.
- Kastle for Kids.
- Although there are prime farmland soils mapped in the project ROW's, the NRCS has stated that no prime farmland impacts are anticipated as they consider the ROW's urban land.
- According to the LDNR SONRIS database as of 9/30/15.

E.4 ENVIRONMENTAL CONSEQUENCES

Environmental consequences associated with the Preferred Alternative are demonstrated in **Table ES-2**. Most notable are impacts to the human environment in the form of relocations and introduction of control of access measures (medians), J-turns, and new intersection types (a roundabout), there are minimal impacts to natural resources.

E.5 COST SUMMARY

The Opinion of Probable Cost for the Preferred Alternative was prepared and is included in **Appendix B**. The cost of the Preferred Alternative is estimated to be \$60,727,394 (which includes utility relocations).

E.6 PERMITS, MITIGATIONS, AND COMMITMENTS

E6.1. Permits

Permits that may be required to be obtained prior to construction of the LA 28 project include:

- United States Army Corps of Engineers (USACE) Section 404 Permit for impacts to jurisdictional wetlands
- Section 401 Water Quality Certification issued by the Louisiana Department of Environmental Quality (LDEQ) in support of the Section 404 permit
- Louisiana Pollutant Discharge Elimination System (LPDES) Storm Water Discharge Permit for Construction Activities (greater than five acres) issued by the LDEQ
- Rapides Parish construction permit for roadway construction, as applicable

E6.2. Mitigation and Commitments

The following are commitments relative to the proposed project:

- Mitigation for unavoidable impacts to wetland habitats will be determined in accordance with the USACE and conducted prior to project construction
- Structures potentially eligible for listing on the National Register of Historic Places will be avoided
- During final design, Phase II Site Investigation/ Assessments may be conducted to assess whether environmental liability concerns exist that require remediation prior to construction; remediation of the sites will be conducted, if required

E.7 AREAS OF CONTROVERSY/UNRESOLVED ISSUES

During the public involvement process, concerns were raised regarding the inclusion of roundabouts as well as control of access measures (median openings). Business owners

in the LA 1207 and LA 28 intersection area are concerned that the project may interfere with access to their businesses and therefore negatively affect profit. In addition, many attendees were opposed to roundabouts anywhere along the project study area and requested a continuous turn lane instead of median openings. While the Preferred Alternative addresses the concern of three roundabouts on the mainline, a roundabout at LA 28 and LA 1207 is required to maintain adequate traffic flow. Additionally, it is the policy of DOTD that new four-lane facilities have restricted access to increase safety. The concerns about roundabouts and access controls are not considered to be fully resolved.

ENVIRONMENTAL CHECKLIST

ENVIRONMENTAL CHECKLIST

WBS No. H.004825.2

Name: Widening LA 28 East

Route: LA 28

Parish: Rapides, LaSalle, Catahoula

1. General Information

- | | | |
|--|--|---|
| <input type="checkbox"/> Conceptual Layout | <input checked="" type="checkbox"/> Line and Grade | <input type="checkbox"/> Preliminary Plans |
| <input type="checkbox"/> Survey | <input type="checkbox"/> Plan-in-Hand | <input type="checkbox"/> Advance Check Prints |

2. Class of Action

- | | |
|--|---|
| <input type="checkbox"/> Environmental Impact Statement (E.I.S.) | <input type="checkbox"/> State Funded Only (EE/EF/ER) |
| <input checked="" type="checkbox"/> Environmental Assessment (E.A.) | |
| <input type="checkbox"/> Categorical Exclusion (C.E.) | |
| <input type="checkbox"/> Programmatic C.E. (as defined in FHWA letter of agreement dated 03/15/95) | |

3. Project Description

The proposed project is to widen a portion of LA 28 East from LA 3128 in Libuse east to LA 1207 in Holloway and to conduct a review of environmental conditions on LA 28 from LA 1207 east to US 84. Between LA 3128 and LA 1205, LA 28 is a four-lane urban arterial (UA) with a center turn lane. East of LA 1205, LA 28 is a two-lane rural arterial (RA).

Under the proposed project, LA 28 between LA 3128 and LA 1205, will remain an UA-2 classified roadway with a posted speed limit of 45 miles per hour (mph). However, control of access in the form of an 18-foot raised median will be installed. No additional right-of-way will be acquired in this area. East of LA 1205, LA 28 will be widened to support four 12-foot travel lanes, three two-phased signalized J-turns, J-turns throughout with four dual lane J-turns, a dual lane roundabout at LA 1207, a variable width raised median (18 to 30 feet), and an 8-foot outside shoulder width. This section of LA 28 will be classified as a UA-5 with a design speed of 60 mph.

4. Public Involvement

- ☒ Views were solicited.
- ☐ Views were not solicited.
- ☒ Public Involvement events held. (List events and dates in Section 11.)
- ☒ A public hearing/opportunity for requesting a public hearing required. (List dates in Section 11.)
- ☐ 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is right of way required from a burial/cemetery site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is right-of-way required from a Wetland Reserve Program (WRP) property?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is required right-of-way prime farmland ? (Use form AD 1006, if needed) ...	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Will any relocation of residences or businesses occur?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Are construction or drainage servitudes required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Are properties acquired or improved with L&WC funds affected?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Cultural Section 106

		NO	YES	N/A
a.	Are any known historic properties adjacent or impacted by the project? (If so, list below).....	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Are any known archaeological sites adjacent or impacted by the project? (If so, list site # below)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Would the project affect property owned by or held in trust for a federally recognized tribal government ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Natural & Physical Environment

		NO	YES	N/A
a.	Are wetlands affected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	Are other waters of the U.S. affected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	Are Endangered/Threatened Species/Habitat affected?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Is project within 100 Year Floodplain ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e.	Is project in Coastal Zone Management Area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Is project in a Coastal Barrier Resources area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Is project on a Sole Source Aquifer ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h.	Is project impacting a navigable waterway ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i.	Are any State or Federal Scenic Rivers/Streams impacted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j.	Is a noise analysis warranted (Type I project)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
k.	Is an air quality study warranted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
l.	Is project in a non-attainment area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m.	Is project in an approved Transportation Plan, Transportation Improvement Program (TIP) and State Transportation Improvement Program (STIP)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
n.	Are construction air, noise, & water impacts major?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

9. Social Impacts

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

SPN H.004825.2 EA – ENVIRONMENTAL CHECKLIST

- I. 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)

- | | | |
|--|--|--|
| <input type="checkbox"/> Corps Nationwide | <input type="checkbox"/> CUP/Consistency Determination | <input type="checkbox"/> LA Scenic Stream |
| <input checked="" type="checkbox"/> Corps Section 404/10 | <input type="checkbox"/> USCG Bridge | <input checked="" type="checkbox"/> DEQ WQC |
| <input type="checkbox"/> Levee | <input type="checkbox"/> USCG Navigational Lights | <input checked="" type="checkbox"/> LPDES Stormwater |
| <input type="checkbox"/> Other (explain below) | | |

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

Item 4: Two public meetings were held: April 2, 2013 and January 22, 2015. A public hearing was held for the Widening LA 28 East project (October 11, 2016) after the EA was approved for distribution.

Item 5.a: Additional right-of-way in the amount of approximately 98 acres will be acquired between LA 1205 and LA 1207 (see Section 4-3).

Item 5.b: Fifteen residences and ten commercial buildings are expected to require relocation as a result of right-of-way acquisition (see Section 4.3)

Item 7.a: While there are presently no structures listed on the National Register of Historic Places, two properties directly adjacent to the proposed right-of-way of the Preferred Alternative are considered eligible for listing, the Pacholik House (40-05068) and the Tuma Store/Post Office (40-05160). Both properties have been avoided.

Item 8.a and b: Wetlands and Other Waters are discussed in Section 4.18 and Appendix F.

Item 8.d: A floodplain finding is located in Section 4.13.

Item 8.g: Sole Source Aquifers are discussed in Sections 3.12 and 4.12.

Item 8.j: A noise analysis was conducted and is discussed in Section 4.15 and Appendix C.

Item 8.k: Transportation conformity analysis does not apply, however a qualitative Mobile Source Air Toxics analysis does apply and is discussed in Section 4.16 and Appendix D.

Item 8.o: Six sites were determined to elicit recognized environmental conditions: Belgard's Auto/Greg's Auto Repair (petroleum impacts), Country Living RV and Campground (USTs and petroleum impacts), LA 3128 at LA 28 East diesel fuel release site, Exxon Outpost (USTs and petroleum impacts), Auto Recycling and Towing, Inc. (improper petroleum product management), and staining and mechanical equipment located on Parcel 1104054096000701. Further investigation will be required to discern any environmental liability associated with these sites.

Item 9b: Several churches and day care facilities are located off of LA 28 adjacent to the project construction area: Book Worm Academy, Kastle for Kids, and Cubhouse for Kids, Truthway Pentecostal Church, Pioneer Baptist Church, Unity Baptist Church, and Open Door Community Church.

Item 9.c: Title VI considerations are discussed in Section 4.5.

Item 9e: A Ward 11 Sheriff Substation is located adjacent to the project area north of LA 28 near LA 1207. The Deville Volunteer Fire Department maintains a station off LA 28 adjacent to Lost Ridge Road.

Item 9f: The Preferred Alternative will result in median construction, intersection changes, J-turns, and a roundabout in the project construction study area. With the installation of medians, residents and travelers will have to make J-turns or U-turns to access businesses and residences located between median openings and to return to their former direction of travel. The Preferred Alternative will involve the placement of one roundabout on LA 28 at LA 1207, replacing the signalized intersection. All of these access management and traffic improvement measures will change current traffic patterns.

Item 9.j: Context sensitive solutions were considered when developing the build alternatives. Stakeholders were consulted multiple times throughout the Stage 0 and Stage 1 process including stakeholder meetings, solicitation of view (SOV) process, and invitations to public meetings. Land use patterns, cultural resources, environmental resources, and community input were all considered in the development of the build alternatives.

Item 9.k: Due to the rural nature of the project area, the number of driveways, and design speed, no pedestrian or bike accommodations were considered.

Preparer: Kerry Oriol
Title: Environmental Project Manager
Date: October 28, 2015

Attachments

- ☒ S.O.V. and Responses (see *Appendix A*)
- ☒ Wetlands Analysis (see *Chapter 4* and *Appendix F*)
- ☒ Project Description Sheet (see *Chapter 1*)
- ☒ Conceptual Stage Relocation Plan (see *Chapter 4* and *Appendix G*)
- ☒ Traffic Noise Analysis (see *Chapter 4* and *Appendix C*)
- ☒ Air Quality Analysis (see *Chapter 4* and *Appendix D*)
- ☒ Exhibits and/or Maps (see figures located throughout the EA)
- ☐ 4(f) Evaluation (see *Chapter 4*, not required)
- ☐ Form AD 1006 (see *Chapter 4*, not required)
- ☒ 106 Documentation (see *Chapter 4* and SHPO correspondence in *Appendix A*)
- ☒ Other: Line and Grade Plan/Profile Sheets and Detailed Cost (see *Appendix B*)
 - Phase I ESA (see *Appendix E*)
 - Agency and Public Outreach

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- B Line and Grade
- C Traffic Noise Analysis
- D Air Quality Analysis
- E Phase I Environmental Site Assessment
- F Wetland Analysis
- G Conceptual Stage Relocation Plan

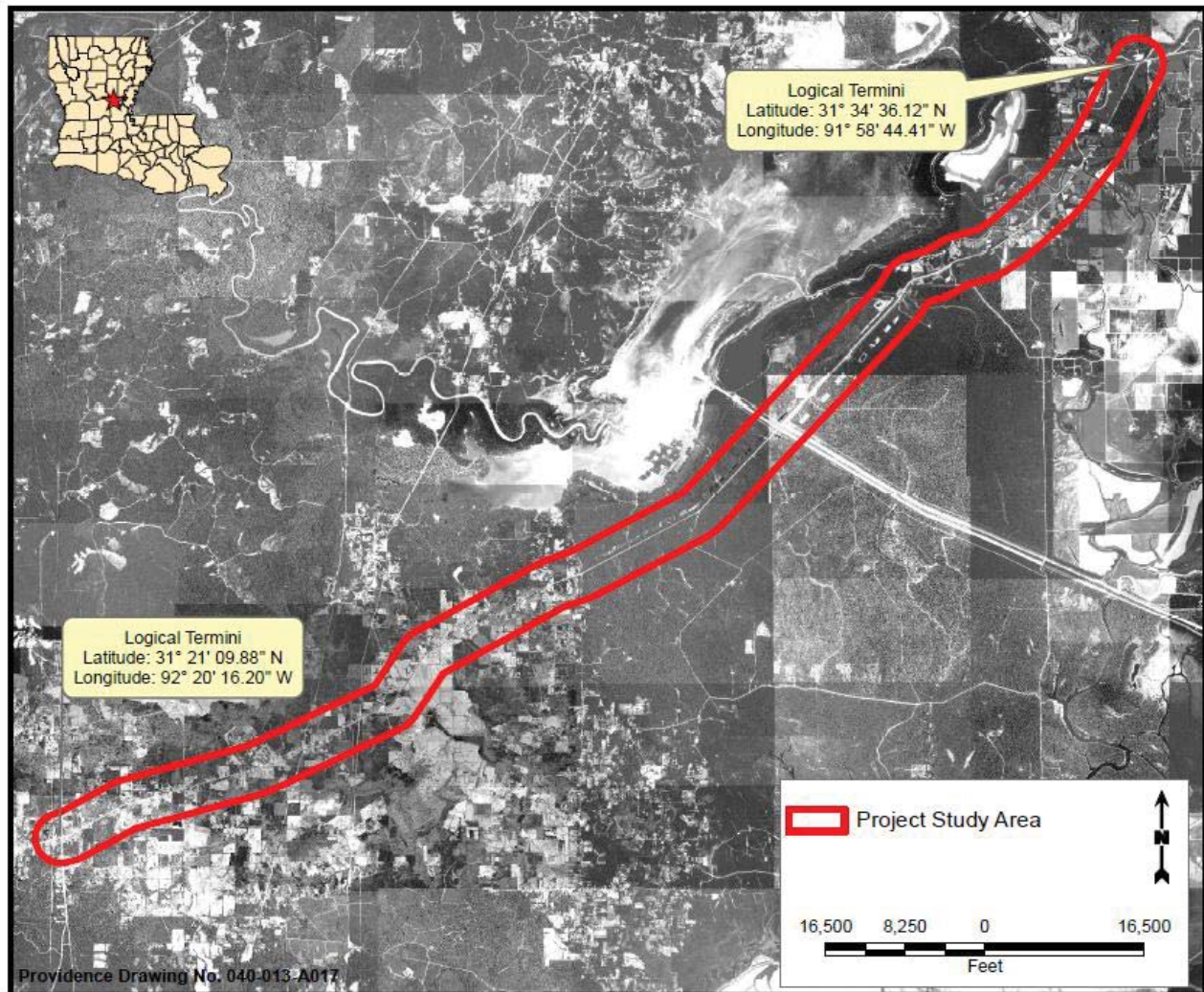
1.0 PURPOSE AND NEED

1.1 Description of the Proposed Project

The Louisiana Department of Transportation and Development (DOTD) proposes to expand a portion of Louisiana Highway (LA) 28 East starting from its western intersection with LA 3128 (Libuse) to its eastern intersection with LA 1207 (Holloway) in Rapides Parish. As the project also involves the review of environmental conditions/constraints on LA 28 from LA 1207 east to US 84 in Catahoula Parish, the project study area map shows the overall study area extending to US 84 (**Figure 1**). The proposed project construction study area is 7.25 miles in length and is presently classified as an urban arterial (UA) with four (4) lanes and a central two-way left turn lane until it tapers to a non-divided, two-lane section without turn lanes in east of LA 1205, where it is classified as a rural arterial (RA). An RA typically connects urban areas and serves corridor movements indicative to statewide travel. Urban arterials typically serve major activity centers, provide continuity of rural corridors, and serve intra-area travel demand. No construction is proposed east of LA 1207. The project's construction study area is the primary focus of this EA.

Under the proposed project, LA 28 between LA 3128 and LA 1205, will remain an UA-2 classified roadway with a posted speed limit of 45 miles per hour (mph). However, control of access in the form of an 18-foot wide raised median will be installed in this area. No additional right-of-way (ROW) will be acquired between LA 3128 and LA 1205. East of LA 1205, LA 28 will be widened to support four 12-foot travel lanes, three two-phased signalized J-turns, J-turns throughout with four dual lane J-turns, a dual lane roundabout at LA 1207, a variable width raised median (18 to 30 feet), and an 8-foot outside shoulder. This section of LA 28 will be classified as a UA-5 with a design speed of 60 mph. Additional ROW will be acquired from LA 1205 east to LA 1207 to accommodate the widening.

FIGURE 1
PROJECT STUDY AREA



Base map comprised of ESRI World Imagery Maps dated June 2013.

1.2 Project Background

A Stage 0 Feasibility Study and Environmental Inventory (Feasibility Study) for the proposed project were completed in April 2010 and are available for review or copy at DOTD's Environmental Section. DOTD's acceptance of these studies allowed the project to move forward into Stage 1 Planning and Environmental (Planning/Environmental). This Environmental Assessment (EA) is required to be completed in Stage 1 to ensure the project is in compliance with the National Environmental Policy Act (NEPA).

1.3 Purpose and Need

The purpose of the proposed project is to increase the capacity of the existing roadway and bring this section of LA 28 up to current design standards. The proposed project is needed because the level of service (LOS) for the design year of 2036 is not adequate to support demand (Alliance, 2015).

The assessment of potential engineering and environmental constraints associated with LA 28 East from LA 1207 east to US 84 was determined appropriate to address future planning of widening LA 28 east to its terminus at US 84.

2.0 ALTERNATIVES

2.1 Alternatives Development Process

Three build alternatives (and the No Build Alternative) developed during the 2010 Feasibility Study were carried forward into the Stage 1 Planning and Environmental study for further evaluation. The alternatives presented to commenting agencies via the Solicitation of Views (SOV) letters and to the public during the April 2013 public involvement meeting included:

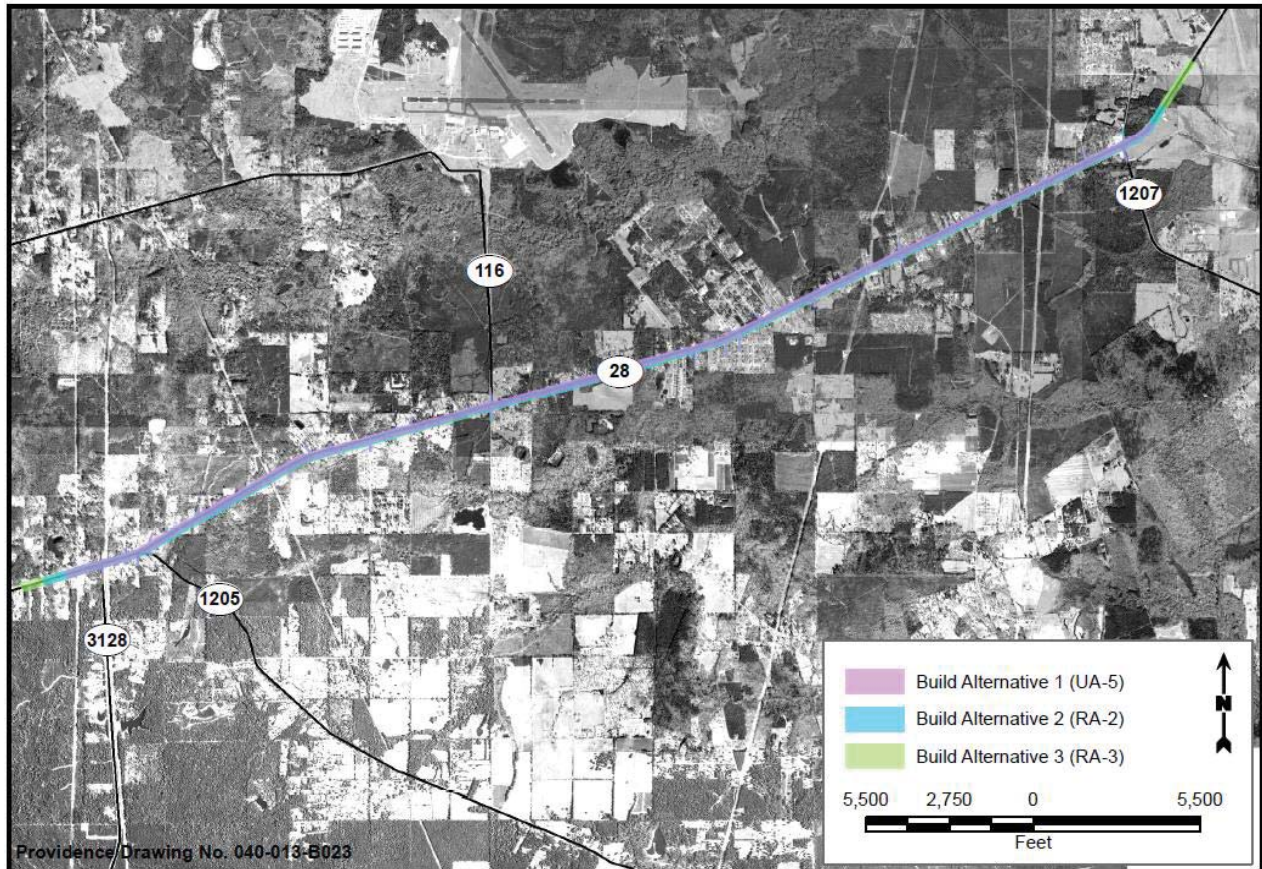
- Alternative 1(RA-2) – A rural arterial with four 12-foot travel lanes, dual lane roundabouts at the intersections of LA 28 at LA 3128, LA 116, and LA 1207, a 53-foot wide depressed median, and a design speed of 60 mph
- Alternative 2 (RA-3) – A rural arterial with four 12-foot travel lanes, dual lane roundabouts at the intersections of LA 28 at LA 3128, LA 116, and LA 1207, a 60-foot wide depressed median, and a design speed of 70 mph
- Alternative 3 (UA-4) – An urban arterial with four 12-foot travel lanes, dual lane roundabouts at the intersections of LA 28 at LA 3128, LA 116, and LA 1207, an 18- foot raised median, and a design speed of 55 mph

After the April 2013 public meeting, it was determined that the original three alternatives represented design options of the same general alternative and did not truly provide a range of alternatives for public review. They also identified a need to add a more detailed traffic analysis to the scope to fully consider the functionality of the proposed roundabouts. The development of new build alternatives that would meet the project need while providing differing designs was requested as well as the consideration of service roads along with detailed traffic analysis.

The following alternatives were developed after the first public meeting and the analysis of service roads (see Section 2.2 for traffic study discussion):

- Build Alternative 1 – UA-5 (60 mph) with a varying raised median width (18 to 30 feet) and three roundabouts
- Build Alternative 2 – RA-2 with a 42-foot depressed median with no more than one roundabout
- Build Alternative 3 – RA-3 with a 60-foot depressed median with no more than one roundabout

FIGURE 2
PRELIMINARY BUILD ALTERNATIVES



Base map comprised of ESRI World Imagery Maps dated June 2013.

2.2 Traffic

A traffic study was performed that considered the addition of service roads and the analysis of various build alternatives considering an urban section with three roundabouts, and a rural section with the inclusion of one roundabout and traffic signals (where warranted) without roundabouts (Alliance, 2015). This study analyzed current conditions with the no-build condition during the potential build and design years, 2016 and 2036, respectively, and the build condition during 2016 and 2036.

Traffic data analysis indicated that service roads would have little impact on the efficiency of LA 28, due to the small number of vehicles benefiting, demonstrating the cost and impacts would not justify the minimal benefit. Based on these results, service roads were eliminated from further consideration.

Continued traffic analysis was conducted considering various intersection types along the corridor for all of the build alternatives. Each alternative had consistent intersection types throughout for the initial analysis. The different intersection types analyzed included: no change (all existing intersection types remain the same); all

signalized; all J-turns; roundabouts at three major intersections; and one roundabout at LA 1207.

Traffic signal warrant analysis was conducted at LA 3128, LA 1205, LA 116, Gene Gunter Road, and LA 1207. Only LA 1207 met the conditions to warrant a signal (the intersection is currently signalized), despite the fact that a traffic signal currently exists at LA 116. The traffic study recommended the removal of this signal and replacement with a partial median opening.

The traffic study revealed that in 2013, LA 28 was primarily operating at an acceptable LOS. An acceptable LOS ranges from A, which is the best, to C, which is acceptable (A, B, then C). LOS conditions of D do occur during the evening peak at LA 28 and LA 3128 and at LA 116 and during the morning peak traffic period at LA 28 and Gene Gunter Road/Barney Rush Road and LA 28 at LA 1207. In 2036, without the project, an LOS of F to E would be expected to occur at the below intersections along LA 28 in the project construction area:

- LA 28 at LA 3128
- LA 28 at LA 1205
- LA 28 at LA 116/Barron Chapel Road
- LA 28 at Gene Gunter Road/Barney Rush Road
- LA 28 at LA 1207 – northbound from LA 1207

Traffic analysis of the J-turn only alternative indicated that the intersections of LA 3128 and LA 1205 would have an operational problem with weaving movements. For the J-turn intersection alternative to function properly in this area, one of the intersections would need to be removed. As this was not considered feasible, neither the urban nor rural arterial concept could move forward with only J-turns.

Similarly, the analysis of only signalized intersections would result in an unacceptable LOS (LOS of D to F at various intersections) in the design year for both the urban and rural roadways without the addition of mitigation measures, such as additional turn lanes and phased signals.

Under both urban and rural build alternative scenarios, the roadway was determined to function at an appropriate LOS in the design year using a combination of roundabouts and J-turns (some dual lane J-turns). The most efficient traffic movement requiring the fewest mitigation measures is achieved under Build Alternative 1, the UA-5 with three roundabouts located at LA 3128, LA 116, and LA 1207.

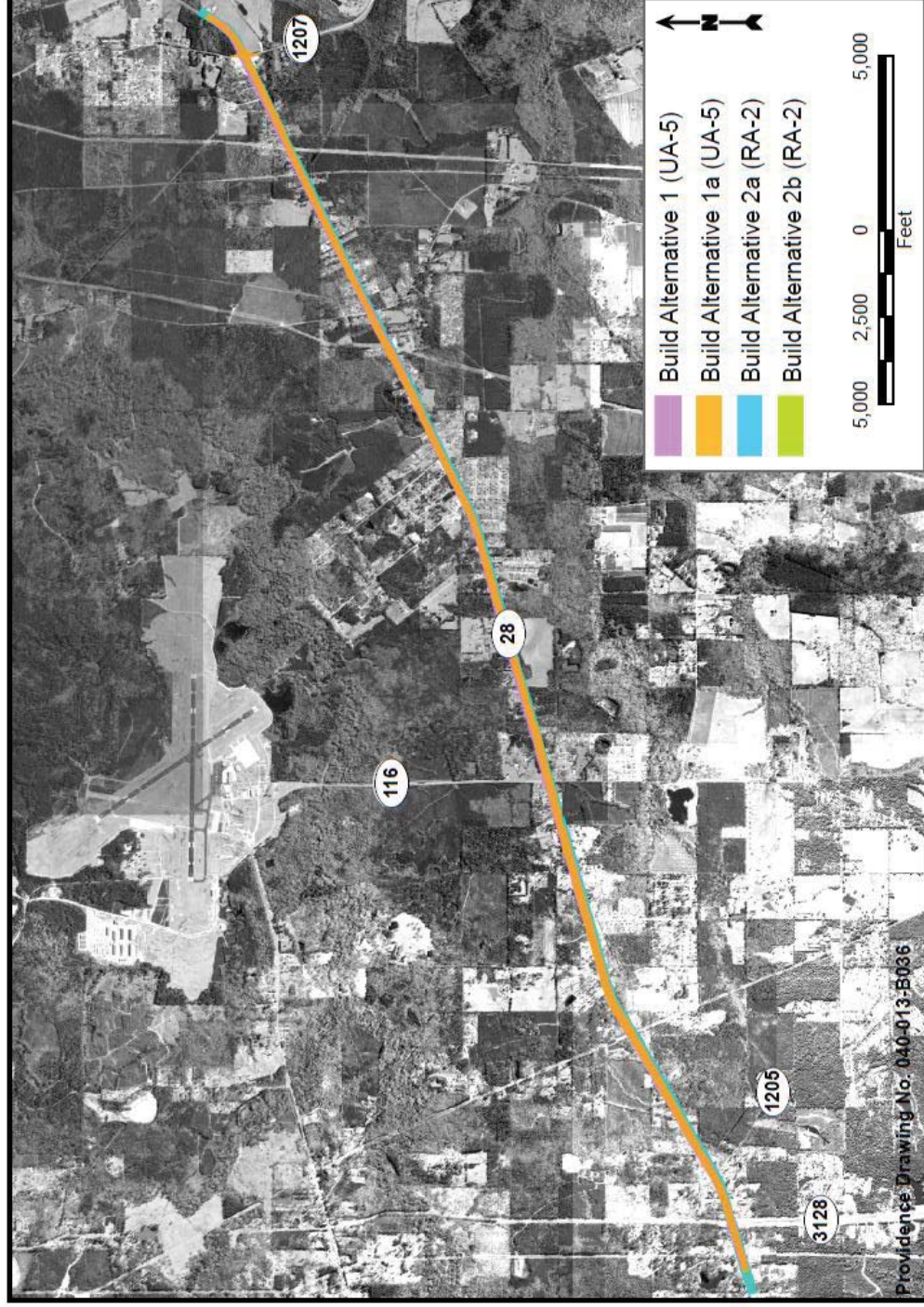
2.3 Alternatives Screening Process

The build alternatives were refined after the completion of the traffic study. The RA-3 design was eliminated because of the higher mainline ROW impacts than the RA-2 concept, which provided nearly the same design benefits with less ROW impacts.

Elimination of Build Alternative 3 resulted in developing Build Alternative 2 into two options based on interchange type at LA 1207. Build Alternative 2a incorporates a roundabout at the intersection of LA 28 and LA 1207. Build Alternative 2b maintains a signalized intersection at LA 28 and LA 1207. In the event the signalized interchange would be preferred, mitigation measures, including an additional left turn lane northbound on LA 1207 would need to be provided.

Build Alternatives 1, 2a, and 2b were presented to the public in January 2015. **Table 2-1** is a comparison matrix of the build alternatives presented to the public. **Figure 3a** shows all four build alternatives developed for this EA.

FIGURE 3a
BUILD ALTERNATIVES



Base map comprised of ESRI World Imagery Maps dated June 2013.

**TABLE 2-1
BUILD ALTERNATIVES COMPARISON MATRIX**

Evaluation Criteria	Build Alternative 1 (UA-5)	Build Alternative 2 (RA-2)	
		2a (Roundabout at LA 1207)	2b (Signalization at LA 1207)
Purpose and Need			
Meets Purpose and Need	Yes	Yes	Yes
Engineering			
Length (miles)	7.36	7.63	7.63
Required Right-of-Way (acres)	78.34	101.91	100.92
2030 Average Daily Traffic for Connector (Mainline)	23,100	23,100	23,100
Anticipated Level of Service for the Alternatives (Mainline)	A	A	A
Potential At-Grade Railroad Crossings	0	0	0
Potential Navigable Water Crossings	0	0	0
Constructability			
Construction Complexity ¹	Medium	Low	Low
Preliminary Construction Costs (millions) ²	\$53.4	\$53.1	\$50.8
Community Disruption/Impacts during Construction	Medium	Medium	Medium
Cultural Resources ³			
Potential to Impact Historical Resources	Low	Low	Low
Potential to Impact Archaeological Resources	Low	Low	Low
Potential Wetlands ⁴			
Freshwater Forested/Shrub Wetland (acres)	0.00	0.11	0.11
Potential Hydric Soils (acres)	18.66	20.65	20.65
Threatened/Endangered/Protected Species			
Potential Impact to Threatened and Endangered Species	None	None	None
Community Impacts			
Residential Structures	16	24	21
Commercial Property/Businesses	14 ⁵	15 ⁵	14 ⁵
Churches	1 ⁶	0	0
Recreational Areas	0	1 ⁷	1 ⁷
Other Community Facilities	0	1 ⁸	1 ⁸
Potential to Impact Transit Routes	Low	Low	Low
Land Use			
Potential Impact to Prime Farmland ⁹ (acres)	0.00	0.00	0.00
Potential Impact to the 100-yr Floodplain (acres)	5.92	7.19	7.19
Visual Quality			
Potential Visual Quality Impacts	Low	Low	Low
Environmental Liability Concerns ¹⁰			
Potential Impacts to Hazardous Sites	Medium	Medium	Medium
Active Oil and Gas Wells within 160 feet of Proposed Right-of-Way	0	0	0
Observation Relief Wells (ORWs) Affected	0	0	0
Active Water Well Locations	4	4	4
Other Environmental Concerns			
Utility Impacts ¹¹	51,850 feet	55,100 feet	55,100 feet
State Scenic Streams	None	None	None
Potential Visual Quality Impacts	Low	Low	Low
Potential Impact to Federal/State Scenic Streams	None	None	None

NOTES:

1. Construction complexity estimates the general difficulty of construction based on grade adjustments, the number of railroad crossings, the number of potential navigable water crossings, utility relocations, and ROW. Low means less complex, high is the most complex.
2. Construction costs are preliminary estimates and do not include utility relocations. A 20% contingency and 8% design fee is applied to each alternative.
3. Cultural resource estimates are based off the Louisiana Cultural Resources Map, which identifies the location of standing structures and archaeological sites.
4. Potential wetlands were defined using National Wetlands Inventory data and minimal field verification. A wetlands delineation will be conducted once a Preferred Build Alternative is selected.
5. Total number includes Exxon Outpost which contains four businesses.
6. Pioneer Baptist Church.
7. Country Livin' Gas Station & Campground.
8. Kastle for Kids.
9. Although there are prime farmland soils mapped in the project ROWs, the NRCS has stated that no prime farmland impacts are anticipated as they consider the ROWs urban land.
10. According to the LDNR SONRIS database as of 09/30/15.
11. Total number includes utilities for water, gas, and electric lines impacted throughout the length of project.

2.4 Preferred Alternative

After the second public meeting, the three alternatives were compared in detail along with public comments. While generally in favor of the project, the public expressed concerns with having three roundabouts associated with Build Alternative 1 and the amount of ROW and J-turns more closely associated with Build Alternatives 2a and 2b. Build Alternative 2b was eliminated from further consideration due to the impacts associated with the acquisition of additional ROW to conduct all the mitigation measures that would be required to achieve an acceptable LOS.

Ultimately, to resolve the public's concerns and maintain an efficient facility, a hybrid of Build Alternative 1 and Build Alternative 2a was developed. The new alternative, termed Build Alternative 1a, utilizes the UA-5 design for reduced ROW, one roundabout at LA 1207 with mitigation measures (for the best LOS), and shifts the UA-5 ROW further south, more in alignment with the northern limits of the RA-2 to further reduce structure impacts. This shift was achievable with the removal of the roundabouts at LA 3128 and LA 116. Signalized J-turns, dual right turn lanes, and dual lane J-turns are the mitigation measures utilized to maintain an acceptable LOS without the roundabouts at LA 3128 and LA 116. The estimated construction cost, prior to the development of utility impacts costs for Build Alternative 1a was also lower than the other build alternatives. For these reasons, Build Alternative 1a was selected as the Preferred Alternative. **Table 2-2** is the Preferred Alternative Decision Matrix. **Figures 3b, 3c, 3d, and 3e** present the preferred alternative.

There will be no additional ROW acquired between the western logical termini (just west of LA 3128) and LA 1205, as LA 28 is five lanes in this area. LA 28 will remain a UA-2 west of LA 1205 with a posted speed limit of 45 mph. Installation of an 18-foot wide raised median will occur in this area. In terms of classification, east of LA 1205, the Preferred Alternative will be a UA-5 with a design speed of 60 mph. The proposed UA will have four 12-foot travel lanes, dual right turn lanes from northbound LA 1205, three two-phased signalized J-turns (at LA 3128, Barron Chapel Road, and LA 116), J-turns throughout with four dual lane J-turns, a dual lane roundabout at LA 1207, a variable width raised median (18 to 30 feet), and an 8-foot outside shoulder. The total estimated cost for Build Alternative 1a is \$61 million dollars.

**TABLE 2-2
PREFERRED ALTERNATIVE SELECTION MATRIX**

Evaluation Criteria	Build Alternative 1	Build Alternative 2a	Build Alternative 2b	Build Alternative 1a
	UA 5 with 3 Roundabouts	A 2 with a Roundabout at LA 12(A 2 with Signalization at LA 1207	UA 5 with a Roundabout at LA 1207	PREFERRED ALTERNATIVE
Purpose and Need	Yes	Yes	Yes	Yes
Meets Purpose and Need	Yes	Yes	Yes	Yes
Cultural Resources ¹				
Potential to Impact Historical Resources	Medium	Medium	Medium	Medium
Potential to Impact Archaeological Resources	Low	Low	Low	Low
Potential Wetlands ²				
Freshwater Forested/Shrub (acres)	0	0.11	0.11	0
Threatened/Endangered/Protected Species				
Potential Impact to Threatened and Endangered Species	None	None	None	None
Community Impacts				
Residential Structures	16	24	21	15
Commercial Property	15 ^{3, 4}	16 ^{3, 4}	15 ^{3, 4}	13 ^{3, 5}
Churches	1 ⁶	0	0	0
Recreational Areas	0	1 ⁷	1 ⁷	0
Other Community Facilities	0	1 ⁸	1 ⁸	0
Land Use				
Prime Farmland ⁹ (acres)	0	0	0	0
100-yr Floodplain (acres)	5.97	7.19	7.19	6.23
Environmental Liability Concerns				
Potential Impacts to Hazardous Sites	Medium	Medium	Medium	Medium
Active Oil and Gas Well Locations ¹⁰	0	0	0	0
Other Environmental Concerns				
Active Water Well Locations ¹⁰	4	4	4	4
Potential Visual Quality Impacts	Low	Low	Low	Low

NOTES:

1. Cultural resource estimates are based off the Louisiana Cultural Resources Map, which identifies the location of standing structures and archaeological sites. The Cultural Resource Survey indicated that no resources would be adversely affected by the Preferred Alternative.
2. Potential wetlands were defined using National Wetlands Inventory data.
3. Total number includes Exxon Outpost, which supports 4 businesses.
4. Total number includes Holloway General Store, however, alternative only impacts pump island not the structure.
5. Country Livin' Gas Station impact is confined to the pump island only.
6. Pioneer Baptist Church.
7. Country Living Campground may be affected.
8. Kastle for Kids.
9. Although there are prime farmland soils mapped in the project ROWs, the NRCS has stated that no prime farmland impacts are anticipated as they consider the ROWs urban land.
10. According to the LDNR SONRIS database as of 9/30/15.

FIGURE 3b
PREFERRED BUILD ALTERNATIVE

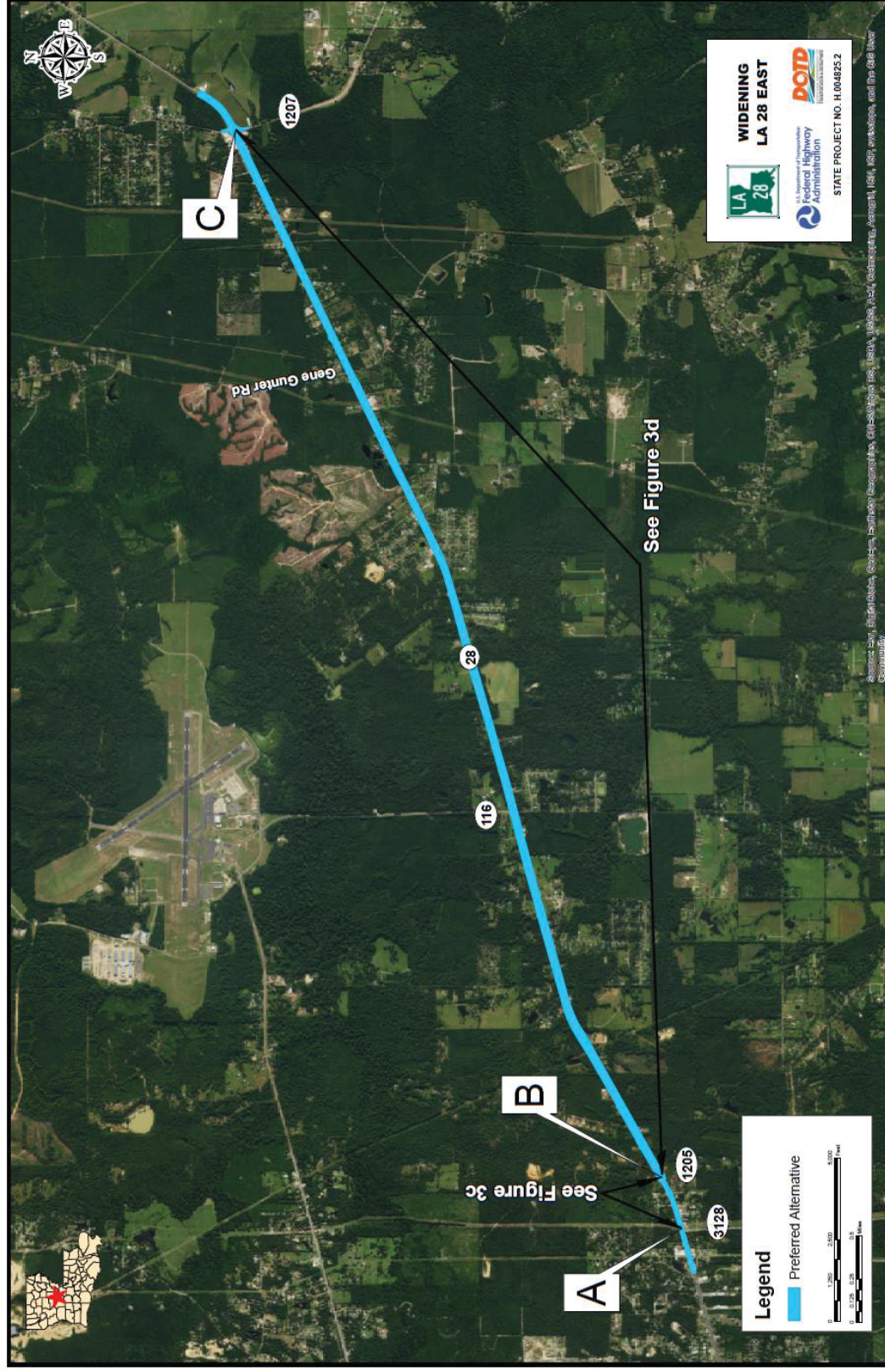


FIGURE 3c
PREFERRED BUILD ALTERNATIVE SECTION A TO B

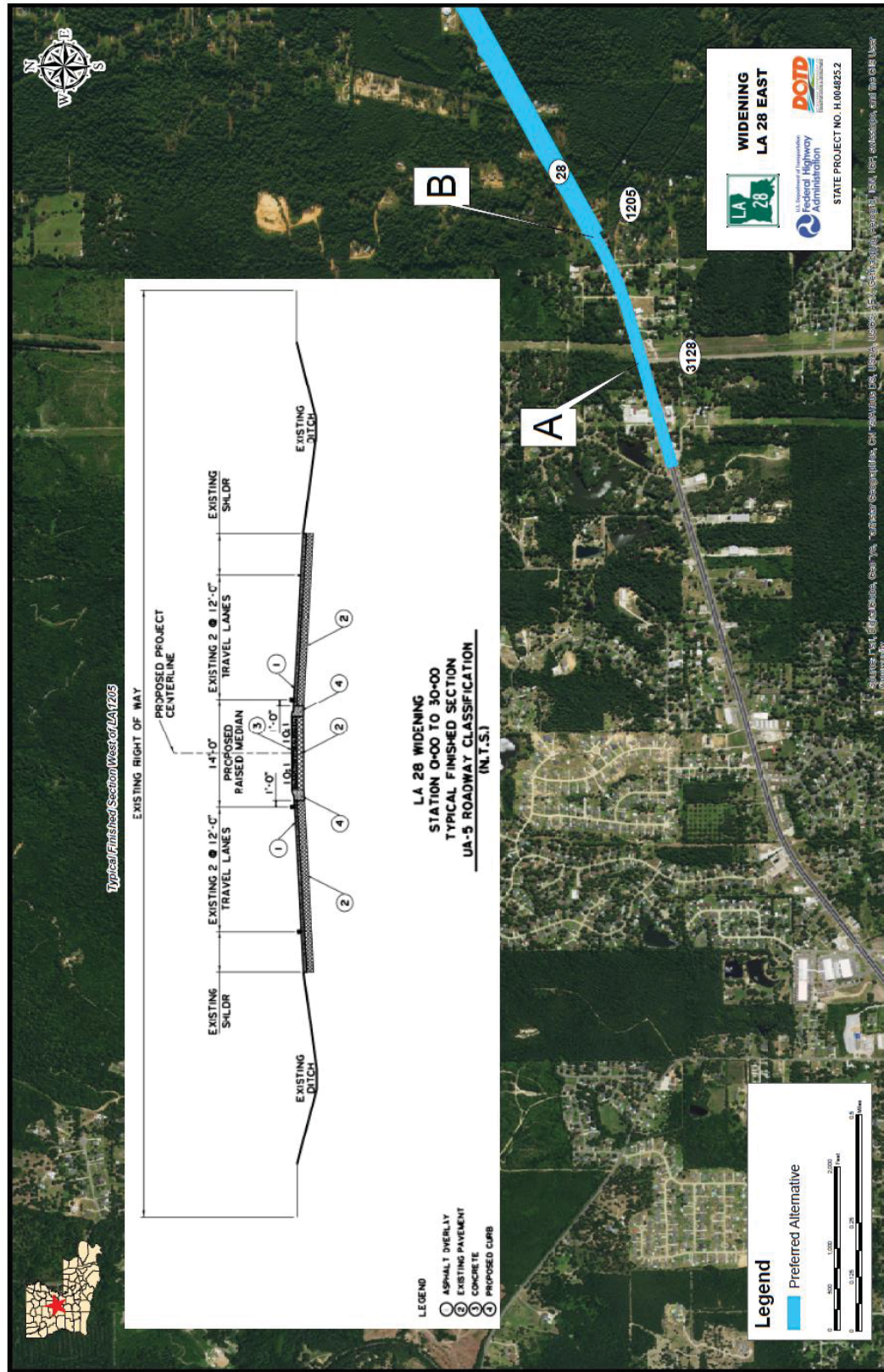


FIGURE 3d
PREFERRED BUILD ALTERNATIVE SECTION B TO C

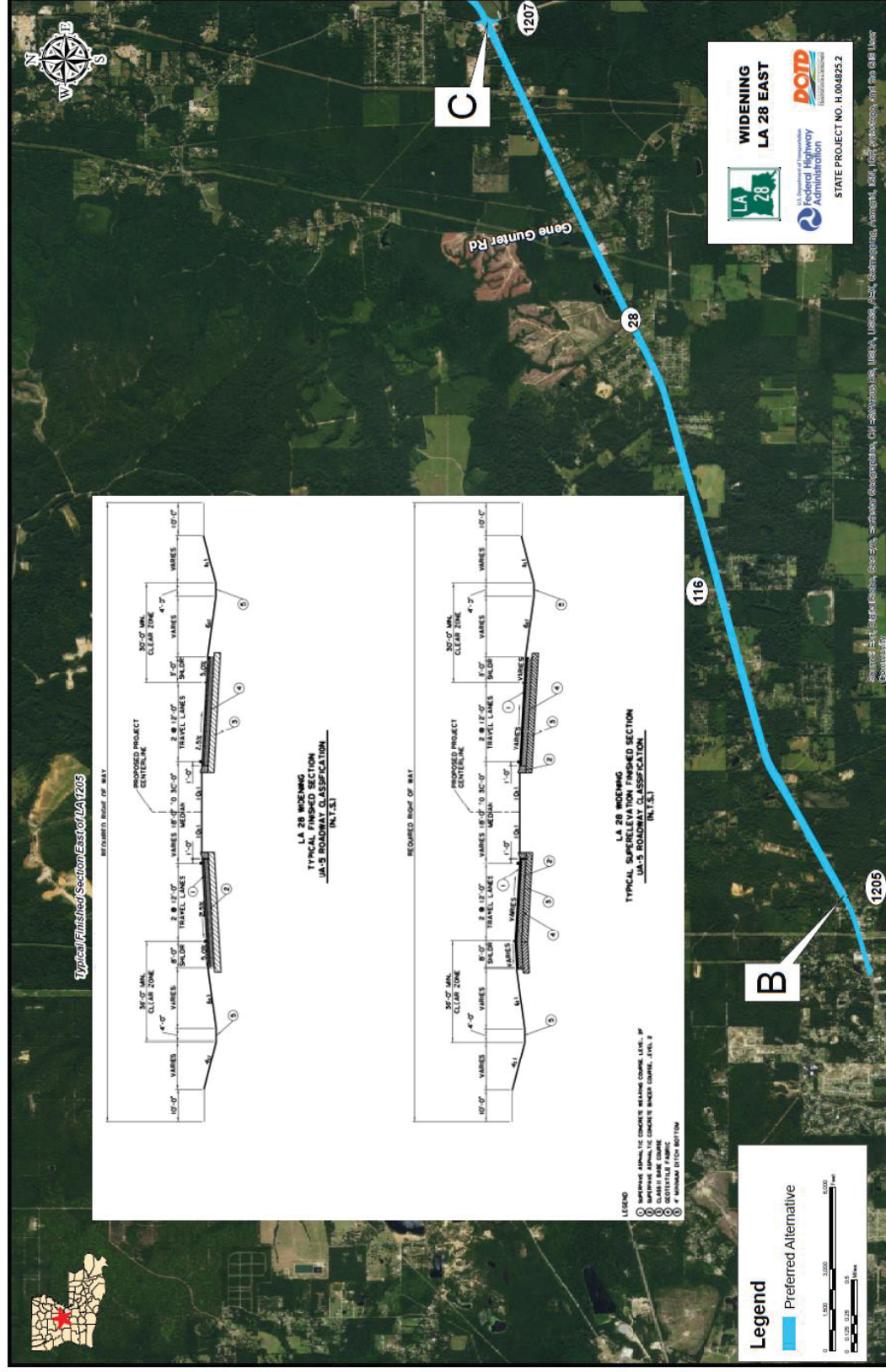
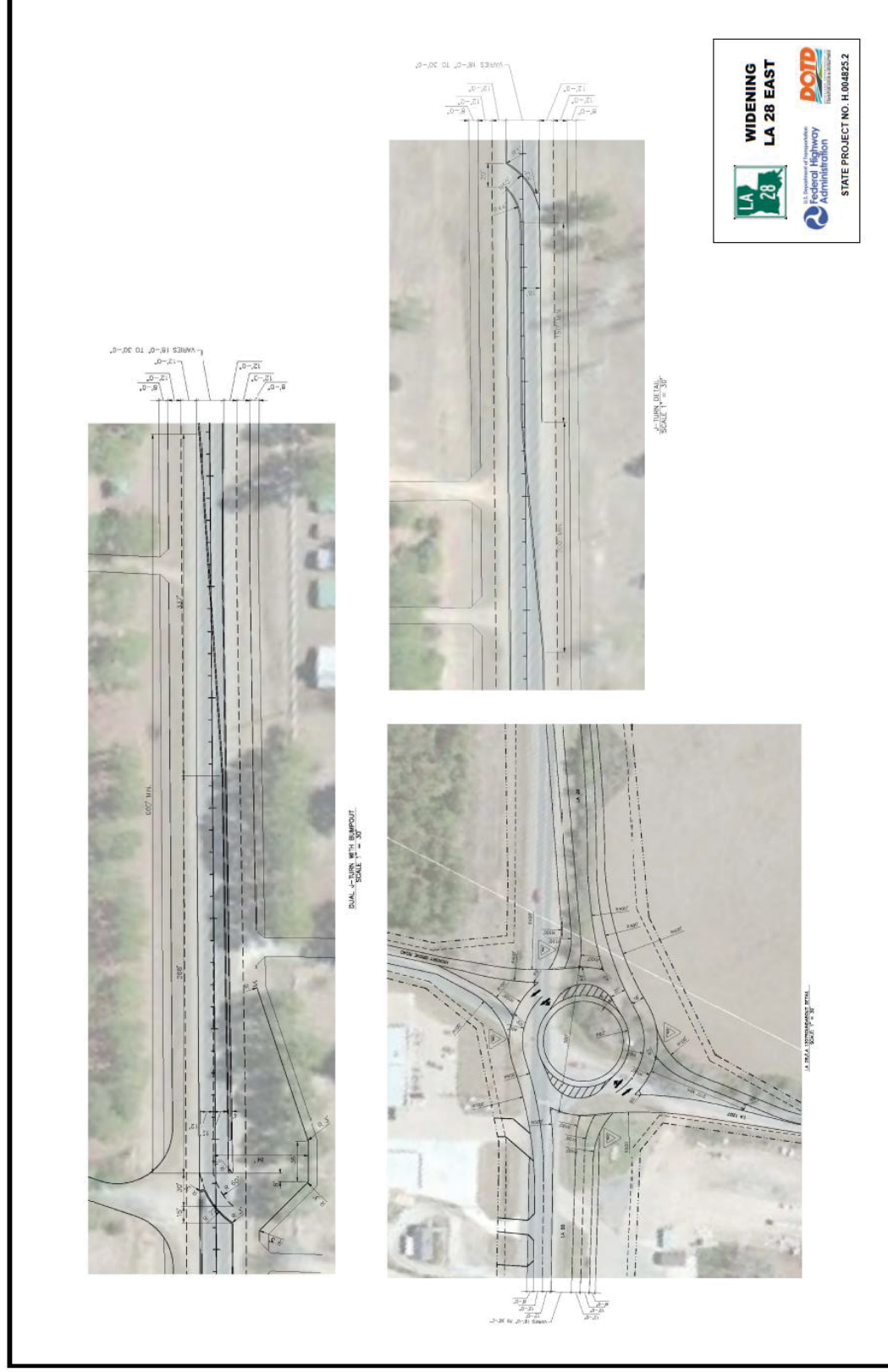


FIGURE 3e
PREFERRED BUILD ALTERNATIVE DETAILS



2.5 Alternatives Cost Comparison

Table 2-1 presented a construction cost comparison of the build alternatives. The Opinion of Probable Cost for the Preferred Alternative is located in **Appendix B**.

2.6 Context Sensitive Solutions

The proposed project will widen existing LA 28 to four lanes to allow for more efficient and safe traffic flow and provide for future projected traffic volumes. Land use patterns, cultural resources, environmental resources, and community input were all considered in the development of the build alternatives along with early stakeholder involvement.

Service roads were considered but deemed unnecessary due to minimal vehicle use.

The removal of two of the roundabouts in favor of two-phase signalized J-turns and the addition of a second right turn lane at LA 1205 were incorporated to alleviate public concerns. Landscaping for the medians was to be determined during final design.

3.0 AFFECTED ENVIRONMENT

The project study area boundary shown in **Figure 1** (Chapter 1.1) defines the geographic area of the affected environment associated with the LA 28 East Widening project. The proposed project study area extends from approximately 500 feet to the west of the intersection of LA 28 and LA 3128 in Libuse to approximately 500 feet to the east of the intersection of LA 28 with US 84 near Jonesville, Louisiana. The proposed construction study area starts at LA 3128 and ends at the intersection of LA 28 with LA 1207 in Holloway. Construction between LA 3128 and LA 1205 will be conducted entirely within existing ROW and will only involve the installation of the proposed raised median. All agency correspondence noted in this chapter are included as **Appendix A** in chronological order, unless otherwise stated.

3.1 Project Setting

While the project area occupies portions of Rapides, LaSalle, and Catahoula Parishes, the construction study area (approximately 7 miles) is only within Rapides Parish. The project setting discussion highlights Rapides Parish among the parishes in the study area.

Rapides Parish is located in central Louisiana and, along with LaSalle and Catahoula Parishes, is one of eight parishes included in the Kisatchie-Delta Regional Planning and Development District (KDRPDD). Rapides Parish is also the namesake of the area Metropolitan Planning Organization, Rapides Area Planning Commission. The region is often referred to as the cultural crossroads (“The Crossroads”, “Regional Profiles”) of Louisiana, where the French culture of the south merges with the Anglo-Saxon culture of the north. Rapides Parish is located approximately half way between Louisiana’s border with Texas and Mississippi to the west and east, respectively, and half way between Arkansas and the Gulf of Mexico to the north and south. It is this location in the center of Louisiana that has earned the KDRPDD the nickname Cenla.

Rapides Parish’s history revolves around institutions that continue to support the parish and region today. In 1860, Louisiana State University (LSU) opened near Pineville with 19 cadets and five professors (“Turning Points”). During the Civil War, Union soldiers burned 90% of Alexandria, destroying almost all the city’s historic structures. LSU survived the 1864 fires, but was destroyed by another fire in 1869. As a result of the 1869 fire, LSU was relocated to Baton Rouge. It was not until 1959 that LSU Alexandria was established, with its first students accepted in 1960.

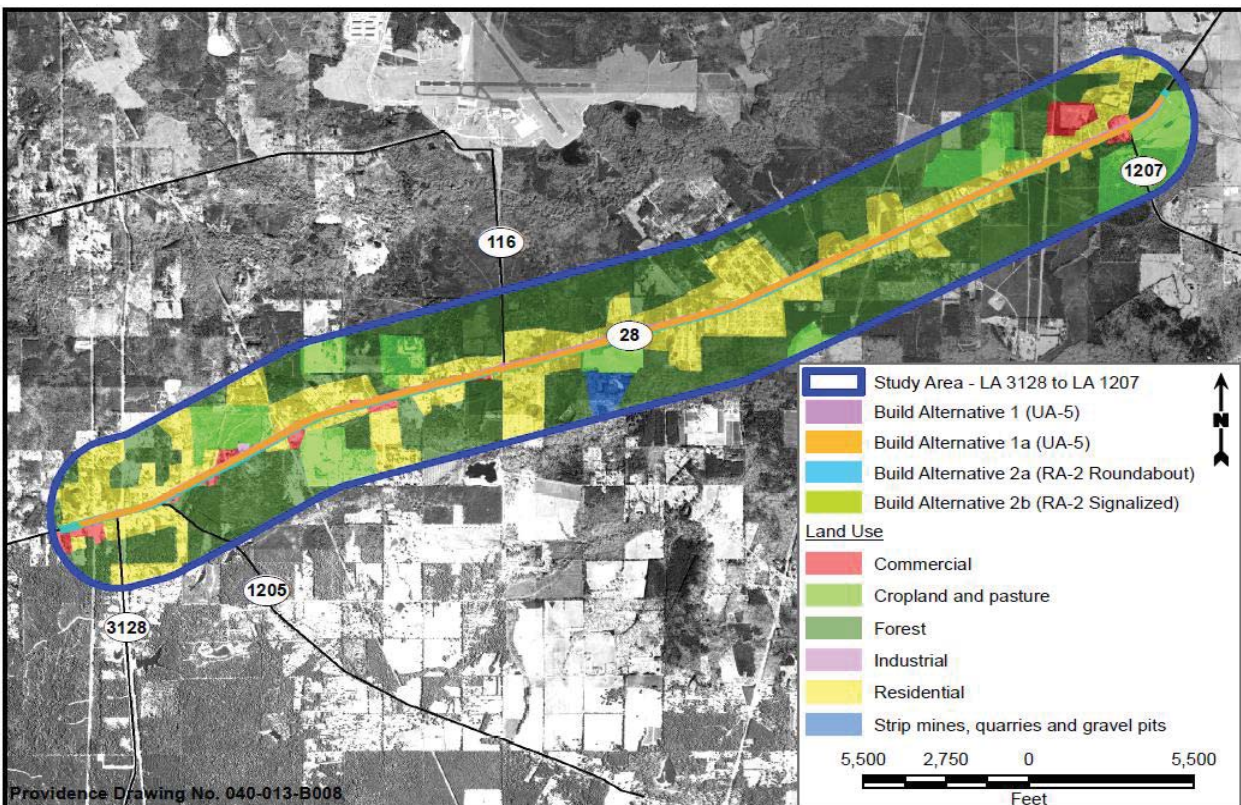
The region’s economy was ignited by logging in the 1890s, but failure to sustainably harvest resulted in the near clear-cutting of Rapides Parish’s forests by the 1920s (“Turning Points”). A massive government and public supported initiative to replant the region began in the 1930s, resulting in the recovery of the timber industry, which remains a significant segment of the regional as well as Rapides Parish’s economy. World War II (WWII) also brought economic gains to the region in the form of army training bases and people; over 150,000 new

residents came to Rapides Parish during WWII. Many of the wartime residents left the parish when the war ended. Today, the military plays a strong role in the regional economy. Fort Polk continues to grow and is one of the state's largest employers ("Regional Profiles"). Camp Beauregard continues to support Louisiana's Air National Guard. The conversion of England Air Force Base to a commercial park upon its closure resulted in the development of a school, golf course, and commercial investments, including a popular restaurant.

3.2 Land Use and Development Trends

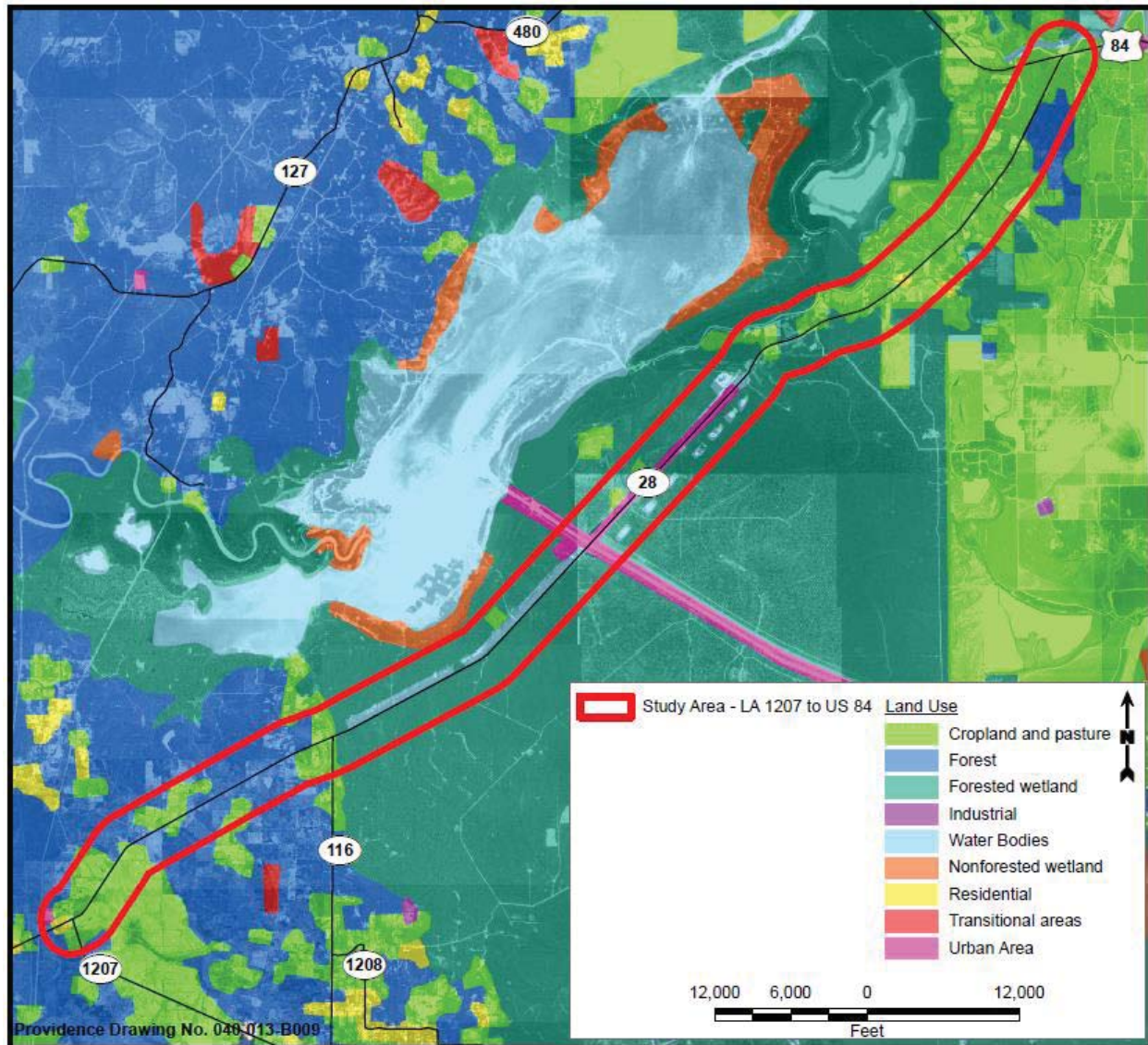
The total project study area encompasses approximately 4,746 acres in Rapides, LaSalle, and Catahoula Parishes. Current land use is represented in **Figures 4a** and **4b**. As demonstrated in the figures, land use in Rapides Parish is predominantly associated with agriculture and forest land, in LaSalle Parish its wetlands, and in Catahoula Parish, agriculture dominates land use categories. Developed areas within the project study area consist of commercial developments in Rapides Parish off of LA 28 and Camp Beauregard to the north of LA 28 also in Rapides Parish. Residential areas are concentrated north and south of LA 28 in the construction study area, and less concentrated between LA 1207 and LA 115 off LA 28. The remaining study area does not support extensive residential development.

FIGURE 4a
LAND USE LIMITS OF CONSTRUCTION



Land Use Land Cover Data obtained from the USGS data set and modified based on aerial investigations. Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 4b
LAND USE LA 1207 – US 84



Land Use Land Cover Data obtained from the USGS data set and modified based on aerial investigations. Base map comprised of ESRI World Imagery Maps dated June 2013.

3.3 Community Facilities and Services

Schools

There are no schools located directly adjacent to LA 28 in the study area. Three area schools, Buckeye High School, Buckeye Elementary School, and Hayden R. Lawrence Middle School, utilize LA 28 and LA 1207 as routes to their respective campuses.

Day Cares

Three day cares/early learning centers, Bookworm Academy, Kastle for Kids, and Cubhouse for Kids, are located off of LA 28 in the construction study area. No day care facilities were observed in the remaining study area.

Libraries

One branch of the Rapides Parish Library system, Gunter Branch, is located in the construction study area. This library serves the three schools located off LA 1207 as well as schools located to the north and west of the project study area.

Houses of Worship and Cemeteries

Five churches are located off LA 28 in the project study area. Truthway Pentecostal Church, Pioneer Baptist Church, and Unity Baptist are located in the construction study area. Open Door Community Church in Deville (Rapides Parish) and Mount Hermon Baptist Church in Catahoula Parish were observed in the remaining study area between LA 1207 and US 84.

Police and Fire

There is one fire station located off of LA 28 in the construction study area, Deville Volunteer Fire District. The Holiday Village Fire Station is located just to the west of LA 3128. The Ward 11 substation for the Rapides Parish Sheriff's office is located adjacent to the Holloway General Store on the north side of LA 28 East just west of LA 1207.

3.4 Community Demographic

A majority of the project study area falls within Census Tract 101 in Rapides Parish. A small portion of the study area south of LA 28 and west of LA 116 falls within Census Tract 132. **Figures 5a** and **5b**, along with **Table 3-1**, provide details on population in the project study area according to the United States Census Bureau's (USCB's) 2010 Census for Census Tracts 101 and 132. Demographic data for these tracts relating to housing units, educational attainment, age groups, and language spoken was obtained from the American Community Survey (ACS) 5-Year Estimates for 2008-2012 (see **Table 3-2**). This data was available on the USCB's American Fact Finder (AFF) website and is the most recent data currently available for the project study area.

**TABLE 3-1
POPULATION DATA**

Census Tracts withing the Project Study Area	Subject	Total Population (all races)	White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some Other Race Alone	Two or More Races	Hispanic ¹	Minority Calculation ²
Rapides - Tract 101	Number	9,266	8,781	250	65	63	2	13	92	121	485
	Percent	-	94.8%	2.7%	0.7%	0.7%	0.0%	0.1%	1.0%	1.3%	5.2%
Rapides - Tract 132	Number	8,253	7,248	686	58	69	2	32	158	130	1,005
	Percent	-	87.8%	8.3%	0.7%	0.8%	0.0%	0.4%	1.9%	1.6%	12.2%
LaSalle - Tract 9703	Number	4,352	4,219	30	57	6	0	9	31	31	133
	Percent	-	96.9%	0.7%	1.3%	0.1%	0.0%	0.2%	0.7%	0.7%	3.1%
Catahoula - Tract 3	Number	3,060	2,816	203	16	1	0	1	23	7	244
	Percent	-	92.0%	6.6%	0.5%	0.0%	0.0%	0.0%	0.8%	0.2%	8.0%

NOTES:

1. Since all Hispanics regardless of race are considered a minority, the population with Hispanic ethnicity is identified in this column, and all the other race categories do not include Hispanic ethnicity.
2. In accordance with FHWA Order 6640.23A and DOT Order 5610.2, a minority means a person who is Black, Asian American, American Indian/Alaskan Native, or Hispanic (regardless of race). To determine the number of minorities, the total population minus the "white alone" population was determined.

Source: USCB, 2010 Census Summary File 1 (DP-1) 100-Percent Data

TABLE 3-2
DEMOGRAPHIC DATA

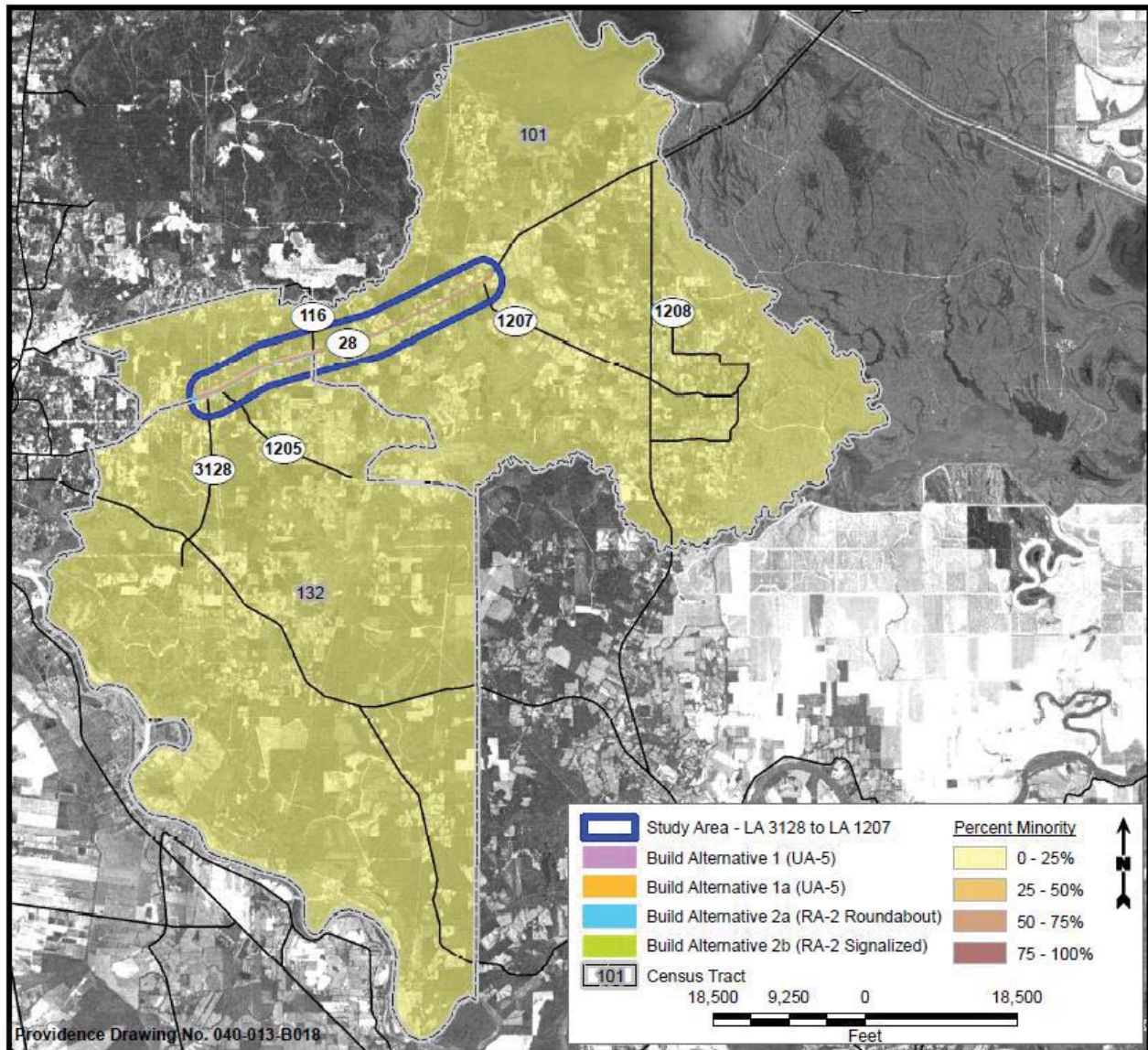
Census Tracts within the Project Study Area	Rapides - Tract 101		Rapides - Tract 132		LaSalle - Tract 9703		Catahoula - Tract 3		Study Area	
	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent
Housing Data										
Total housing units	3,643	-	3,283	-	2,223	-	1,541	-	10,690	-
Occupancy status										
Occupied housing units	3,354	92.1%	3,086	94.0%	1,732	77.9%	1,238	80.3%	9,410	88.0%
Vacant housing units	289	7.9%	197	6.0%	491	22.1%	303	19.7%	1,280	12.0%
Tenure										
Occupied housing units	3,354	-	3,086	-	1,732	-	1,238	-	9,410	-
Owner occupied	2,907	86.7%	2,483	80.5%	1,526	88.1%	1,084	87.6%	8,000	85.0%
Renter occupied	447	13.3%	603	19.5%	206	11.9%	154	12.4%	1,410	15.0%
Educational Attainment										
Population 25 years and over	5,697	-	5,204	-	2,866	-	2,145	-	15,912	-
Less than 9th grade	336	5.9%	205	3.9%	145	5.1%	276	12.9%	962	6.0%
9th to 12th grade, no diploma	475	8.3%	321	6.2%	282	9.8%	375	17.5%	1,453	9.1%
High school graduate (includes equivalency)	2,346	41.2%	1,900	36.5%	1,251	43.6%	962	44.8%	6,459	40.6%
Some college, no degree	1,344	23.6%	1,168	22.4%	611	21.3%	306	14.3%	3,429	21.5%
Associate's degree	300	5.3%	488	9.4%	152	5.3%	48	2.2%	988	6.2%
Bachelor's degree	666	11.7%	821	15.8%	300	10.5%	142	6.6%	1,929	12.1%
Graduate or professional degree	230	4.0%	304	5.8%	125	4.4%	36	1.7%	695	4.4%
Age Groups										
Total Population	9,266	-	8,253	-	4,352	-	3,060	-	24,931	-
0-9 years	1,374	14.8%	1,242	15.0%	620	14.2%	384	12.5%	3,620	14.5%
10-19 years	1,477	15.9%	1,241	15.0%	600	13.8%	388	12.7%	3,706	14.9%
19-24 years	468	5.1%	425	5.1%	217	5.0%	143	4.7%	1,253	5.0%
25-44 years	2,422	26.1%	2,146	26.0%	1,084	24.9%	703	23.0%	6,355	25.5%
45-64 years	2,405	26.0%	2,293	27.8%	1,207	27.7%	956	31.2%	6,861	27.5%
65 years and over	1,120	12.1%	906	11.0%	624	14.3%	486	15.9%	3,136	12.6%
Language Spoken at Home										
Population 5 years and over	8,228	-	8,114	-	4,054	-	3,156	-	23,552	-
English only	7,738	94.0%	7,907	97.4%	4,014	99.0%	3,134	99.3%	22,793	96.8%
Language other than English	376	4.6%	321	4.0%	40	1.0%	22	0.7%	759	3.2%

NOTES:

1. Although the ACS produces population demographic and housing unit estimates, for 2010, the 2010 Census provides the official counts of the population and housing
2. An estimated margin of error was given for each category and is available on the AFF website.

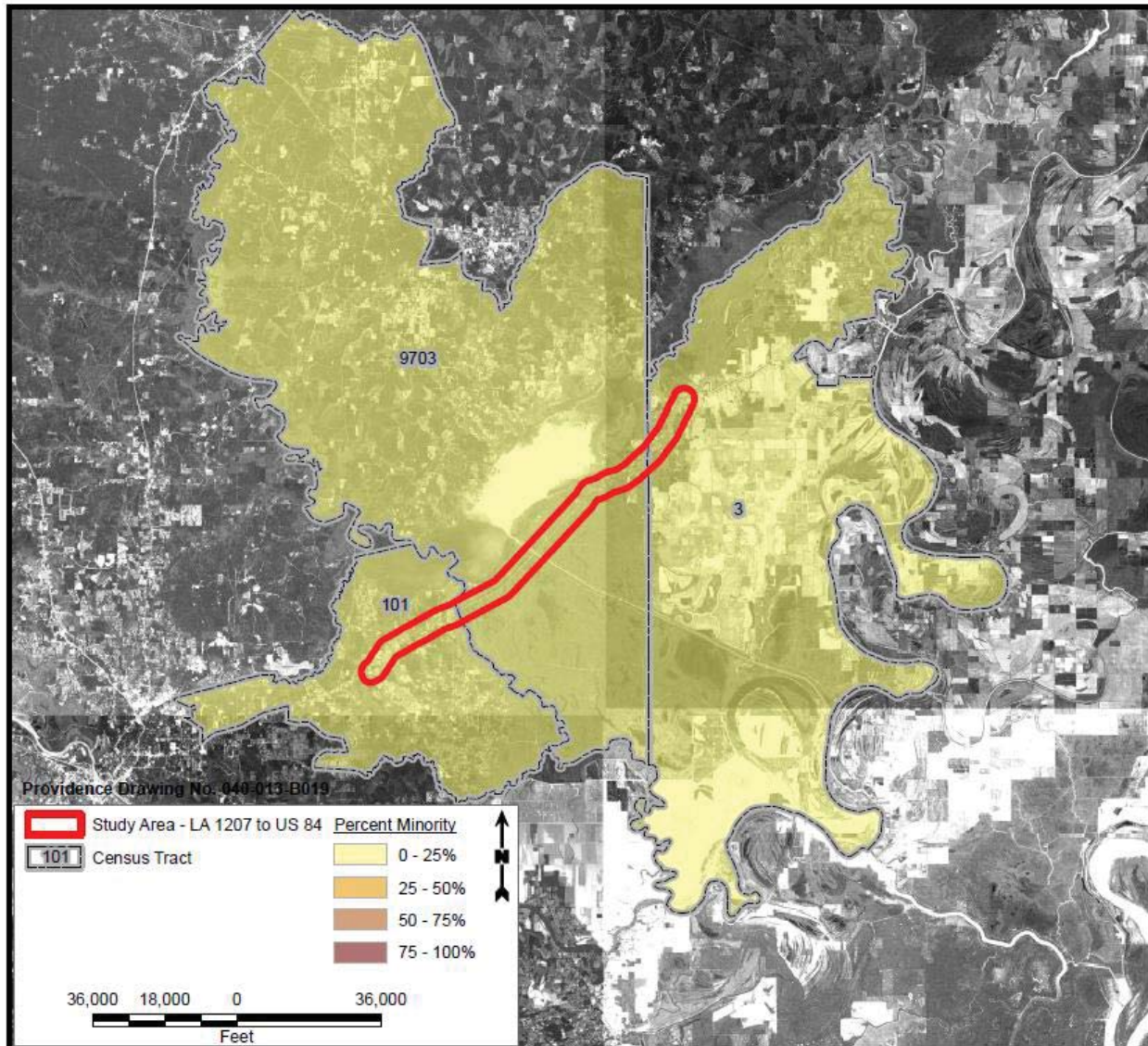
Sources: USCB, 2006-2010 ACS 5-Year Estimates Table DP-02 and DP-04; 2010 Census Summary File 1 (SF 1) 100-Percent Data, Tables QT-H1, QT-P1

FIGURE 5a
MINORITY DATA LIMITS OF CONSTRUCTION



Minority data obtained from the USCB, 2010 Census Summary File 1 (SF1) 100-Percent Data, Table P9. Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 5b
MINORITY DATA LA 1207 – US 84



Minority data obtained from the USCB, 2010 Census Summary File 1 (SF1) 100-Percent Data, Table P9. Base map comprised of ESRI World Imagery Maps dated June 2013.

3.5 Employment and Economic Trends

While population growth between 2000 and 2010 has been low for the Central Louisiana region (“Regional Profiles”), multiple employers are implementing new developments opening up additional job opportunities. These organizations and developments, as noted by the Cenla Chamber and in current news releases, are as follows:

- Proctor and Gamble
\$218 million in area investments resulting in 382 new jobs
- Startek
\$8.2 million in new investments resulting in 550 new jobs
- Union Tank Car
\$100 million in new investments resulting in 850 new jobs
- Mekesson Aps
\$37 million in new investments resulting in 75 new jobs
- Martco
\$120 million in new investments resulting in 170 new jobs
\$24 million invested in expansions resulting in 45 new jobs
- American Specialty Alloys
2.4 billion aluminum manufacturing mill and complex resulting in approximately 1,450 jobs (Revolution Aluminum, 2016)

According to Louisiana Travel, the Cenla region also supports the largest concentration of nurseries in the state of Louisiana.

Regional unemployment as of March 2013 was listed as 6.5%, which is higher than the March 2013 Louisiana average of 6.0%, but lower than the national average of 7.6%. No updated unemployment data was available as of August 2015.

Forbes Magazine listed Alexandria as one of its 25 best places to retire in 2012 and 2013 (Forbes, 2013) listing the climate, air quality, low cost of living, and good Milken aging index as positive attributes of the city.

Table 3-3 provides economic and employment details as reported by the 2010 United States Census.

**TABLE 3-3
EMPLOYMENT AND ECONOMIC STATUS**

Location	Rapides - Tract 101		Rapides - Tract 132		LaSalle - Tract 9703		Catahoula - Tract 3		Study Area	
	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent	Estimate	Percent
Employment Status										
Population 16 years and over	652	-	954	-	1,076	-	1,425	-	4,107	-
In labor force	227	34.8%	531	55.7%	600	55.8%	743	52.1%	2,101	51.2%
Civilian labor force	227	34.8%	531	55.7%	600	55.8%	743	52.1%	2,101	51.2%
Employed	182	27.9%	455	47.7%	495	46.0%	592	41.5%	1,724	42.0%
Unemployed	45	6.9%	76	8.0%	105	9.8%	151	10.6%	377	9.2%
Armed Forces	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Not in labor force	425	65.2%	423	44.3%	476	44.2%	682	47.9%	2,006	48.8%
Occupation										
Civilian employed population 16 years and over	182	-	455	-	495	-	592	-	1,724	-
Management, business, science, and arts occupations	13	7.1%	60	13.2%	195	39.4%	133	22.5%	401	23.3%
Service occupations	106	58.2%	170	37.4%	161	32.5%	309	52.2%	746	43.3%
Sales and office occupations	14	7.7%	142	31.2%	31	6.3%	62	10.5%	249	14.4%
Natural resources, construction, and maintenance occupations	0	0.0%	0	0.0%	64	12.9%	19	3.2%	83	4.8%
Production, transportation, and material moving occupations	49	26.9%	83	18.2%	44	8.9%	69	11.7%	245	14.2%
Industry										
Civilian employed population 16 years and over	182	-	455	-	495	-	592	-	1,724	-
Agriculture, forestry, fishing and hunting, and mining	0	0.0%	0	0.0%	17	3.4%	10	1.7%	27	1.6%
Construction	0	0.0%	0	0.0%	64	12.9%	22	3.7%	86	5.0%
Manufacturing	7	3.8%	50	11.0%	0	0.0%	30	5.1%	87	5.0%
Wholesale trade	0	0.0%	21	4.6%	0	0.0%	0	0.0%	21	1.2%
Retail trade	30	16.5%	0	0.0%	21	4.2%	25	4.2%	76	4.4%
Transportation and warehousing, and utilities	28	15.4%	19	4.2%	32	6.5%	17	2.9%	96	5.6%
Information	0	0.0%	22	4.8%	12	2.4%	0	0.0%	34	2.0%
Finance and insurance, and real estate and rental and leasing	0	0.0%	0	0.0%	30	6.1%	0	0.0%	30	1.7%
Professional, scientific, and management, and administrative and waste management services	36	19.8%	9	2.0%	72	14.5%	67	11.3%	184	10.7%
Educational services, and health care and social assistance	18	9.9%	127	27.9%	150	30.3%	218	36.8%	513	29.8%
Arts, entertainment, and recreation, and accommodation and food services	21	11.5%	180	39.6%	42	8.5%	94	15.9%	337	19.5%
Other services, except public administration	42	23.1%	15	3.3%	55	11.1%	88	14.9%	200	11.6%
Public administration	0	0.0%	12	2.6%	0	0.0%	21	3.5%	33	1.9%
Income and Benefits (in 2010 inflation-adjusted dollars)										
Total households	3,114	-	2,959	-	1,647	-	1,254	-	8,974	-
Median household income (dollars)	55,971	-	53,258	-	53,125	-	42,806	-	-	-
Mean household income (dollars)	64,164	-	73,636	-	67,619	-	53,967	-	-	-
With earnings	2,397	77.0%	2,342	79.1%	1,183	71.8%	979	78.1%	6,901	76.9%
With Social Security	983	31.6%	755	25.5%	576	35.0%	429	34.2%	2,743	30.6%
With retirement income	724	23.2%	638	21.6%	207	12.6%	136	10.8%	1,705	19.0%
With Supplemental Security Income	130	4.2%	176	5.9%	52	3.2%	175	14.0%	533	5.9%
With cash public assistance income	37	1.2%	38	1.3%	23	1.4%	0	0.0%	98	1.1%
With Food Stamp/SNAP benefits in the past 12 months	434	13.9%	206	7.0%	122	7.4%	257	20.5%	1,019	11.4%

NOTES:

1. An estimated margin of error was given for each category and is available on the AFF website.

Source: USCB, 2006-2010 ACS 5-Year Estimates Table DP-03

3.6 Environmental Justice Analysis

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations (February 11, 1994), specifies actions to be taken on a range of issues that are intended to promote nondiscrimination in federal actions to provide minority and low-income communities equal access to public information regarding a federal action, and to provide an opportunity for public participation in the evaluation of a federal action in matters relating to human health and the environment. Low income can be defined as a population whose median household income is at or below the Department of Health and Human Service poverty guidelines. A demographic profile for the Census tracts comprising the study area was prepared to answer the following questions posed by EO 12898:

- Does the potentially affected community include minority and/or low-income populations?
- Are the environmental impacts likely to fall disproportionately on minority and/or low-income members of the community and/or tribal resources?

The population/minority and poverty data obtained from the USCB AFF website are illustrated on **Tables 3-1** and **3-4** and **Figures 5a, 5b, 6a, and 6b**. Based on the data presented, Census Tracts 101 and 132 do not support minority populations. Within the project study area and immediately affected areas, there are no environmental justice concerns.

TABLE 3-4
POVERTY STATUS IN THE PAST 12 MONTHS

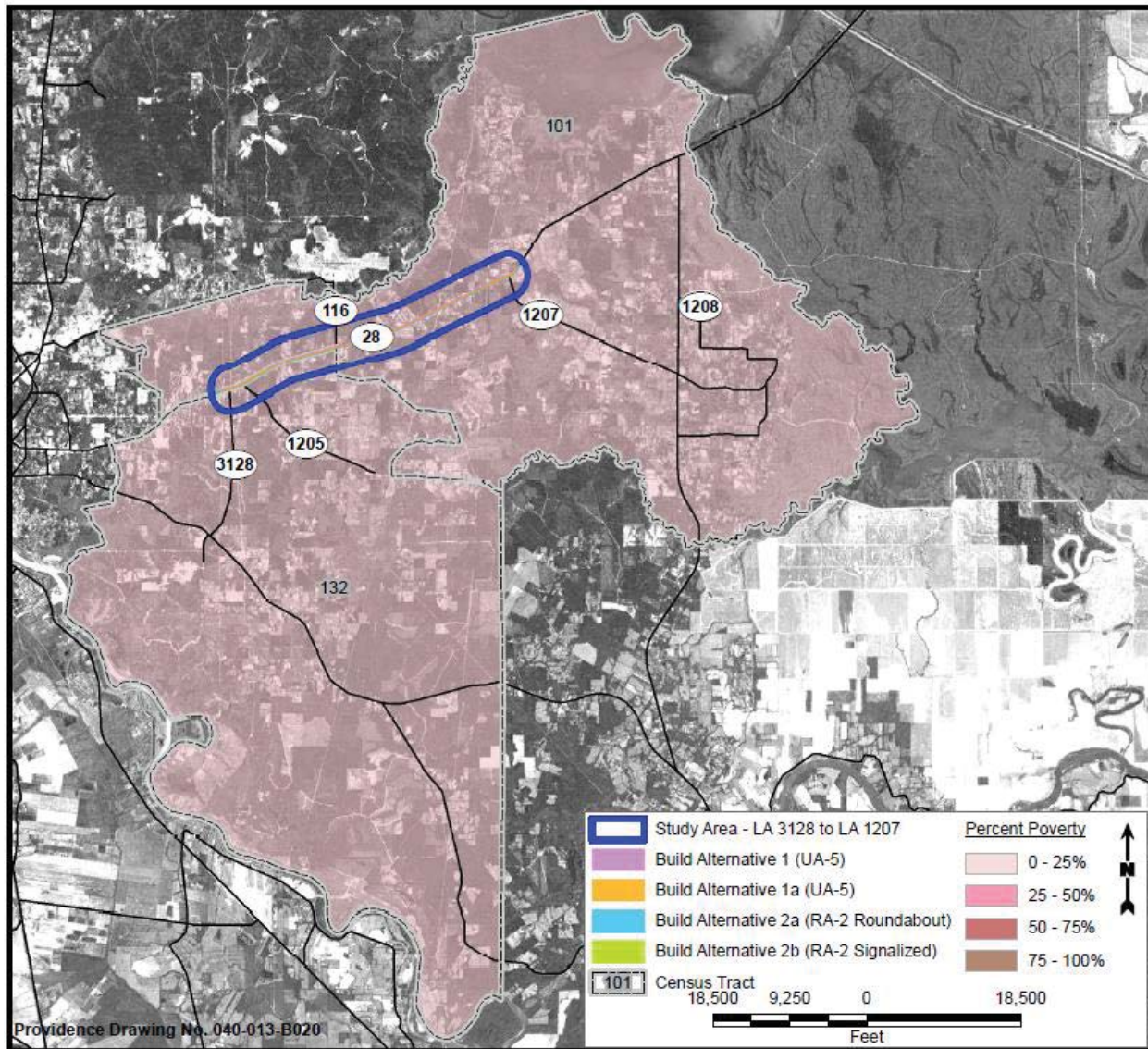
Census Tracts within the Project Study Area	Subject	Population for whom Poverty Status is Determined ¹
Rapides - Tract 101	Total Population Status Determined	8,764
	Below Poverty Level	1,041
	Percent Below Poverty Level	11.9%
Rapides - Tract 132	Total Population Status Determined	8,600
	Below Poverty Level	996
	Percent Below Poverty Level	11.6%
LaSalle - Tract 9703	Total Population Status Determined	4,425
	Below Poverty Level	510
	Percent Below Poverty Level	11.5%
Catahoula - Tract 9803	Total Population Status Determined	3,211
	Below Poverty Level	438
	Percent Below Poverty Level	13.6%

NOTES:

1. An estimated margin of error was given for each category and is available on the AFF website.

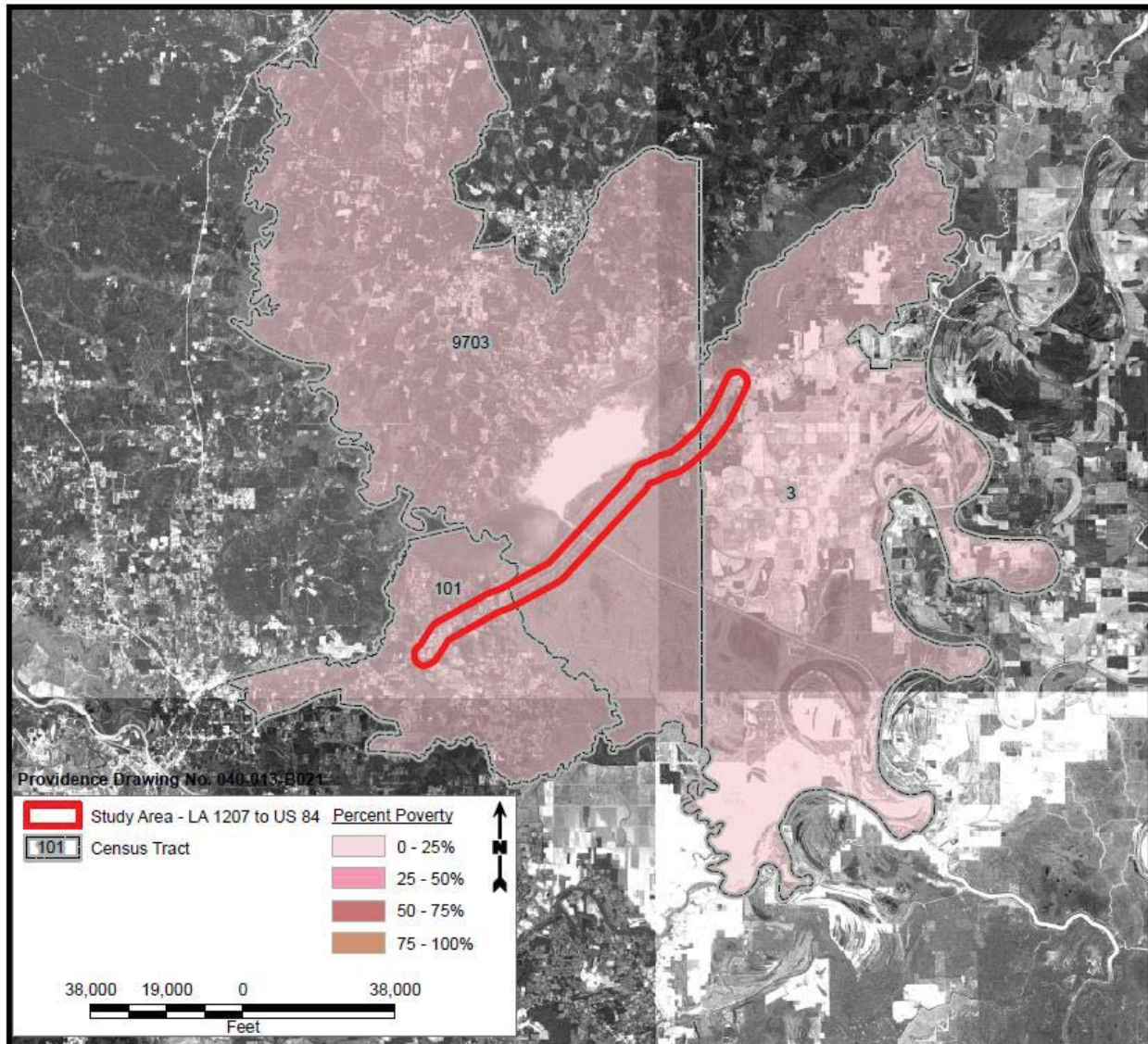
Source: USCB, 2006-2010 ACS 5-Year Estimates Table S1701: Poverty Status in the Past 12 Months

FIGURE 6a
POVERTY DATA LIMITS OF CONSTRUCTION



Poverty data obtained from the USCB, 2006-2010 ACS 5-Year Estimates, Table S1701. Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 6b
POVERTY DATA LA 1207 – US 84



Poverty data obtained from the USCB, 2006-2010 ACS 5-Year Estimates, Table S1701. Base map comprised of ESRI World Imagery Maps dated June 2013.

3.7 Public Lands and Recreation



The project study area contains three substantial public recreational areas, detailed below.

The Catahoula National Wildlife Refuge is located north of LA 28 in LaSalle and Catahoula Parishes. The refuge, established in 1958 as a wintering area for waterfowl, has been listed as a Globally Important Bird Area. Catahoula Lake is a Wetlands of International Importance (RAMSAR wetland). Over 3,500 acres of habitat on the refuge has been restored using Wetland Reserve Program funds.

The Louisiana Department of Wildlife and Forestry (LDWF) owns and maintains the Dewey Wills Wildlife Management Area (WMA), 61,871 acres of bayous, lakes, wetlands, and forested lands managed in LaSalle and Catahoula Parishes. Portions of LA 28 in LaSalle Parish lie within the boundaries of the WMA.

The Little River Dam Recreation Area is owned by the United States Army Corps of Engineers (USACE) and is located adjacent to US 84 in Catahoula Parish. This recreation area is centered around the Little River Dam and provides two boat launches (four lanes total), picnic areas, parking, and a comfort station (restrooms).



3.8 Cultural Resources

A preliminary cultural resources assessment was conducted for the project study area using the Louisiana Department of Cultural, Recreation, and Tourism's (LDCRT's) Louisiana Cultural Resources Map Geographic Information System (GIS) database and the National Register of Historic Places (NRHP) database for previously recorded historic structures and archeological sites and properties. Based on this preliminary search, no archeological sites were found within the project study area.

The State Historic Preservation Officer's (SHPO's) response to the Solicitation of Views, dated January 24, 2013, reflected the need to conduct a Cultural Resources Survey (CRS). A CRS was conducted on the preferred alternative, with details presented in Chapter 4 of this EA. A letter of concurrence from the SHPO on the CRS is in **Appendix A**.

3.9 Section 4(f) and or 6(f) Properties

Title 49 United States Code (USC) Section 303, previously Section 4(f) of the DOT Act of 1966, and 23 Code of Federal Regulations (CFR) 774 state that the DOT and FHWA agencies may not approve the use of land from significant publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites. However, a taking may be approved if a determination is made that there is no feasible and prudent alternative to the use of the land and the action includes all possible planning to minimize harm to the property resulting from use. The FHWA determines the application of Section 4(f) unless the federal, state, or local officials having jurisdiction over the land determines that the entire site is not significant. In the absence of a determination, the Section 4(f) land is presumed to be significant. Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users Section 6009 simplified the process and approval for projects that have only *de minimis* impacts. As discussed in Section 3.7, three publicly-owned recreation and wildlife management areas are located in the project study area in LaSalle and Catahoula Parishes.

The United States Department of the Interior (DOI), National Park Service's (NPS), Land and Water Conservation Fund (LWCF) provides grants to state and local governments for the acquisition and development of public outdoor recreation areas and facilities. Section 6(f) of the Land and Water Conservation Act (CFR Title 36, Chapter 1, Part 59) requires the acquisition of Section 6(f) lands and facilities be coordinated with the DOI. Typically, replacement in kind is required for acquisition of Section 6(f) lands and facilities.

A search conducted through the NPS's LWCF website revealed that 11 LWCF grants were issued for parks and recreation facilities in Rapides Parish since 1970, four grants to LaSalle Parish since 1976, and seven grants to Catahoula Parish since 1967 (NPS LWCF grants). None of the facilities listed are in or adjacent to the project study area. Correspondence with the LDCRT's Office of State Parks received on May 7, 2013 concurs with the findings that no LWCF grant properties are located in the project study area.

3.10 Visual Environment

The visual environment of the project study area in Rapides Parish primarily consists of suburban neighborhoods, rural homesteads, forested areas, and sparse commercial development. As the project area moves into LaSalle Parish, the landscape changes to a lower elevation supporting primary seasonally flooded wetlands associated with the Dewey Wills Wildlife Management Area and the Catahoula National Wildlife Refuge. The project area terminates in Catahoula Parish, where the visual environment is dominated by cropland and pasture with occasional residences and farm buildings.

3.11 Geology/Topography

There are four physiographic regions in Rapides Parish as defined by the Natural Resources Conservation Service (NRCS) Red River alluvial plains, nearly level upland, gently sloping uplands, and strongly sloping uplands. The Red River alluvial plain represents a highly productive and fertile band of loamy soil adjacent to the Red River. The Red River alluvial plain is nearly level to level in terms of general topography. Rapides' nearly level uplands were formed from loamy sediments deposited by streams draining the uplands. They are typically low in fertility and are often flooded. The gently sloping upland areas are in the southern and northern portions of the parish and are located at higher elevations than the Red River alluvium. Numerous small drainage ways dissect the gently sloping upland area, which supports woodlands rather than the croplands of the alluvial soils. Most of the strongly sloping uplands support pine forests and are located in the northwestern portion of the parish.

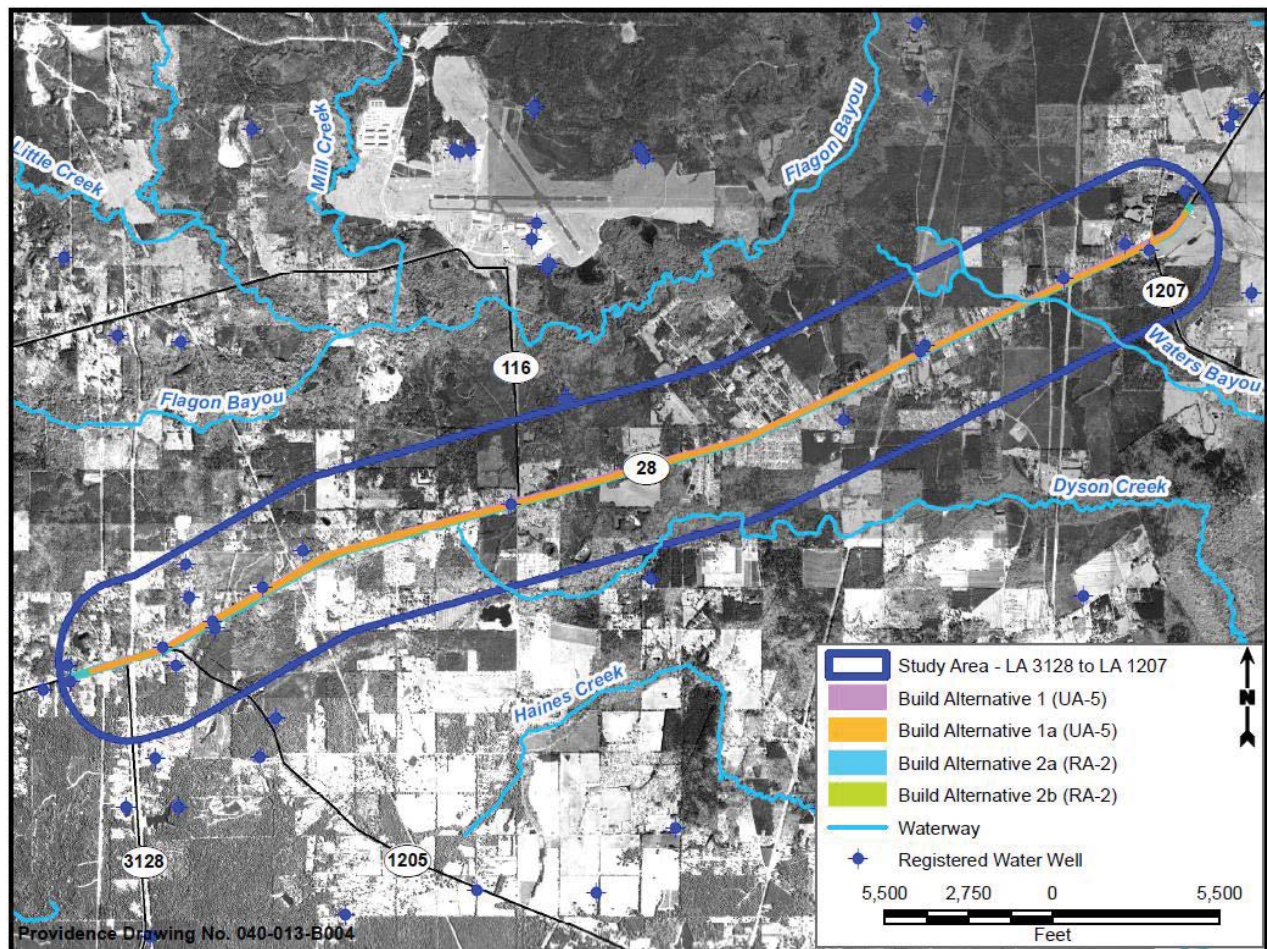
The portion of LaSalle Parish in the project study area represents lower elevation areas of wetlands and bayous that are included in the Dewey Wills Wildlife Management Area and are owned and maintained by the LDWF. Agricultural land dominates the landscape of Catahoula Parish in the study area.

3.12 Water Resources

3.12.1 Surface Water

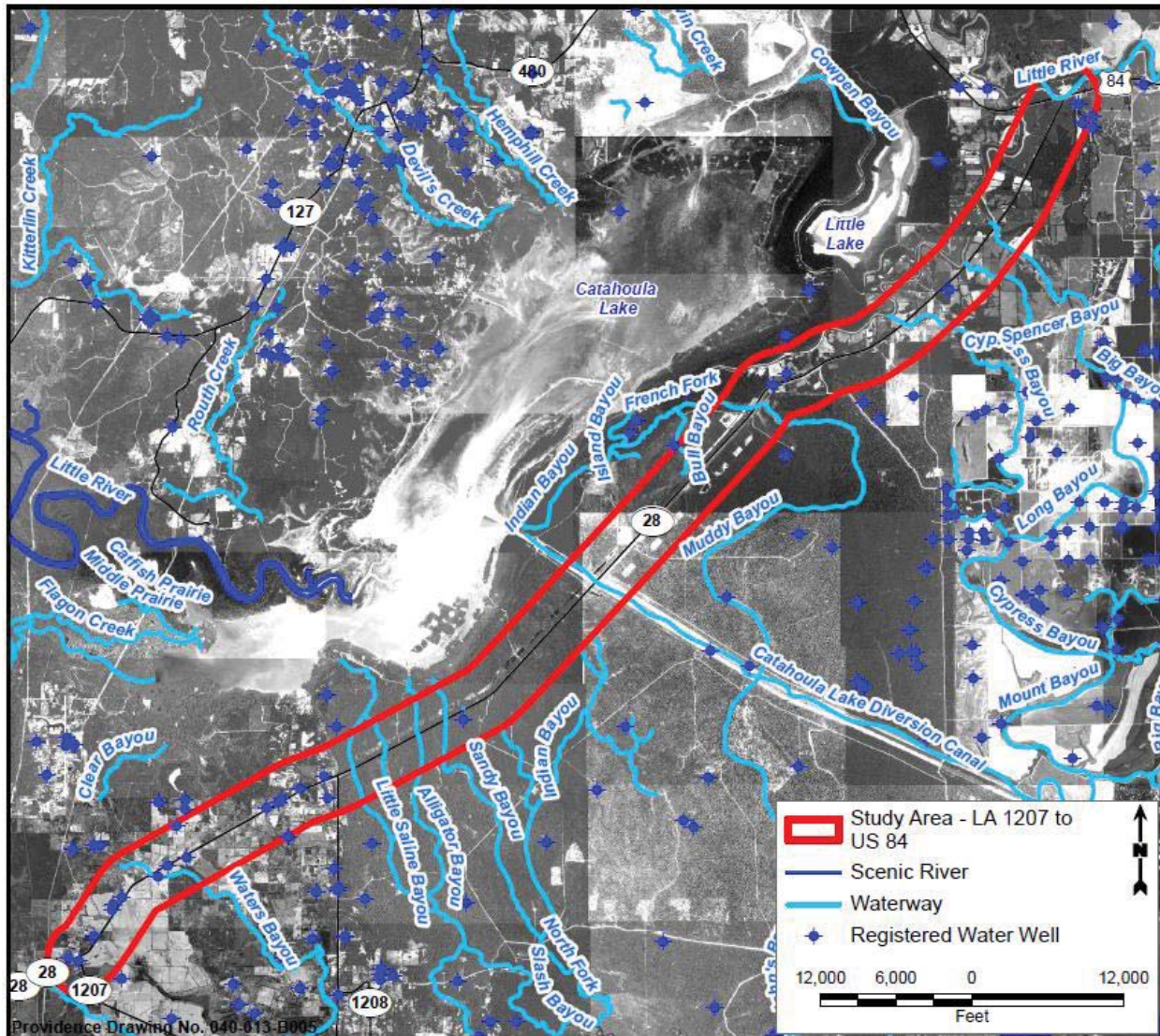
Surface water exists in the project study area in rivers, bayous, canals, and other drainage ways, and occasionally, wetlands. **Figures 7a** and **7b** show area water resources. Water quality in the project study area is affected by both naturally occurring conditions and point source and nonpoint source discharges. Point sources include mainly industrial, municipal, and sewer discharges. Nonpoint sources include storm water runoff, industrial discharges, landscape maintenance activities, forestry, agriculture, and natural sources (LDEQ, 2013).

FIGURE 7a
WATER RESOURCES LIMITS OF CONSTRUCTION



Registered water wells obtained from the LDNR SONRIS water well server as of 11/4/15. Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 7b
WATER RESOURCES LA 1207 – US 84



Registered water wells obtained from the LDNR SONRIS water well server as of 9/30/15. Base map comprised of ESRI World Imagery Maps dated June 2013.

Subsegments 101501 and 101506 of the Red River Water Quality Management Basin and five subsegments of the Ouachita Water Quality Management Basin provide recreational opportunities and drainage for the study area. The Red River basin primarily serves the study area within the limits of construction. The Ouachita basin serves most of the remaining project area.

The draft 2014 Louisiana Water Quality Inventory: Integrated Report - Fulfilling the Requirements of the Federal Clean Water Act Sections 305(b) and 303(d) (LDEQ, 2014) indicates that all of the seven waterways have primary contact recreation, secondary contact recreation, and fish and wildlife propagation as their designated uses. None of the seven subsegments are supporting the designated use of fish and wildlife

propagation and all but one of the Ouachita Subsegments, 081301, is not meeting the primary contact recreation use. Each of the subsegments is discussed further below. The *Final Draft 2014 Louisiana Water Quality Inventory: Integrated Report (305(b)/303(d))* was submitted to the United States Environmental Protection Agency (USEPA) for approval on September 19, 2014.

Red River Water Quality Basin

- Subsegment 101501 – Big Saline Bayou from Catahoula Lake to Saline Lake

This subsegment is not meeting the designated use of fish and wildlife propagation due to low dissolved oxygen. Low dissolved oxygen levels are listed as resulting from natural conditions. While currently on the 303(d) list, the criteria is under review, as low dissolved oxygen is presumed a natural condition.

- Subsegment 101506 – Big Creek from its headwaters to Saline Lake

This subsegment is not meeting the designated use of fish and wildlife propagation due to elevated levels of lead from unknown causes. As a result, this subsegment is on Louisiana's 2014 303(d) list of impaired waterways.

Ouachita River Water Quality Basin

- Subsegment 081301 – Little River from Archie Dam to Ouachita River

This subsegment is not meeting the designated use of fish and wildlife propagation due to elevated levels of sulfates. Levels of sulfates appear to be a result of natural conditions; therefore, a use attainability analysis has been recommended. As a result, this subsegment is on Louisiana's 2014 303(d) list of impaired waterways.

- Subsegment 081603 – Catahoula Lake

This subsegment is not meeting the designated use of fish and wildlife propagation due to excess turbidity. Turbidity has been attributed to agriculture operations. Fecal coliform bacteria believed elevated due to livestock operations and waterfowl use have designated this subsegment as not meeting criteria for primary contact recreation as well. This subsegment is on Louisiana's 2014 303(d) list of impaired waterways.

- Subsegment 081604 – Catahoula Lake Diversion Canal from Catahoula Lake to Black River

This subsegment is not meeting the designated use of fish and wildlife propagation or primary contact recreation. Fecal coliform bacteria believed

elevated due to livestock operations are the cause of impairment for primary contact recreation. No causes are listed for the failure to meeting fish and wildlife propagation designated use. This subsegment is on Louisiana's 2014 303(d) list of impaired waterways.

- Subsegment 081605 – Little River from Catahoula Lake to the dam at Archie

This subsegment is not meeting the designated use of fish and wildlife propagation or primary contact recreation. Fecal coliform bacteria believed elevated due to livestock operations are the cause of impairment for primary contact recreation. No causes are listed for the failure to meeting fish and wildlife propagation designated use. This subsegment is on Louisiana's 2014 303(d) list of impaired waterways.

- Subsegment 081610 – Old River from Catahoula Lake to Little River at Archie Dam

This subsegment is not meeting the designated use of fish and wildlife propagation or primary contact recreation. Fecal coliform bacteria believed elevated due to sewerage discharges and waterfowl use are listed as the causes of impairment for primary contact recreation. No causes are listed for the failure to meeting fish and wildlife propagation designated use. This subsegment is on Louisiana's 2014 303(d) list of impaired waterways.

3.12.2 Groundwater

A search was performed using the LDNR Strategic Online Natural Resources Information System (SONRIS) databases for Public Water System (PWS) wells located within the project study area. The SONRIS database includes all water wells registered with DOTD. A PWS is any water system that provides water to at least 25 people for at least 60 days annually.

There are approximately 21 registered water wells located in the project study area as of March 2015; it is possible that additional wells have been drilled but are not registered. Of the 21 wells, one is an active rural public supply well and one is an active municipal public supply well.

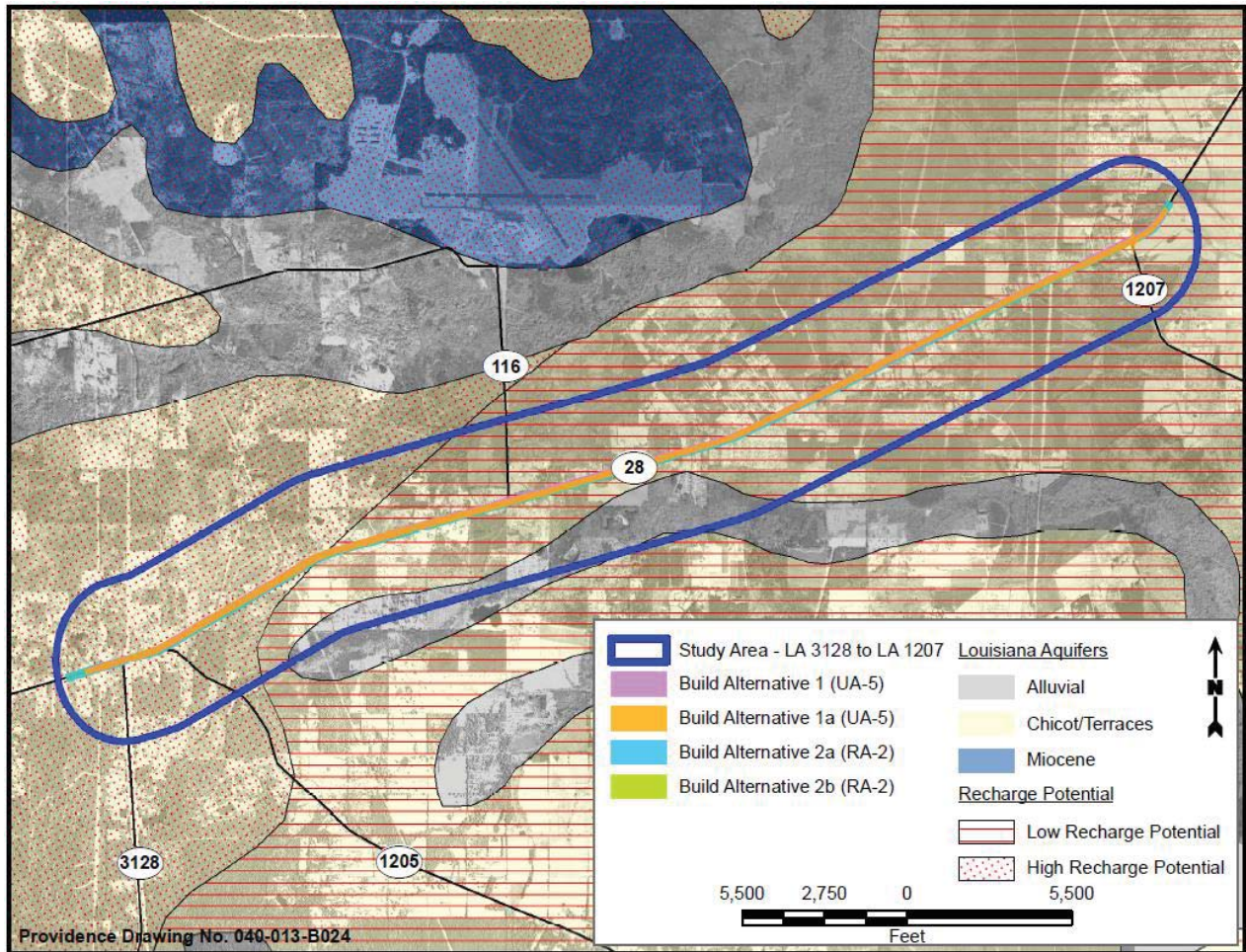
All water wells that were identified are shown on **Figures 7a** and **7b** and are detailed in **Table 3-5**. This search was conducted on November 4, 2015, it is possible that additional wells have been drilled but are not registered.

**TABLE 3-5
REGISTERED WATER WELLS IN THE PROJECT STUDY AREA**

Well Type	Quantity
Abandoned Observation	1
Domestic	10
Municipal Public Supply	1
Plugged and Abandoned Monitor	3
Plugged and Abandoned Test Hole	5
Rural Public Supply	1
TOTAL	21

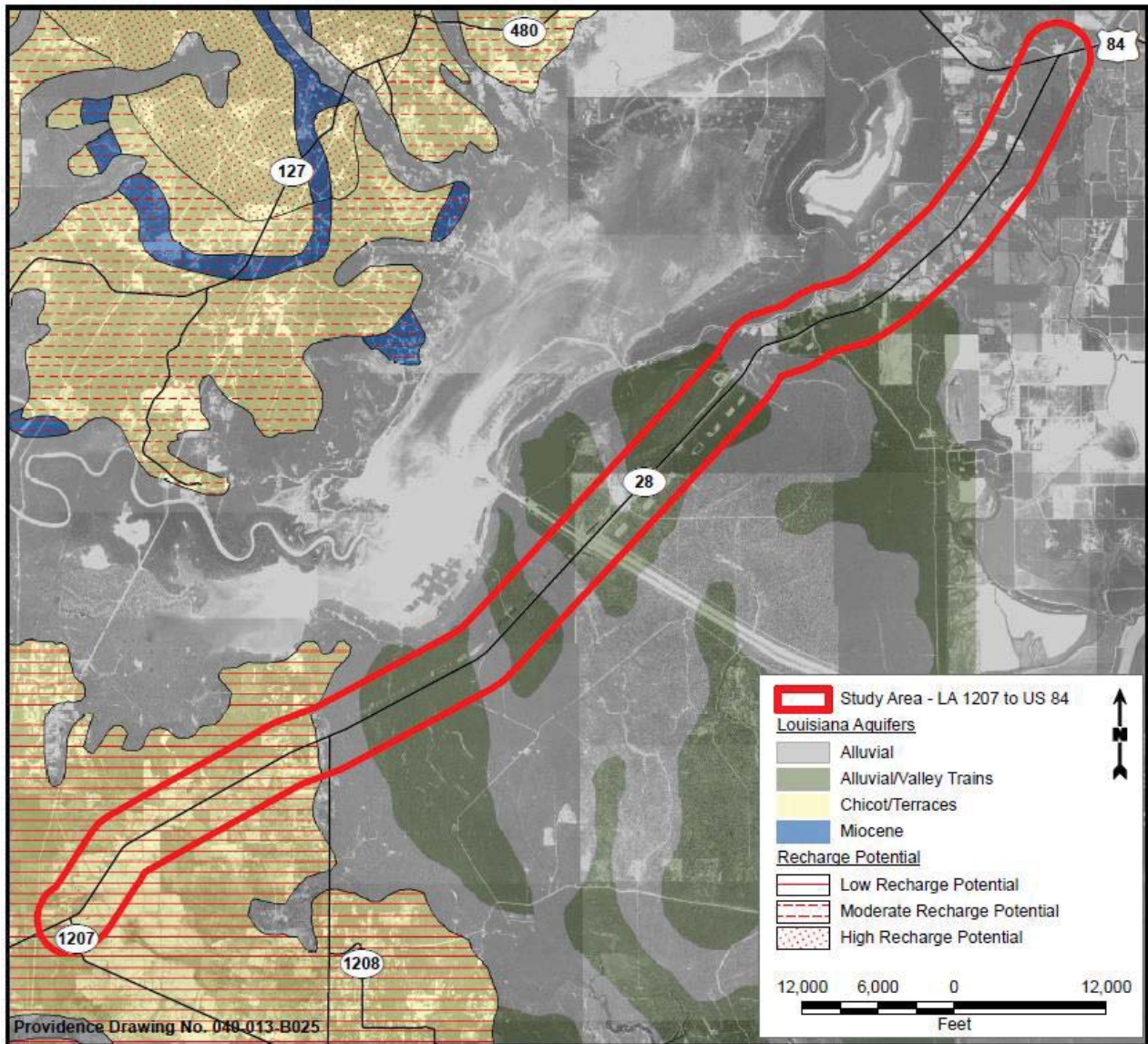
According to the USEPA, a Sole Source Aquifer (SSA) is an aquifer that normally supplies at least 50% of the drinking water for a particular community or area where no viable alternative drinking water source exists. Correspondence received from USEPA's SSA Program dated February 1, 2013 contradicts the USEPA mapping data and indicates that although the project study area lies above the Chicot Aquifer, no adverse effect on the Chicot Aquifer is likely to result from the proposed project. Correspondence from the SSA program received in response to the draft EA indicated that the project area does not lie above an SSA and no adverse effect on groundwater is expected. **Figures 8a** and **8b** demonstrate the limits of area aquifers and aquifer recharge potential, as defined by the USEPA and LDEQ.

FIGURE 8a
AQUIFERS AND RECHARGE POTENTIAL LIMITS OF CONSTRUCTION



A search for SSA's was performed, and no SSA's were found in the project study area. Aquifer data comprised of Recharge Potential of Louisiana Aquifers, LDEQ (1999). Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 8b
AQUIFERS AND RECHARGE POTENTIAL LA 1207 – US 84

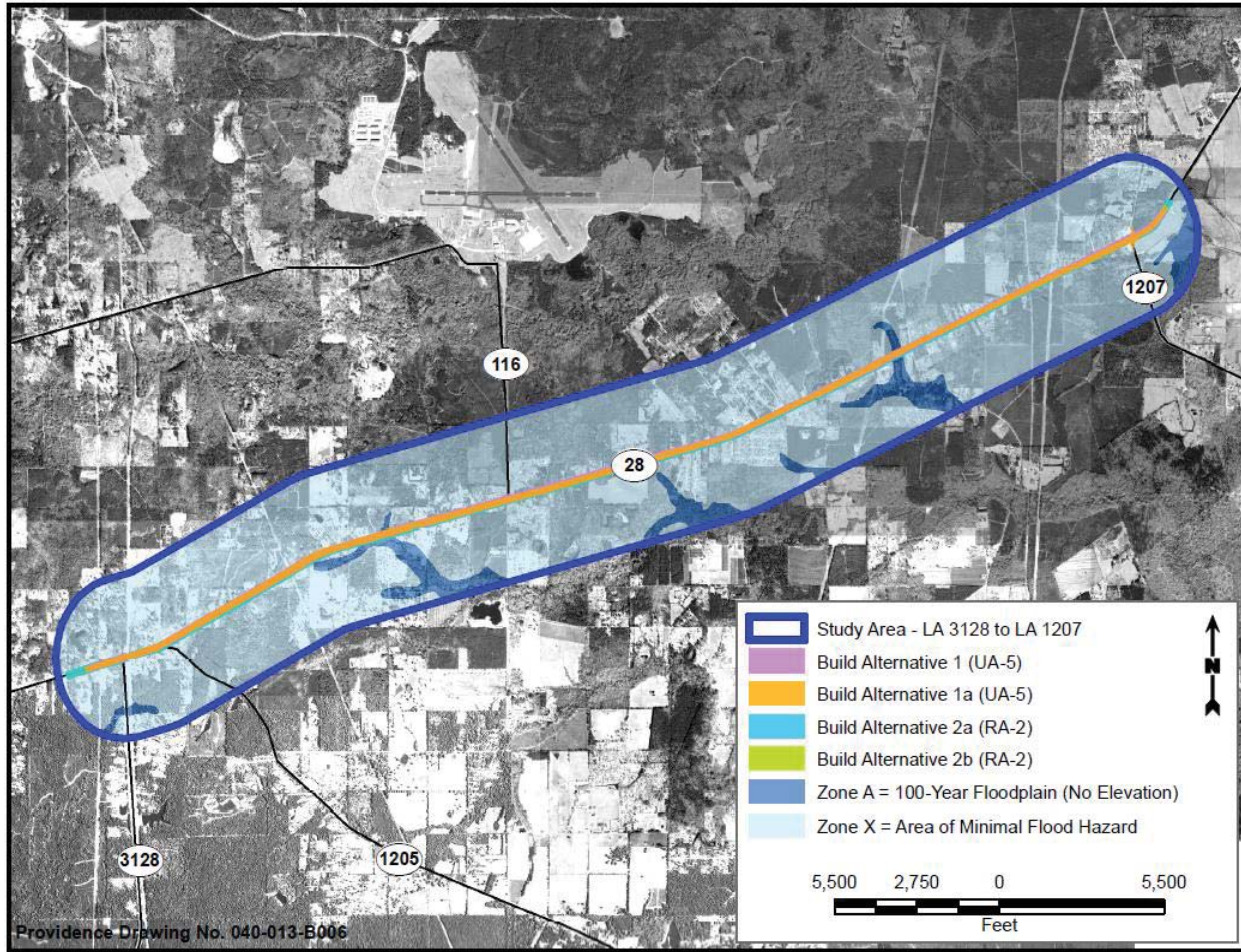


A search for SSA's was performed, and no SSA's were found in the project study area. Aquifer data comprised of Recharge Potential of Louisiana Aquifers, LDEQ (1999). Base map comprised of ESRI World Imagery Maps dated June 2013.

3.13 Floodplains

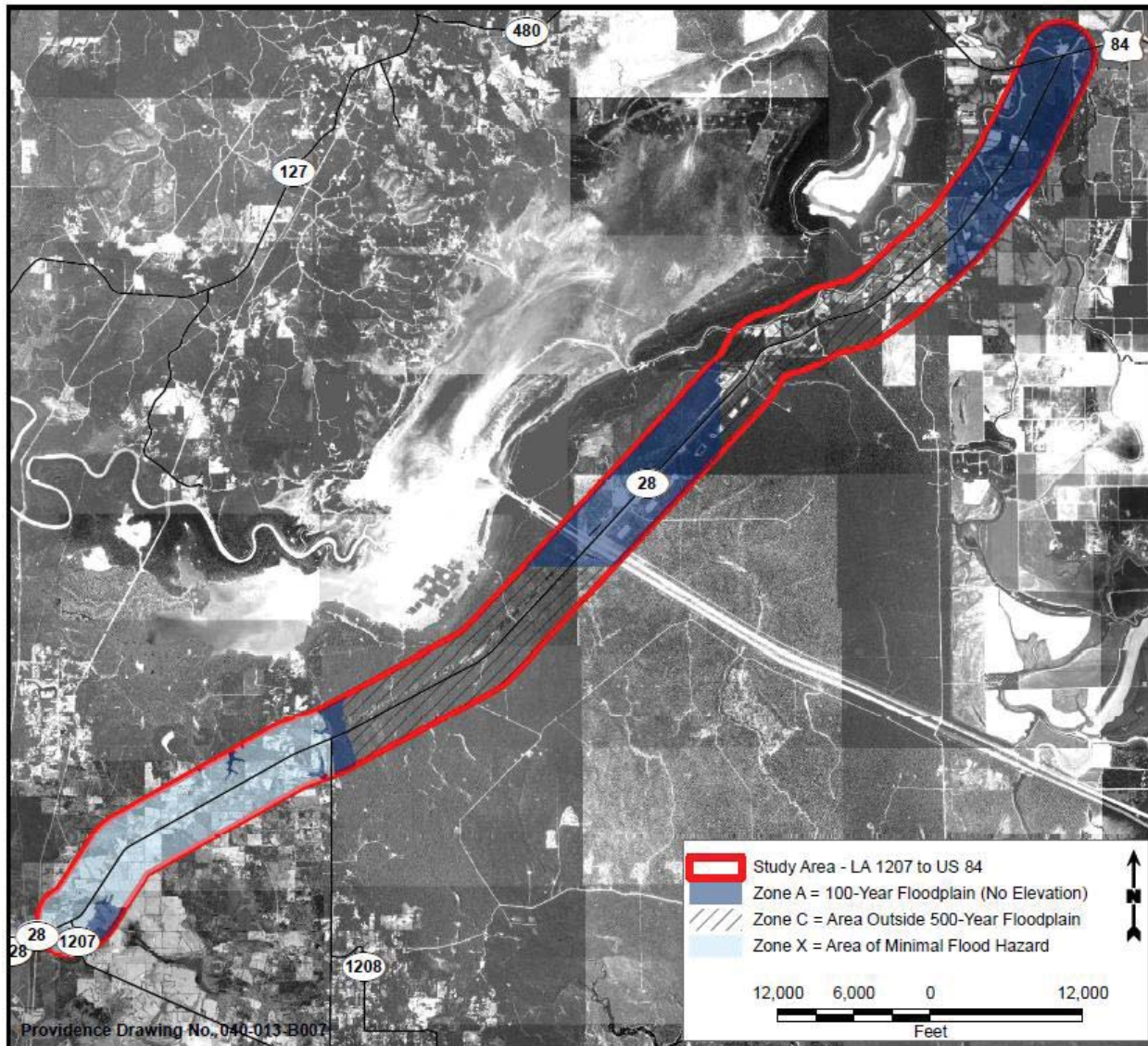
Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) were used to determine the extent of the 100-year floodplain in the project study area. **Figures 9a** and **9b** show the 100-year flood plain consisting of 292.49 acres within the proposed study area.

FIGURE 9a
FLOODPLAINS LIMITS OF CONSTRUCTION



*The Q3 Flood Data obtained from the FIRMS published by FEMA.
Base map comprised of ESRI World Imagery Maps dated June 2013.*

FIGURE 9b
FLOODPLAINS LA 1207 – US 84

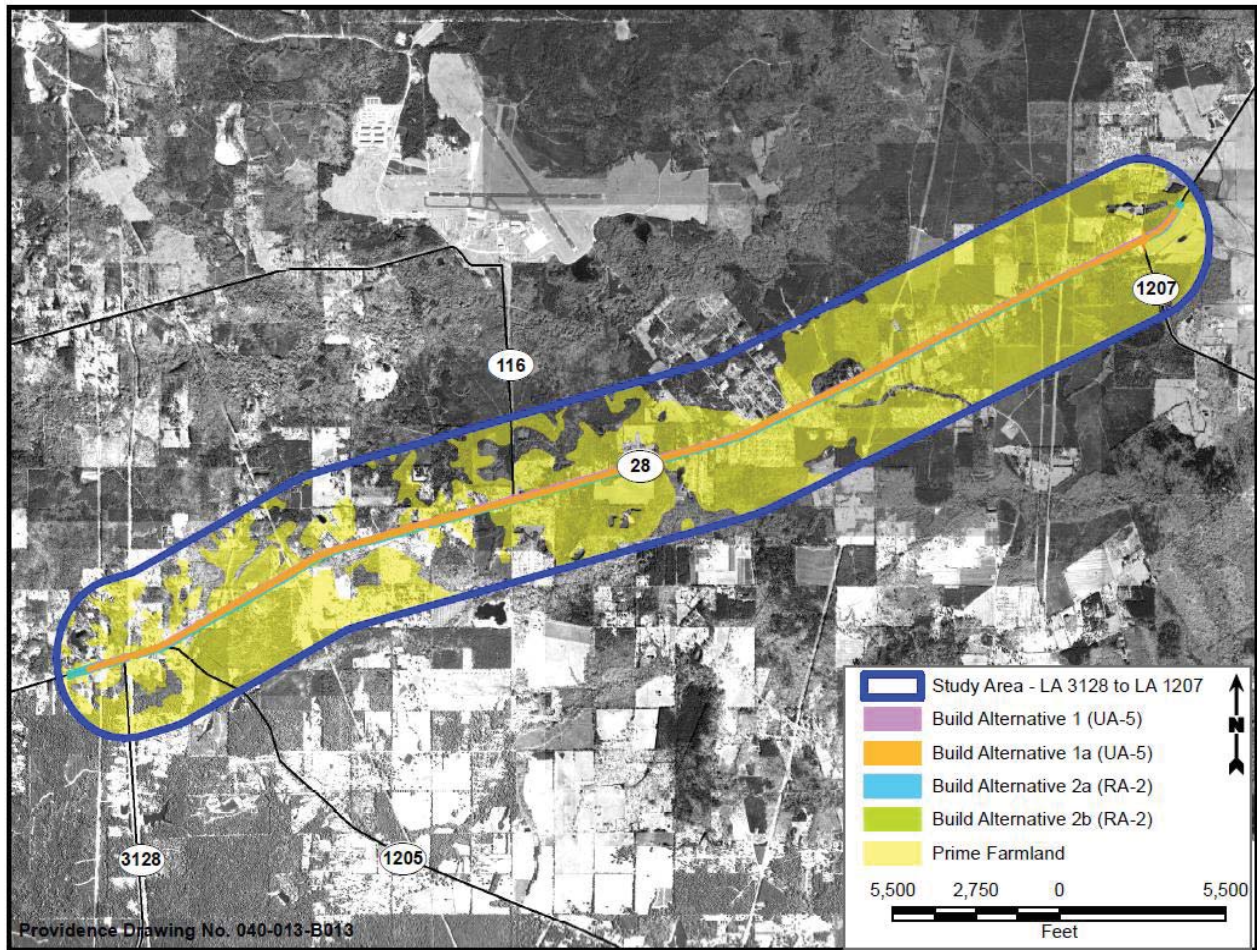


*The Q3 Flood Data obtained from the FIRMS published by the FEMA.
 Base map comprised of ESRI World Imagery Maps dated June 2013.*

3.14 Farmland

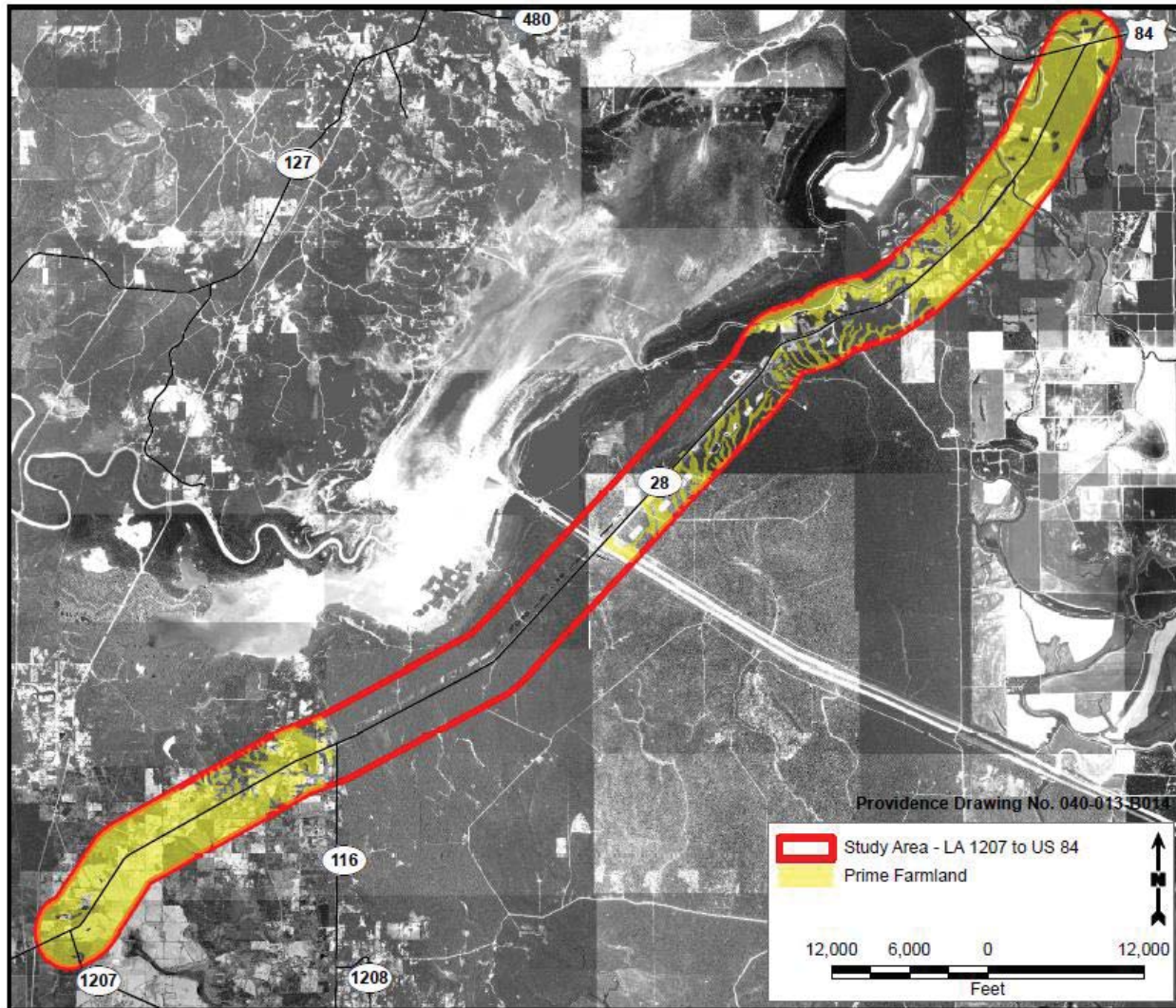
Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. While the Red River alluvial plain supports many crops including cotton, corn, sugarcane, and soybeans and the low areas between the natural levees support soybeans and provide pasture, no prime farmland is expected to be impacted by the proposed project. **Figures 10a** and **10b** show soils, some of which are classified as prime farmland soils within the project study area. Per preliminary correspondence from the NRCS dated January 22, 2013, the proposed construction areas will not impact prime farmland and will not impact NRCS work in the vicinity.

FIGURE 10a
PRIME FARMLANDS LIMITS OF CONSTRUCTION



Soils data obtained from the NRCS data-server as of 6/11/09. Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 10b
PRIME FARMLANDS LA 1207 – US 84



Soils data obtained from the NRCS data-server as of 6/11/09. Base map comprised of ESRI World Imagery Maps dated June 2013.

3.15 Noise

According to the FHWA's Highway Traffic Noise: Analysis and Abatement Guidance, sound is when an object moves and the movement causes vibrations of the molecules in the air to move in waves. We hear what we call sound when the vibration reaches our ears. Sound from highway traffic is generated primarily from a vehicle's tires, engine, and exhaust. Sound pressure levels used to measure the intensity of sound are described in terms of decibels (dB). Sound occurs over a wide range of frequencies. However, not all frequencies are detectable by the human ear. Therefore, an adjustment is made to the high and low frequencies to approximate the way an average person hears traffic sounds. This adjustment is called A-weighting decibels (dBA). Generally, when the sound level exceeds the mid-60 dBA range, outdoor conversation in normal tones at a distance of three feet becomes difficult.

Because traffic sound levels are never constant due to the changing number, type, and speed of vehicles, a single value is used to represent the average or equivalent steady-state sound level (Leq). For traffic noise assessment purposes, Leq is typically evaluated over the worst one-hour period and is defined as Leq(h).

The FHWA has established noise abatement criteria (NAC) for various land use activity categories that can be used to determine when a traffic noise impact would be expected to occur. The DOTD's noise policy defines traffic noise levels as "approaching" when the noise level is at least 1 dBA below the FHWA NAC. The DOTD policy also states a 10 dBA increase over existing levels is a substantial increase. In accordance with current FHWA noise regulations, the Traffic Noise Model (TNM) version 2.5 computer program was used to predict the noise levels associated with the proposed build alternatives including the existing, design year no-build, and design year build conditions. Two hundred and sixty-five (265) noise receivers were used in the models. The traffic noise analysis is detailed further in Chapter 4.15, and a complete copy of the analysis is contained in **Appendix C**.

3.16 Air Quality

Air quality is measured by the type and level of pollutants in the air. The 1990 Clean Air Act Amendment requires the USEPA to set National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) for pollutants considered harmful to public health and the environment. The USEPA has set NAAQS for six principal pollutants, which are called "criteria" pollutants as shown in **Table 3-6** (USEPA, NAAQS). In addition to criteria air pollutants for which NAAQS have been established, the USEPA regulates air toxics which mostly originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories, refineries) (USEPA, *Pollutants and Sources*).

**TABLE 3-6
CRITERIA POLLUTANTS**

Pollutant Name	Chemical Abbreviation
Ozone	O ₃
Carbon Monoxide	CO
Particulate Matter	PM
Nitrogen Dioxide	NO ₂
Sulfur Dioxide	SO ₂
Lead	Pb

Highway agencies are required to consider the impacts of transportation improvement projects on a regional level in the Transportation Conformity analysis and at a statewide level in the State Implementation Plan (USEPA, *Transportation Conformity*) for those areas that are not in attainment with current standards. Since this project is in Rapides, LaSalle, and Catahoula Parishes, which are all in

attainment (USEPA, “Current Nonattainment,” 2014), an air quality conformity analysis for attainment and maintenance of the NAAQS is not required. An air quality conformity analysis to conform to the State Implementation Plan for attainment and maintenance of the NAAQS is not required. However, the proposed project adds capacity and the design year traffic projections within the project construction limits indicate an average daily traffic of less than 140,000 vehicles per day, therefore, a qualitative Mobile Source Air Toxics analysis is required.

A letter from LDEQ dated February 1, 2013, confirming that Rapides Parish is classified as an attainment parish with the NAAQS for all criteria air pollutants and has no general conformity determination obligations. An air quality analysis was conducted for the Preferred Alternative. The review is summarized in Chapter 4.16 is contained in **Appendix D**.

3.17 Hazardous Materials

A survey of the project study area was conducted to identify sites that contain or potentially contain hazardous or toxic materials and/or wastes during the Stage 0 Study. Environmental Data Resource, Inc. (EDR) was contracted to provide environmental regulatory database information for the project study area, using the standard American Society for Testing and Materials (ASTM) format for Phase I Environmental Site Assessments. Their report included regulatory agency record reviews, including a search of federal and state environmental compliance databases.

Providence reviewed the EDR regulatory records to determine what, if any, information, release reporting, or registrations exist, or have been applied for, which might reveal a potential for contamination, indicate the possible presence of contamination, or assist in identifying recognized environmental conditions in connection with the project study area. This procedure includes the examination of standard environmental record sources identified within Section 7.2.1.1 of ASTM Standard Practice E 1527-13, along with other appropriate agencies as deemed necessary. The databases searched include: federal ASTM E 1527-13 Databases, federal ASTM E 1527-13 Supplemental Databases, and state ASTM E 1527-13 Databases. Providence also conducted a field reconnaissance of the project area, interviewed property owners, and performed a search of LDEQ’s Electronic Document Management System (EDMS).

Two types of sites were considered to be of particular interest for this project:

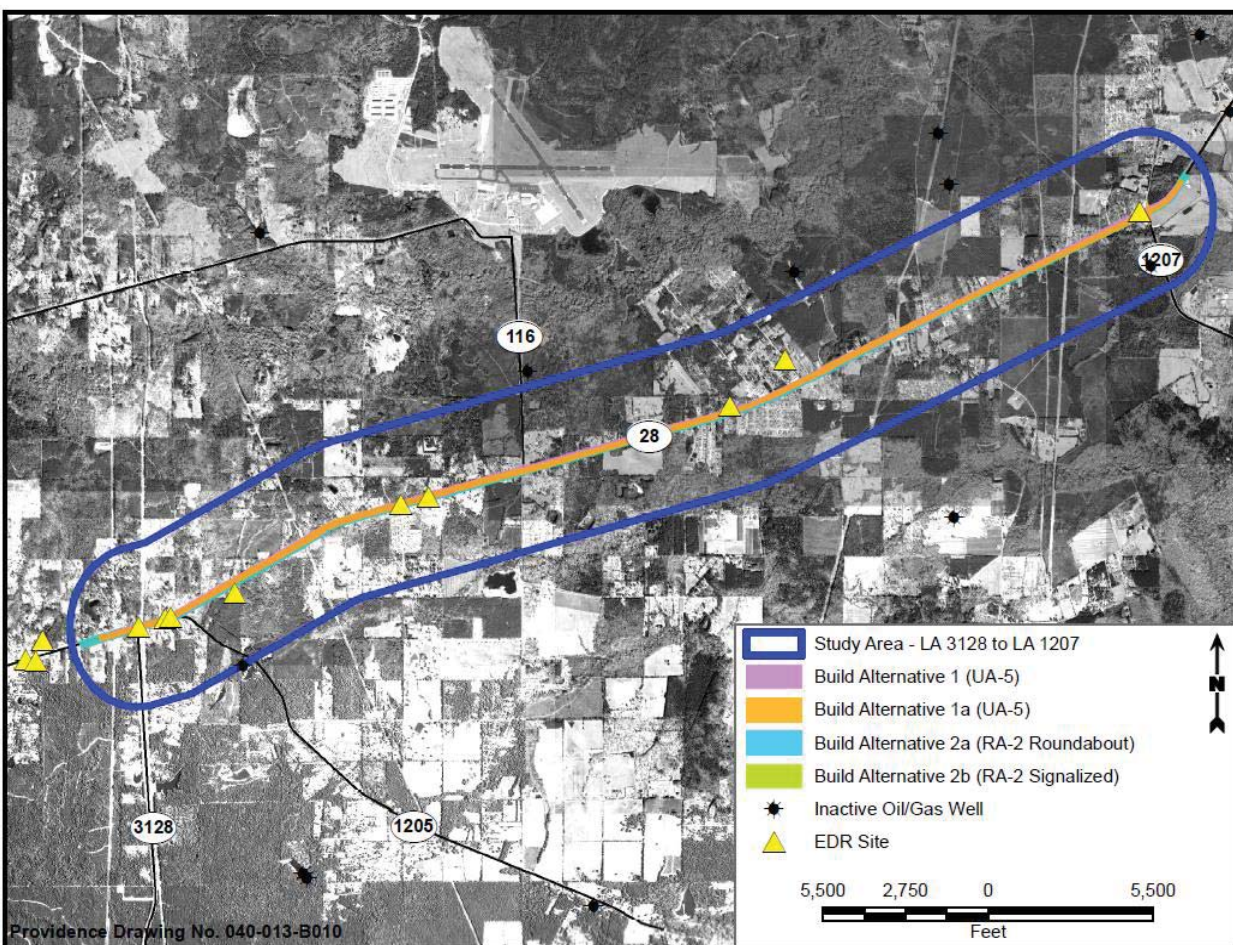
- Sites where hazardous materials or wastes are generated, stored, handled, or disposed
- Sites containing underground storage tanks (USTs)

These sites, should they be contaminated, have the potential to directly impact the project study area if located in the existing or proposed ROW, or indirectly through migration of contamination off site and into the project ROW.

3.17.1 Hazardous Waste Sites

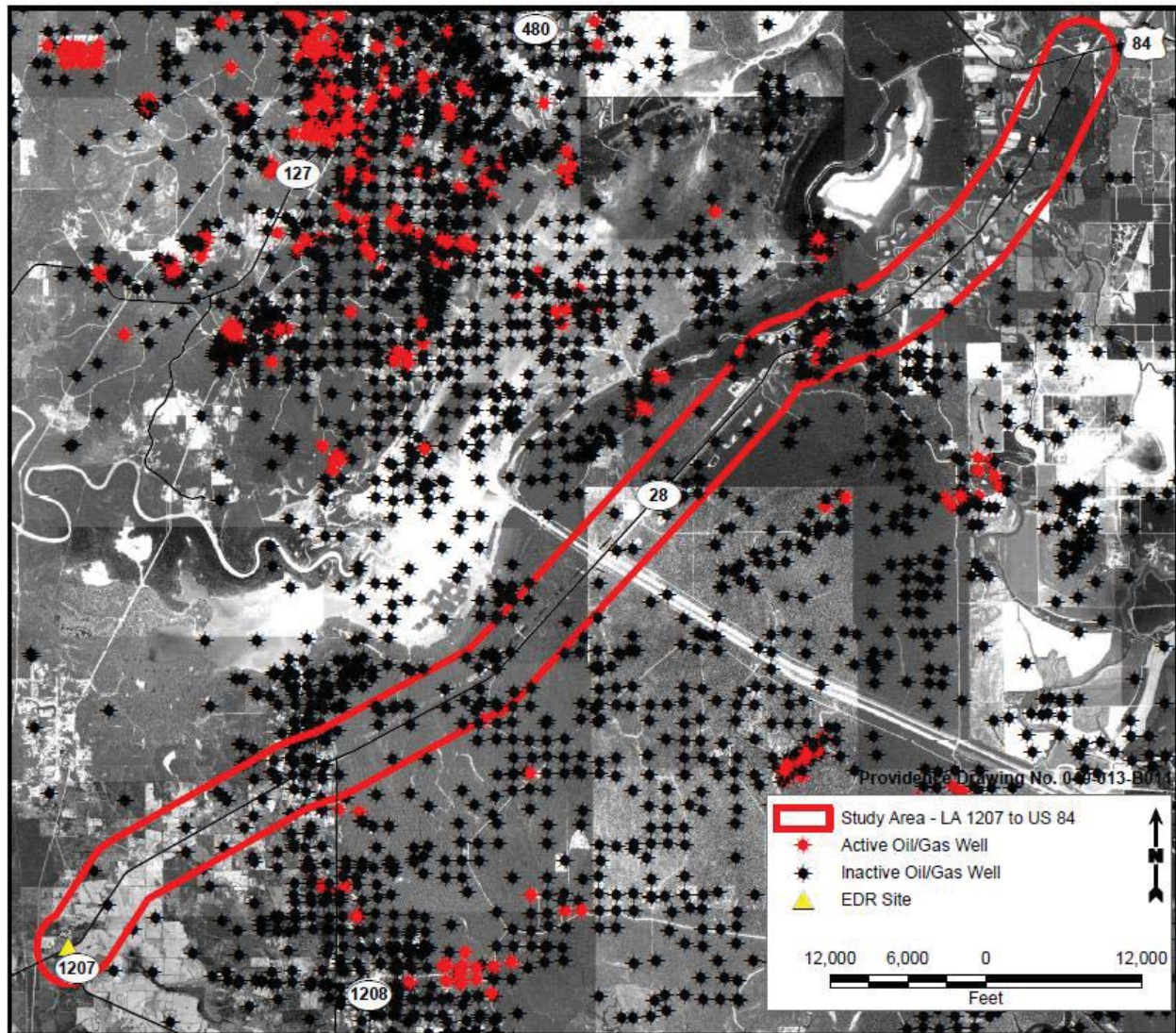
Hazardous waste is defined by 42 USC § 6903 as “a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.” Federal and state databases were used to identify known hazardous waste sites. Potential hazardous waste sites in the project study area identified by the EDR report are shown on **Figures 11a** and **11b**. A copy of the EDR report can be found in the Phase I ESA (see **Appendix E**).

FIGURE 11a
POTENTIAL ENVIRONMENTAL LIABILITY SITES LIMITS OF CONSTRUCTION



Environmental liability sites obtained from EDR shapefile as of 4/6/15. Oil and gas well data obtained from the LDNR SONRIS oil and gas well server as of 11/4/15. Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 11b
POTENTIAL ENVIRONMENTAL LIABILITY SITES LA 1207 – US 84



Environmental liability sites obtained from EDR shapefile as of 4/6/15. Oil and gas well data obtained from the LDNR SONRIS oil and gas well server as of 3/10/15. Base map comprised of ESRI World Imagery Maps dated June 2013.

Two Resource Conservation and Recovery Act - Small Quantity Generators (RCRA-SQG) were located in the search area, one at Eugene's Body Shop at 329 Circle Drive in Pineville, LA. The other is located at Greg Auto Repair at 9815 Highway 28 East in Pineville, LA. Of the two, only Greg Auto Repair is in the project study area.

The SPILLS is a database of spills and/or releases to land reported to the Emergency Response Section of the LDEQ. This list revealed two sites in the search area. Of these, both were located in the project study area and have a closed incident status.

The NPDES database is a listing of sites with a Louisiana Pollutant Discharge Elimination System program issued permit. One NPDES site was found in the search area, located at Melichar's Grocery in at 5244 Highway 28 East. This site is not located within the project study area.

A search was performed on EDR's Historical Auto Gas Stations database within the search area and five sites were found. Of the five, all but one were within the project study area boundaries.

3.17.2 USTs

USTs are defined as any one or a combination of tanks used to contain regulated substances, the volume of which, including connecting underground pipes, is 10% or more beneath the surface of the ground. The LDEQ requires by law that all USTs within the state be registered. The data search queried UST records maintained by the LDEQ.

The preliminary EDR report identified seventeen USTs in the study area. Of these, four are removed, four are active, five are closed, and three are temporarily out of service. Three of the removed USTs and two active USTs are located at the Holloway General Store at 12749 Highway 28 East. There are five USTs located at Country Living RV Park, at 6448 Highway 28 East. There are two active, one temporarily out of service, and two removed USTs. There are also seven USTs at Melichar's Grocery at 5244 Highway 28 East. Five of these are closed and two are temporarily out of service.

One Historical Leaking Underground Storage Tank was found within the search area; however, it was not located within the boundary of the project study area. It is located at Melichar's Grocery at 5244 Highway 28 East.

3.17.3 Oil and Gas Wells

A secondary search was performed for oil and gas wells in the EDR Underground Injection Control (UIC) database. One plugged and abandoned well is located within the study area. This search was conducted on November 4, 2015, and it is possible that additional wells have been drilled but are not registered

**TABLE 3-7
REGISTERED OIL AND GAS WELLS IN THE PROJECT STUDY AREA**

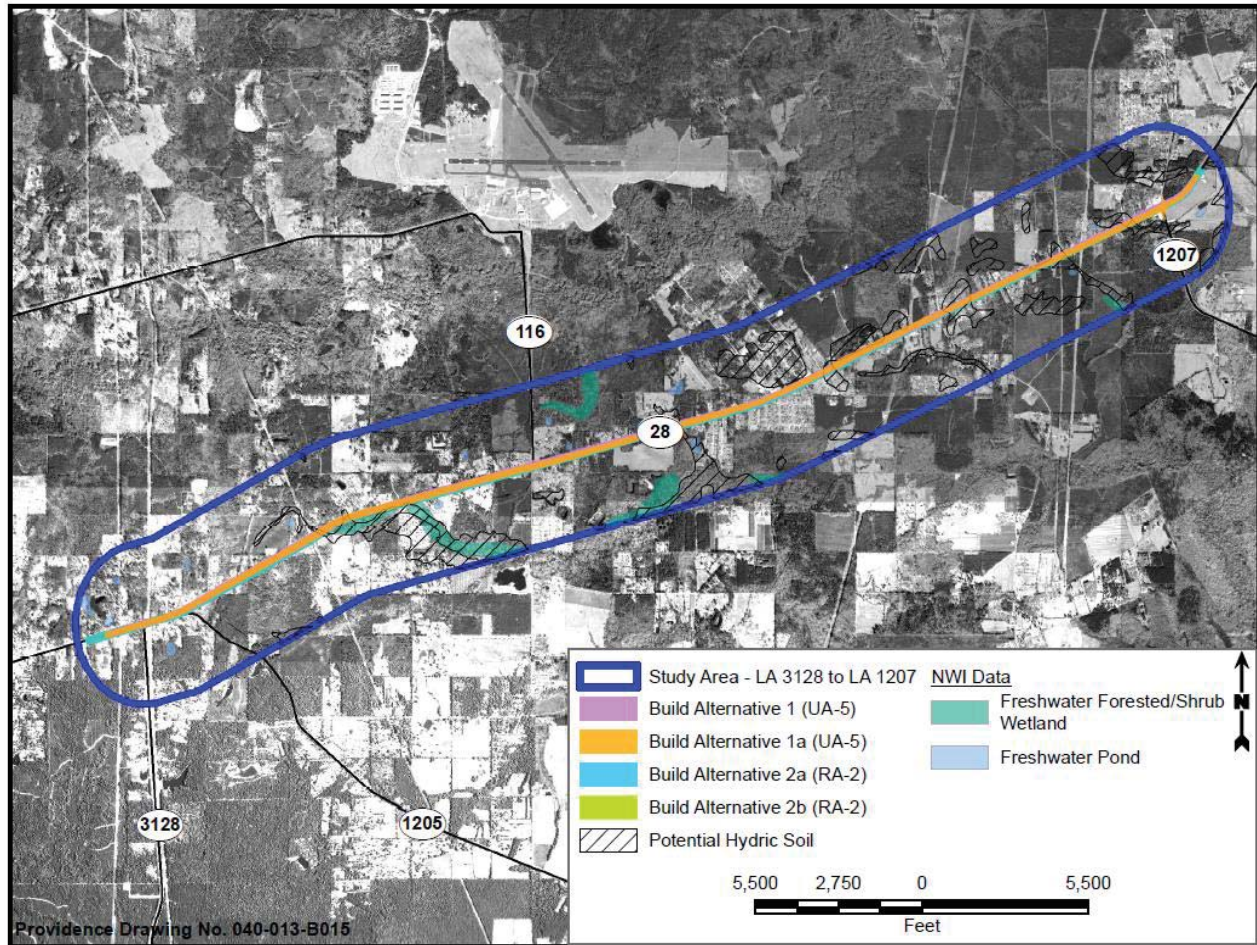
Well Type	Quantity
Dry and Plugged	1
Total	1

3.18 Wetlands

Wetlands are defined jointly by the USACE and the USEPA as “those areas that are inundated or saturated by surface or groundwater, at a frequency and duration sufficient to support, and that under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (40 CFR 230.3 and 33 CFR 328.3). In compliance with EO 11990, a preliminary desktop wetland investigation was conducted on the proposed study area using soils data and local knowledge. **Figures 12a** and **b** are maps demonstrating the location of hydric soils in the project study area. Wetlands are potentially present where hydric soils exist.

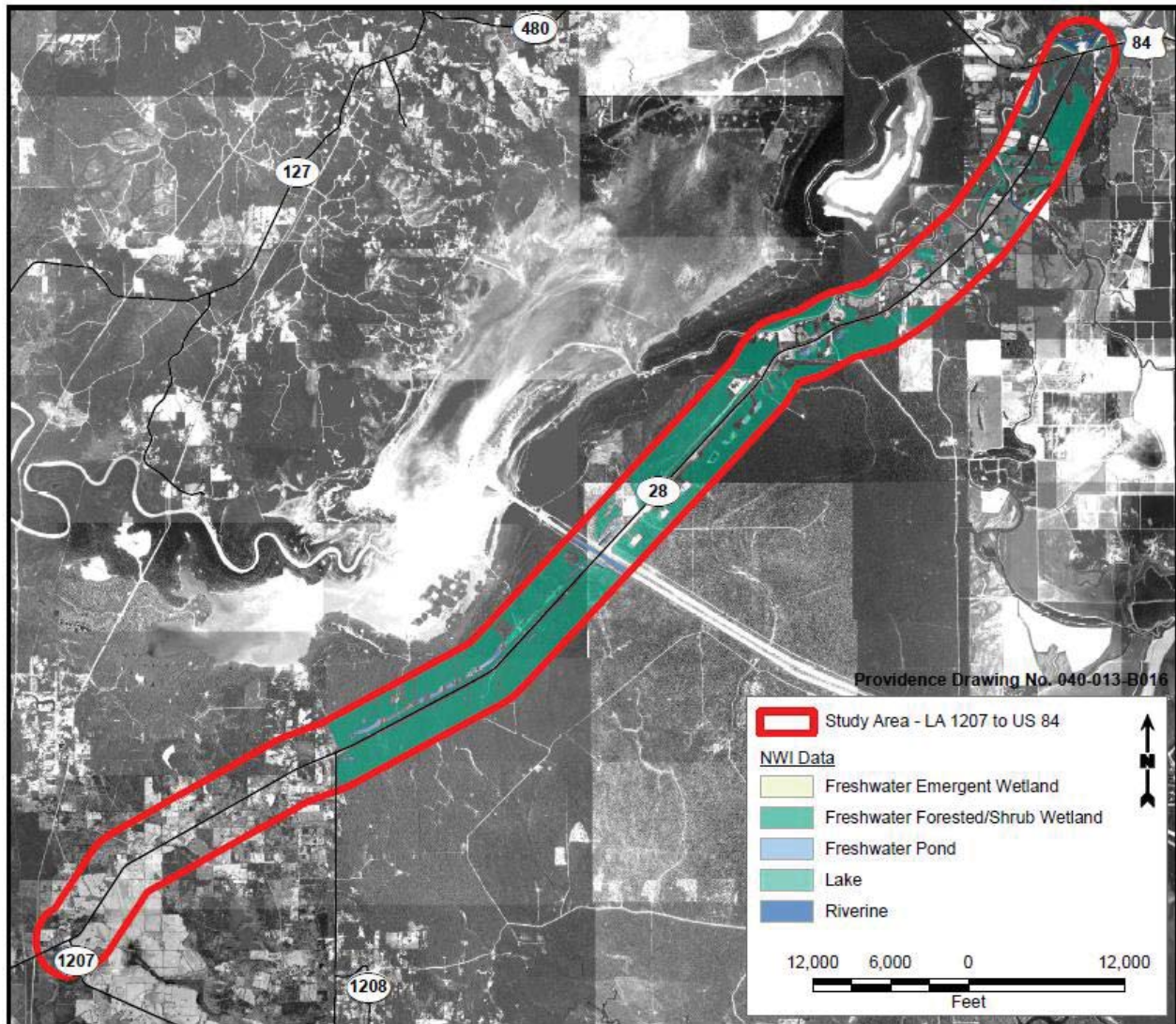
Wetlands potentially present in the project area are believed to be primarily comprised of bottomland hardwood forested wetlands, cypress-tupelo swamp, and riparian habitats associated with other waters of the U.S. (canals, bayous, and other waterways). According to National Wetlands Inventory (NWI) data for the project study area, approximately 142.49 acres are mapped as freshwater forested/shrub wetlands and 31.29 acres are mapped as freshwater pond. Correspondence from the USACE, dated July 3, 2013, states waters of the U.S., including wetlands, occur on the site that may be subject to the Corps’ jurisdiction. Field investigations were required to accurately delineate the site. The results of the wetland analysis are discussed in Chapter 4.18, and the full analysis is included as **Appendix F**.

FIGURE 12a
POTENTIAL WETLANDS AND HYDRIC SOILS LIMITS OF CONSTRUCTION



Potential hydric soils data obtained from Soil Survey Geographic Database, dated 2009. NWI Data from the United States Fish and Wildlife Service (USFWS), Division of Habitat and Resource Conservation as of 8/4/14. Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 12b
POTENTIAL WETLANDS AND HYDRIC SOILS LA 1207 – US 84



Potential hydric soils data obtained from Soil Survey Geographic Database, dated 2009. NWI Data from USFWS, Division of Habitat and Resource Conservation as of 8/4/14. Base map comprised of ESRI World Imagery Maps dated June 2013.

3.19 Coastal Zone

The project study area is located within Rapides Parish, Louisiana. All of Rapides Parish falls outside the Louisiana Coastal Zone Boundary

3.20 Rivers and Scenic Streams

The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve certain rivers throughout the country demonstrating “outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations”. According to the Wild and Scenic Rivers System’s website, there is only one waterway in Louisiana protected under this program,

Saline Bayou, and it is located in LaSalle Parish, to the south of the study area (“Saline Bayou, Louisiana”).

The NPS’s Nationwide Rivers Inventory “is a listing of more than 3,400 free-flowing river segments in the United States that are believed to possess one or more outstanding remarkable natural or cultural values judged to be of more than local or regional significance”. According to the NPS’s Nationwide Rivers Inventory webpage, there are 11 free-flowing Louisiana Segments. Two are located in Rapides Parish, Spring Creek and Calcasieu River. Both are located south of the project area.

The Louisiana Natural and Scenic River Act of 1970 established the Louisiana Natural and Scenic River System. According to the LDWF’s Scenic Rivers webpage, there are no historic and scenic rivers in Rapides Parish. There are five Natural and Scenic Rivers, none of which are in the project area. They are Bayou Cocodrie, Calcasieu River, Little River, Spring Creek, and Ten Mile Creek. A letter from the LDWF dated January 18, 2013 confirms this information.

3.21 Wildlife

Wildlife present in the project study area include those expected present in rural communities adjacent to pine forest in the construction study area to those inhabiting bottomland hardwood forests, lakes, and bayous in the remaining study area. Raccoons, squirrels, deer, armadillo, rabbits, song birds, and raptors (owls, hawks, etc.) are likely to be encountered in the construction study area. Within the remaining project study area, these animals, along with hogs, turkey, beaver, mink, nutria, bobcats, foxes, and coyotes inhabit the WMA and National Wildlife Refuge (NWR). Waterfowl, raptors, wading birds and shorebirds are plentiful in Dewey Wills and the Catahoula NWR as well as song birds. Recreationally and commercially important fish including buffalo, crappie, other sunfish, bass, gar, and carp are supported by the numerous lakes, streams, and bayous in the project study area. A letter from the LDWF dated January 18, 2013 confirms this information.

3.22 Threatened and Endangered Species

The Endangered Species Act of 1973 allows the USFWS to manage threatened and endangered species and their ecosystems. There are no threatened or endangered species or protected habitats listed for the project study area. This information has been confirmed through correspondence with the USFWS, dated January 31, 2013, and the LDWF, dated January 18, 2013.

3.23 Unique and Environmentally Sensitive Areas

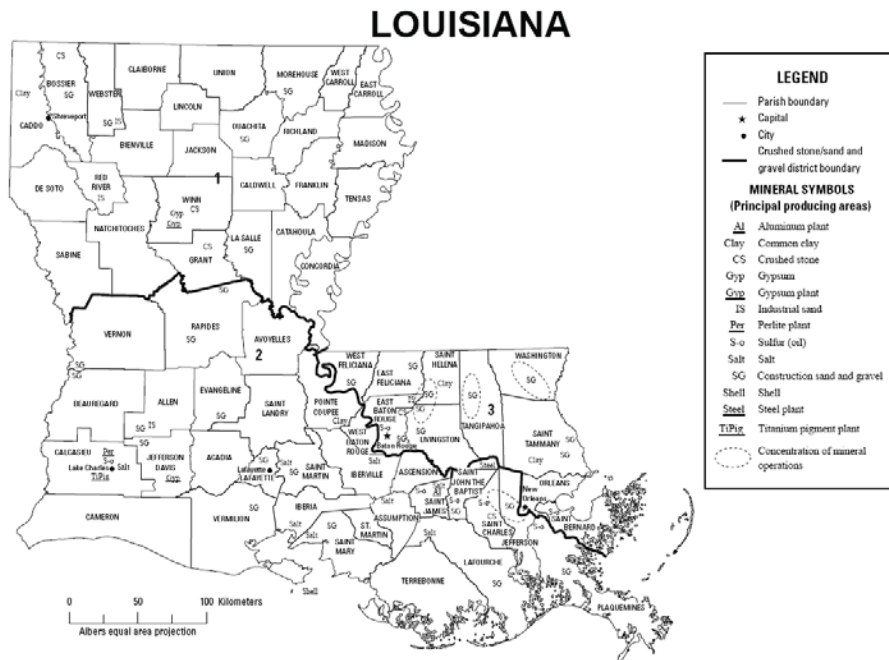
The DOTD Engineering Directives and Standards Manual (EDSM No: I.1.1.21) Treatment of Significant Trees in DOTD Right-of-Way defines significant trees as aesthetically important. Within the existing ROW in the construction study area, no

significant trees were observed; however, significant trees could be present outside the 500-foot buffer around LA 28 that was visually observed in April 2013.

Outside the construction limits in the project study area, through LaSalle Parish, the Dewey Wills WMA lies on both sides of LA 28. This WMA supports a substantial wetland environment that may contain significant trees. Additionally, wetlands and agricultural areas extend into Catahoula Parish through the end of the project study area.

3.24 Mineral Resources

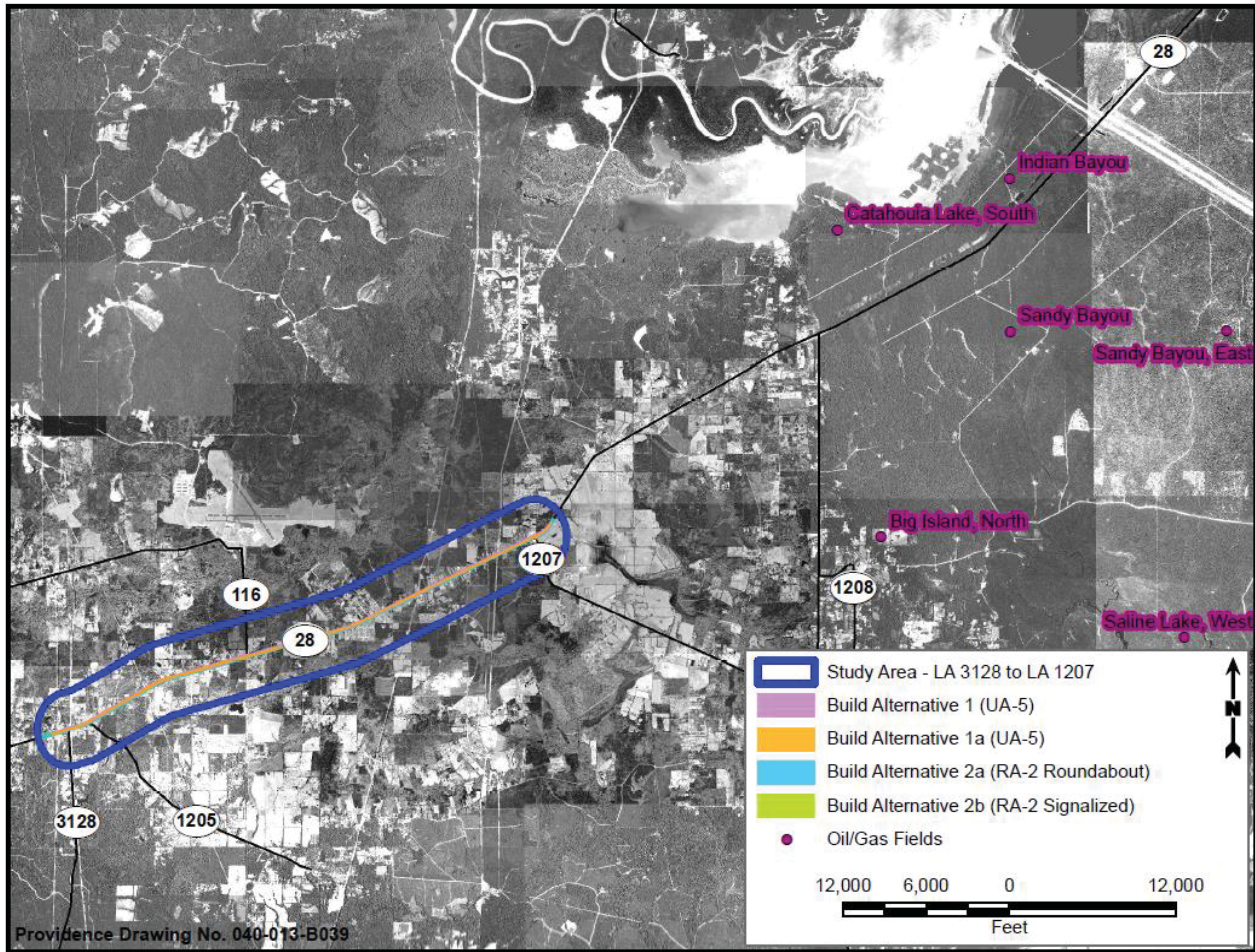
Mineral resources information for the project study area was obtained by researching the LDNR's SONRIS database and the USGS's publicly available data. The USGS 2009 *Minerals Yearbook* for Louisiana included the figure below illustrating principal mineral producing areas. Construction sand and gravel was listed as a mineral resource for Rapides Parish.



Source: Louisiana Geological Survey/U.S. Geological Survey (2009).

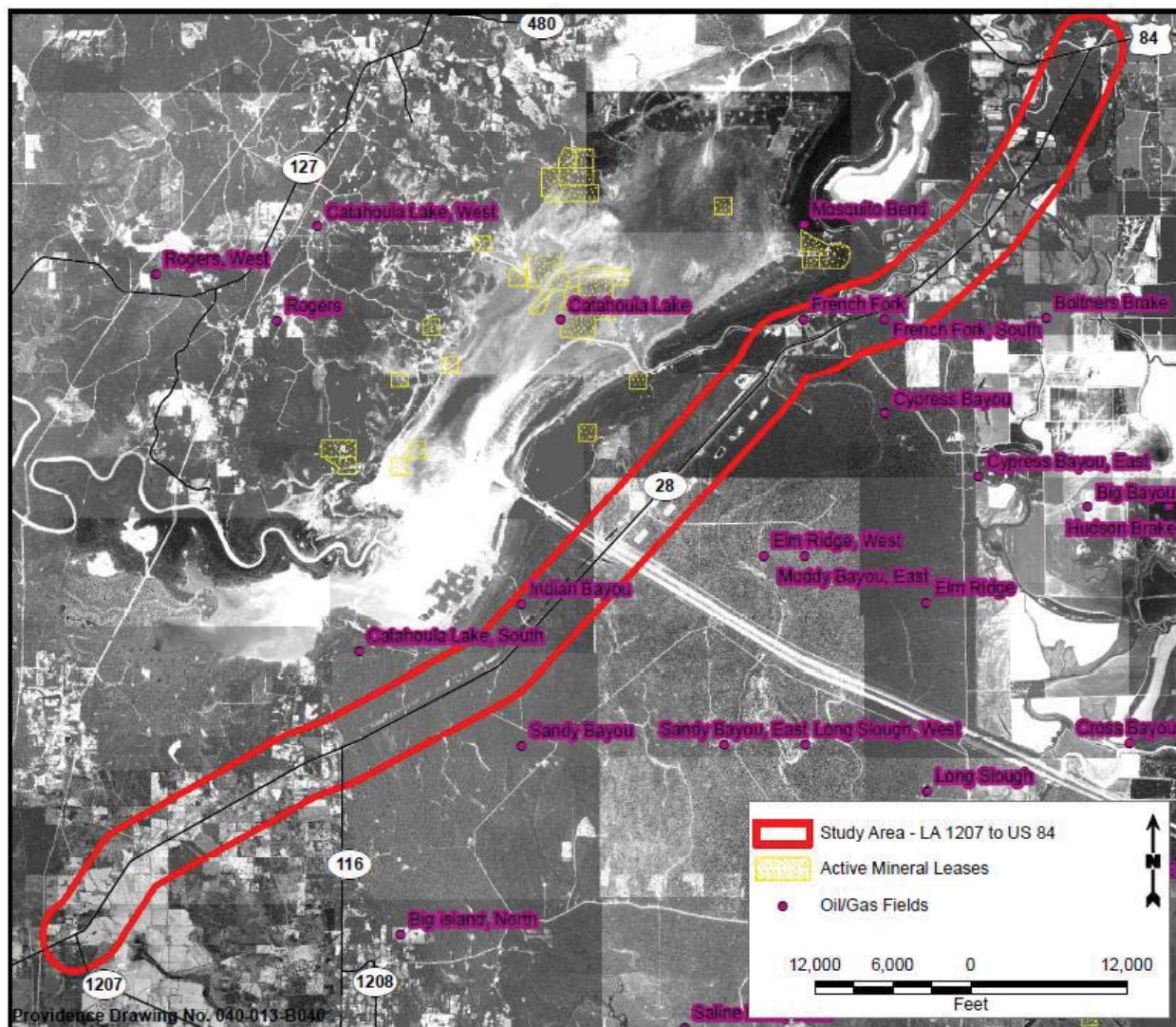
Active mineral leases in the project study area were researched through the State Mineral and Energy Board of the state of Louisiana, the entity that issues leases for the purpose of exploring, prospecting, and/or drilling for and producing oil, gas, and any other liquid or gaseous minerals in solution and produced with oil and gas. Lease terms exclude free sulphur, potash, lignite, sale, and other solid minerals. There are no active mineral leases (oil and gas) or Seismic 3D permits in the project study area (see **Figures 13a** and **13b**).

FIGURE 13a
MINERAL RESOURCES LIMITS OF CONSTRUCTION



A search was performed for Seismic 3D Permits and Active Mineral Leases and none were found within the vicinity of the project study area. Oil/Gas Fields were obtained from the LDNR SONRIS data set as of 3/10/15. Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 13b
MINERAL RESOURCES LA 1207 – US 84



A search was performed for Seismic 3D Permits and none were found within the vicinity of the project study area. Active Mineral Leases and Oil/Gas Fields were obtained from the LDNR SONRIS data set as of 3/10/15. Base map comprised of ESRI World Imagery Maps dated June 2013.

4.0 ENVIRONMENTAL CONSEQUENCES

Environmental consequences associated with the build alternatives and the No-Build Alternative are discussed in this chapter along with potential permits and mitigation measures. This chapter does not include a topic by topic discussion of the project study area between LA 1207 and US 84. While discussion of the general environment associated with this area has been included in Chapter 3, there is no action proposed to occur to the east of LA 1207, outside of the intersection improvements at LA 1207 included in this project. A brief discussion of possible environmental constraints associated with the potential future widening of LA 28 to LA 84 is included at the end of this chapter

4.1 Land Use and Development

The No-Build Alternative will not change the present development pattern in the project area.

Construction of the Build Alternative 1a will result in the direct conversion of 143.79 acres of residential land, 30.11 acres of forested land, 22.12 acres of commercial land, 11.41 acres of agricultural land, and 0.90 acres of industrial land. This information is according to the USGS land use data presented in **Figure 4a** (located in Chapter 3.2). Potential wetland impacts are described in more detail in Section 4.18.

4.2 Community Facilities and Services

The No-Build Alternative will not impact community facilities.

Under the Preferred Alternative, the Deville Volunteer Fire Station may be operationally affected due to the amount of driveway in the required ROW. It is possible that impacts to the drives for the fire station could be minimized during final design to allow for continued safe vehicle entry/exit from the station building.

A letter was received from the KDRPDD, dated March 13, 2013, stating there is no objection to the proposed project as it relates to the community.

4.3 Relocations

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (the Uniform Act) provides important protections and assistance for people affected by federally funded projects. Relocation resources are available to all residential and business relocations without discrimination. The Conceptual Stage Relocation Plan (CSRP) prepared for this project is in **Appendix G**.

As no ROW acquisition would be required under the No-Build Alternative, there would be no relocation impacts.

Tables 4-1 and **4-2** detail potential relocations associated with the Preferred Build Alternative. Build Alternative 1a will potentially result in 15 residential

displacements and affect approximately 10 commercial structures. Based on exterior visual observations, all the residences, appear to be maintained and all are believed to meet decent, safe, and sanitary standards.

**TABLE 4-1
POTENTIAL RESIDENTIAL DISPLACEMENTS ASSOCIATED
WITH BUILD ALTERNATIVE 1a**

Address	Structures In ROW (number outside of ROW)	Approximate Home Size ¹ (in square feet)	Approximate Lot Size (acres) ²	Number of Occupants ³
6575 LA 28	1	1,800	0.39	2
7191 LA 28 ⁴	2 (2)	1,800	1.6	2
101 Ridgecrest	1 (1)	3,000	0.48	2
Barron Chapel at LA 28	1 (2)	3,500	1.37	2
8560 LA 28	1 (1)	1,066	1	2
9423 or 9425, or 9427 LA 28	1	1,300	2.5	2
9423 or 9425, or 9427 LA 28	1	1,300	2.5	2
9520 LA 28	1	3,700	1.86	2
9820 LA 28	1 (2)	1,500	0.65	2
10312 LA 28	1 (4)	1,900	1.8	2
10715 LA 28	2 (3)	1,300	1	2
10895 LA 28	1 (1)	2,400	4.3	2
10944 LA 28	1 (3)	1,150	1.77	2
11 Gene Gunter Road	3 (2)	2,300	1.07	2

NOTES:

1. Approximate home size measured off of Rapides Parish Assessor's Office Map or Google Earth imagery.
2. Approximately lot sizes obtained from Rapides Parish Assessor's Office Parcel Map.
3. Number of Occupants is based on USCB AFF data for average family and household size for Census Tracts 101 and 132.
4. There are four mobile homes on parcel, two in ROW. The Assessor's office lists this parcel as vacant.

**TABLE 4-2
COMMERCIAL STRUCTURES ASSOCIATED
WITH BUILD ALTERNATIVE 1a**

Address	Structures In ROW (number outside of ROW)	Approximate Square Feet ¹	Status ²
6408 LA 28, Pineville, LA 71360	1	4,100	Occupied
6861 LA 28, Pineville, LA 71360	1 (1)	3,750	Occupied
7316 LA 28, Pineville, LA 71360	1 (1)	1,790	Occupied
7320 LA 28, Pineville, LA 71360	1 (2)	1,680	Occupied
8380 LA 28, Pineville, LA 71360	1	4,642	Occupied
Mailing -PO Box 8 Libuse, LA 71348	1	10,220	Occupied
9161 LA 28, Pineville, LA 71360	1	4,330	Vacant
9815 LA 28, Pineville, LA 71360	2 (2)	1,000	Occupied
9868 LA 28, Pineville, LA 71360	1	2,300	Occupied
12800 LA 28, Deville, LA 71328 ³	1 (3)	9,200	Occupied

NOTES:

1. Approximate structure size measured off of Rapides Parish Assessor's Office Map.
2. Status is based on field observation of activity.
3. Includes pump island and main building; the other three structures are detached.

The potential ROW acquisition costs are detailed in **Table 4-3**. This cost does not include utility relocations or mitigation for impacts to jurisdictional wetlands. Potential utility relocations are discussed in Section 4.6. Costs associated with mitigation for wetland impacts and utilities are also included in the Preliminary Opinion of Probable Cost in **Appendix B**.

**TABLE 4-3
ESTIMATED RIGHT-OF-WAY COSTS FOR PREFERRED ALTERNATIVE 1a**

Item	Unit Price	Unit	Quantity	Total
Land ¹	\$15,000.00	ACRE	97.79	\$1,466,814
Improvements - Residences ²	\$90.00	FT ²	21,050	\$1,894,500
Improvements - Commercial Building ³	\$92.00	FT ²	43,012	\$3,957,104
Damages - Buildings ⁴	\$92.00	FT ²	4,000	\$368,000
Damages - Carport ⁵	\$900.00	LUMP SUM	2	\$1,800
Damages - Garage ⁵	\$7,400.00	LUMP SUM	2	\$14,800
Damages - Pump Island ⁶	\$56,000.00	LUMP SUM	1	\$56,000
Damages - Substation/Fence/Access ⁷	\$50,000.00	LUMP SUM	1	\$50,000
Damages/Repair - Driveways/Parking Lots ⁸				
Concrete/asphalt	\$55.00	SQ YD	165	\$9,075
Gravel	\$8.00	SQ YD	1,500	\$12,000
Moving Costs (from Table 7 of CSRP)				\$127,200
Subtotal				\$7,830,093
Appraisals	\$400.00	PROPERTY	173	\$69,200
Litigation (10% of subtotal)				\$783,009
Contingency (5% of subtotal)				\$391,505
Total				\$9,073,807

Values for real estate are for estimation purposes only.

FT² = Square feet; SQ YD = square yard

NOTES:

1. Total acreage for land is based on values provided in **Table 5** of the CSRP. Publicly available data should not be relied upon, it is possible additional acreage may be affected.
2. Residence estimated value is based on current ft² sales prices and recent sales data for LA 28 East, and does not reflect the prices of the current inventory of replacement housing.
3. Commercial estimated values are based on average price per square foot being asked for commercial buildings in the area; price does not reflect value of the business.
4. Deville Fire Station building not included, but could be damaged out due to loss of drives.
5. Costs obtained from Alan's Factory Direct.
6. Pump island canopy cost obtained from State of Michigan costs for Service Stations and Car Washes. Pump replacement cost of \$10,000 per pump from Gilbarco.
7. Substation (near Jones Road) improvements impacted include overhead power lines, access, and fencing. This value is based on DOTD's Real Estate Section averages.
8. Cost assumes 150 drives to be repaired, approximately 15 being concrete/asphalt and all at 10x10 ft.

No special or unusual conditions have been identified. No discussions have been held with local officials or community groups regarding potential displacements, and none are anticipated at this time. Replacement housing is available in the area of displacement. In conclusion, there are no unusual problems anticipated in providing replacement housing under normal procedures. Additional details regarding this relocation can be found in the CSRP, located in **Appendix G**. The other relocations will involve utilities, and these are further discussed in Section 4.6.

4.4 Employment Trends and Local Economy

The No-Build Alternative is not expected to change either the existing business climate or composition along LA 28.

Widening of LA 28 East under current DOTD roadway standards will result in construction of medians and restriction of access on the currently open access LA 28. Medians have been shown to be safer, increase capacity, and result in more aesthetically pleasing streetscapes (Utah, 2014). Presently, there are no medians and no paved shoulders along the majority of the route. Therefore, construction of Build Alternative 1a will affect travel, and therefore, businesses, along LA 28.

Several studies were referenced in order to gain an understanding of potential impacts to existing and future commercial interests along LA 28. Two research studies, conducted in Texas and Utah, prepared in an attempt to discern potential impacts to business associated with the installation of medians and control of access measures, were reviewed. Positive effects noted by the studies include:

- Increased corridor business sales
- An increase in regional business sales
- An increase in the placement of new businesses post construction (over control study location where no controlled access measures were installed)
- An increase in property values on the median restricted corridor

Retention of current employee base was also noted. Survey data indicated that 83% of people polled would continue to patronize a business regardless of access restrictions and that access was the least important factor in determining where they would shop, eat, *etc.*

Both studies concluded that there is a perception by business owners that installation of control of access measures will adversely impact their business. Business owners are also skeptical of economic studies conducted in states other than their own. In most cases, this perception has been shown to be worse than the actual effects. However, some businesses tend to do better than others, and some may see a loss of business. Businesses that rely almost exclusively on bypass traffic (only visit because it's on the way to somewhere else) appear to be the category of business that may see business loss as a result of controlled

access; this category includes gas stations. Specialty retail and restaurants tend to experience an increase in customers and sales.

4.5 Environmental Justice

Neither the No-Build nor the Preferred Build Alternative will have disproportionately high and adverse human health or environmental effects on minority or low-income populations since census data did not reflect these populations in the project study area.

4.6 Utilities

Utility information was obtained through local utilities prior to alternative development. However, not all utility companies provided information, therefore additional information will be required during the design phase to locate all utilities and quantify precise impacts. Sizes of water and gas lines, and the type of gas lines, were not provided. Therefore, assumptions were made for a typical size and contents of utility as well as the cost of mitigation of the specific utility.

As no ROW acquisition will be required under the No-Build Alternative, there will be no utility impacts.

Alternative 1a will require multiple utilities to be relocated to construct. The majority of those impacts are to water and overhead electric lines. The impact of the Preferred Alternative on the utilities received is summarized in **Table 4-4**. An average cost for relocation of utilities was developed based on previous project experience and available information. These costs only reflect construction costs and do not account for items such as engineering design, environmental permitting, construction inspection, wetland mitigation, facility shut-in, *etc.* Additional investigation should be performed during design to develop more accurate costs.

TABLE 4-4
ESTIMATED UTILITY RELOCATION COSTS FOR BUILD ALTERNATIVE 1a

Utility	Mitigation Description	Length (ft)	Unit Cost	Total
Water	Relocation	38366	20	\$767,320
Gas	Relocation	229	100	\$22,900
Electric	Relocation	14071	70	\$984,970
Total				\$1,775,190

4.7 Traffic Patterns

The No-Build Alternative will have no impacts on current traffic patterns.

The Preferred Alternative will result in median construction, intersection changes, J-turns, and a roundabout in the project construction study area. With the

installation of medians, residents and travelers will have to make J-turns or U-turns to access businesses and residences located between median openings and to return to their former direction of travel. The Preferred Alternative will involve the placement of one roundabout on LA 28 at LA 1207, replacing the signalized intersection. All of these access management and traffic improvement measures will change current traffic patterns.

A letter from the Rapides Soil & Water Conservation District Board of Supervisors received February 26, 2013 confirmed the project would greatly improve traffic flow in the area.

4.8 Public Land and Recreation

As discussed in Chapter 3.7, state/federal parks, wildlife refuges, and wildlife management areas are located off of LA 28 and US 84 in the project study area, in LaSalle and Catahoula Parishes, outside the construction study area. Therefore, neither the No-Build nor the Preferred Alternative will impact public land or recreation areas.

4.9 Cultural Resources

FHWA must consider the potential effects of a proposed action on historic properties per Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The No-Build Alternative will have no adverse effect because no ground disturbances or ROW acquisitions will occur as a result of this project.

Earth Search, Inc. (ESI) conducted a Phase I Cultural Resources Survey (CRS) of all build alternatives from June 22 through July 10, 2015. Archival research was employed as the first step, including consulting maps, site files, and project files through the use of the Louisiana Division of Archaeology's online Louisiana Cultural Resources Map GIS database, Louisiana Historic Standing Structures Survey, NRHP database, and the Louisiana State Library.

Federal regulations define the area of potential effects (APE) as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist." For assessment of direct effects, the APE is defined as the areas of construction and clearing in which ground-disturbing activities are possible. The APE for archeological resources was limited to the proposed ROW for all build alternatives (direct APE). The APE for historic structures included the proposed ROW for the build alternatives as well as an indirect APE, 0.25-mile diameter buffer (0.125 miles around the direct APE). The direct APE comprises approximately 244.3 acres (98.9 hectares).

Standard archaeological survey methods were used during the field study and included a combination of surface inspection and shovel testing. In areas having greater than 85% surface visibility, pedestrian survey with surface scanning and judgmental shovel testing was performed. Shovel testing was undertaken in areas

where the vegetation hindered surface visibility along three transects parallel to LA 28, two on the south side and one on the north side. Along each transect, shovel tests were excavated at 30 meter intervals (98.4 feet). In areas that contained numerous buried utilities, partially inundated areas, and areas of dense commercial and residential properties, survey consisted of an intensive pedestrian survey with judgmental shovel testing. Shovel tests were a minimum of 11.8 inches [30 centimeters (cm)] in diameter and excavated to a maximum depth of 19.7 inches (75 cm), the soil was then screened through 0.25 inch (0.64 cm) mesh hardware cloth.

Archaeological survey resulted in the identification of no new sites. Also, no deposits associated with the only previously recorded site 16RA705 were identified. ESI commented that roadway construction will have no effect on buried cultural resources. No additional archaeological investigations were recommended.

The architectural standing structure survey included examination of buildings in the direct and indirect APEs of the build alternatives. The APE for fieldwork consisted of a 0.25 mile (400 meter) diameter buffer of each of the proposed ROWs, the Indirect APE. Thus, the indirect APE for the purposes of the architectural survey included an area extending approximately 200 meters (656 feet) to either side of the centerline of the existing roadway. This provides sufficient distance to address direct impacts from construction and indirect impacts, such as adverse effects to the viewsheds of any identified historic properties.

The architectural survey resulted in the recordation of 53 standing structures greater than or approaching 50 years of age. Five of the structures have been recommended eligible for nomination to the NRHP [36CFR 60.4 (a)]. The Pacholik House (40-05068) is located in the direct APE of all the build alternatives. The Tuma Store/Post Office and its associated outbuilding (40-05106) are located in the direct APE of the UA alternatives. ESI recommended that the Pacholik House and the Tuma Store/Post Office be avoided during all phases of highway construction. Preliminary design of the preferred alternative avoids the properties associated with both of these structures. Some drainage work within the existing ROW adjacent to these properties is anticipated.

The three remaining structures (40-05107, 40-05108, 40-05070) that ESI recommends are eligible for nomination to the NRHP are all within the indirect APE and at least 17 meters (55.8 feet) from the direct APE. ESI concluded that the proposed improvements to LA 28 will have no effect on these historic resources. No additional cultural resources investigations are recommended for these structures.

The DOTD approved Phase I CRS report was accepted by the SHPO March 2, 2016. A letter of No Objection was received from the SHPO on October 4, 2016 (Appendix A).

4.10 Sections 4(f) and 6(f)

As discussed in Chapter 3.9, no properties were identified meeting the criteria for Section 4(f) or 6(f) lands within the project construction study area. Therefore, there will be no use of Section 4(f) properties and no conversion of Section 6(f) properties under the No-Build Alternative or the Preferred Alternative.

4.11 Visual Environment

The No-Build Alternative will have no impact on existing views and aesthetic characteristics of the surrounding area.

The Preferred Alternative uses the existing ROW of LA 28 to the extent practicable; therefore, no measurable effects on the existing view shed of area residents is anticipated.

4.12 Water Resources

The No-Build Alternative will not impact existing surface water, groundwater quality, recharge potential, or area water wells.

The Preferred Alternative is located within Subsegment 081603, Catahoula Lake, of the Ouachita River Basin. Current information from LDEQ's draft *2014 Water Quality Inventory Integrated Report* indicates that Subsegment 081603 is listed as impaired due to both fecal coliform contamination and turbidity.

The Preferred Alternative is also located within Subsegment 101501, Big Saline Bayou – From Catahoula Lake to Saline Lake, of the Red River Basin. Current information from LDEQ's draft *2014 Water Quality Inventory Integrated Report* indicates that Subsegment 101501 is listed as impaired due to low levels of dissolved oxygen. However, as the low dissolved oxygen levels are believed to be naturally occurring, the LDEQ is considering revising the criteria.

Given the nature of the discharges associated with the activities at the project site, the typical pollutant of concern would be total suspended solids (TSS) or turbidity. Use of best management practices (BMPs) will provide the greatest protection to area waterways by preventing off-site impacts such as an increase of suspended solids, dissolved solids, sedimentation, siltation, and turbidity resulting from construction. Therefore, there is no reasonable potential to cause or contribute to further impairment of the turbidity standard on Catahoula Lake, nor the dissolved oxygen standard on Big Saline Bayou.

The potential for an adverse impact associated with the Preferred Alternative on groundwater is extremely low as the project involves widening an existing roadway and BMPs will be implemented to prevent off-site migration of solids.

4.13 Floodplains

The No-Build Alternative will have no impact on floodplains or future flooding in the area.

Figure 9a (located in Section 3.13) shows the 100-year floodplain data for the project study area. Within the boundary of the Preferred Alternative, approximately 5.07 acres are located in the 100-year floodplain. In order to assure compliance with local, state, and federal agencies regarding floodplain requirements for the National Flood Insurance Program, correspondence was sent to FEMA's Mitigation Division. A response was received dated January 22, 2013, requesting contact with the Rapides Parish Floodplain Administrator for permits and requirements. An SOV letter was sent to the Rapides Parish Floodplain Administrator and a response was not received. However, the KDRPDD did respond indicating that no floodplain impacts were anticipated.

4.13.1 Project Area Background

The project area for all the alternatives is almost entirely contained within Zone "C" designated floodplain as detailed in the FEMA Flood Insurance Rate Map Panels 220145-0155B, 220145-0165B, 220145-0175B. Zone "C" is documented as an area of minimal flooding. A portion of the project area between Kristi Lane and Barber Drive is within Zone "A" which is subject to 100-year flood events; however, base flood elevations and flood hazard factors have not been determined. The majority of surrounding land within the Zone "A" area has an average elevation of 120.0 feet above mean sea level.

4.13.2 Alternatives Impacts

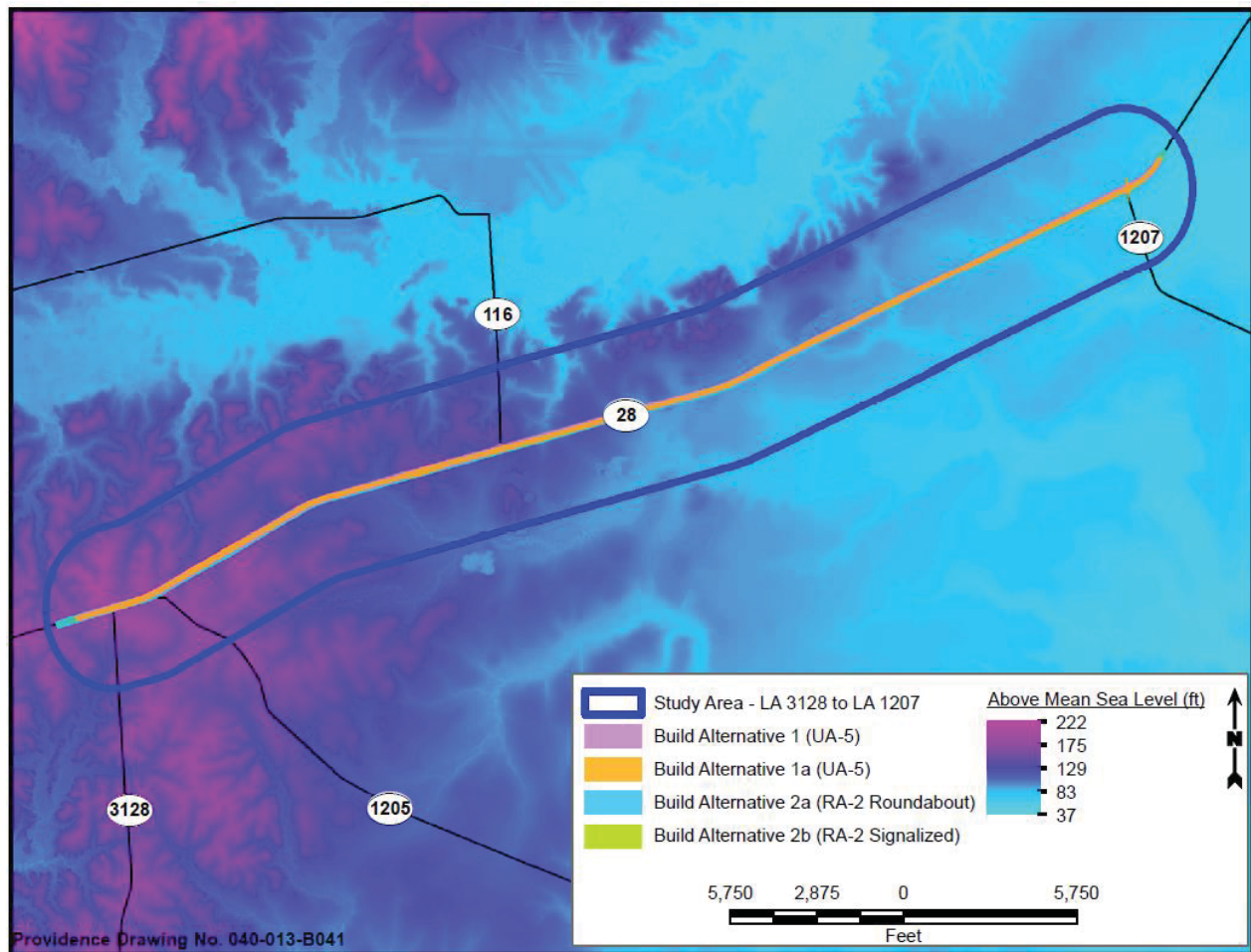
No impacts to existing floodplains are anticipated under the No-Build Alternative.

The majority of existing LA 28 is outside of a floodplain; however, there is a small area that is within the floodplain containing roadside ditches designed to convey runoff adjacent to the roadway. Due to the purpose and need of this project, there is no feasible build alternative that does not impact the floodplain.

The preferred alternative, Build Alternative 1a, involves the widening of LA 28 by providing one additional lane, a one foot inside shoulder, and an eight foot outside shoulder in each direction along with an 18 to 30-foot median. Alternative 1a described in Chapter 2.3 is 39,424 feet in length and will involve the placement of fill in order to construct the proposed widening. Total 100-year floodplain impact is calculated at 6.23 acres.

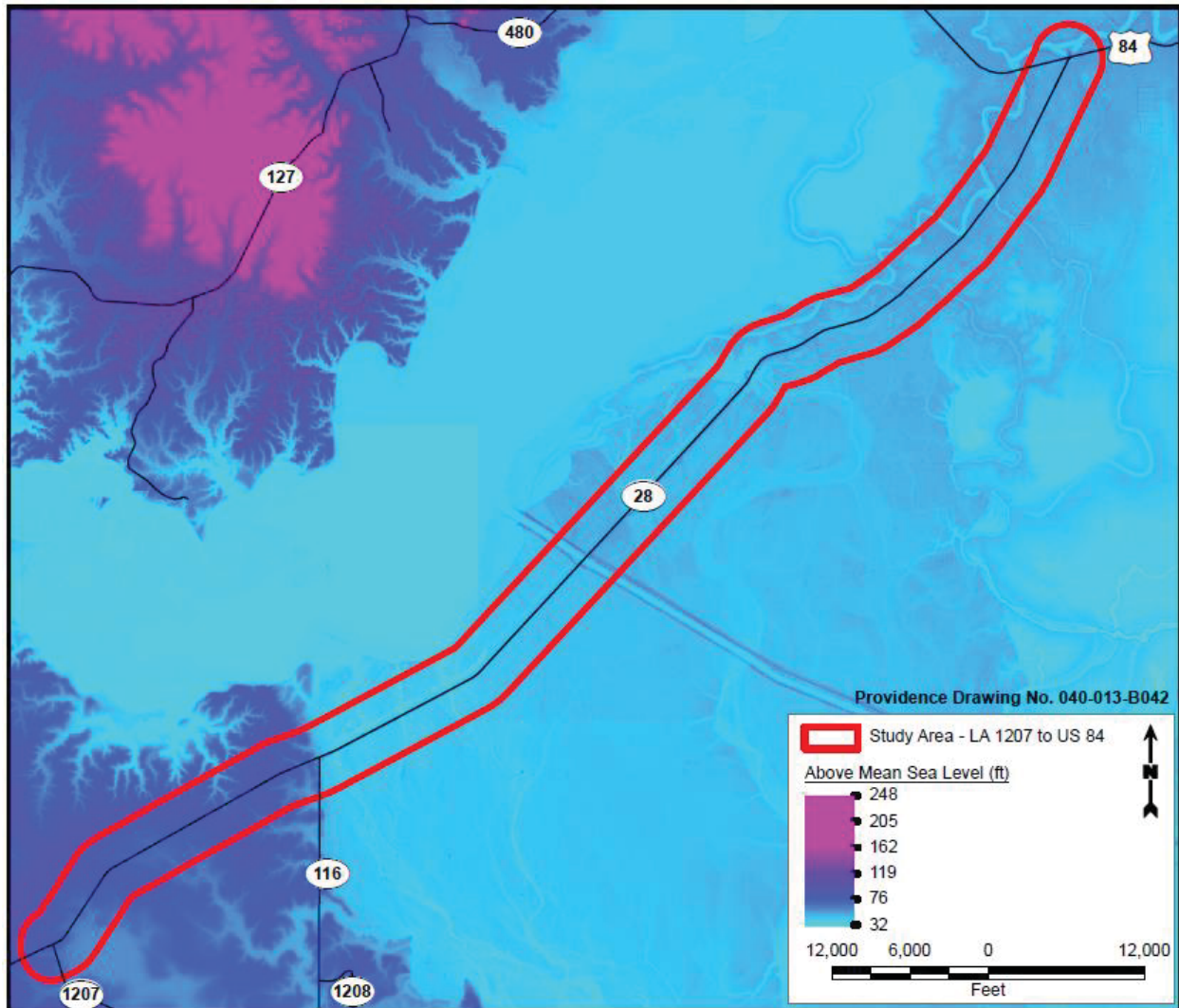
Existing LIDAR (light detection and ranging) data along the preferred alternative is shown in **Figure 14a**. Culverts will be placed at appropriate locations to allow runoff to convey along its natural course. All cross drain culverts will be designed to convey the 50-year frequency storm. Construction of detention treatment facilities to provide additional storage in the floodplain could be considered; however, additional studies would be required at a later date to determine the amount of storage necessary.

FIGURE 14a
LIDAR ELEVATION DATA LIMITS OF CONSTRUCTION



LIDAR data obtained from Louisiana Oil Spill Coordinator's Office Dataset 2014.

FIGURE 14b
LIDAR ELEVATION DATA LA 1207 – US 84



LIDAR data obtained from Louisiana Oil Spill Coordinator's Office Dataset 2014.

4.13.3 Floodplain Finding

The Alternative 1a project area is mainly out of a floodplain, but the portion that is within a floodplain is contained within the Dyson Creek floodplain. This alternative was designed to follow the existing roadway and therefore minimize additional floodplain impacts.

4.13.4 Floodplain Mitigation

Detailed hydrologic and hydraulic studies will be conducted during final design to determine the water surface elevation impacts of placing fill within the floodplain. These studies should show that no increase in flood level due to construction will occur. The majority of Alternative 1a is outside of a floodplain throughout the length of the project. The portions that are within

the floodplain should be designed to minimize upstream impacts by providing adequate stormwater conveyance or storage.

The DOTD will review these studies in order to ensure that the most feasible mitigation measures are being taken to provide adequate assurance to the adjacent properties so that no increased risk of flooding will be a result of the road construction.

4.14 Farmlands

In a response letter dated January 22, 2013, the NRCS indicated that the proposed project is exempted from the Farmland Protection Policy Act regulations, therefore, no impact to prime farmlands are expected from either alternative.

4.15 Noise

Noise impacts for the existing year, design year no-build, and design year build conditions were determined from a comparison of the NAC to the TNM results. Where a predicted noise level equaled or exceeded the DOTD NAC, or where the predicted noise level exceeded an existing noise level by 10 dBA, an impact will occur.

For the no-build condition, 262 receptors were modeled, as three receptors that were Category D receptors were removed. The 2038 design year traffic predictions for the No-Build Alternative result in an impact to 91 of the 262 receptors.

For the 2038 build conditions of the Preferred Alternative, 111 receptors experienced a noise impact. The 2038 build condition modeled 249 receptors as a result of the removal of potentially acquired structures. Noise abatement measures were considered for these impacted receptors.

Noise abatement such as alteration of horizontal or vertical alignments and acquisition of property rights to serve as a buffer zone were determined to not be feasible or reasonable. Noise insulation measures for public use or nonprofit structures were considered, but determined unnecessary, as interior noise impacts were not determined to occur in the design year for the three qualifying structures.

Noise barriers were considered for all impacted receptors. Noise barriers were not considered feasible for 86 of the 111 impacted receivers due to property access needs. Therefore, no noise abatement measures were analyzed for these 85 residences and one commercial structure. Noise barriers were considered for the remaining 25 receivers. Three of these receivers (31, 166, and 180 per **Figures 15a** through **15d**) are located on large tracts of land with limited adjacent structures; a barrier would not meet the reasonableness cost criteria for these three residential receivers. Therefore, construction of 10 noise barriers was analyzed for the remaining 22 residential receivers. Forty-three additional receivers were added to this analysis, as they may receive benefit from a noise barrier. In all cases, the preliminary barrier cost already exceeded the cost

effectiveness criteria and the reasonableness 8 dBA design goal was not met. Based on the noise analysis, a noise barrier would not be feasible or reasonable for the remaining 22 impacted receivers.

Traffic management measures such as *No Engine Brake* signs could be beneficial for impacted receptors near LA 28 at LA 3128 and LA 116. Also, modified speed limits reducing the posted speed to 40 miles per hour (mph) proved effective in abating the impact for 22 of the impacted receptors and could be considered during the design phase; design criteria designates a 50 mph speed limit for LA 28.

It is important to note that during Stage 1 Planning/Environmental, the noise analysis identifies noise abatement measures that are likely to be incorporated into the project's design. The final determination of any proposed noise abatement measure will be made during the design stage. If, during design, conditions substantially change that impact the implementation of likely barriers, the DOTD will reevaluate the reasonableness of the proposed barrier. Only barriers determined to be both reasonable and feasible will be constructed. Barriers that are no longer reasonable and feasible will be removed from the project.

Impacted receivers are illustrated on **Figures 15a** through **15d**. A copy of the full traffic noise analysis is included as **Appendix C**.

FIGURE 15a
2038 NO-BUILD IMPACTED RECEIVERS EAST OF NICOLE LANE

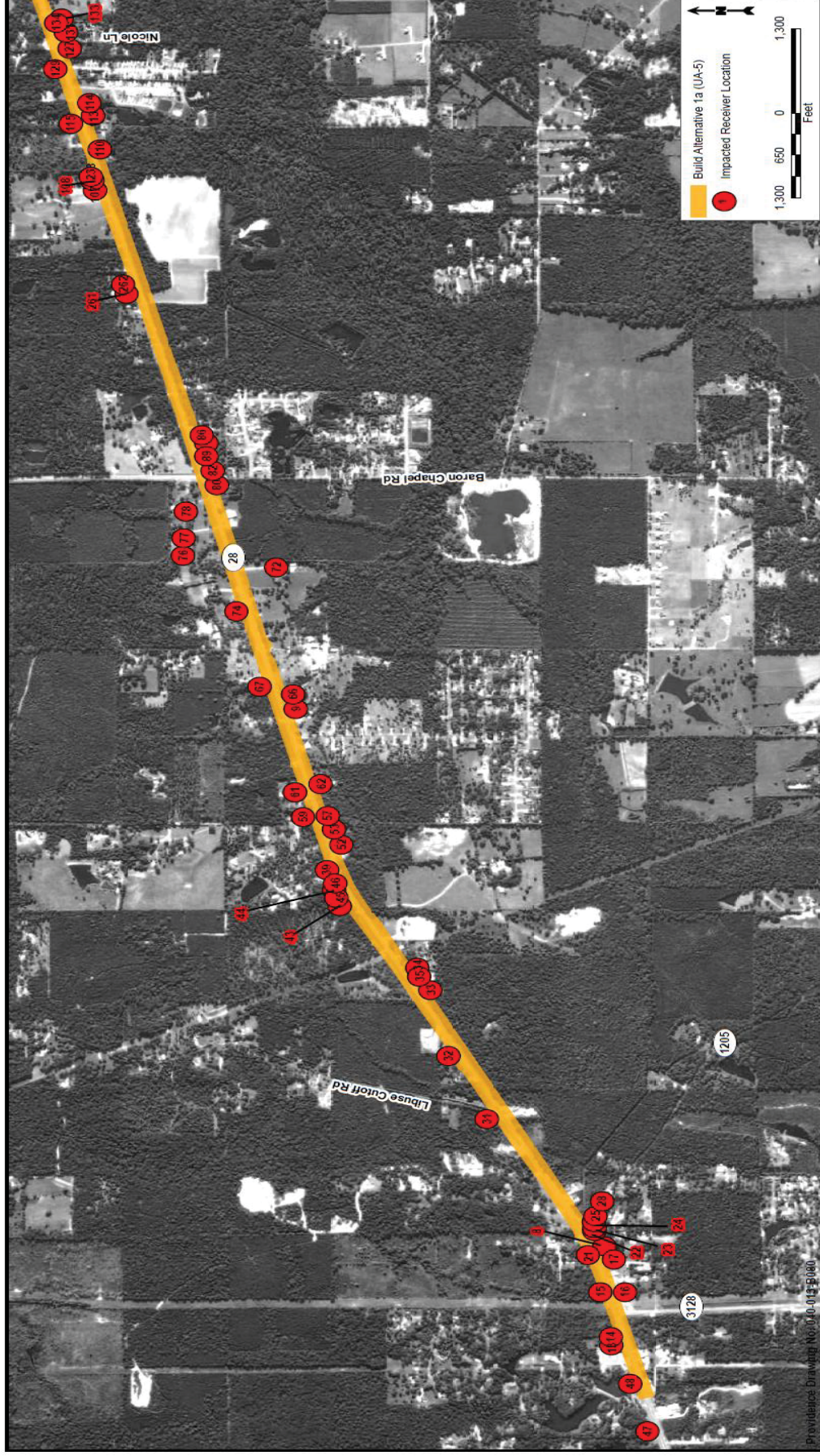


FIGURE 15b
2038 NO-BUILD IMPACTED RECEIVERS WEST OF NICOLE LANE

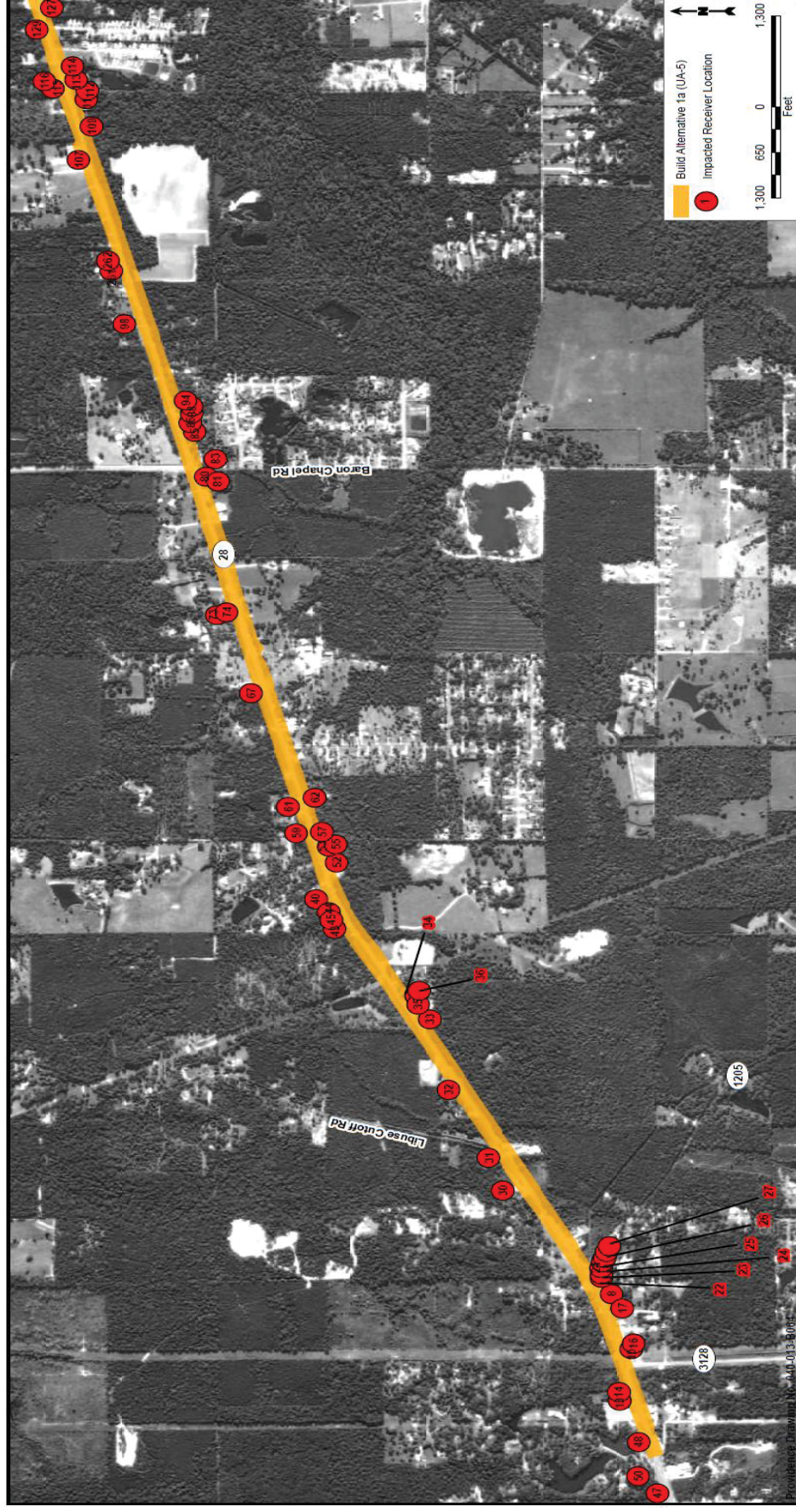


FIGURE 15C
2038 BUILD IMPACTED RECEIVERS EAST OF NICOLE LANE



Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 15d
2038 BUILD IMPACTED RECEIVERS WEST OF NICOLE LANE



4.16 Air Quality

The No-Build Alternative will involve no impacts to existing air quality.

Louisiana is currently in attainment statewide for CO. The proposed action is consistent with the current DOTD 2015-2018 STIP. The traffic projections for the proposed action do not exceed the FHWA threshold of 140,000 vehicles per day (vpd). CO analyses performed, assuming worst-case scenarios, for projects with similar average daily traffic to the proposed project such as the Pecue Lane Widening and Interchange project in East Baton Rouge Parish have shown no violations of the NAAQS. Therefore, it was determined that the proposed project will not violate the NAAQS for CO, like similar projects modeled have previously demonstrated. Hence, air quality modeling for CO was not required. Similarly, no hot-spot analysis was necessary, since the area has not been identified as nonattainment or maintenance and is in compliance with all NAAQS.

A qualitative Mobile Source Air Toxics (MSAT) analysis was performed for the Preferred and No Build Alternatives. The assessment acknowledged that the Preferred Alternative may result in increased exposure to MSAT emissions in certain locations.

The project has low potential MSAT effects since the current and projected vehicle traffic does not exceed 140,000 vpd. Also, emissions for the design year 2036 will likely be lower than 2016 base case levels as a result of USEPA's national control programs that are projected to reduce annual MSAT.

Temporary and localized increases in PM and MSAT emissions may result from construction-related activities. PM from site preparation will be the primary construction-related emissions, which will be temporary in nature and only occur during the construction phase. Potential impacts would be minimized through appropriate abatement measures such as using fugitive dust control measures (covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls), as appropriate.

Based on the results of the air quality analysis, the project is not expected to cause or contribute to any violations of the NAAQS and no adverse air quality impacts associated with the implementation of the proposed project are expected.

4.17 Hazardous Waste

The No-Build Alternative does not involve any ground disturbances or ROW acquisitions. Therefore, no impacts to hazardous waste sites and oil and gas wells will occur.

A Phase I Environmental Site Assessment (ESA) was conducted only on the Preferred Alternative, Build Alternative 1a. Potential sites representing environmental liability concerns were defined in Chapter 3 for all build alternatives.

The potential impacts of Build Alternative 1a, in terms of hazardous waste sites and oil and gas wells, are based on the search of the LDNR's SONRIS database and the Phase I ESA (see **Appendix E**). Providence personnel conducted a site reconnaissance of the subject property and adjacent properties on September 14 through September 16, 2015. The purpose of the investigation was to observe whether any visible areas of environmental concern were evident on the subject property.

The term recognized environmental conditions means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. Historical recognized environmental conditions are conditions that in the past would have been considered recognized environmental conditions, but under present circumstances may or may no longer be considered recognized environmental conditions. Historical recognized environmental conditions usually involve properties that have experienced a past release and have been remediated to the satisfaction of the responsible regulatory authority. Neither recognized environmental conditions nor historical recognized environmental conditions are intended to include *de minimis* conditions that generally do not present a material risk or harm to public health or the environment, and that will not likely be the subject of an enforcement action if discovered by the appropriate regulatory authority. Below is a summary of the various conditions documented in the Phase I ESA. Additional findings that did not illicit an environmental liability concern are discussed in detail in Section 9.4 of the Phase I ESA (see **Appendix E**).

4.17.1 Recognized Environmental Conditions

The Phase I ESA was conducted in general conformance with ASTM Standard E1527-13, with some exceptions. All exceptions to, or deletions from, this practice are described in Sections 1.0 and 2.0 of the report, included in **Appendix E**. The assessment has revealed evidence of recognized environmental conditions with the subject property for Build Alternative 1a as described below. Due to the potential for contamination to be present on any of the below properties, a Phase II Site Investigation is recommended upon initiation of final design prior to ROW acquisition.

- Greg's Auto Repair, also identified as Belgard's Auto Service, was identified by EDR as a Resource Conservation and Recovery Act-Conditionally Exempt Small Quantity Generator (RCRA-CESQG). Belgard's Auto Service, located on the subject property and adjoining property of Parcel Numbers 1103554110001001, 1104354110000901, and 1104354110000801, is currently in operation with auto repair activities on site. Additionally, an above ground storage tank (AST), suspected hydraulic lift, and staining were observed at the site. The current and historic auto repair operations at the site is a recognized environmental condition based on the likelihood of a release of hazardous substances and/or petroleum products to the environment.
- Country Living RV is a recognized environmental condition based on the likelihood of a release to the environment of petroleum products based on photoionization detector (PID) readings during the closure of the former USTs on the property. Analytical samples were collected for total petroleum hydrocarbons-diesel range organics (TPH-DRO), but not for total petroleum hydrocarbons-gasoline range organics (TPH-GRO), which would be the likely constituent of concern. Additionally, there are three USTs currently located at the site.
- The SPILLS finding for the LA 28 East at LA 3128 site identified by EDR is a recognized environmental condition based on the uncertain quantity of petroleum products released, and lack of documentation for any further investigation or remedial actions taken following the incident. No acquisition of ROW is required at this location, however, here are no coordinates associated with the release files that would indicate the release occurred outside of existing ROW.
- The USTs located at The Exxon Outpost, located on the subject property and adjoining property of Parcel Number 110285409100230, is a recognized environmental condition based on the soil investigation performed in 1993. The TPH-GRO and benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations observed in the vicinity of the USTs were above the current day Risk-Evaluation Corrective Action Program (RECAP) Limiting Screening Standard (LSS), and are indicative of a gasoline release to the environment. Groundwater data for the site was not available on EDMS. No additional information was available concerning the petroleum products found in the soils, or for any further investigation or remedial activities regarding the contamination. Based on the available information, the contamination is likely to remain on the property.
- Files maintained in the LDEQ's EDMS for the Auto Recycling & Towing Inc. (formerly Alexandria Recycling) site, located approximately 470 feet north of the subject property, indicate the site previously mismanaged petroleum products and potentially

hazardous substances. The historical operations at the site, specifically, crushing automobiles without containerizing petroleum products and dumping activities could have introduced contaminants to the soil and groundwater. Based on potentially impacted soil and groundwater at the site and the proximity of this site to the subject property, the potential migration of impacted groundwater from the Auto Recycling & Towing Inc. facility elicits environmental liability concerns to the subject property.

- Providence discovered staining and mechanical equipment located on the subject property on Parcel Number 1104054096000701 (11 Gene Gunter Road). A questionnaire completed by the current property owner indicates one AST was located on the northern-adjointing property at the property. Based on the field observations during the site visit, auto repairs and mismanagement of petroleum products are suspected to occur at the property. The suspected mismanagement of petroleum products may have impacted the soil and groundwater at the subject property. The potentially impacted soils at parcel number 1104054096000701 constitute a recognized environmental condition.

4.17.2 De Minimis Conditions

No *De Minimis* Conditions were identified on the subject property through our investigations into the subject property.

4.18 Wetlands

The No-Build Alternative does not involve any ground disturbances or ROW acquisitions. Therefore, the No-Build Alternative will not have any adverse impacts on jurisdictional wetlands or other waters of the U.S.

On September 2, 2015, Providence biologists visited the project site and collected field data on the three diagnostic wetland parameters (soils, vegetation, and hydrology) within the ROW of the Preferred Alternative. Based on the wetland analysis conducted, potential jurisdictional wetlands and habitat types within the ROW for Build Alternative 1a are shown on **Figures 16** through **16f**.

Build Alternative 1a consists of approximately 7 miles, encompassing approximately 200 acres of existing road and ROW. Based on site observations and data collected in the field, potential jurisdictional wetlands exist on the site. A total of approximately 1.52 acres of potential jurisdictional wetlands and 0.46 acres of other waters of the U.S. were determined to exist in the proposed ROW. This total is broken out into approximately 1.12 acres of palustrine forested (PFO) wetland habitat, 0.37 acres of palustrine emergent (PEM) wetland habitat, and 0.03 acres of palustrine scrub-shrub (PSS) wetland habitat. A formal request for a jurisdictional determination has been provided to the USACE.

The PFO wetlands appear to historically exhibit high quality bottomland hardwood habitat characteristics, providing essential chemical, physical, and biological, wetland functions including: protecting water quality by trapping sediments and retaining excess nutrients, providing flood control and flood storage capacity, providing groundwater recharge/exchange, and providing essential wildlife habitat (denning and foraging habitat for small and large mammals). The PFO wetlands, however, have been previously impacted by the construction of LA 28, and therefore now exhibit relatively moderate to low quality habitat. This habitat exhibits several undesirable species including Chinese tallow tree (*Triadica sebifera*) and Chinese privet (*Ligustrum sinense*).

A portion of the PEM wetlands at the Site observed in the right-of-way of LA 28 exhibits relatively moderate to low quality herbaceous habitat characteristics due to ongoing disturbance by periodical mowing. The remainder of the PEM wetlands appears to exhibit high quality PEM habitat characteristics and remain relatively undisturbed. Despite the habitat quality, all PEM wetlands provide flood control/flood storage capacity, provide groundwater recharge/exchange, and foraging habitat for wildlife.

The PSS wetlands, observed in or adjacent to the LA 28 ROW, appear to exhibit relatively moderate to low quality habitat characteristics. This habitat, however, still provides flood control and flood storage capacity, groundwater recharge/exchange, and essential wildlife habitat.

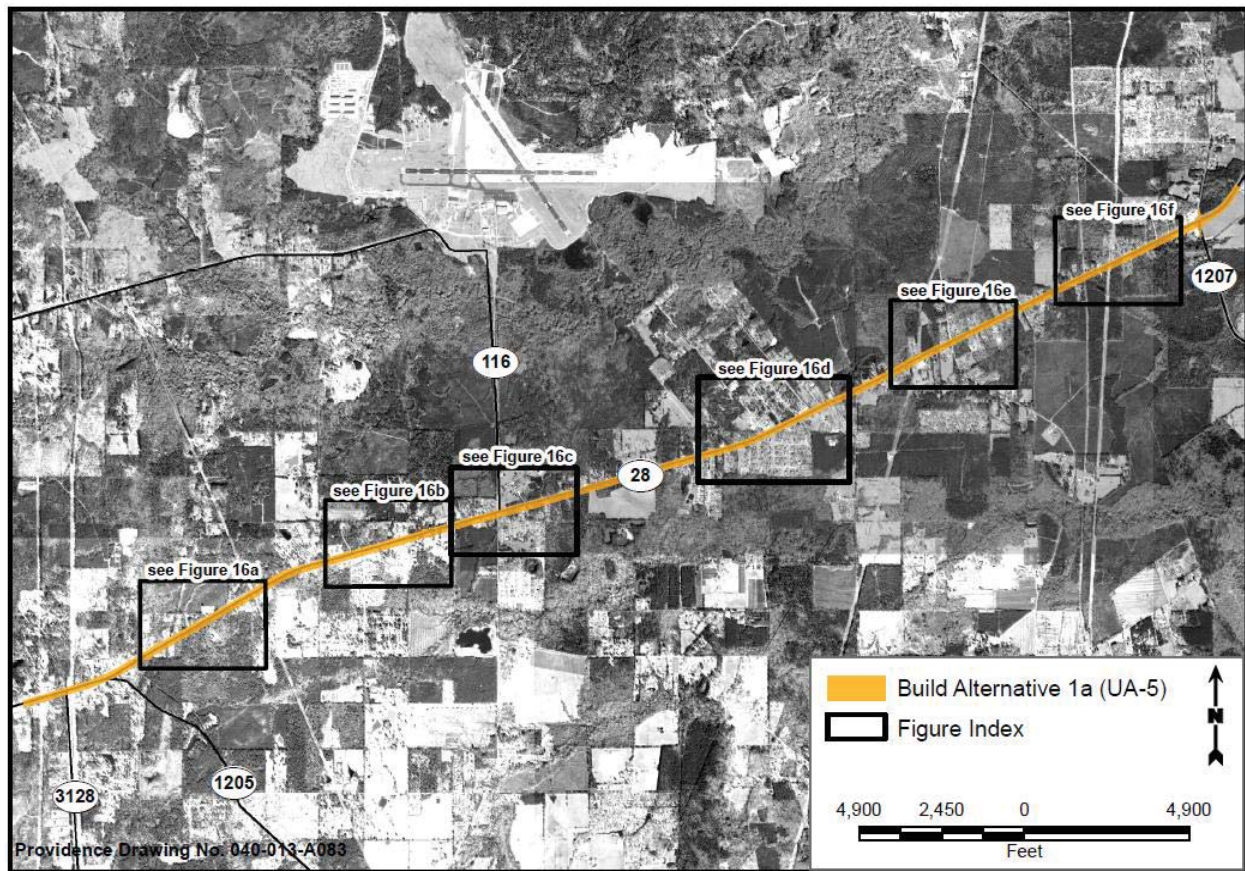
Impacts to the above-referenced wetland habitats include: mechanized clearing, grubbing and filling of the PFO, PSS and PEM wetlands. Construction may require conversion of the forested wetland habitat and scrub-shrub habitat to herbaceous habitat which could potentially reduce the ability to trap sediments and excess nutrients, thus reducing water quality protection, and remove essential denning and foraging habitat for small and large mammals. Again, however, PEM wetlands can provide flood control/flood storage capacity, provide groundwater recharge/exchange, and foraging habitat for wildlife. The entire Site will not be impacted therefore the areas outside the construction footprint should maintain wetland characteristics after completion of construction.

To minimize permanent and temporary wetland impacts and maintain functionality of other waters of the U.S., construction methods will include use of BMPs, both temporary and permanent, to minimize and mitigate impacts to adjacent wetlands. Temporary measures may include, but are not limited to, silt screen fencing, temporary vegetative cover and hay bales. Permanent measures may include vegetative cover for soil stabilization and the use of riprap for the protection of soils from erosion. Additional control measures, including limiting impervious surfaces and preservation of stream buffers, may also be implemented to reduce migration of soils off-site. Existing culverts will be replaced/modified to maintain functionality and flow of existing waters.

To minimize the impacts associated with the clearing and grubbing in wetland habitats, specialized equipment (marsh buggies, marsh masters, etc.) equipped with cutters/excavators could be utilized to limit the amount of soil disturbance. Additionally, burning the woody debris in place could reduce the amount of tracking back and forth through the corridor to haul the trees/debris off-site and would be preferable to chipping the trees/debris which could, in the short term, increase surface elevations within the wetland areas and hinder flow of existing waters.

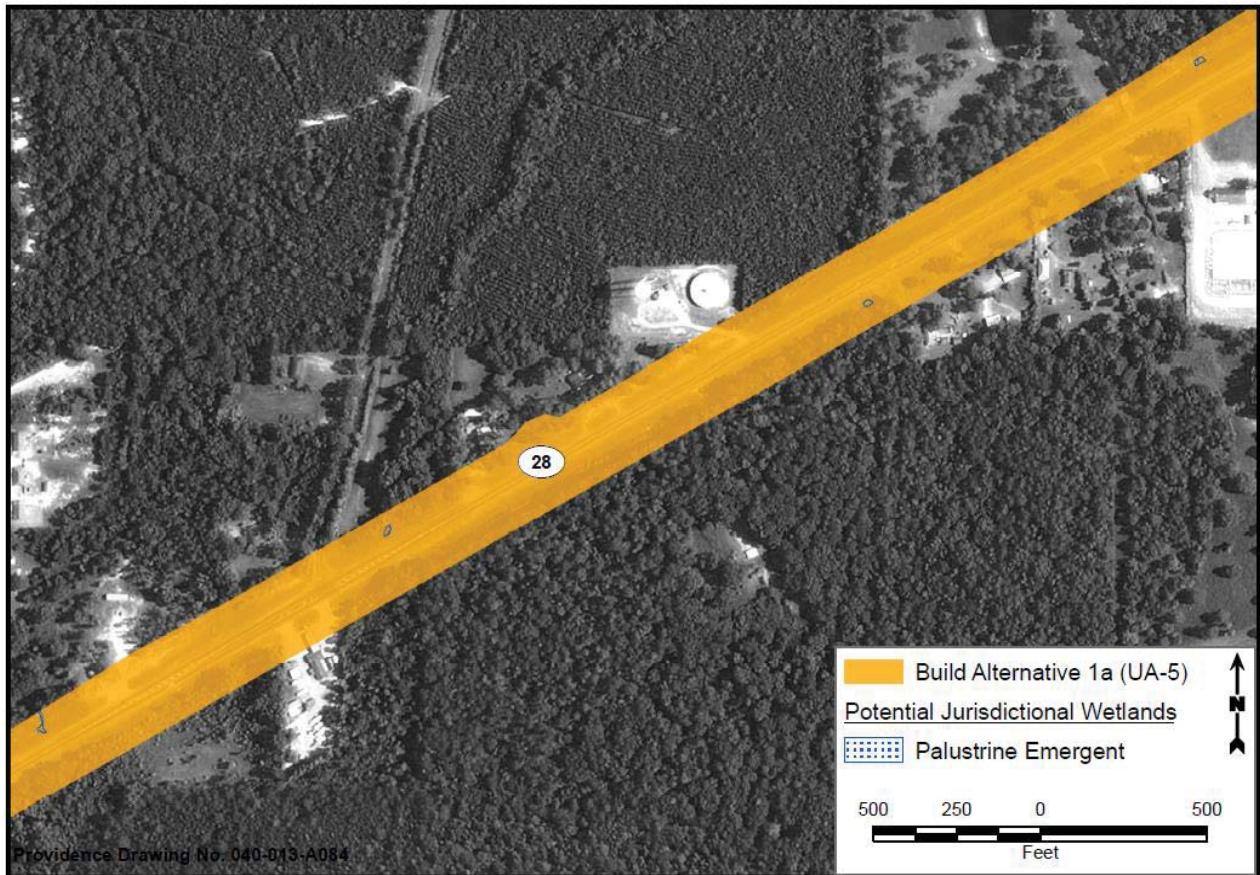
The use of BMPs and control measures for construction could reduce permanent impacts to wetlands outside the construction footprint. The impact within the site will result in a reduction of the areas' ability to provide water quality protection. The loss of denning and nesting habitat for small and large mammals would be minimal and short-term. Wildlife will likely return the areas adjacent to the site when land disturbance activities are complete. The wetland areas outside the project footprint, post-construction, would retain essential chemical, physical, and biological wetland functions, providing water quality protection, flood control and flood storage areas, groundwater recharge/exchange potential, and wildlife foraging habitat for small and large mammals.

FIGURE 16
POTENTIAL JURISDICTIONAL WETLANDS INDEX



Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 16a
POTENTIAL JURISDICTIONAL WETLANDS



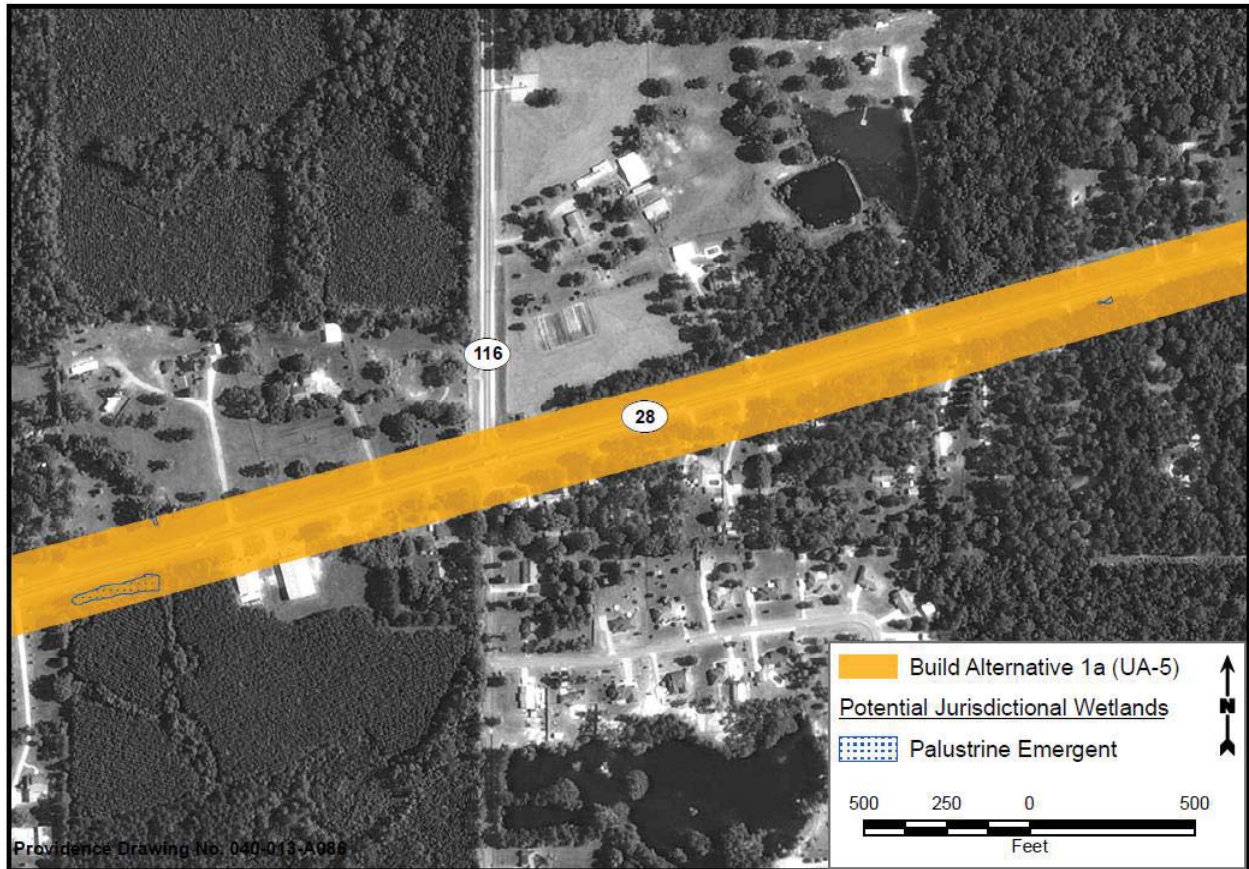
Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 16b
POTENTIAL JURISDICTIONAL WETLANDS



Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 16c
POTENTIAL JURISDICTIONAL WETLANDS



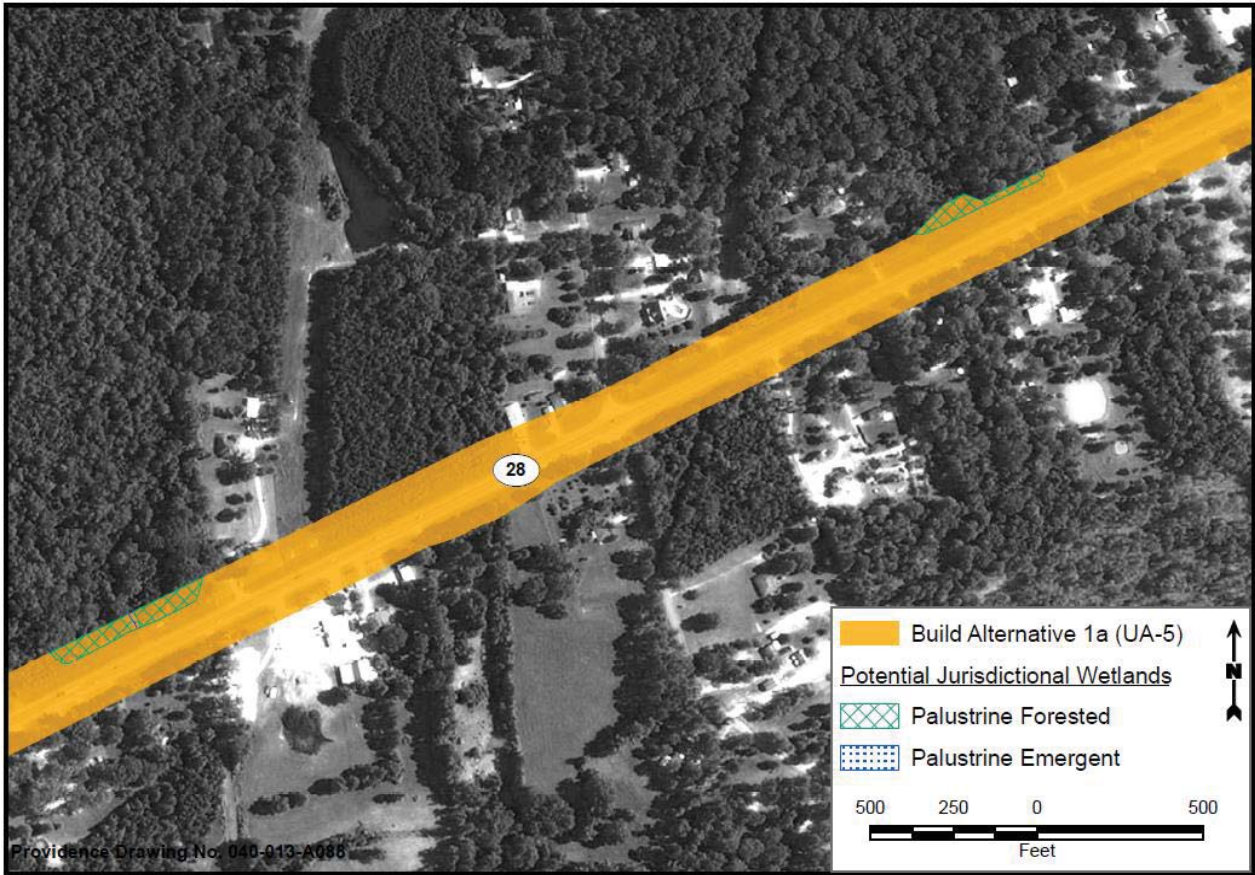
Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 16d
POTENTIAL JURISDICTIONAL WETLANDS



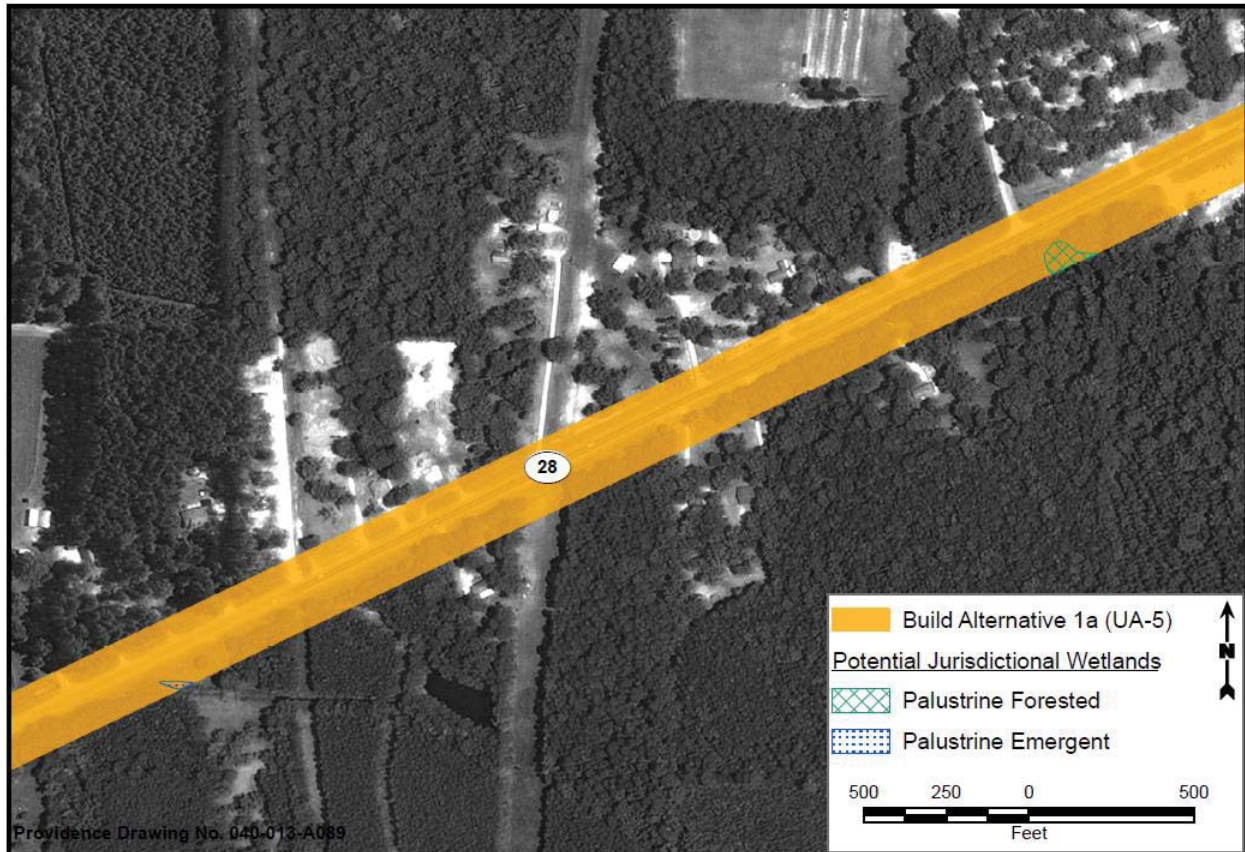
Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 16e
POTENTIAL JURISDICTIONAL WETLANDS



Base map comprised of ESRI World Imagery Maps dated June 2013.

FIGURE 16f
POTENTIAL JURISDICTIONAL WETLANDS



Base map comprised of ESRI World Imagery Maps dated June 2013.

4.19 Rivers and Scenic Streams

As mentioned in Chapter 3.20, there will be no impact with either the No-Build or Preferred Alternative on national or state scenic rivers, as there are no national wild and scenic rivers, free-flowing segments of the Nationwide Rivers Inventory, or Louisiana Scenic Streams adjacent to the project construction study area.

4.20 Wildlife

The No-Build Alternative should involve no disturbance of existing wildlife.

While the Preferred Alternative does require the purchase of additional ROW, the majority of the ROW is mowed and maintained and does not represent highly functional wildlife habitat. Wildlife that may be present within existing ROW and acquired ROW is likely to be temporarily displaced during construction, but would likely return when land disturbing activities are completed.

4.21 Threatened and Endangered Species

The No-Build Alternative should not have any adverse impacts on the threatened and endangered species or critical habitats for threatened or endangered species.

As mentioned in Chapter 3.22, correspondence with the USFWS and LDWF stated there will be no effect on threatened or endangered species or their critical habitats. Therefore, both the No-Build and the Preferred Alternative will have no effect on threatened and endangered species or critical habitats for threatened or endangered species.

4.22 Unique and Environmentally Sensitive Areas

The No-Build Alternative is not expected to impact unique or environmentally sensitive areas.

Potential areas of significant trees were identified in the project area for the build alternatives. During the design stage, landscape architectural staff and District Roadside Development Coordinators will be consulted concerning ROW to identify the location of significant trees. The design section will indicate the location of these trees on the final plans and implement a context sensitive design to accommodate these trees, if any, as practical.

4.23 Mineral Resources

The No-Build Alternative is not expected to impact Rapides Parish's mineral resources.

There are no active mineral leases or Seismic 3D permits within the project study area boundaries; therefore, the Preferred Alternative would not be expected to impact any mineral resources. Mineral resources are shown on **Figures 13a and 13b** in Section 3.24.

4.24 Other Considerations

4.24.1 Secondary Effects

Secondary or Indirect effects/impacts per 40 CFR 1508.8(b) are those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." Effects that are considered reasonably foreseeable include changes in land use patterns, population density, traffic patterns, and increased area growth.

General traffic pattern changes are expected under the Preferred Alternative. The project introduces access management measures and a roundabout, neither of which currently exist in the project area. Widening of LA 28 will be accomplished with restricted median openings between the four travel lanes, requiring travelers to make J-turns or U-turns to access

businesses and residences located between median openings and to return to their former direction of travel. It is expected that travelers will get accustomed to the new method of traveling along LA 28 in the construction study area.

Since LA 28 will be widened to a four-lane facility, growth can reasonably be expected to occur in the construction study area. More through traffic traveling east/westbound on LA 28 may entice pass-through businesses to locate in the construction study area as well as new area destination businesses.

4.24.2 Cumulative Effects

Cumulative effect or impact per 40 CFR 1508.7 is the “impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

Correspondence with the Rapides Parish Planning Commission indicated that no large significant developments have been permitted in the construction study area. A new facility, American Alloys, has announced plans to open to the south of LA 28 and could potential result in an increase in traffic at LA 28 and LA 3128 and LA 1205.

Widening of LA 28 eastbound to LA 1207 does provide for the potential to widen LA 28 eastbound from LA 1207 through the remainder of Rapides Parish, through LaSalle Parish, terminating at US 84 in Catahoula Parish.

4.25 LA 1207 to US 84 Potential Constraints

No construction is proposed for the study area from LA 1207 to US 84; however, as there is a future potential to widening LA 28 in this area, it was studied as part of this EA. This portion of LA 28 lies within three parishes, Rapides, LaSalle, and Catahoula.

Primary constraints to the widening of LA 28 to US 84 include the presence of state and federally protected lands adjacent to LA 28 and elevational differences between the existing roadway and surrounding lands (mostly in the LaSalle Parish portion). These constraints are further detailed below.

The section of LA 28 in Rapides and Catahoula Parishes east of LA 1207 is primarily rural agricultural land. Open Door Community Church is located just past LA 1207 on the south side of LA 28. The building is approximately 200 feet from the shoulder and would not likely be affected by any future widening activities. Mount Hermon Baptist Church is located within 90 feet of the shoulder of LA 28 in

Catahoula Parish and could potentially be affected by a future decision to widen LA 28 to US 84.

There is a pronounced difference in elevation between LA 28 (approximately 61 feet above sea level) and the surrounding land from the general vicinity of LA 1207 east to US 84. Differences in elevation reach a maximum of 20 feet through LaSalle Parish, where the majority of adjacent land is protected within the bounds of either the Dewey Willis WMA or the Catahoula NWR. There is a berm that runs on both sides of LA 28 for approximately one half mile from the Calcasieu Diversion Canal to Dewey Willis WMA Road. The berm reduces the elevational difference between LA 28 and the surrounding wetlands to approximately ten feet.

5.0 AGENCY INVOLVEMENT AND PUBLIC OUTREACH

5.1 Agency Coordination

A second round of SOV letters were mailed out January 15, 2013 to federal, state, and local agencies and elected officials. This round was deemed necessary in order to let agencies, elected officials, and interested parties know that the project had moved into the planning and environmental phase. Responses to the SOV letters are located in **Appendix A. Table 5-1** provides a list of responses associated with the SOVs.

**TABLE 5-1
SOLICITATION OF VIEWS RESPONSES¹**

AGENCY	RESPONSE
Louisiana Department of Wildlife and Fisheries	No impacts are anticipated to rare, threatened, or endangered species or critical habitat. No state or federal parks, wildlife refuges, wildlife management areas, or scenic streams were noted in the project area.
Natural Resources Conservation Service	The project is exempt from the requirements of the Farmland Protection Policy Act.
Federal Emergency Management Agency	The project team should contact the local floodplain administrator. By letter to the KDRPPD, the team did contact the local floodplain administrator.
United States Army Corps of Engineers	There are no ongoing activities in the project area, if there will be dredging or filling, a permit may be required. See Chapter 4 for a discussion of the wetlands findings post identification of a preferred alternative.
Louisiana Department of Culture, Recreation, and Tourism - Division of Archaeology	More data is needed in order to perform a Section 106 review. The Cultural Resources Survey was submitted, revised per comments, and a letter of no objection received (See Table 5-3 and Appendix A).
Louisiana Department of Culture, Recreation, and Tourism - Office of	There are no Land and Water Conservation Act funded projects in the project area.
United States Fish and Wildlife Service	The project is not likely to adversely affect trust resources.
United States Environmental Protection Agency - Sole Source Aquifer	No adverse effects on groundwater are anticipated.
Louisiana Department of Environmental Quality	No objection to the project, but be advised that multiple permits may be required. Potential permits are listed in the Summary of Permits, Mitigation, and Commitments located before the Table of Contents in this EA.
Louisiana Department of Natural Resources-Office of Conservation	While there are no injection wells in the project area, there are oil and gas and water wells.
Choctaw Nation	Please provide a copy of the cultural resources investigations and official finding. DOTD forwarded a copy of the CRS and SHPO letter, as requested.
Rapides Parish Soil and Water Conservation District	The proposed project should greatly improve traffic in the area.
Kisatchie Delta Regional Planning and Development District (KDRPDD)	The project is not expected to create a flood hazard, negatively impact environmental resources, detract from employment or job creation, or disproportionately affect one community

¹ Responses were solicited in SOVs mailed January 15, 2013. Additional agency correspondence received during the circulation of the draft EA is included in Table 5-3.

5.2 Public Outreach

Two public meetings and a public hearing were held for the Widening LA 28 East project. Public meeting and public hearing transcripts were submitted under separate cover for all three of these events and are no longer included as an appendix in this EA. **Table 5-2**, located after the meeting summaries, summarizes the comments received during the two meetings along with responses.



The first public meeting for the Stage 1 EA was held on April 2, 2013 at the Keyes Community Center. The purpose of this meeting was to advise the public that the project had moved from the Feasibility phase to the EA and to reintroduce the three build alternatives that were carried forward from the Feasibility Study.

The meeting was held in a combination open house/presentation format whereby attendees were provided the times of a presentation that was given orally (as opposed to pre-recorded) as well as the ability to view exhibits and ask questions of the project team. A total of 23 people signed in to the meeting, 12 of which were either from the community or elected officials. The remaining 11 people were from the consultant team and DOTD.



A second public meeting was held on January 22, 2015 at Buckeye High School in Deville, LA. The purpose of this meeting was to provide the public a chance to review and comment on the three potential build alternatives developed after the first public meeting. As detailed in Chapter 2 of this EA, DOTD requested additional build alternatives be considered and a full traffic study be conducted to assess the best possible solution for the widening of LA 28 East. The paid public notice ran twice in the local newspaper, *The Town Talk*, on January 10 and 17, 2015. There was an announcement on DOTD's website which was posted on January 13, 2015. E-mail invitations were sent to local/state agencies and elected officials on January 14 and 15, 2015. E-mail invitations were also sent to interested members of the public on January 15, 2015.



The public meeting was conducted using a combination open-house and formal presentation format to allow for the most flexibility in attendance. A total of 136 people attended, including 119 members of the public, twelve (12) agency

representatives and/or elected officials, and five (5) members of the consultant team.

Participants were asked to provide comments through the end of the comment period, February 5, 2015. Several methods were available for members of the public to comment including verbal comments to a court reporter, a comment form provided at the meeting to be dropped into a drop box, via e-mail or mail sent via U.S. Postal Mail after the meeting. A total of eight (8) comment forms were deposited in the drop box during the meeting. Eleven (11) comments were received via e-mail and one comment was received via U.S. Postal Mail. The court reporter also received comments.

**TABLE 5-2
COMMENTS RECEIVED DURING PUBLIC MEETINGS¹**

Relative to Roundabouts - Don't like roundabouts, emphatically opposed to roundabouts, roundabouts will affect businesses at LA 1207, no roundabouts at three intersections, roundabouts won't accommodate trucks and school buses	Thank you for your comments. Under Build Alternative 2a, there is only one roundabout proposed at the intersection of LA 28 and LA 1207. Roundabouts are designed to accommodate vehicles up to a large interstate truck (WB-67). We invite you to learn more about roundabouts by following the link below: http://www.sp.dotd.la.gov/Inside_LaDOT/Divisions/Engineering/Traffic_Engineering/Pag
A four-lane with a red light is the best option for LA 1207	This represents the Build Alternative 2b, which is a rural arterial utilizing a signalized intersection at LA 1207.
There is a need for a traffic light at LA 1205 and LA 28 - its dangerous, it's impossible to enter during high traffic periods	A traffic signal warrant analysis was conducted based on traffic counts collected in April and May of 2013 and collision data from 2011-2013 for the un-signalized intersections of LA 28 at LA 3128, LA 1205, and Barney Rush Road/Gene Gunter Road. This analysis determines if traffic signals should be recommended. Traffic conditions at LA 28 and LA 1205 did not meet signal warrant requirements based on volume or collision data.
Please continue LA 28 from Libuse to Holloway with 4 lanes and a center turning lane	It is DOTD policy that 5 lane roadways (4 lanes and a turning lane) will no longer be constructed due to safety issues. All alternatives considered will provide for the most access points permissible under the guidance.
The RA2 is the wider ROW and it is further south, so this is ok. The UA5 is a narrower ROW, but is pushed further north and gets into the oak trees, along with taking out my neighbor's house and shop. Can the UA5 be moved some south to the current northern boundary? If so, it will still fall within the RA2 southern boundary?	The project team will consider if this is a possibility and what potential impacts would result from shifting the ROW.
I would like to see LADOT proceed with Alternate 2b with a design speed of 65 mph and no J-turns. J-turns are not safe and are bad for business. J-turns will not give access to businesses, no one wants to make U-turns.	Thank you for your comments. J-turns are spaced throughout the divided highway at intervals consistent with current design standards. J-turns provide for a safer intersection by reducing the potential for serious accidents. We invite you to learn more about j-turns by following the link below: http://www.wapps.dotd.la.gov/administration/public_info/projects/home.aspx?key=59
What about putting turn lanes at 116 (Esler field) Left and Right turn lanes. Even though accidents have lessened since the Red light was put in people still get hit. Folks want to turn right by using the shoulder. It is hard to see over the hill to see if traffic is coming. For sure a left turn is needed.	A J-turn is proposed at LA 116 and will allow for a turn lane.
There are a lot of folks that live right off the highway so turning into their driveway is a bit of concern. (I am one of those folks). Coming home in the evening I have to turn (Right) off the highway to enter my driveway and have come very close to being hit from behind. I put my blinker on and start slowing down about a block from my drive. Is there going to be a shoulder lane for turning right off the highway?	In some instances, an acceleration lane may be provided at locations where it is deemed appropriate. A J-turn will be located at LA 116 for all options. J-turns provide for a safer intersection by reducing the potential for serious accidents. We invite you to learn more about j-turns by following the link below:
The land out there is already flat and has drainage problems so if you were to put in a raised median it seems like it would make the problem worse. The drainage ditches now are not very deep and do not flow very well. I would hope that you will put the depressed median in and make the ditches at the front of the properties deeper and flow better.	Drainage studies will be conducted during the design stage of the project to ensure that adequate drainage is maintained during both construction and operation of the new highway.
Support the Highway 28 E 4 lane project as I see the amount of traffic that travels this road on a daily basis	Thank you for your comments.
We are committed to and support whatever efforts will best achieve the goal of making Hwy 28 Safer for our people and provide a means of travel that will help our area grow, provide opportunity for economic development and improve and ease the travel along the Holloway to Libuse route.	Thank you for your comments.
Are they going to move or widen and take the expense of moving driveways back? I just installed a new driveway and don't want to see it torn up unless they put back one just like it.	If construction activities cause the relocation of a driveway, it will be moved and replaced in the same or better condition as it was originally. For example, if your driveway is concrete now, it will be concrete when it is moved.

¹ Individual verbal comments have not been provided in this summary table. Complete comments and responses were prepared and presented in the summaries for each of the two public meetings held for the LA 28 EA. Copies of these documents were made available on DOTD's Environmental Section webpage and sent to all commenters.

The Public Hearing held for the Widening LA 28 East EA was held on Tuesday, October 11, 2016. The purpose of the hearing was to present the findings of the EA, presenting details on the proposed preferred alternative.

The paid public notice below ran twice in the local newspaper, *The Town Talk*, on September 7, 2016 and October 2, 2016. A hearing announcement was posted on DOTD's website on October 10, 2016. E-mail invitations were sent to agencies and interested parties on September 9, 2016.

The hearing was conducted using an open-house format to allow for the most flexibility in attendance. Hearing attendees were greeted at the entrance and requested to sign in. They were provided with a handout and a comment form and advised of the meeting format and the pre-recorded 14-minute presentation that would repeat every 20 minutes.

The hearing was set up with a curtained off presentation viewing area, an exhibit viewing area, and tables for verbal comments, written comments, map viewing, and real estate information. After signing in, attendees were directed to the presentation area or advised when the presentation would restart. The exhibit viewing area was located behind and offset from the presentation area to the extent possible so presentation viewing would not be interrupted by those asking questions in the exhibit area.

A total of 103 people signed in to the hearings, excluding the consultant team. Agencies and elected officials amounted to 15 of the 103 attendees and included personnel from DOTD, the Rapides Area Planning Commission (RAPC), and Senator Riser. Four individuals from the consultant team were present to guide attendees through the series of exhibits, to explain the proposed project, and to answer questions.



Participants were given the opportunity to provide comments during the hearing and through the end of the comment period, October 21, 2016. Several methods were available for members of the public to comment including verbal comments to a court reporter, a comment form provided at the meeting to be dropped into a drop box, via e-mail or mail sent via U.S. Postal Mail after the meeting. The court reporter accepted comments from three individuals. Eight (8) comment forms were deposited in the drop box during the meeting. No additional comments were received via e-mail or U.S. Postal Mail through the end of the comment period.

5.3 Comments on EA

Table 5-3 is a summary of the comments received during the EA comment period, which was initiated with the Notice of Availability on August and ended on October 21, 2016.

**TABLE 5-3
COMMENTS RECEIVED DURING THE WIDENING LA 28 EAST EA COMMENT PERIOD**

COMMENT LETTER/EMAIL	RESPONSE
LDEQ Email -After reviewing your request, the Department has no objections based on the information provided in your submittal.	No response required, see Appendix A.
LDCRT - SHPO - No objection letter	No response required, see Appendix A.
USEPA SSA program – No objection letter	No response required, see Appendix A.
COMMENT FORM (PARAPHRASED)	RESPONSE
As much as we need 4-lanes out to Holloway, if it were up for a vote, I would vote against funding because I think the preferred option is ill-conceived. I think 2b was the best option. My preference would be no divided lanes and no roundabouts.	Thank you for your comments. The preferred alternative was developed from Alternatives 1, 2a and 2b to be the least damaging, affecting the least amount of structures.
Construction on State Road 115 should be underway when approval/construction begins. Construction and the future roundabout will cause a large number of trucks to divert to State Road 115 to State Road 107.	Thank you for your comments. While the study limits for the project extend to US 84, the construction study limits were from LA 3128 to LA 1207. LA 115 is west of the western terminus of the construction study area and was therefore, not part of the study of potential alternatives.
The use of roundabouts will greatly affect large trucks. I am one in the community that believes J-turns are a better use.	Thank you for your comments. There is only one roundabout proposed at the intersection of LA 28 and LA 1207. J-turns are spaced throughout the divided highway at intervals consistent with current design standards. The design of roundabouts varies and would be developed to accommodate truck traffic on LA 28.
Stage 1 started in 2012, why the delay, why should it take 10-20 years to complete. Roundabouts are a stupid idea. The majority of the traffic comes from Holloway or Deville and goes to Holloway or Deville. The design below works better (the design is a signalized intersection). US 190 does not have a median and the speed is 65 mph.	DOTD's project delivery process is a seven-stage process that may take up to 20 years from project inception to operation. The traffic study conducted as part of the project indicated that a signalized intersection at LA 28 and LA 1207 would not provide adequate level of service.
Put a red light on LA 1207 and 28. There is no need for a roundabout. School traffic alone will take considerable time to go thru the roundabout.	The traffic study conducted as part of the project indicated that a UA 5 highway with a signalized intersection at LA 28 and LA 1207 would not provide adequate level of service.

COMMENT FORM (PARAPHRASED)	RESPONSE
<p>We have two properties on the residential displacements list. Please contact us, we have many questions.</p>	<p>DOTD District 8 Real Estate contacted the landowners to assist with their questions. The Commenter's concern was relative to rental income on properties that would be affected by right-of-way acquisition and they asked that the J-turn affecting their property be redesigned. The agent provided details on the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) and mailed them a brochure explaining the real estate acquisition process. The Preferred Alternative design was determined to be the least damaging of the alternatives considered, with right-of-way minimized to the extent practicable. Final design will more accurately determine the land necessary for widening and J-turn construction.</p>
<p>Please think of safety, police, fire department, all emergencies on highway. This project would make is safer for everyone. Drive safe, obeys laws, and wear your seatbelt.</p>	<p>Thank you for your comments.</p>
<p>My main concern is the roundabout at LA 1207. While costs may be higher, installation of an overpass for LA 1207 traffic turning left on to LA 28 heading into Pineville would prevent many traffic accidents.</p>	<p>The traffic study conducted as part of this project studied multiple interchange types, J-turns, and service roads to provide for a safe, efficient widening project. The concept of an overpass for westbound traffic coming from LA 1207 was not part of the study. Roundabouts provide safety improvements that dramatically reduce crash frequency and severity.</p>
VERBAL COMMENT (PARAPHRASED)	RESPONSE
<p>I would like them to extend the four-lane from Libuse out in the same manner. Don't change it, just continue the same four-lane – no turnaround, no middle lane with a ridge in it, just continue it the way it is.</p>	<p>Five lane roadways where the center lane is a turn lane, as this comment supports, no longer meet DOTD safety standards. The new roadway is required to have access controls for improved traffic safety and which is achieved by the raised median with J-turns.</p>

VERBAL COMMENT (PARAPHRASED)	RESPONSE
<p>With the roundabout at LA 1207, it is likely that someone will construct a competing store on the south side of the road (east side of roundabout), as the existing Exxon would be affected by the proposed action. This could put the gas station on the north side at that interchange out of business. All I am asking is that they would put a J-turn there. Deputies leaving the substation will have to go approximately a mile west on 28 to get to a J-turn to go to Deville. By putting a J-turn at the stores, they would have a way out within about 40 yards.</p>	<p>Thank you for your comments. In the traffic study conducted for this project, intersections, including LA 1207, that were evaluated as roundabouts, were shown to mitigate the J-turn delay for the minor road, due to the decrease in J-turn traffic by roundabout movements. J-turns are located approximately every quarter mile (1,300 feet), along LA 28 in the project area. Based on the preliminary design, a J-turn would be available to deputies leaving the substation within 650 feet of the access drive to the substation.</p>
<p>We pay a lot of property taxes, to hurt us (businesses at LA 1207) is like hurting schools, public schools, which hurts kids.</p>	<p>Thank you for your comments.</p>
VERBAL COMMENT (PARAPHRASED)	RESPONSE
<p>Please look at it a second time and come up with something that will help the situation (at LA 28 and LA 1207).</p>	<p>In the traffic study conducted for this project, intersections, including LA 1207, that were evaluated as roundabouts, were shown to mitigate the J-turn delay for the minor road, due to the decrease in J-turn traffic by roundabout movements. As traffic volumes continue to increase on LA 28, left-turning movements to and from the multiple driveways near this intersection will have fewer gaps to make these turns and suffer from increasing delay. Implementation of appropriate intersection design and access management such as roundabouts and J-turns ultimately improves accessibility to these locations.</p>
<p>The route goes right through the middle of my house, my pool, everything. What do I do? The interchange at LA 116 is very dangerous and needs the traffic signal.</p>	<p>The Uniform Act provides important protections and assistance for people affected by federally funded projects. Relocation resources are available to all residential and business relocations without discrimination. DOTD and FHWA follow the directives of the Uniform Act when conducting right-of-way acquisition. This action ensures that During Stage 3, Final Design, DOTD will finalize the right-of-way and contact those land owners from which right-of-way will need to be purchased; there is no need to do anything at this time. The traffic study conducted for this project indicated that a signal at LA 116 was not warranted.</p>

VERBAL COMMENT (PARAPHRASED)	RESPONSE
<p>I don't think it's feasible to put a roundabout at LA 1207, even dual lane, lots of people with trailers, boats, and 18-wheelers.</p>	<p>The traffic study conducted as part of this project studied multiple interchange types, J-turns, and service roads to provide for a safe, efficient widening project. Roundabouts provide safety improvements that dramatically reduce crash frequency and severity and it will be designed to accommodate buses and 18-wheeled trucks.</p>

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FIGURE REFERENCES**Figure ES-1 Project Study Area**

Base map provided by ESRI World Imagery Maps dated June 2013.

Figure ES-2 Preliminary Build Alternatives

Base map provided by ESRI World Imagery Maps dated June 2013.

Figures ES-3 Build Alternatives

Base map provided by ESRI World Imagery Maps dated June 2013.

Figure ES-4 Preferred Alternative

Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 1 Project Study Area

Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 2 Preliminary Build Alternatives

Base map provided by ESRI World Imagery Maps dated June 2013.

Figures 3a Build Alternatives

Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 3b Preferred Alternative

Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 4a Land Use Limits of Construction

Land Use Land Cover data obtained from the USGS data set and updated based on aerial investigations. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 4b Land Use LA 1207 – US 84

Land Use Land Cover data obtained from the USGS data set and updated based on aerial investigations. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 5a Minority Data Limits of Construction

Minority data obtained from USCB, 2010 Census Summary File 1 (SF 1) 100-Percent Data, Table P9 Hispanic or Latino, and not Hispanic or Latino by Race. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 5b Minority Data LA 1207 – US 84

Minority data obtained from USCB, 2010 Census Summary File 1 (SF 1) 100-Percent Data, Table P9 Hispanic or Latino, and not Hispanic or Latino by Race. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 6a Poverty Data Limits of Construction

Poverty data obtained from USCB, 2006-2010 ACS 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 6a Poverty Data LA 1207 – US 84

Poverty data obtained from USCB, 2006-2010 ACS 5-Year Estimates, Table S1701: Poverty Status in the Past 12 Months. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 7a Water Resources Limits of Construction

Registered water wells obtained from the LDNR SONRIS water well server as of 11/4/15. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 7b Water Resources LA 1207 – US 84

Registered water wells obtained from the LDNR SONRIS water well server as of 11/4/15. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 8a Aquifers and Recharge Potential Limits of Construction

A search for SSA's was performed, and no SSA's were found in the project study area. Aquifer data comprised of Recharge Potential of Louisiana Aquifers, LDEQ (1999). Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 8b Aquifers and Recharge Potential LA 1207 – US 84

A search for SSA's was performed, and no SSA's were found in the project study area. Aquifer data comprised of Recharge Potential of Louisiana Aquifers, LDEQ (1999) dated 10/15/12. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 9a Floodplains Limits of Construction

The Q3 Flood Data obtained from the FIRMS published by FEMA. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 9b Floodplains LA 1207 – US 84

The Q3 Flood Data obtained from the FIRMS published by FEMA. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 10a Prime Farmlands Limits of Construction

Soils data obtained from the NRCS server as of 6/11/09. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 10b Prime Farmlands LA 1207 – US 84

Soils data obtained from the NRCS server as of 6/11/09. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 11a Potential Environmental Liability Sites Limits of Construction

Environmental liability sites obtained from EDR shapefile as of 4/6/15. Oil and gas well data obtained from the LDNR SONRIS oil and gas well server as of 11/4/15. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 11b Potential Environmental Liability Sites LA 1207 – US 84

Environmental liability sites obtained from EDR shapefile as of 4/6/15. Oil and gas well data obtained from the LDNR SONRIS oil and gas well server as of 3/10/15. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 12a Potential Wetlands and Hydric Soils Limits of Construction

Potential hydric soils data obtained from Soil Survey Geographic Database, dated 2009. NWI Data from the USFWS, Division of Habitat and Resource Conservation, as of 8/14/14. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 12b Potential Wetlands and Hydric Soils LA 1207 – US 84

Potential hydric soils data obtained from Soil Survey Geographic Database, dated 2009. NWI Data from the USFWS, Division of Habitat and Resource Conservation, as of 8/14/14. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 13a Mineral Resources Limits of Construction

A search was performed for Seismic 3D Permits and Active Mineral Leases and none were found within the vicinity of the project study area. Oil/Gas Fields were obtained from the LDNR SONRIS data server as of 3/10/15. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 13b Mineral Resources LA 1207 – US 84

A search was performed for Seismic 3D Permits and none were found within the vicinity of the project study area. Active Mineral Leases and Oil/Gas Fields were obtained from the LDNR SONRIS data server as of 3/10/15. Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 14a LIDAR Data Limits of Construction

LIDAR data obtained from Louisiana Oil Spill Coordinator's Office dataset 2014.

Figure 14b LIDAR Data LA 1207 – US 84

LIDAR data obtained from Louisiana Oil Spill Coordinator's Office dataset 2014.

Figure 15a 2038 No-Build Impacted Receivers East of Nicole Lane

Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 15b 2038 No-Build Impacted Receivers West of Nicole Lane

Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 15c 2038 Build Impacted Receivers East of Nicole Lane

Base map provided by ESRI World Imagery Maps dated June 2013.

Figure 15d 2038 Build Impacted Receivers West of Nicole Lane

Base map provided by ESRI World Imagery Maps dated June 2013.

Figures 16 Potential Jurisdictional Wetlands Index

Base map provided by ESRI World Imagery Maps dated June 2013.

Figures 16a-16f Potential Jurisdictional Wetlands

Base map provided by ESRI World Imagery Maps dated June 2013.

7.0 LIST OF ACRONYMS

ACS	American Community Survey
AFF	American Fact Finder
APE	Area of Potential Affects
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
BMP	Best Management Practices
CFR	Code of Federal Regulations
cm	Centimeters
CO	Carbon monoxide
CRS	Cultural Resources Survey
CSRP	Conceptual Stage Relocation Plan
dB	decibels
dBA	A-weighted average sound
DOI	Department of the Interior
DOT	Department of Transportation
DOTD	Louisiana Department of Transportation and Development
EA	Environmental Assessment
EDMS	Electronic Document Management System
EDR	Environmental Data Resources, Inc.
EJ	Environmental Justice
EO	Executive Order
ESA	Environmental Site Assessment
ESI	Earth Search, Inc.
FEMA	Federal Emergency Management
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rate Maps
FPPA	Farmland Protection Policy Act
GIS	Geographic Information System
HABS	Historic American Building Survey
KDRPDD	Kisatchie Delta Regional Planning and Development District
LA	Louisiana Highway
LDCRT	Louisiana Department of Cultural, Recreation, and Tourism
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
Leq	Equivalent Sound Level
Leq(h)	Worst-one-hour Sound Levels
LIDAR	Light detection and ranging
LOS	Level of Service
LPDES	Louisiana Pollutant Discharge Elimination System
LSS	Limited Screening Standards
LWCF	Land and Water Conservation Fund
LSU	Louisiana State University
mph	miles per hour
MSAT	Mobile Source Air Toxic

LIST OF ACRONYMS (*continued*)

NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
O ₃	Ozone
Pb	Lead
PEM	Palustrine Emergent
PFO	Palustrine Forested
PID	Photoionization Detector
PM	Particulate Matter
ppm	parts per million
PSS	Palustrine Scrub-Shrub
PWS	Public Water System
RA	Rural Arterial
RCRA-CESQG	Resource Conservation and Recovery Act-Conditionally Exempt Small Quantity Generator
RECAP	Risk Evaluation Corrective Action Program
ROW	Right-Of-Way
SHPO	State Historic Preservation Office
SPILLS	Database for Emergency Response Section Incidents
SONRIS	Strategic Online Natural Resources Information System
SOV	Solicitation of Views
SSA	Sole Source Aquifer
STIP	State Transportation Improvement Program
TIP	Transportation Improvement Program
TNM	Traffic Noise Model
TPH-DRO	Total Petroleum Hydrocarbons – Diesel Range Organics
TPH-GRO	Total Petroleum Hydrocarbons – Gasoline Range Organics
TSS	Total Suspended Solids
UA	Urban Arterial
Uniform Act	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
US	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
WMA	Wildlife Management Area