# ENVIRONMENTAL ASSESSMENT

## WIDENING LA 28 EAST
## FROM LIBUSE TO HOLLOWAY
## RAPIDES PARISH

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



**AUGUST 2016**

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

U.S. Department of Transportation
Federal Highway Administration

# EXECUTIVE SUMMARY

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## E.1 INTRODUCTION

### E1.1. Background

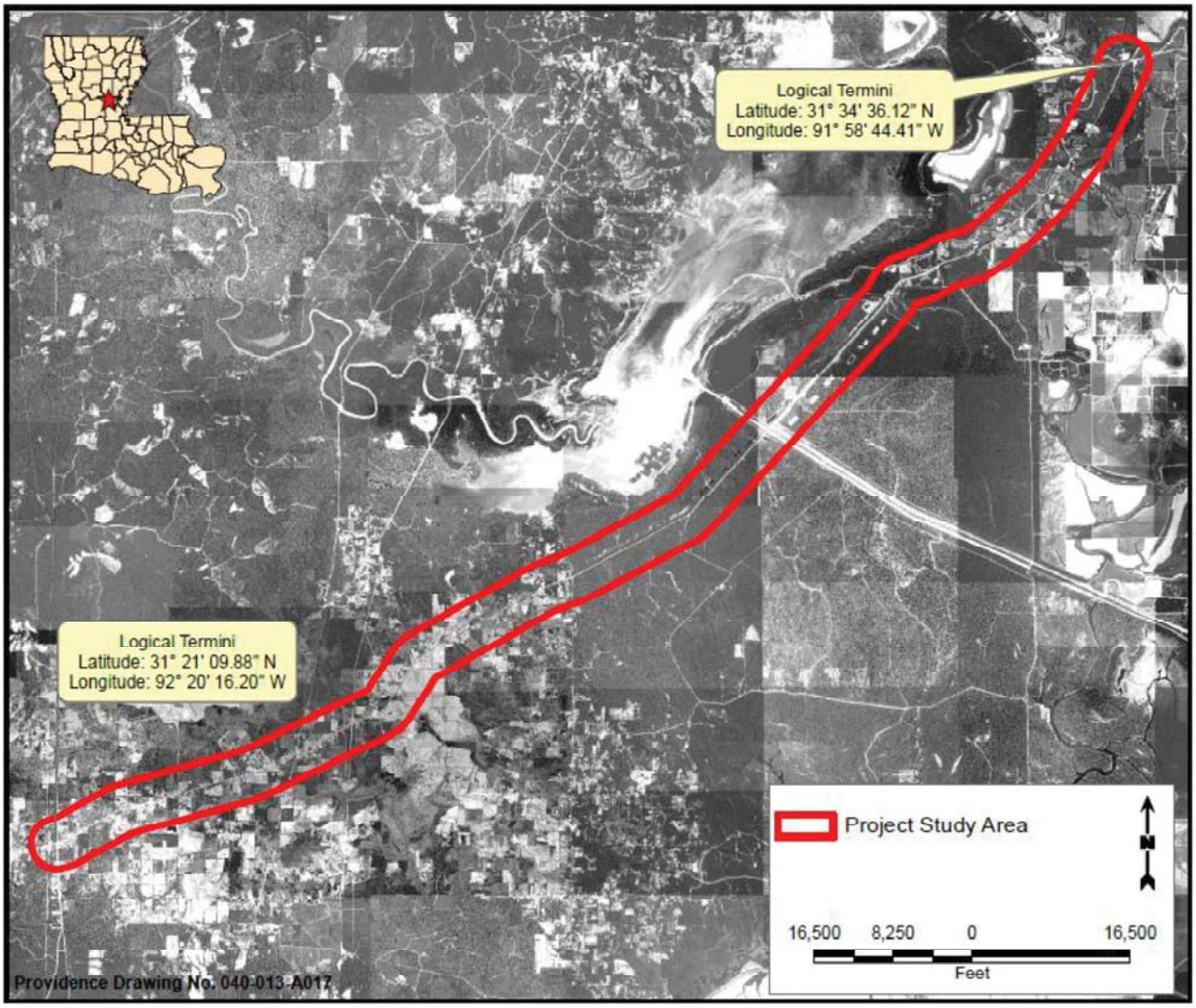
A Feasibility Study and Environmental Inventory (Feasibility Study) for the Widening of Louisiana Highway (LA) 28 East project were completed in April 2010. Acceptance of these studies allowed the project to move forward into Stage 1 Planning and Environmental (Planning/Environmental). The construction limits remain the same as those originally presented during the Feasibility Study; however, the project's logical termini have changed. The eastern logical terminus now extends to United States Highway (US) 84, which will allow the Environmental Assessment (EA) to include an assessment of potential engineering and environmental issues along LA 28 from the end of construction at LA 1207 east to US 84 in Catahoula Parish.

### E1.2. Project Description

The Louisiana Department of Transportation and Development (DOTD) proposes to expand a portion of LA 28 East starting from its western intersection with LA 3128 (Libuse) to its eastern intersection with LA 1207 (Holloway) in Rapides Parish. The proposed project construction study area is 7.25 miles in length and is classified as a rural principal arterial 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 at LA 1205. The lanes are 12-feet wide with 8-foot shoulders along the 4-lane section and 10-foot shoulders along the 2-lane section. **Figure ES-1** demonstrates the approved logical termini and location of the project study area.

Three design alternatives were studied for this proposed project, as well as a No-Build Alternative. An environmental and engineering constraints review of the remaining project area from LA 1207 to US 84 in Catahoula Parish is also provided.

**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 to provide the capacity necessary to serve increasing traffic demands.

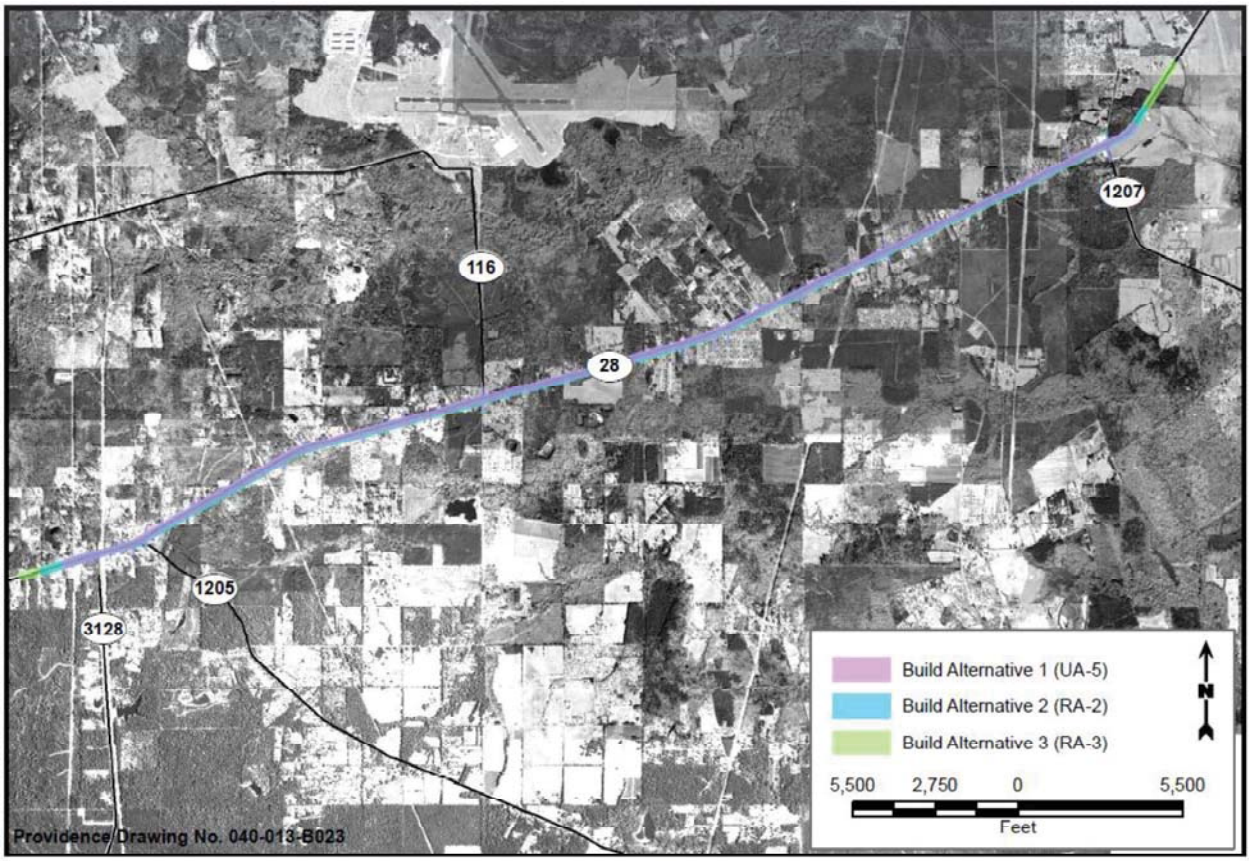
## E.3 ALTERNATIVES DEVELOPMENT AND SCREENING

### E3.1. Alternatives Considered

Three build alternatives were carried into this EA from the Feasibility Study: Urban Arterial (UA)-4, Rural Arterial (RA)-2, and RA-3 (**Figure ES-2**). The UA-4 changes the existing roadway classification from rural to urban and has four 12-foot lanes with 18-foot raised median. The RA-2 changes the existing roadway to four 12-foot

wide travel lanes divided by a 53-foot wide depressed median. The RA-3 would have four 12-foot wide travel lanes divided by a 60-foot wide depressed median.

**FIGURE ES-2**
**PRELIMINARY BUILD ALTERNATIVES**




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

Dual lane roundabouts were also proposed at the intersections of LA 28 at LA 3128, LA 116, and LA 1207 for each of the build alternatives. The approach of the roundabout on LA 116 was proposed as a single-lane, and the approaches of LA 1207 and LA 3128 were proposed with right turn lanes.

During the early stages of the Stage 1 and after the reintroduction of the project to the public, it was decided that multiple dual lane roundabouts should only be considered for one of the build alternatives. The build alternatives concepts to be studied in the EA were changed to a UA-5 (with dual lane roundabouts), RA-2, and RA-3. Each of the three build alternative concepts would also include the consideration of service roads. Subsequent traffic analysis indicated that service roads would have little impact on LA 28, due to the small amount of vehicles benefiting; therefore, service roads were eliminated from further consideration. The RA-3 design was eliminated due to higher mainline ROW impacts than the RA-2 concept, which provided nearly the same design benefits with less ROW impacts. Three build alternatives were presented to the public during the second public meeting and are detailed in **Table ES-1:**

- Build Alternative 1, UA-5 with Three Roundabouts
- Build Alternative 2a, RA-2 with a Roundabout at LA 1207
- Build Alternative 2b, RA-2 with a Signal at LA 1207

## 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 (acres) | 12.51 | 13.94 | 13.94 |
| 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 [9] | | | |
| 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 [10] | 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 |

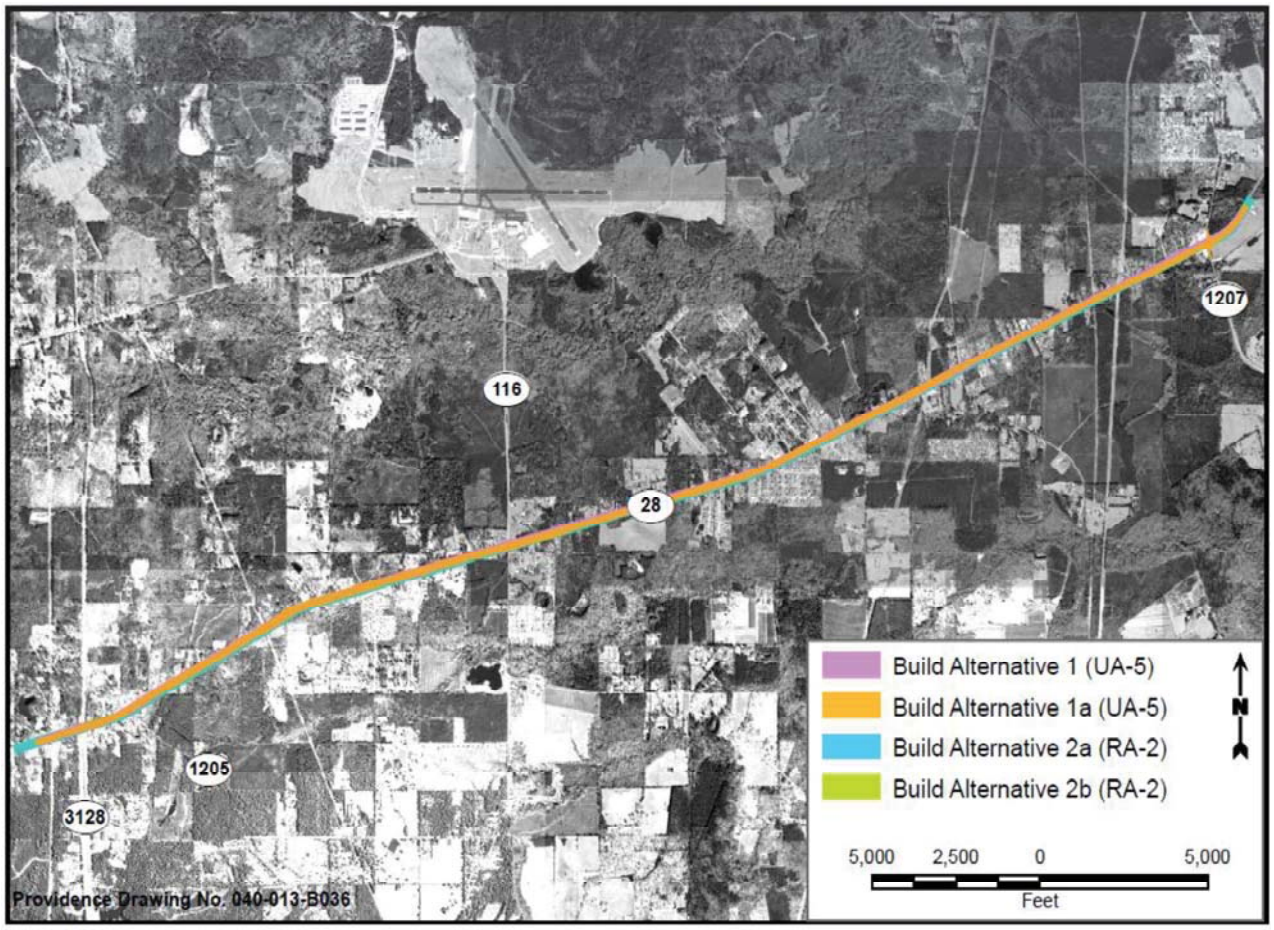
**NOTES:**

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.
2. Construction costs are preliminary estimates and do not include utility relocations. A 20% contigency 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. According to the LDNR SONRIS database as of 09/30/15.
10. Total number includes utilities for water, gas, and electric lines impacted throughout the length of project.

## E3.2. Preferred Alternative

After the second public meeting, the three alternatives were compared in detail along with public comments (see **Table ES-1**). 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. Ultimately, a hybrid of Build Alternative 1 and Build Alternative 2a was developed to be the Preferred Alternative**. Figure ES-3** shows the alignments of the 4 build alternatives considered in the preferred alternative analysis.

**FIGURE ES-3**
**BUILD ALTERNATIVES**

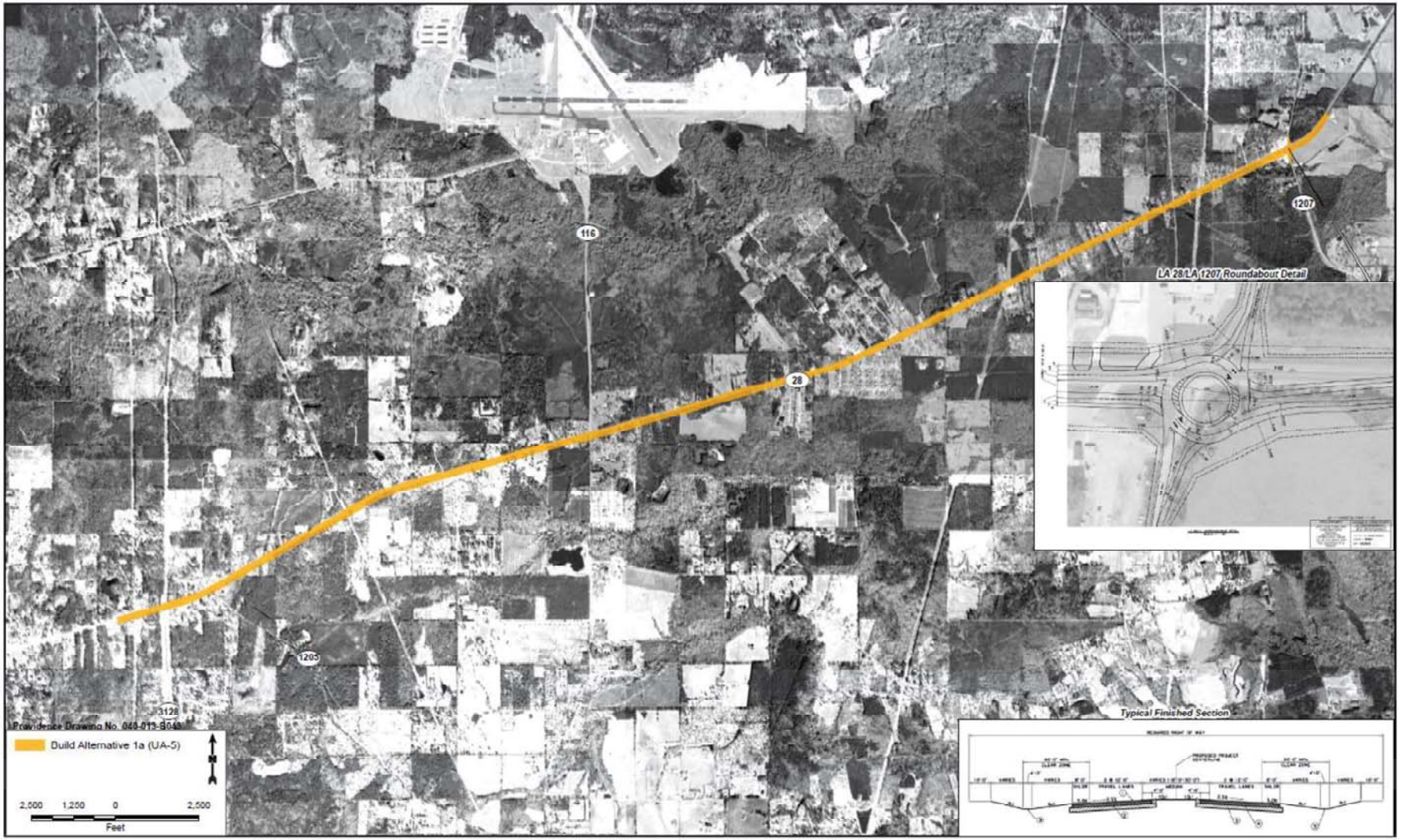



*Base map comprised of ESRI World Imagery Maps dated June 2013.*

Build Alternative 1a (the Preferred Alternative) (**Figure ES-4**) was selected due to less ROW cost with fewer potential relocations and a high level of efficiency. The proposed roundabouts at the intersections of LA 28/LA 3128 and LA 28/LA 116 under Build Alternative 1 were removed in favor of dual lane J-turns with phased signals. This modification allows the preferred alternative to meet traffic needs by keeping the roundabout at the intersection of LA 28 and LA 1207, as under Build Alternative 2a. The estimated construction cost, prior to the development of utility

impact costs, is lower than the other build alternatives. As utility impacts were assumed to be similar for all the alternatives, the estimated utility relocation costs were developed after the selection of the preferred alternative. The total estimated cost for Build Alternative 1a is $61 million. **Table ES-2** is the Preferred Alternative Decision Matrix that demonstrates the differences in impacts between the Preferred Alternative and the other three build alternatives.

## FIGURE ES-4
## PREFERRED ALTERNATIVE




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

# TABLE ES-2
# PREFERRED ALTERNATIVE SELECTION MATRIX

| Evaluation Criteria | Build Alternative 1 (UA-5) | | Build Alternative 2 (RA-2) | |
|---|---|---|---|---|
| | 1 | 1a (Roundabout at LA 1207) | 2a (Roundabout at LA 1207) | 2b (Signalization at LA 1207) |
| Purpose and Need | | | | |
| 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 | 0.11 | 0.11 |
| Threatened/Endangered/Protected Species | | | | |
| Potential Impact to Threatened and Endangered Species | None | None | None | None |
| Community Impacts | | | | |
| Residential Structures | 16 | 15 | 24 | 21 |
| Commercial Property | 15 [3, 4] | 13 [3, 5] | 16 [3, 4] | 15 [3, 4] |
| Churches | 1 [6] | 0 | 0 | 0 |
| Recreational Areas | 0 | 0 | 1 [7] | 1 [7] |
| Other Community Facilities | 0 | 0 | 1 [8] | 1 [8] |
| Land Use | | | | |
| Prime Farmland (acres) | 12.51 | 13.00 | 13.94 | 13.94 |
| 100-yr Floodplain (acres) | 5.97 | 6.23 | 7.19 | 7.19 |
| Environmental Liability Concerns | | | | |
| Potential Impacts to Hazardous Sites | Medium | Medium | Medium | Medium |
| Active Oil and Gas Well Locations [9] | 0 | 0 | 0 | 0 |
| Other Environmental Concerns | | | | |
| Active Water Well Locations [9] | 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
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. 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 changes in travel, 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 Comments

All ROW purchased will be in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and will be based on fair market value as determined by local, recent real estate transactions as approved by the DOTD and FHWA.

## Mitigation and Commitments

| ITEM | OVERSITE AGENCY | MITIGATION/COMMITMENT |
|---|---|---|
| Residential and Commercial Property Acquisition | DOTD | All ROW purchased will be in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and will be based on fair market value negotiated by the DOTD and individual owner. |
| Utility Relocation | DOTD | Specific relocation plans for utilities are developed during final design. Functional or financial responsibility for relocation of a specific facility or line may differ depending on prior agreements between the utility providers, current landowners, local government, and the DOTD. |
| Traffic Management | DOTD | Construction sequence and traffic maintenance plans will be developed as part of final design to ensure continued access to all properties. Requirements for special considerations will be identified and addressed. |
| Wetlands | USACE | A preliminary jurisdictional determination request will be submitted to the USACE. As jurisdictional wetland impacts are anticipated, a Section 404 permit application will be filed and required mitigation conducted prior to permit issuance. |
| General Construction Impacts | LDEQ | Cut and fill operations will be minimized, as practicable. Design and construction activities will incorporate best management practices (BMPs) to prevent future erosion including temporary soil erosion control measures and permanent control measures. Compliance with the provisions of the storm water general permit will minimize environmental impacts during construction. |
| Construction Impacts – Surface Water | LDEQ | Temporary control measures to reduce migration of soils off site to surface water may include the phasing of construction, limiting the amounts of impervious surfaces created, preservation of stream buffers and sensitive areas such as natural wetlands and riparian corridors, limiting disturbance of soil and vegetation, and maintaining the natural infiltrative capacity. Permanent control measures may include the use of sediment barriers, temporary and permanent vegetative cover for soil stabilization, and the use of riprap for the protection of soils from erosion. |

| ITEM | OVERSITE AGENCY | MITIGATION/COMMITMENT |
|---|---|---|
| Construction Impacts – Air Quality | LDEQ | Fugitive dust control measures will be implemented during construction to minimize the potential release of particulate matter from the construction site. Such measures may include cover or treatment of disturbed areas with dust suppression techniques. |
| Drainage | DOTD | Hydrologic and hydraulic studies will be conducted during final design to ensure the construction of the results in no increase in flood elevation on surrounding properties. |
| Cultural Resources | DOTD/Louisiana Department of Culture Recreation and Tourism (LDCRT) | Should any significant cultural resources be unearthed during construction, the LDCRT Offices of Archaeology and Historic Preservation will be contacted immediately. Construction will cease in the area of the discovery until a plan is developed for the recovery of the resources.<br>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. |

## 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

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

### 2. Class of Action

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

### 3. Project Description

The proposed project is to widen a portion of LA 28 East starting from its western intersection with LA 3128 (Libuse) to its eastern intersection with LA 1207 (Holloway) in Rapides Parish. Presently, the travel lanes are 12-feet wide with 8-foot shoulders along the 4-lane section and 10-foot wide with no shoulders along the 2-lane section. The new road will be an urban arterial design with a design speed of 60 miles per hour. The proposed arterial will have four 12-foot travel lanes, two dual phase signalized J-turns, a dual lane roundabout at LA 1207, and a 30-foot raised median and 8-foot outside shoulder width. Between LA 3128 and LA 1205, construction will be conducted entirely within the existing ROW and will consist of the installation of a raised median.

### 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? ..... | ☐ | ☒ | ☐ |
| Is right of way required from a **burial/cemetery** site? ..... | ☒ | ☐ | ☐ |
| Is right-of-way required from a Wetland Reserve Program (**WRP**) property? | ☒ | ☐ | ☐ |
| Is required right-of-way prime **farmland**? (Use form AD 1006, if needed) ... | ☒ | ☐ | ☐ |
| b. Will any **relocation** of residences or businesses occur? ..... | ☐ | ☒ | ☐ |
| c. Are construction or drainage **servitudes** required? ..... | ☒ | ☐ | ☐ |

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

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

## 7. Cultural Section 106

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

## 8. Natural & Physical Environment

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

## 9. Social Impacts

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

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

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

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

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

Item 4: Two public meetings were held: April 2, 2013 and January 22, 2015. A public hearing will also be held for the Widening LA 28 East project once the draft EA has been approved.

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.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 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 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, no pedestrian or bike accommodations were considered.

Item 9.l: The project is not expected to affect traffic patterns; however, it will introduce access management and a new intersection type (roundabout) that will affect how travelers access existing businesses and residential drives.

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 (see *Appendix H)*

# 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. |
| Residential Property Acquisition | DOTD | Approximately 15 residential properties are expected to be acquired. All ROW purchased for relocations will be in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (the Uniform Act). These purchases will be based on fair market value as determined by local, recent real estate transactions as approved by the DOTD. |

| ITEM | OVERSITE AGENCY | MITIGATION/COMMITMENT |
|---|---|---|
| Commercial Property Acquisition | DOTD | Approximately 10 commercial properties/structures are expected to be acquired. All ROW purchased for relocations will be in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (the Uniform Act). These purchases will be based on fair market value as determined by local, recent real estate transactions as approved by the DOTD. |
| Utility Relocation | DOTD | Specific relocation plans for utilities are developed during final design. Functional or financial responsibility for relocation of a specific facility or line may differ depending on prior agreements between the utility providers, current landowners, local government, and the DOTD. |
| Traffic Management | DOTD | Construction sequence and traffic maintenance plans will be developed as part of final design to ensure continued access to all properties. Requirements for special considerations will be identified and addressed. |
| Wetlands | USACE | A preliminary jurisdictional determination request will be submitted to the USACE. As jurisdictional wetland impacts are anticipated, a Section 404 permit application will be filed and required mitigation conducted prior to permit issuance. |
| Significant Trees | DOTD | During design, the location(s) of significant trees will be determined and identified on the final plans in accordance with the DOTD Engineering Directives and Standards, Treatment of Significant Trees in DOTD Right-of-Way (EDSM No: I.1.1.21). |
| General Construction | LDEQ | Cut and fill operations will be minimized, as practicable. Design and construction activities will incorporate best management practices (BMPs) to prevent future erosion including temporary soil erosion control measures and permanent control measures. Compliance with the provisions of the storm water general permit will minimize environmental impacts during construction. |
| Construction – Surface Water | LDEQ | Temporary control measures to reduce migration of soils off site to surface water may include the phasing of construction, limiting the amounts of impervious surfaces created, preservation of stream buffers and sensitive areas such as natural wetlands and riparian corridors, limiting disturbance of soil and vegetation, and maintaining the natural infiltrative capacity. Permanent control measures may include the use of sediment barriers, temporary and permanent vegetative cover for soil stabilization, and the use of riprap for the protection of soils from erosion. |

| ITEM | OVERSITE AGENCY | MITIGATION/COMMITMENT |
|---|---|---|
| Construction – Air Quality | LDEQ | Fugitive dust control measures will be implemented during construction to minimize the potential release of particulate matter from the construction site. Such measures may include cover or treatment of disturbed areas with dust suppression techniques. |
| Floodplain/Drainage | DOTD | Hydrologic and hydraulic studies will be conducted during final design to ensure the construction of the results in no increase in flood elevation on surrounding properties. |
| Cultural Resources | DOTD/Louisiana Department of Culture Recreation and Tourism (LDCRT) | Should any significant cultural resources be unearthed during construction, the LDCRT Offices of Archaeology and Historic Preservation will be contacted immediately. Construction will cease in the area of the discovery until a plan is developed for the recovery of the resources. 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. |

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**Appendix**

# 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 (**Figure 1**). The proposed project construction study area is 7.25 miles in length and is classified as a rural principal arterial 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 at LA 1205. The lanes are 12-feet wide with 8-foot shoulders along the 4-lane section and 10-foot shoulders along the 2-lane section.

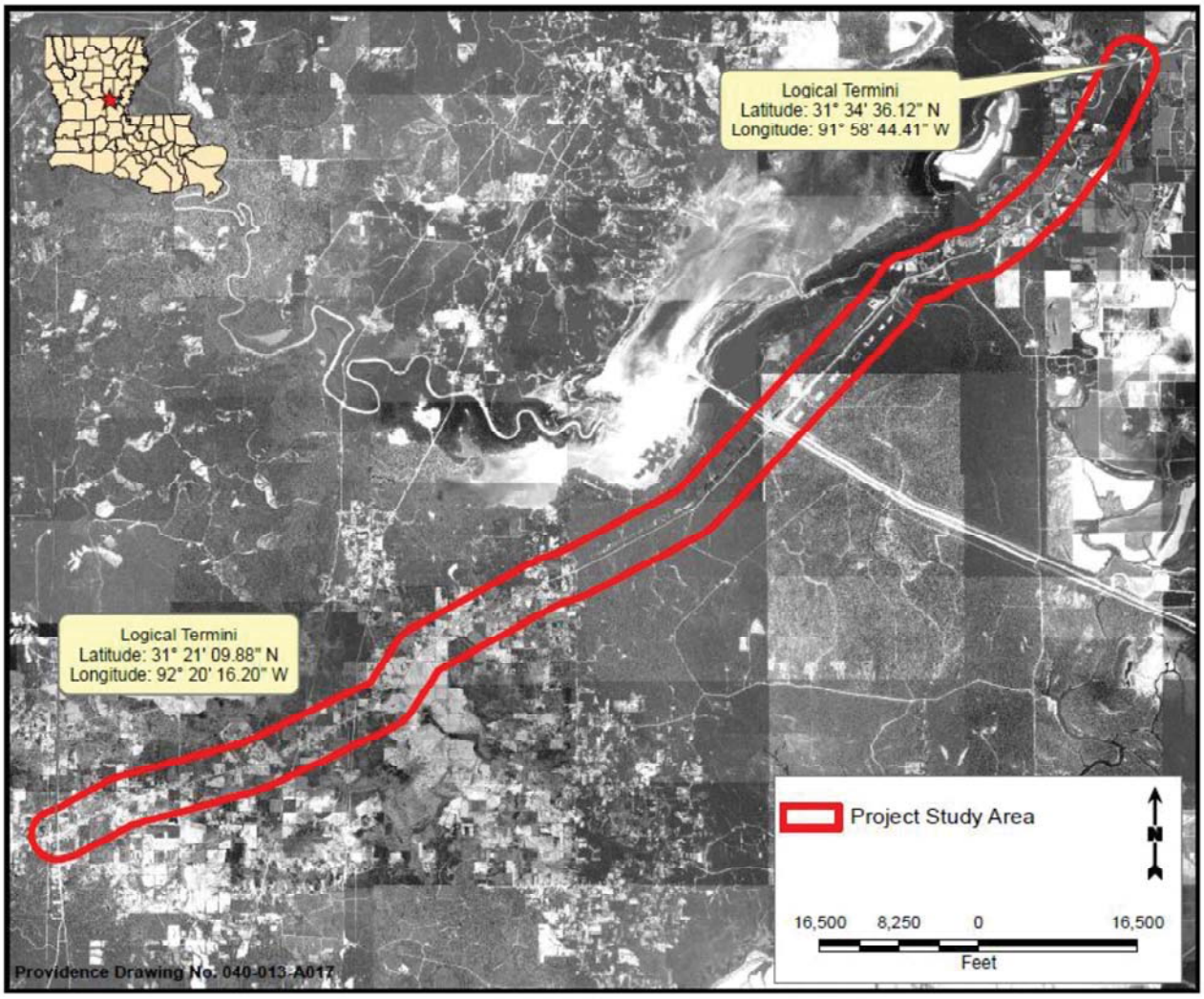
Three build alternatives were presented to public during the second public meeting and are studied in detail in this Environmental Assessment (EA) document:

- Build Alternative 1, Urban Arterial 5 (UA-5) with Three Roundabouts
- Build Alternative 2a, Rural Arterial 2 (RA-2) with a Roundabout at LA 1207
- Build Alternative 2b, RA-2 with a Signal at LA 1207

A fourth build alternative was developed after the second public meeting and was also studied in detail in this document, as it has been selected as the preferred alternative. The Preferred Alternative is an UA-5 with a roundabout at LA 1207 and the inclusion of J-turns, signalized J-turns, and a 30-foot wide median throughout the construction study area (LA 3128 to LA 1207).

An environmental and engineering constraints review of the remaining project area from LA 1207 to United States (US) Highway 84 in Catahoula Parish is also included.

**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. Acceptance of these studies allowed the project to move forward into Stage 1 Planning and Environmental (Planning/Environmental). The construction limits remain the same as that originally presented during the Feasibility Study; however, the project's logical termini changed. The eastern logical terminus now extends to US 84, which will allow the EA to include an assessment of potential engineering and environmental issues along LA 28 from the end of construction at LA 1207 east to US 84 in Catahoula Parish. Additionally, the Feasibility Study document considered dual lane roundabouts for all three potential build alternatives. The EA will only consider multiple dual lane roundabouts for one of the build alternatives.

## 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 to provide the capacity necessary to serve increasing traffic demands.

The additional assessment of potential engineering and environmental constraints associated with the additional 16 plus mile section of LA 28 from LA 1207 to US 84 was determined necessary to address future planning of widening LA 28 east to its terminus at US 84.

# 2.0 ALTERNATIVES

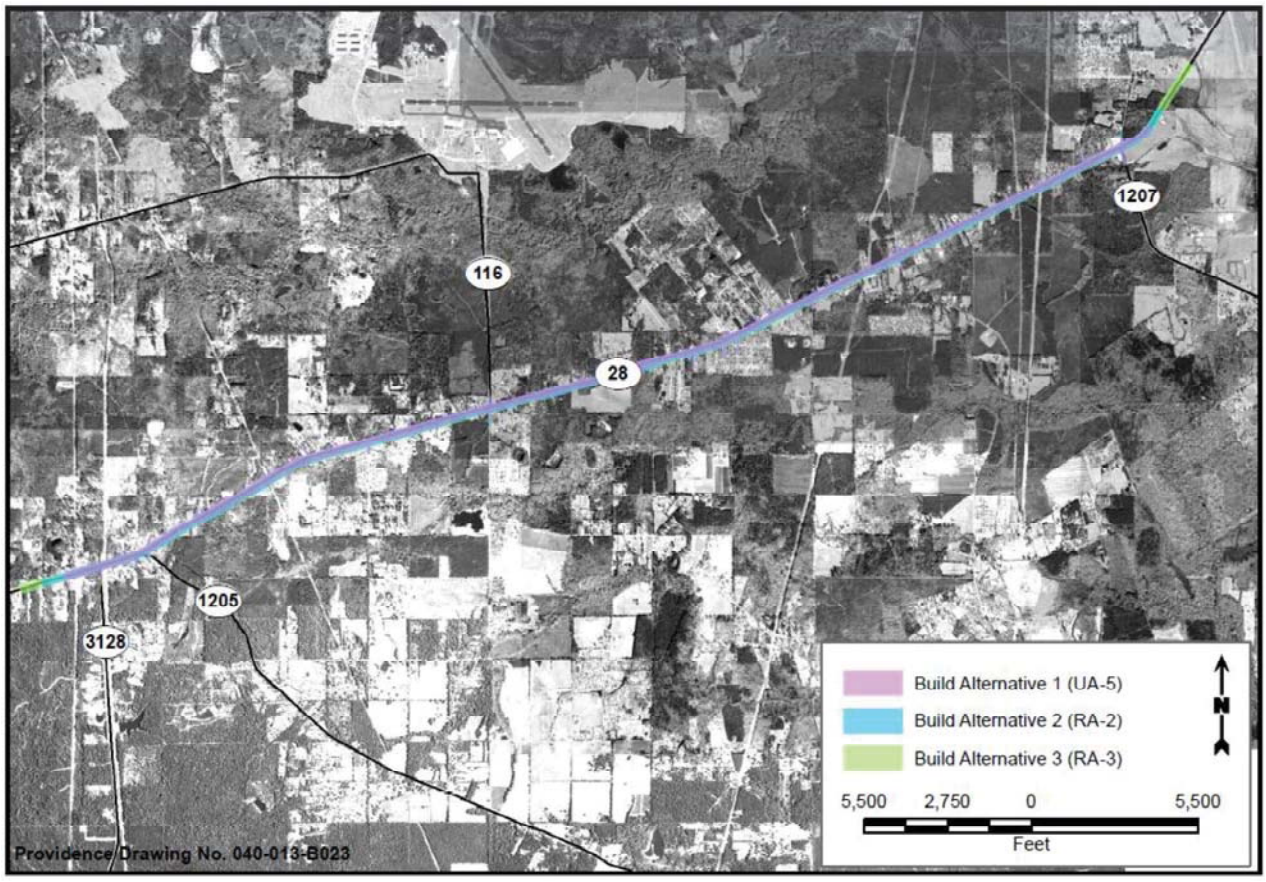
## 2.1 Alternatives Development Process

### *2.1.1 Feasibility Study*

Three build alternatives (and the No Build Alternative) were initially carried forward for study in the environmental document from the Feasibility Study: a UA-4, RA-2, and RA-3, and can be viewed on **Figure 2**. The UA-4 changes the existing roadway classification from rural to urban and has four 12-foot lanes with 18-foot raised median. The RA-2 changes the existing roadway to four 12-foot wide travel lanes divided by a 53-foot wide depressed median. The RA-3 would have four 12-foot wide travel lanes divided by a 60-foot wide depressed median.

Dual lane roundabouts were also proposed at the intersections of LA 28 at LA 3128, LA 116, and LA 1207 for each of the build alternatives. The approach of the roundabout on LA 116 was proposed as a single-lane, and the approaches of LA 1207 and LA 3128 were proposed with right turn lanes.

**FIGURE 2**
**PRELIMINARY BUILD ALTERNATIVES**




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

### *2.1.2 Traffic*

Traffic analysis was conducted on all three potential build alternatives with differing intersection designs and with/without service roads. Traffic data indicated that service roads would have little impact on the efficiency of LA 28, due to the small amount of vehicles benefiting. 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. The different intersection types analyzed included: no change (all existing intersection types remain the same); all signalized; all J-turns; and roundabouts at three major intersections.

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. In order for the J-turn intersection alternative to function properly in this area, one of the intersections would need to be removed.

Under all build alternative scenarios, the roadway was determined to function at an appropriate Level of Service (LOS) in the design year. An LOS of A is the most desirable flow of traffic and can be achieved using Build Alternative 1, a UA-5 with three roundabouts.

## 2.2 Alternatives Screening Process

The Build Alternatives from the Feasibility Study were carried forward into the Planning/Environmental stage at the direction of DOTD and were the alternatives presented to commenting agencies via the Solicitation of Views (SOV) letters. Likewise, the first public meeting, held in April 2013, presented the three Feasibility Study alternatives to the public: RA-2, RA-3, and UA-4, each with dual lane roundabouts at the intersections of LA 28 at LA 3128, LA 116, and LA 1207.

Proposed alternative UA-4 changes the existing roadway classification from rural to urban with four 12-foot lanes with 18-foot raised median. The RA-2 alternative was presented with four 12-foot wide travel lanes divided by a 53-foot wide depressed median, and the RA-3 with four 12-foot wide travel lanes divided by a 60-foot wide depressed median.

After the first public meeting, the project team met to discuss the roundabouts and the need to add more detailed traffic analysis to the scope to fully consider the functionality of the proposed roundabouts. During this meeting, it was determined that the Feasibility Study alternatives represented design options of the same general alternative. The development of new build alternatives that would allow LA 28 to function as a higher speed east/west corridor was requested as well as the consideration of service roads along with detailed traffic analysis. These items were added to the project scope and the following alternatives were developed:

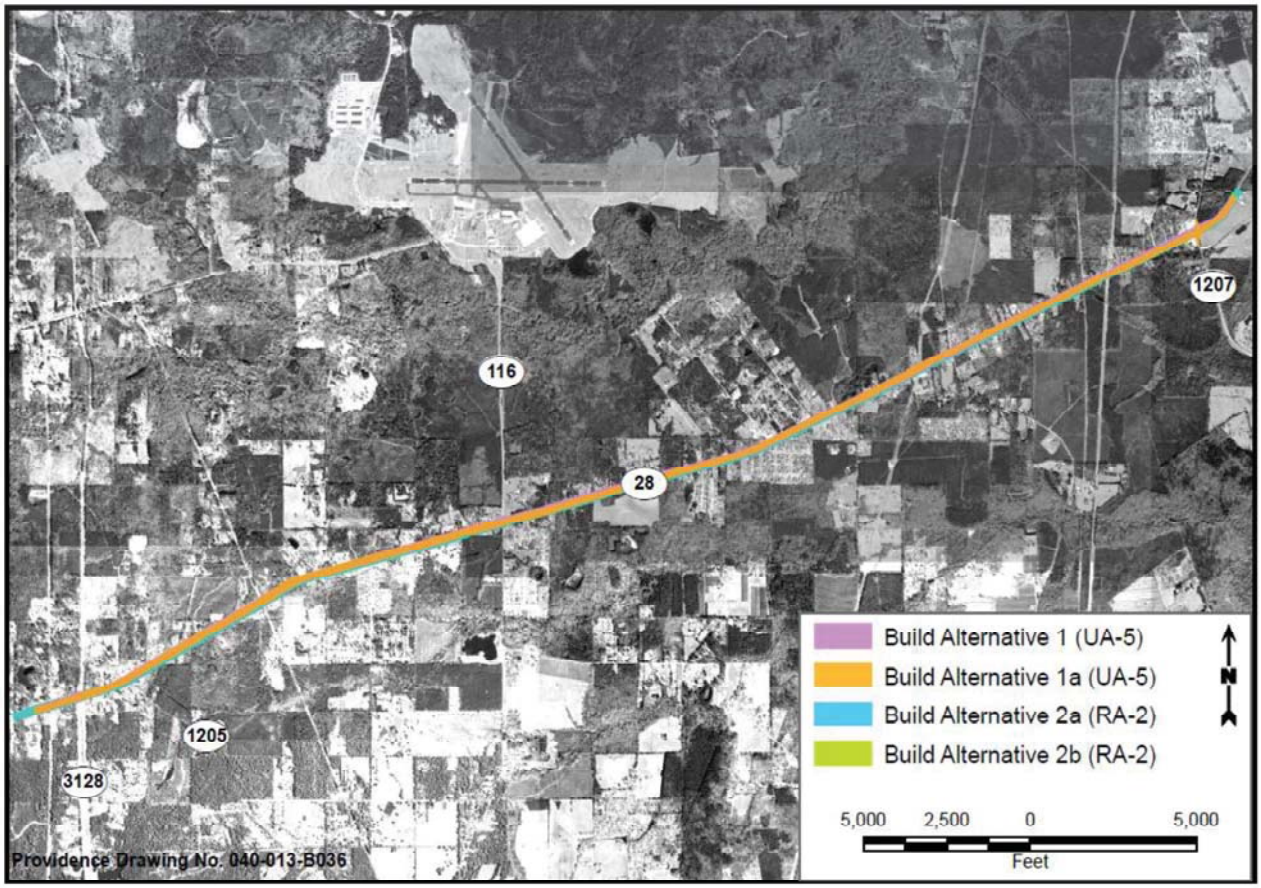
- Build Alternative 1 – UA-5 with varying raised median width (18 to 30 feet)
- Build Alternative 2 – RA-2 with a 42-foot depressed median
- Build Alternative 3 – RA-3 with a 60-foot depressed median

As previously stated, traffic analysis on the concept of service roads indicated that the minimal number of vehicles benefited did not warrant service roads. 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.

Build Alternative 2, the RA-2 concept, was refined into Build Alternatives 2a and 2b. 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.

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 (acres) | 12.51 | 13.94 | 13.94 |
| 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 [9] | | | |
| 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 [10] | 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.
2. Construction costs are preliminary estimates and do not include utility relocations. A 20% contigency 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. According to the LDNR SONRIS database as of 09/30/15.
10. Total number includes utilities for water, gas, and electric lines impacted throughout the length of project.

## 2.3 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 associated with Build Alternative 1 and the amount of ROW and J-turns more closely associated with the Build Alternatives 2a and 2b. Ultimately, a hybrid of Build Alternative 1 and Build Alternative 2a was developed, termed Build Alternative 1a, and was selected as the Preferred Alternative. **Table 2-2** is the Preferred Alternative Decision Matrix.

Build Alternative 1a, **Figure 3b**, was selected due to less ROW acquisition with fewer potential relocations, a high level of efficiency, and it resolved some of the public concerns associated with the project. The proposed roundabouts located at LA 28 and LA 3128 and LA 28 at LA 116 under Build Alternative 1 were removed in favor dual of J-turns with phased signals. This modification allows the preferred alternative to meet traffic needs by keeping the roundabout at LA 28 and LA 1207, as under Build Alternative 2a. The estimated construction cost, prior to the development of utility impacts costs, is lower than the other build alternatives. As utility impacts were assumed to be similar for all the alternatives, the estimated utility relocation costs were developed after the selection of the preferred alternative. The total estimated cost for Build Alternative 1a is $61 million dollars.

The Preferred Alternative will be a UA-5 with a design speed of 60 miles per hour. The proposed arterial will have four 12-foot travel lanes, two phased signalized J-turns, a dual lane roundabout at LA 1207, a 30-foot raised median, and an 8-foot outside shoulder width. There will be no additional ROW acquired between the western logical termini (just west of LA 3128) and LA 1205, as the LA 28 is five lanes in this area. Installation of raised median will occur in this area.

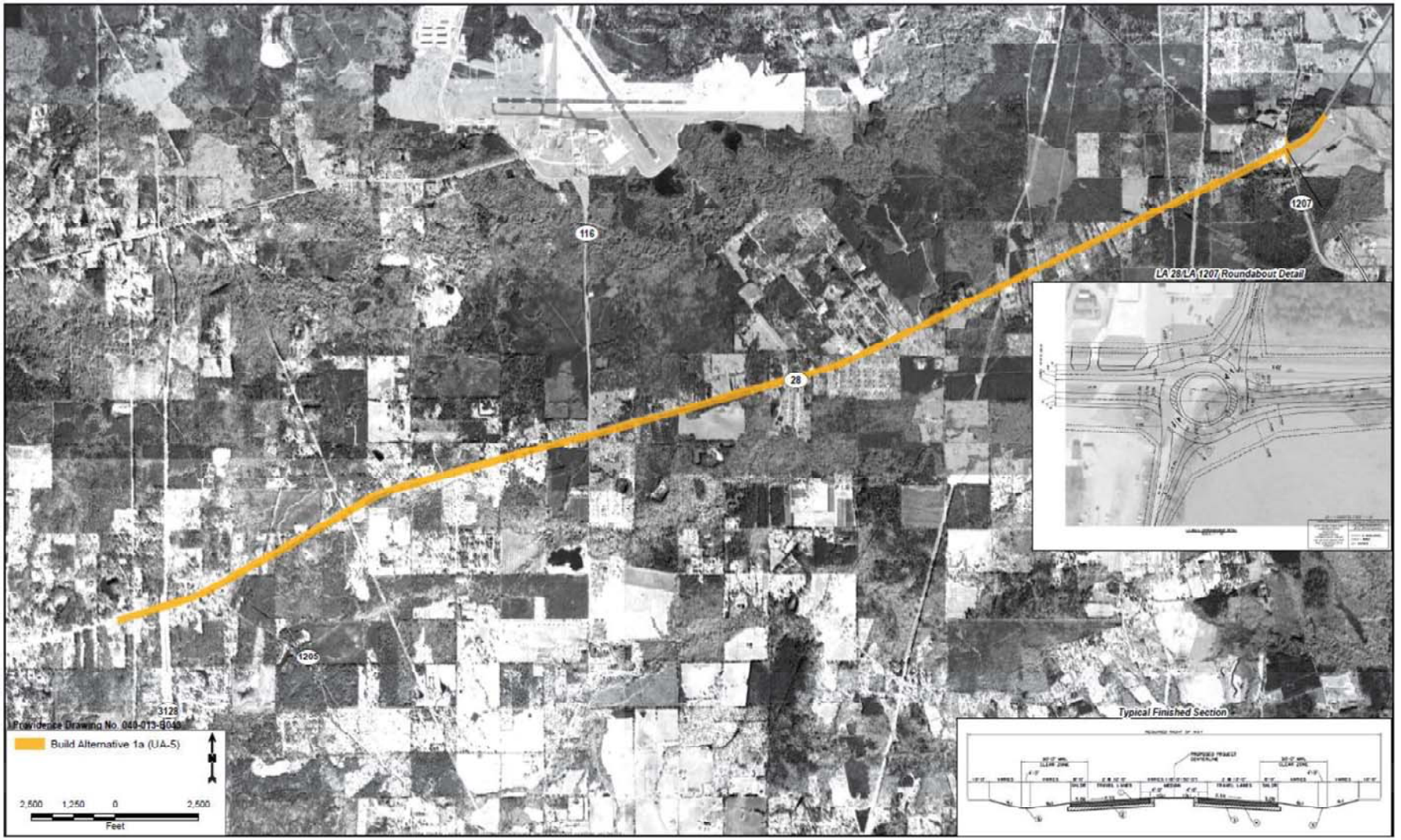
## TABLE 2-2
## PREFERRED ALTERNATIVE SELECTION MATRIX

| Evaluation Criteria | Build Alternative 1 (UA-5) | | Build Alternative 2 (RA-2) | |
|---|---|---|---|---|
| | 1 | 1a (Roundabout at LA 1207) | 2a (Roundabout at LA 1207) | 2b (Signalization at LA 1207) |
| Purpose and Need | | | | |
| 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 | 0.11 | 0.11 |
| Threatened/Endangered/Protected Species | | | | |
| Potential Impact to Threatened and Endangered Species | None | None | None | None |
| Community Impacts | | | | |
| Residential Structures | 16 | 15 | 24 | 21 |
| Commercial Property | 15 [3, 4] | 13 [3, 5] | 16 [3, 4] | 15 [3, 4] |
| Churches | 1 [6] | 0 | 0 | 0 |
| Recreational Areas | 0 | 0 | 1 [7] | 1 [7] |
| Other Community Facilities | 0 | 0 | 1 [8] | 1 [8] |
| Land Use | | | | |
| Prime Farmland (acres) | 12.51 | 13.00 | 13.94 | 13.94 |
| 100-yr Floodplain (acres) | 5.97 | 6.23 | 7.19 | 7.19 |
| Environmental Liability Concerns | | | | |
| Potential Impacts to Hazardous Sites | Medium | Medium | Medium | Medium |
| Active Oil and Gas Well Locations [9] | 0 | 0 | 0 | 0 |
| Other Environmental Concerns | | | | |
| Active Water Well Locations [9] | 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
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. According to the LDNR SONRIS database as of 9/30/15.

## FIGURE 3b
## PREFERRED BUILD ALTERNATIVE




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

## 2.4 Alternatives Cost Comparison

**Table 2-1** presented a generalized construction cost comparison of the build alternatives. **Table 2-3** presents the Opinion of Probable Cost (without the utilities impacts costs).

# TABLE 2-3
# OPINION OF PROBABLE COST

| Item No. | Item Description | Unit Price | Unit | Alternative 1 UA5 w/ Roundabouts | | Alternative 1a UA5 Preferred | | Alternative 2a RA2 w/ Roundabout | | Alternative 2b RA2 w/ Signal | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Quantity | Price | Quantity | Price | Quantity | Price | Quantity | Price |
| 201-01-00100 | Clearing and Grubbing | $200,000.00 | LUMP | 1.00 | $200,000.00 | 1.00 | $200,000.00 | 1.00 | $200,000.00 | 1.00 | $200,000.00 |
| 202-02-06100 | Removal of Concrete Walks and Drives | $40.00 | SQYD | 6,820.78 | $272,831.11 | 6,820.00 | $272,800.00 | 9,489.78 | $379,591.11 | 9,489.78 | $379,591.11 |
| 202-02-32180 | Removal of Headwalls | $1,200.00 | EACH | 50.00 | $60,000.00 | 50.00 | $60,000.00 | 50.00 | $60,000.00 | 50.00 | $60,000.00 |
| 202-02-38240 | Removal of Signs and Supports | $20.00 | EACH | 65.00 | $1,300.00 | 65.00 | $1,300.00 | 65.00 | $1,300.00 | 65.00 | $1,300.00 |
| 202-02-38500 | Removal of Surfacing and Stabalizing Base | $8.00 | SQYD | 185,056.00 | $1,480,448.00 | 185,056.00 | $1,480,448.00 | 195,006.67 | $1,560,053.33 | 195,006.67 | $1,560,053.33 |
| 203-01-00100 | General Excavation | $5.00 | CUYD | 145,184.20 | $725,921.00 | 184,459.60 | $922,298.00 | 220,925.50 | $1,104,627.50 | 220,925.50 | $1,104,627.50 |
| 203-03-00100 | Embankment | $10.00 | CUYD | 185,426.00 | $1,854,260.00 | 168,485.70 | $1,684,857.00 | 231,716.40 | $2,317,164.00 | 231,716.40 | $2,317,164.00 |
| 203-08-00100 | Geotextile Fabric | $5.00 | SQYD | 295,382.67 | $1,476,913.33 | 319,574.78 | $1,597,873.89 | 337,650.22 | $1,688,251.11 | 337,650.22 | $1,688,251.11 |
| 204-06-00100 | Temporary Silt Fence | $1.00 | LNFT | 77,772.00 | $77,772.00 | 77,772.00 | $77,772.00 | 80,612.00 | $80,612.00 | 80,612.00 | $80,612.00 |
| 302-02-06121 | Class II Base Course (12" Thick) (Stone or Recycled Portland | $30.00 | SQYD | 295,382.67 | $8,861,480.00 | 319,574.78 | $9,587,243.33 | 337,650.22 | $10,129,506.67 | 337,650.22 | $10,129,506.67 |
| 502-01-00100 | Superpave Asphaltic Concrete (Assume 8" Thickness) | $110.00 | TON | 129,968.37 | $14,296,521.07 | 140,612.90 | $15,467,419.24 | 148,566.10 | $16,342,270.76 | 148,566.10 | $16,342,270.76 |
| 701-01-01001 | Cross Drain Pipe (24" RCP) | $100.00 | LNFT | 352.00 | $35,200.00 | 352.00 | $35,200.00 | 352.00 | $35,200.00 | 352.00 | $35,200.00 |
| 701-01-01021 | Cross Drain Pipe (30" RCP) | $170.00 | LNFT | 192.00 | $32,640.00 | 192.00 | $32,640.00 | 192.00 | $32,640.00 | 192.00 | $32,640.00 |
| 701-01-01100 | Cross Drain Pipe (54" RCP) | $195.00 | LNFT | 120.00 | $23,400.00 | 120.00 | $23,400.00 | 120.00 | $23,400.00 | 120.00 | $23,400.00 |
| 701-01-01120 | Cross Drain Pipe (60" RCP) | $255.00 | LNFT | 270.00 | $68,850.00 | 270.00 | $68,850.00 | 270.00 | $68,850.00 | 270.00 | $68,850.00 |
| 701-01-01140 | Cross Drain Pipe (72" RCP) | $390.00 | LNFT | 302.00 | $117,780.00 | 302.00 | $117,780.00 | 302.00 | $117,780.00 | 302.00 | $117,780.00 |
| 701-03-01020 | Storm Drain Pipe (18" RCP/PP) | $50.00 | LNFT | 3,244.00 | $162,200.00 | 3,244.00 | $162,200.00 | 3,244.00 | $162,200.00 | 3,244.00 | $162,200.00 |
| 701-03-01040 | Storm Drain Pipe (24" RCP/PP) | $60.00 | LNFT | 1,293.00 | $77,580.00 | 1,293.00 | $77,580.00 | 1,293.00 | $77,580.00 | 1,293.00 | $77,580.00 |
| 701-03-01060 | Storm Drain Pipe (30" RCP/PP) | $65.00 | LNFT | 448.00 | $29,120.00 | 448.00 | $29,120.00 | 448.00 | $29,120.00 | 448.00 | $29,120.00 |
| 701-03-01080 | Storm Drain Pipe (36" RCP/PP) | $90.00 | LNFT | 1,064.00 | $95,760.00 | 1,064.00 | $95,760.00 | 1,064.00 | $95,760.00 | 1,064.00 | $95,760.00 |
| 701-03-01090 | Storm Drain Pipe (42" RCP/PP) | $110.00 | LNFT | 1,080.00 | $118,800.00 | 1,080.00 | $118,800.00 | 1,080.00 | $118,800.00 | 1,080.00 | $118,800.00 |
| 701-03-01100 | Storm Drain Pipe (48" RCP/PP) | $140.00 | LNFT | 192.00 | $26,880.00 | 192.00 | $26,880.00 | 192.00 | $26,880.00 | 192.00 | $26,880.00 |
| 701-03-01140 | Storm Drain Pipe (60" RCP) | $200.00 | LNFT | 352.12 | $70,424.00 | 352.12 | $70,424.00 | 352.12 | $70,424.00 | 352.12 | $70,424.00 |
| 702-03-00100 | Catch Basins (CB-01) | $3,000.00 | EACH | 2.00 | $6,000.00 | 2.00 | $6,000.00 | 2.00 | $6,000.00 | 2.00 | $6,000.00 |
| 706-02-00200 | Concrete Drive (6" Thick) | $55.00 | SQYD | 11,862.22 | $652,422.22 | 11,862.22 | $652,422.22 | 11,862.22 | $652,422.22 | 11,862.22 | $652,422.22 |
| 707-01-00200 | Concrete Curb (Barrier) | $8.00 | LNFT | 78,132.00 | $625,056.00 | 159,086.00 | $1,272,688.00 | 0.00 | $0.00 | 0.00 | $0.00 |
| 711-01-04020 | Rip Rap (55 lb) | $100.00 | CUYD | 100.00 | $10,000.00 | 100.00 | $10,000.00 | 100.00 | $10,000.00 | 100.00 | $10,000.00 |
| 713-01-00100 | Temporary Signs and Barricades | $375,000.00 | LUMP | 1.00 | $375,000.00 | 1.00 | $375,000.00 | 1.00 | $375,000.00 | 1.00 | $375,000.00 |
| 727-01-00100 | Mobilization[1] | $3,000,000.00 | LUMP | 1.00 | $3,000,000.00 | 1.00 | $3,000,000.00 | 1.00 | $3,000,000.00 | 1.00 | $3,000,000.00 |
| 729-01-00100 | Sign (Type A) | $25.00 | SQFT | 1,040.00 | $26,000.00 | 1,040.00 | $26,000.00 | 1,040.00 | $26,000.00 | 1,040.00 | $26,000.00 |
| 729-21-00100 | U-Channel Post | $120.00 | EACH | 65.00 | $7,800.00 | 65.00 | $7,800.00 | 65.00 | $7,800.00 | 65.00 | $7,800.00 |
| 731-02-00100 | Reflectorized Raised Pavement Markers | $5.00 | EACH | 7,777.20 | $38,886.00 | 4,286.00 | $21,430.00 | 4,029.60 | $20,148.00 | 4,029.60 | $20,148.00 |
| 732-01-02080 | Plastic Pavement Striping (24" Width) (Thermoplastic 125 mil) | $18.00 | LNFT | 536.00 | $9,648.00 | 536.00 | $9,648.00 | 536.00 | $9,648.00 | 536.00 | $9,648.00 |
| 732-02-02000 | Plastic Pavement Striping (Solid Line) (4" Width) (Thermoplastic 90 | $2,500.00 | MILE | 29.46 | $73,647.73 | 29.46 | $73,647.73 | 32.47 | $81,174.24 | 30.53 | $76,318.18 |
| 732-03-02000 | Plastic Pvmt Strip (Broken Line)(4" W)(Thermo 90 mil) | $750.00 | MILE | 14.73 | $11,047.16 | 14.73 | $11,047.16 | 16.23 | $12,176.14 | 15.26 | $11,447.73 |
| 732-03-02010 | Plastic Pvmt Strip (Dotted Line)(4" W)(2' L)(Thermo 90 mil) | $1,200.00 | MILE | 0.54 | $648.00 | 0.54 | $648.00 | 0.68 | $818.18 | 0.68 | $818.18 |
| 732-04-01100 | Plastic Pavement Legends and Symbols (Arrow - Right Turn) | $500.00 | EACH | 38.00 | $19,000.00 | 38.00 | $19,000.00 | 38.00 | $19,000.00 | 38.00 | $19,000.00 |
| 739-01-00100 | Hydro-Seeding | $2,000.00 | ACRE | 69.59 | $139,189.32 | 146.00 | $292,000.00 | 74.26 | $148,525.15 | 74.26 | $148,525.15 |
| 740-01-00100 | Construction Layout[2] | LUMP | LUMP | 1.00 | $430,000.00 | 1.00 | $430,000.00 | 1.00 | $300,000.00 | 1.00 | $300,000.00 |
| 805-01-00200 | Class A Concrete (Pipe Headwalls) | $1,000.00 | EACH | 50.00 | $50,000.00 | 50.00 | $50,000.00 | 50.00 | $50,000.00 | 50.00 | $50,000.00 |
| NS-P17-00017 | Traffic Signal System | $200,000.00 | LUMP | 0.00 | $0.00 | 3.00 | $450,000.00 | 0.00 | $0.00 | 1.00 | $200,000.00 |
| **Subtotal** | | | | | **$41,640,424.94** | | **$38,917,976.58** | | **$41,440,722.41** | | **$39,635,137.94** |
| Contingency (20%) | | | | | $8,328,084.99 | | $7,783,595.32 | | $8,288,144.48 | | $7,927,027.59 |
| Engineering Design (8%) | | | | | $3,331,233.99 | | $3,113,438.13 | | $3,315,257.79 | | $3,170,811.04 |
| Required Right-of-Way (ROW) [3] | | $1,000.00 | ACRE | 78.34 | $78,340.00 | LUMP | $9,073,807.00 | 101.91 | $101,910.00 | 100.92 | $100,920.00 |
| Utility Relocations[4] | | LUMP | LUMP | | | LUMP | $1,775,190.00 | | | | |
| Environmental Mitigation [5] | | LUMP | LUMP | | | LUMP | $63,387.00 | | | | |
| **TOTAL** [6, 7] | | | | | **$53,378,083.92** | | **$60,727,394.02** | | **$53,146,034.69** | | **$50,833,896.56** |

**Notes:**

1. Mobilization cost is estimated at approximately 7.5%.
2. Construction layout estimated to be higher for those alternatives containing roundabouts due to the complexity of construction.
3. General ROW costs were developed for all alternatives prior to the selection of a preferred. Detailed ROW costs were developed for the preferred alternative only, which can be found in the Conceptual Stage Relocation Plan included in the EA document as Appendix G.
4. Utility relocation costs were based on available data and calculated for the preferred alternative only. Additional utility information should be obtained during design phase.
5. Environmental mitigation costs only include wetlands and other waters mitigation costs, as no noise mitigation was determined reasonable. Wetlands mitigation costs were calculated based on 2.6 credits required for impacts to approximately 0.25 acres of various wetland habitats. Mitigation for impacts to other waters have been calculated based on 655 credits for 154 linear feet of relatively permanent other waters impact.
6. This is a preliminary cost estimate. Costs will be adjusted during the Stage 3 Design once the survey and geotechnical studies are complete.
7. Utilities, ROW, and Environmental Mitigation were calculated only for the Preferred Alternative. It is noted that costs would be expected to be similar for all the alternatives.

## 2.5 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. The Preferred Alternative was selected because it eliminated two of the roundabouts on the route, which was a significant concern of area residents.

# 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.

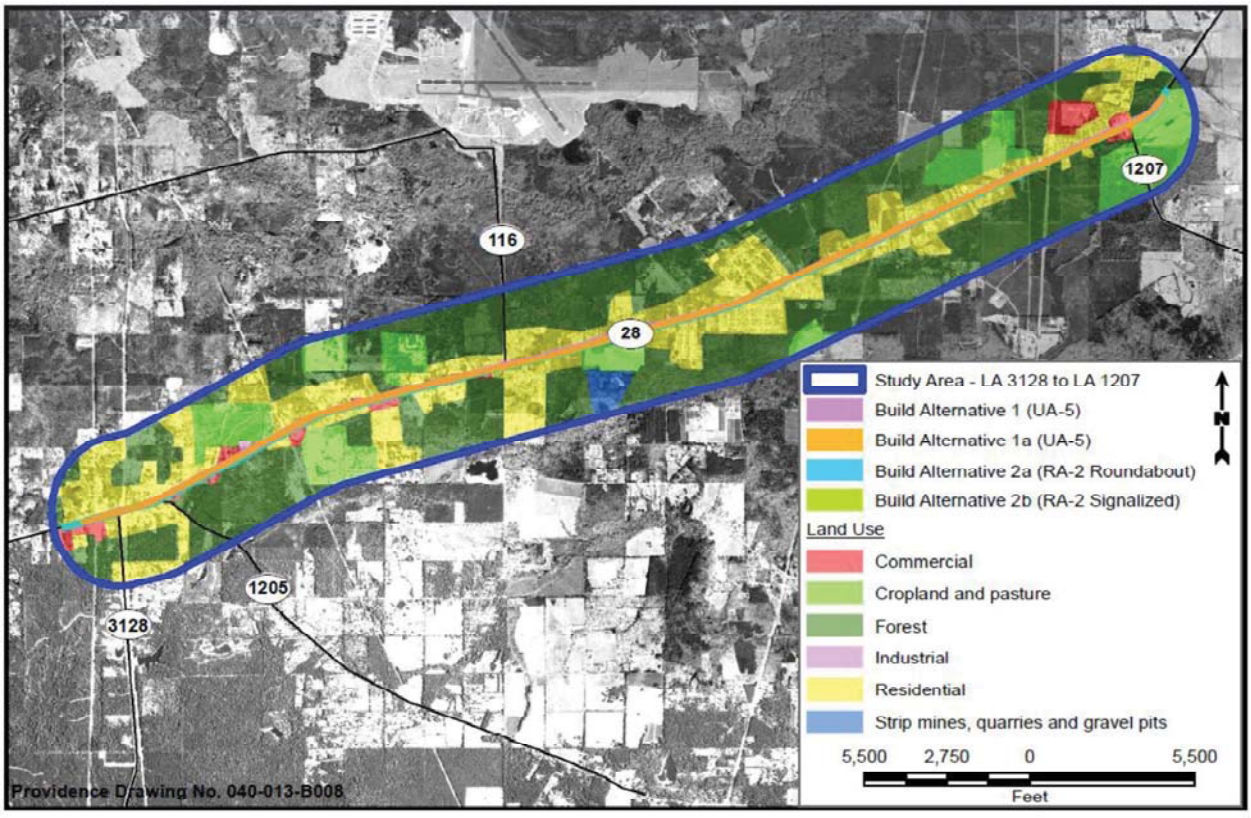
The region's economy was ignited by logging in the 1890s, but failure to sustainably harvest resulted in the near clear-cutting of Rapides Parish's forests by the 1920s ("Turning Points"). A massive government and public supported initiative to replant the region began in the 1930s, resulting in the 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

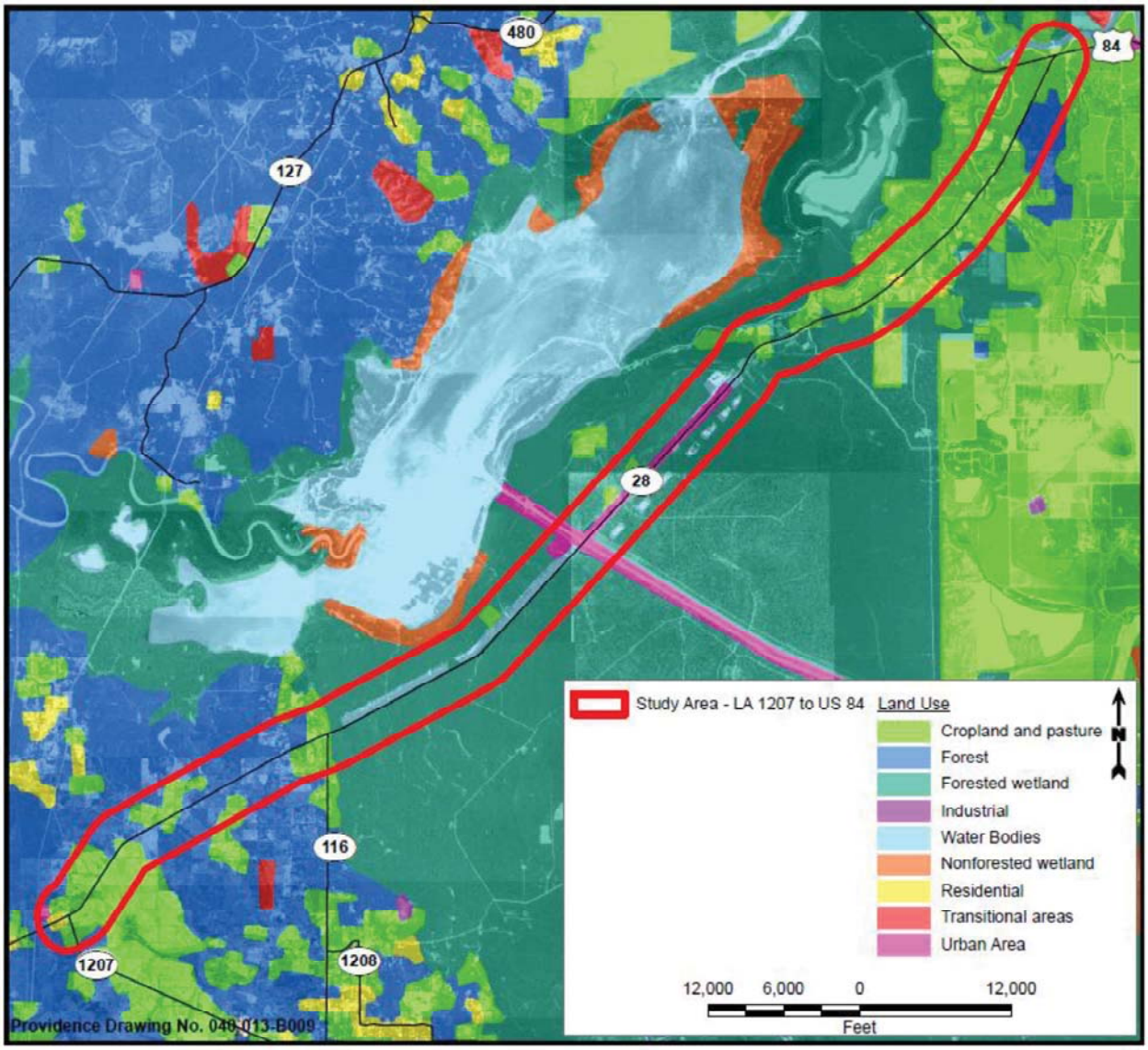
The total project study area encompasses approximately 4,746 acres in Rapides, LaSalle, and Catahoula Parishes. Current land use is represented in **Figures 4a** and **4b**. As demonstrated in the figures, land use in Rapides Parish is predominantly associated with agriculture and forest land, in LaSalle 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.

### *Hospitals*

No hospitals are located on LA 28 in the study area.

### *Public Transportation*

No public transportation facilities are located off of LA 28 in the project study area.

## 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

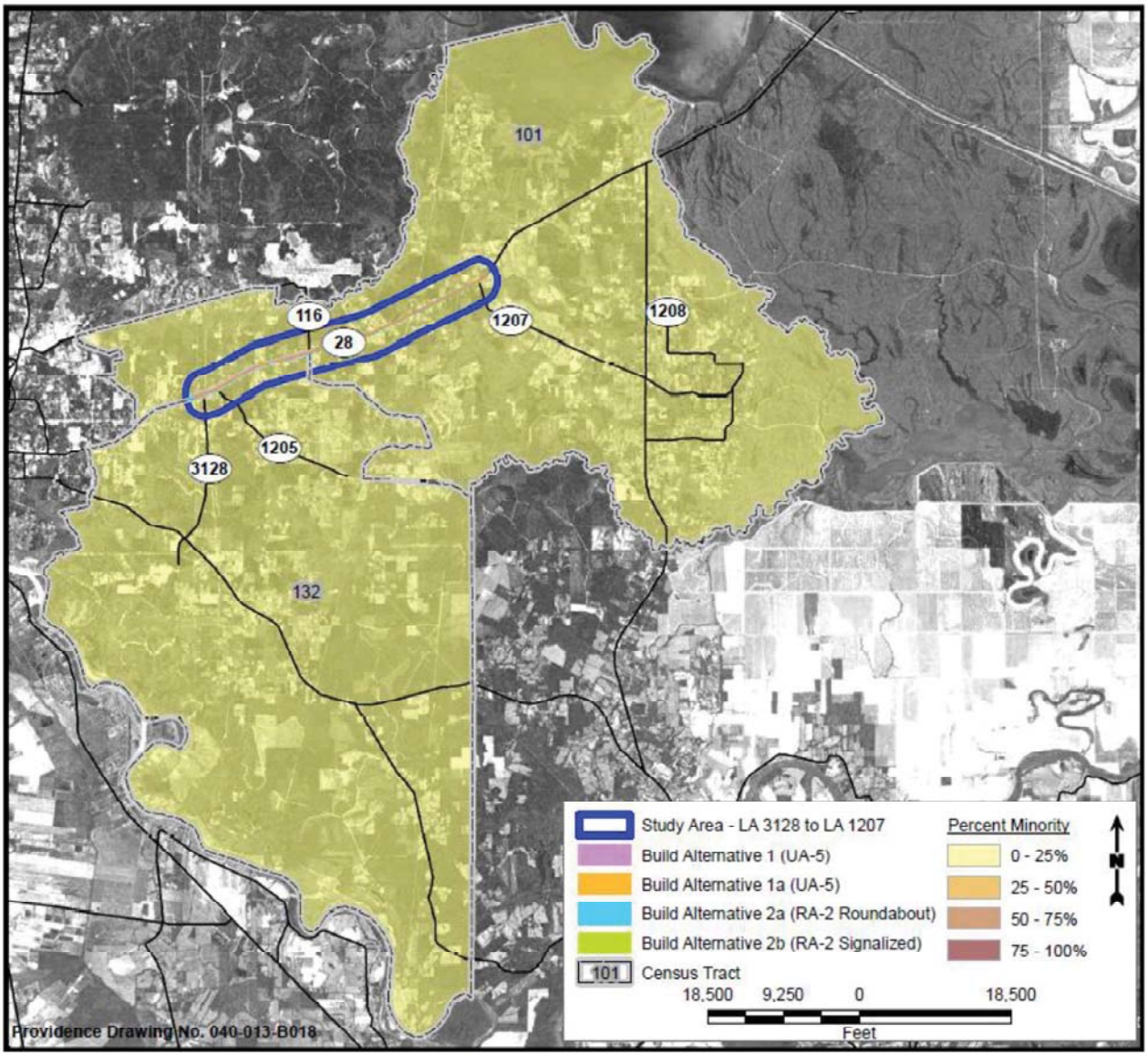
| Census Tracts within the Project Study Area | Rapides - Tract 101 | | Rapides - Tract 132 | | LaSalle - Tract 9703 | | Catahoula - Tract 3 | | Study Area | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Estimate | Percent | Estimate | Percent | Estimate | Percent | Estimate | Percent | Estimate | 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.

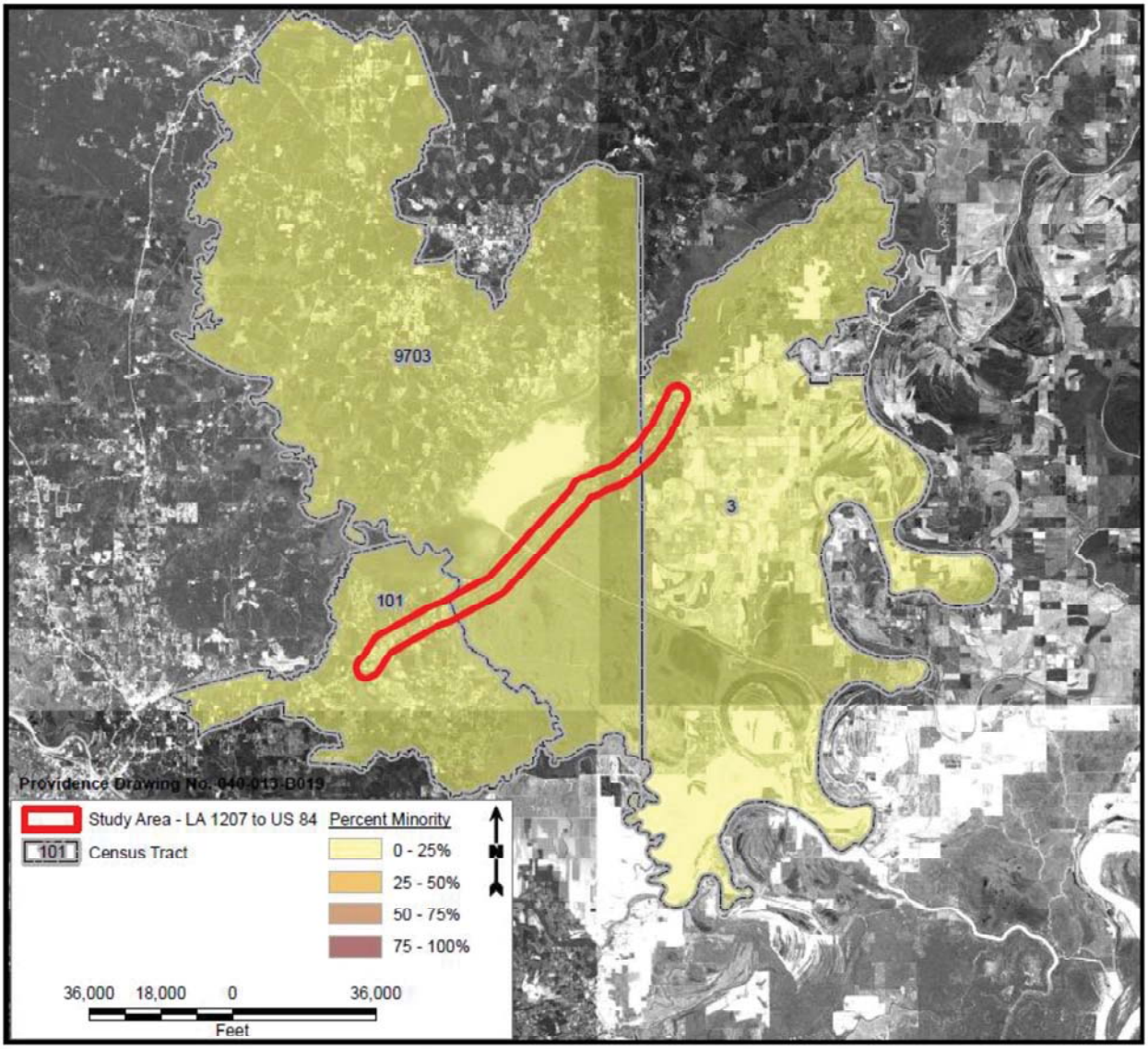
Sources: USCB, 2006-2010 ACS 5-Year Estimates Table DP-02 and DP-04; 2010 Census Summary File 1 (SF 1) 100-Percent Data, Tables QT-H1, QT-P1

## 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.

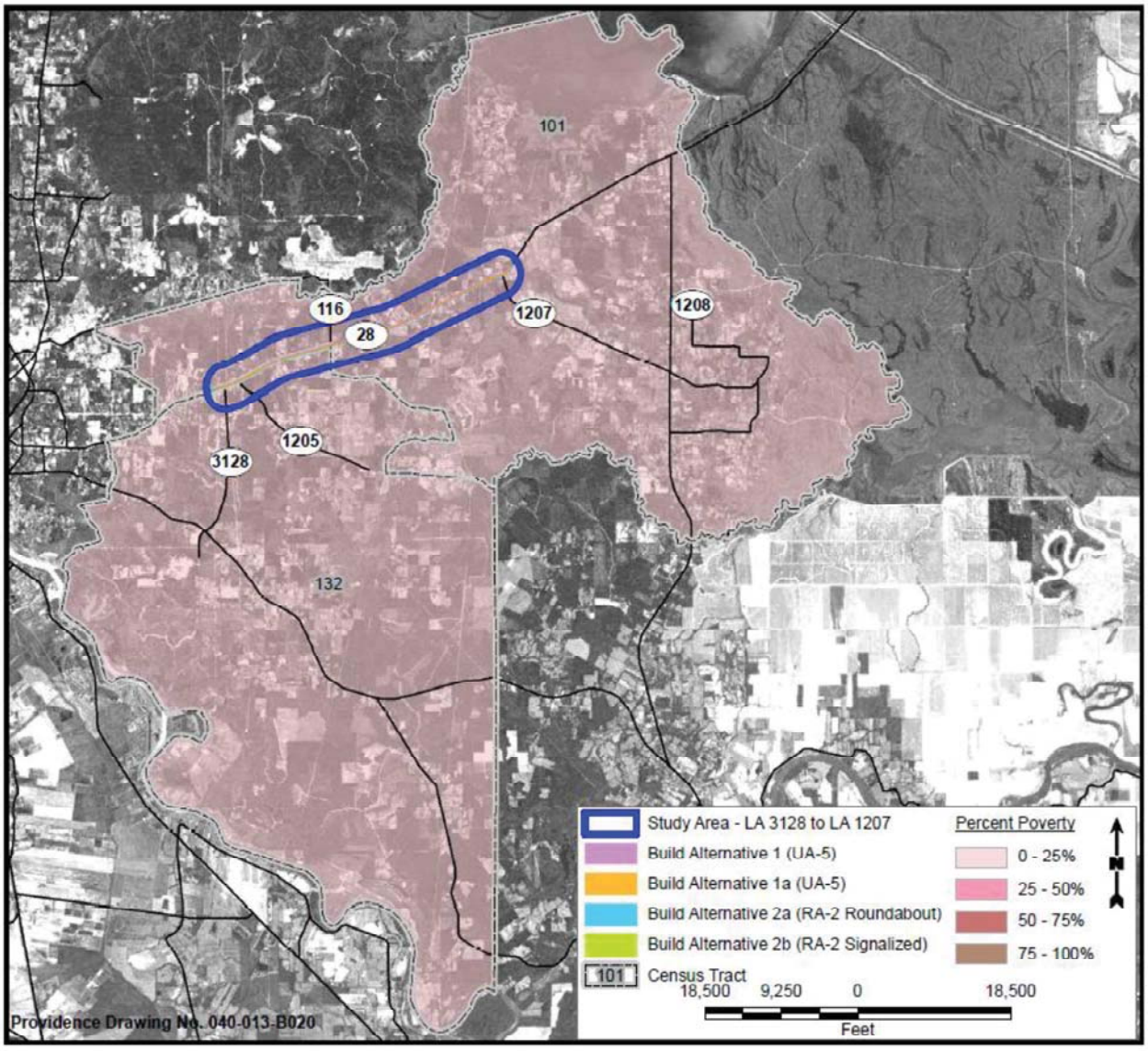
**TABLE 3-4**
**POVERTY STATUS IN THE PAST 12 MONTHS**

| Census Tracts withing 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.

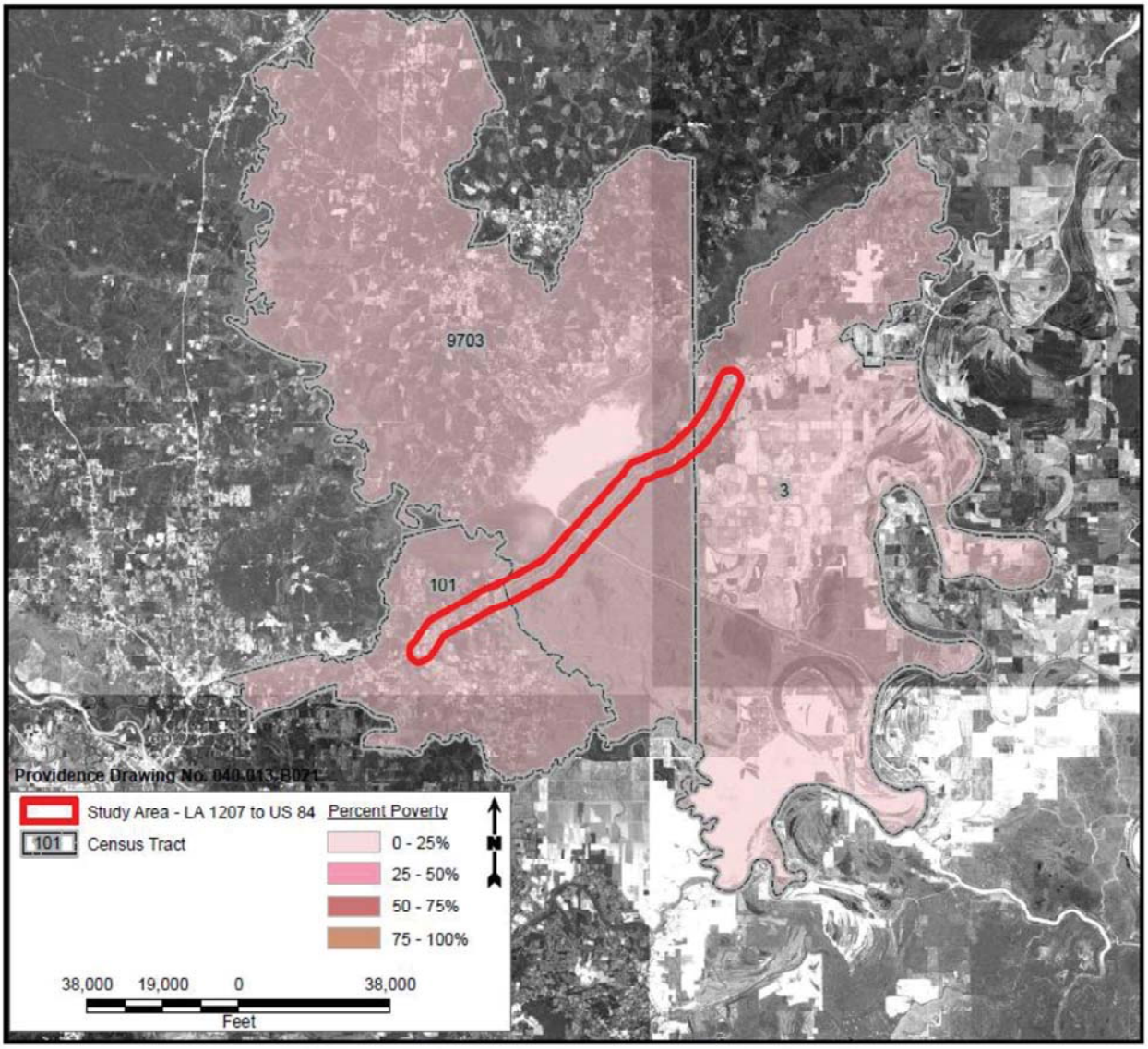
Source: USCB, 2006-2010 ACS 5-Year Estimates Table S1701: Poverty Status in the Past 12 Months

## FIGURE 6a
## POVERTY DATA LIMITS OF CONSTRUCTION



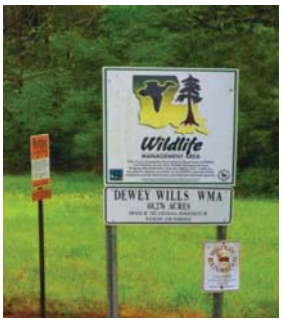

*Poverty data obtained from the USCB, 2006-2010 ACS 5-Year Estimates, Table S1701. Base map comprised of ESRI World Imagery Maps dated June 2013.*

**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.

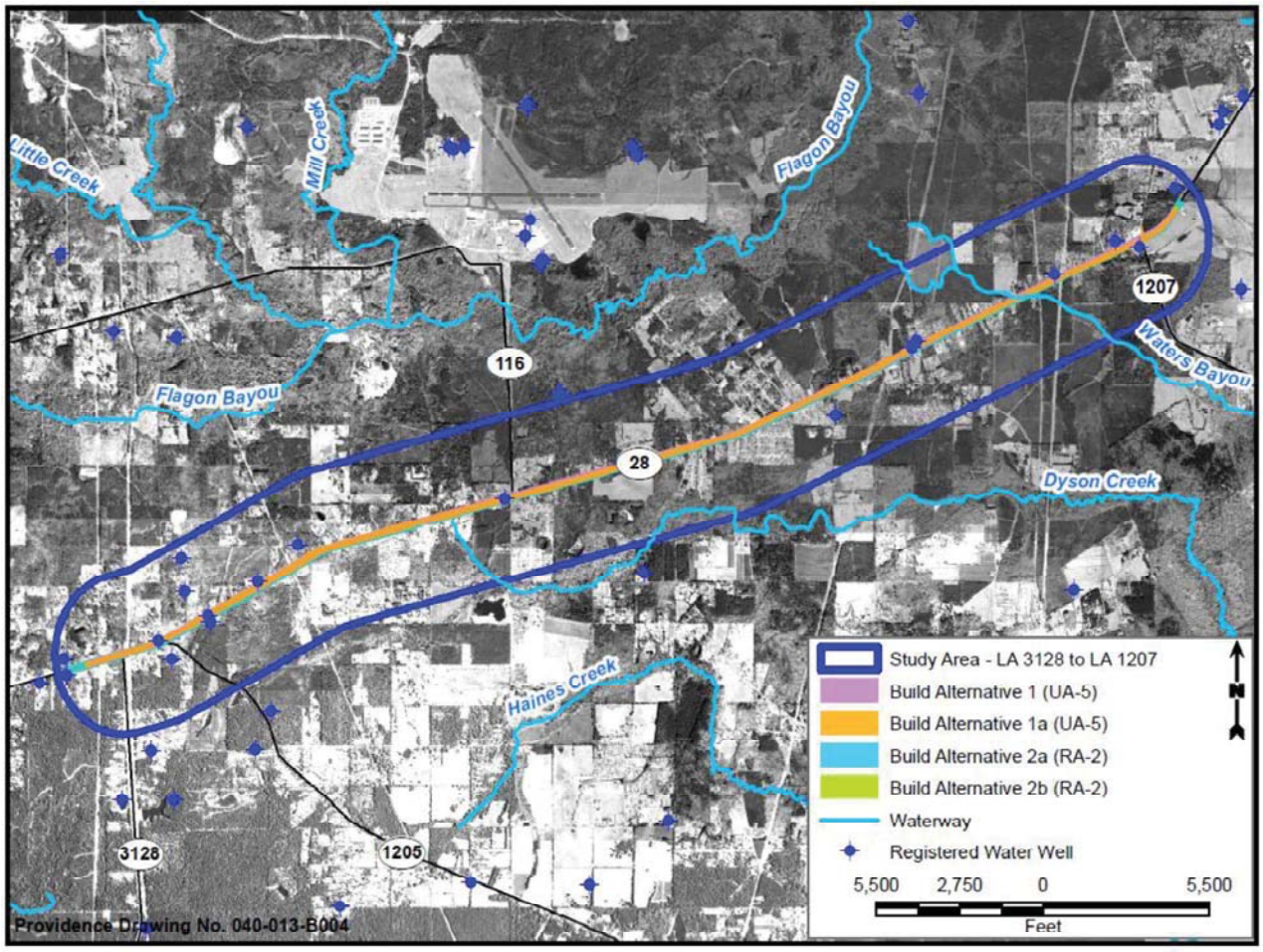
The portion of LaSalle Parish in the project study area represents lower elevation areas of wetlands and bayous that are included in the Dewey Wills Wildlife Management Area and are owned and maintained by the LDWF. Agricultural land dominates the landscape of Catahoula Parish in the study area.

## 3.12 Water Resources

### *3.12.1 Surface Water*

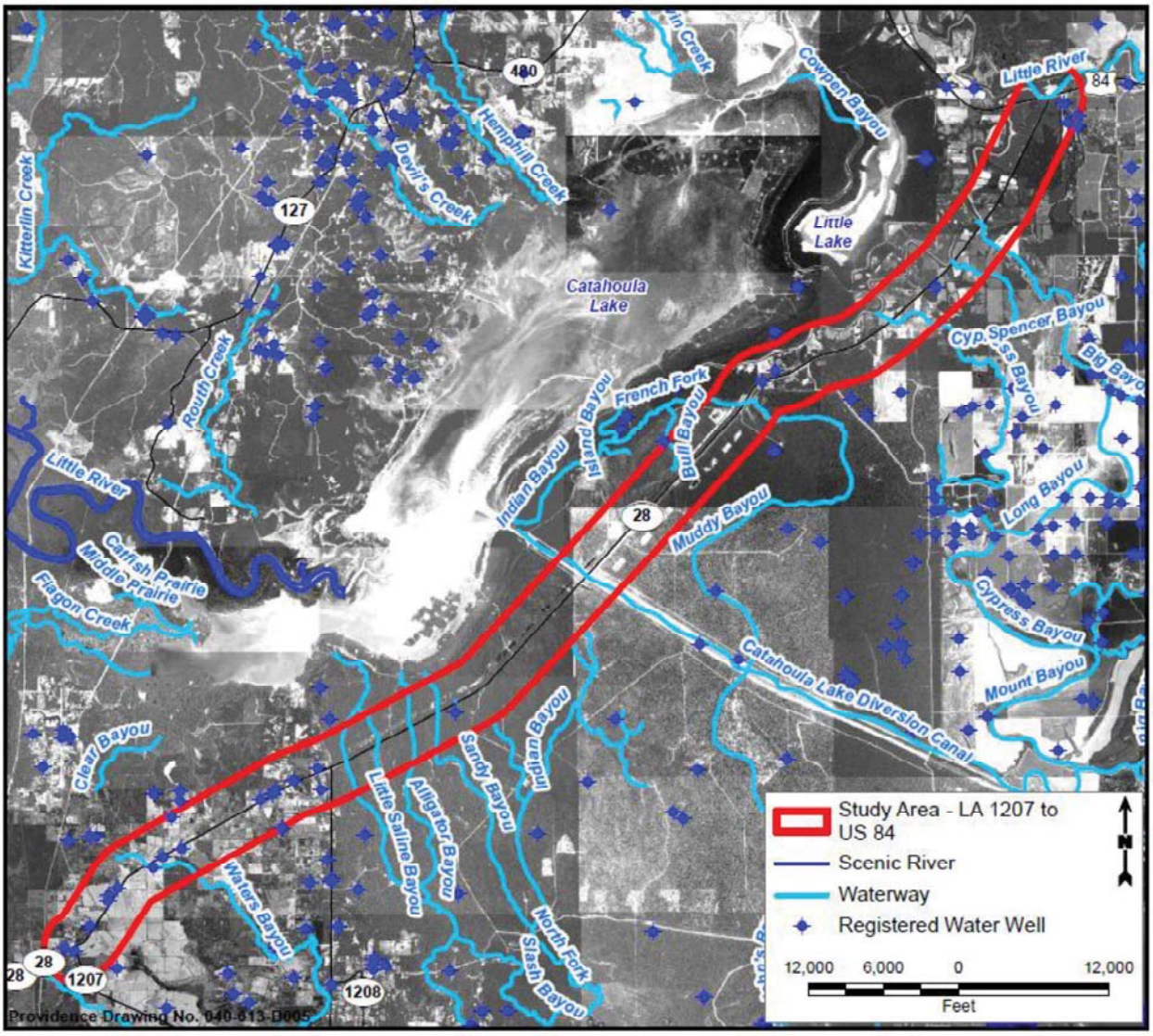
Surface water exists in the project study area in rivers, bayous, canals, and other drainage ways, and occasionally, wetlands. **Figures 7a** and **7b** show area water resources. Water quality in the project study area is affected by both naturally occurring conditions and point source and nonpoint 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.

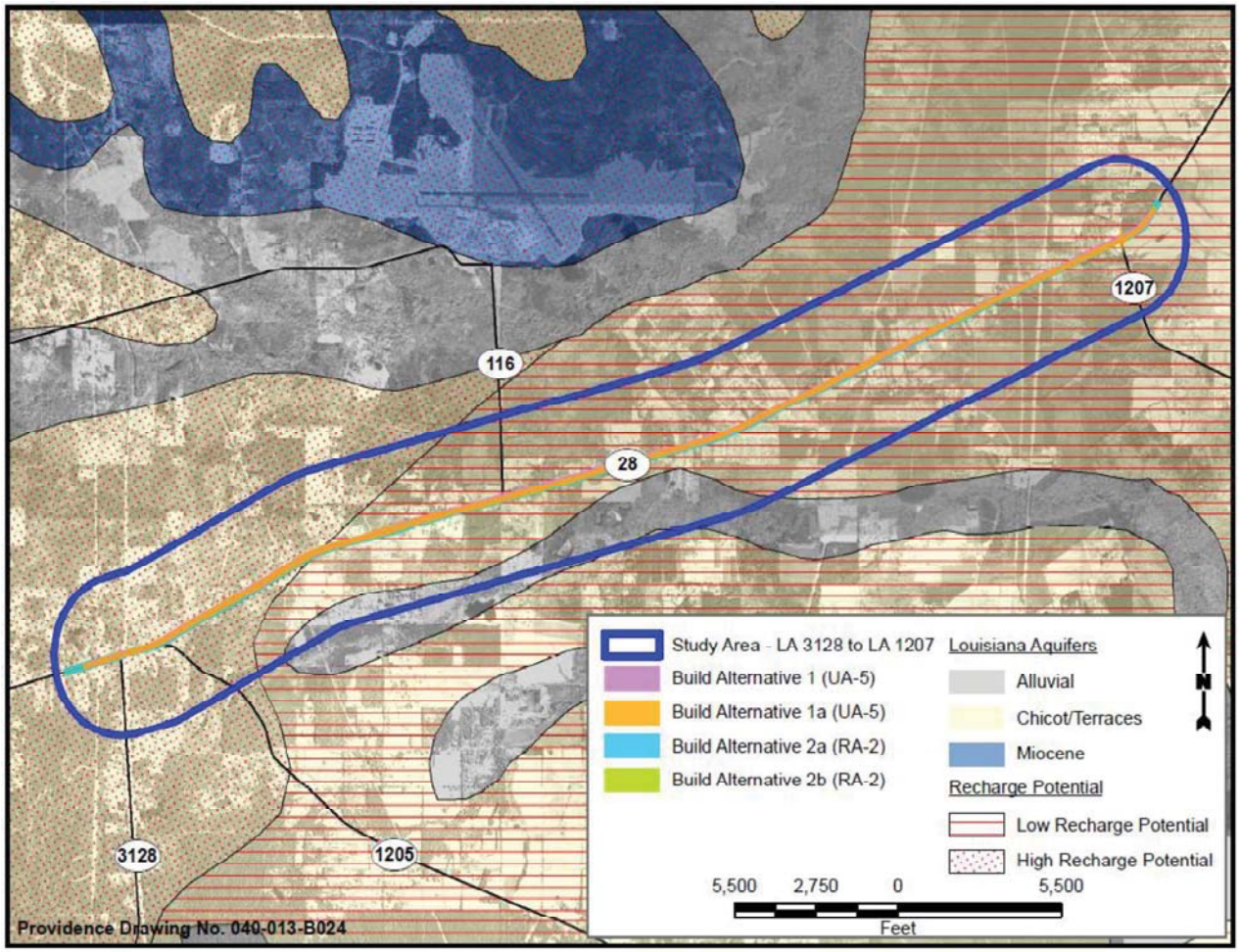
All water wells that were identified are shown on **Figures 7a** and **7b** and are detailed in **Table 3-5.** This search was conducted on November 4, 2015, it is possible that additional wells have been drilled but are not registered.

**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** |

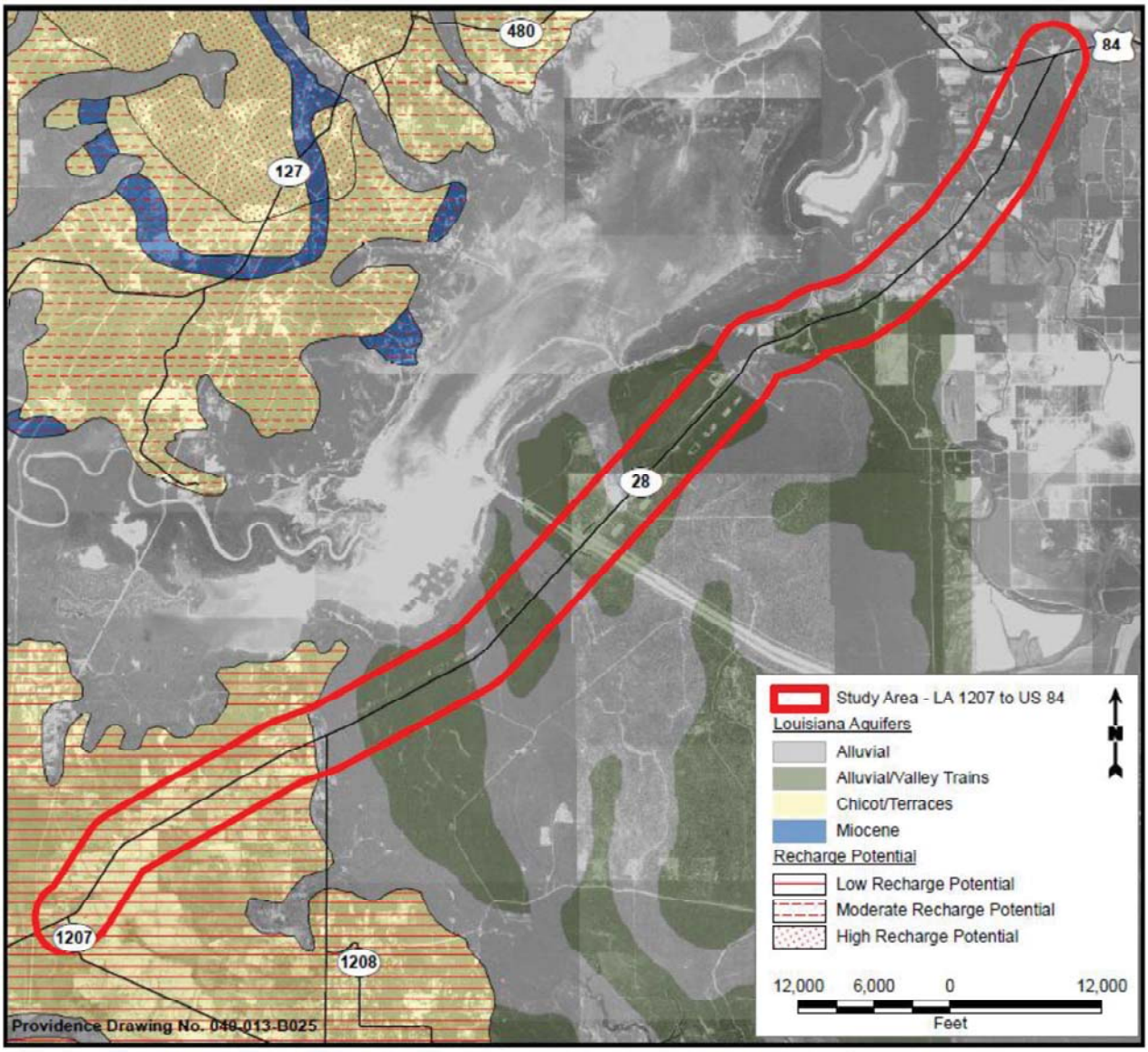
According to the USEPA, a Sole Source Aquifer (SSA) is an aquifer that normally supplies at least 50% of the drinking water for a particular community or area where no viable alternative drinking water source exists. Correspondence received from USEPA's SSA Program dated February 1, 2013 contradicts 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. **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**

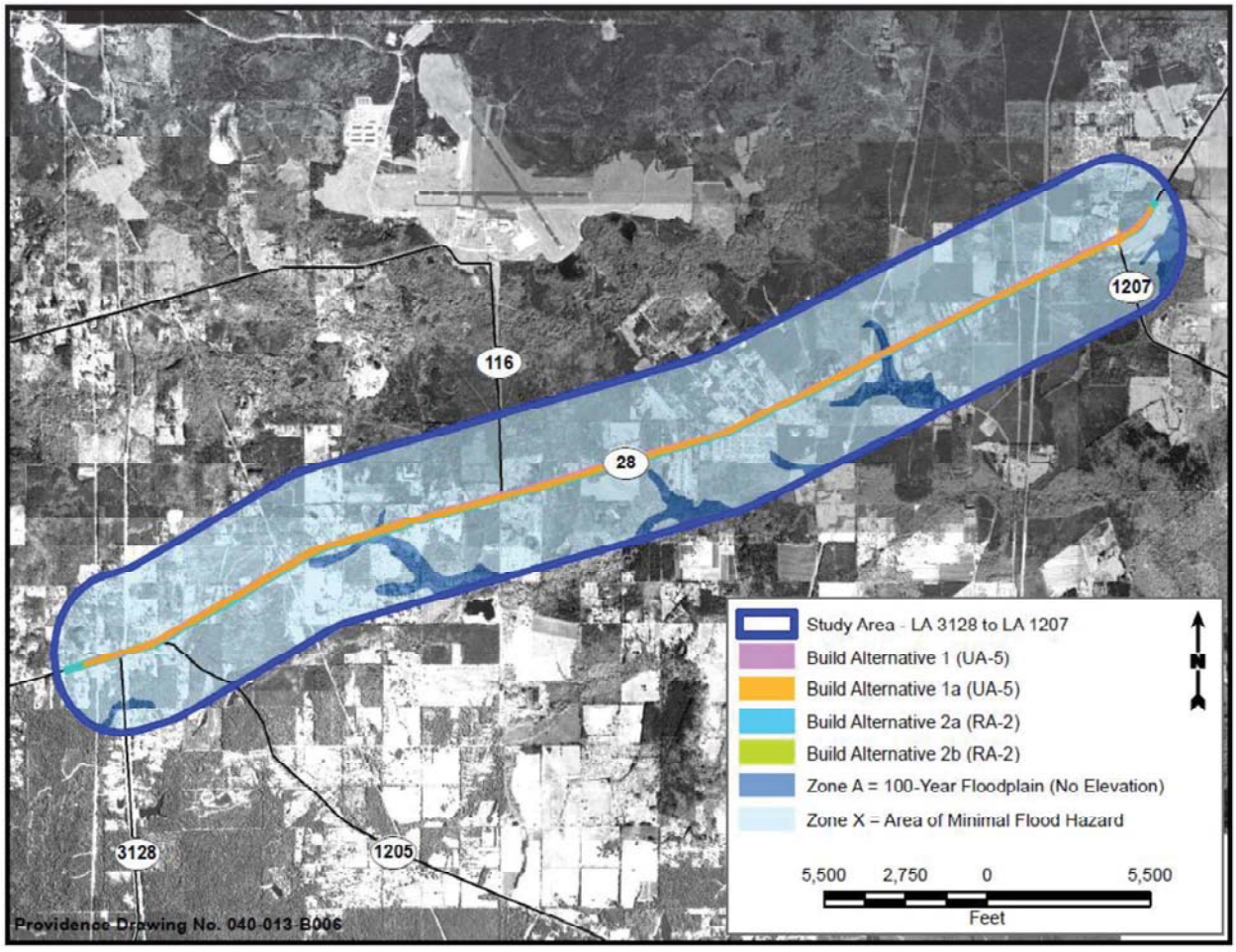



*A search for SSA's was performed, and no SSA's were found in the project study area. Aquifer data comprised of Recharge Potential of Louisiana Aquifers, LDEQ (1999). Base map comprised of ESRI World Imagery Maps dated June 2013.*

## 3.13 Floodplains

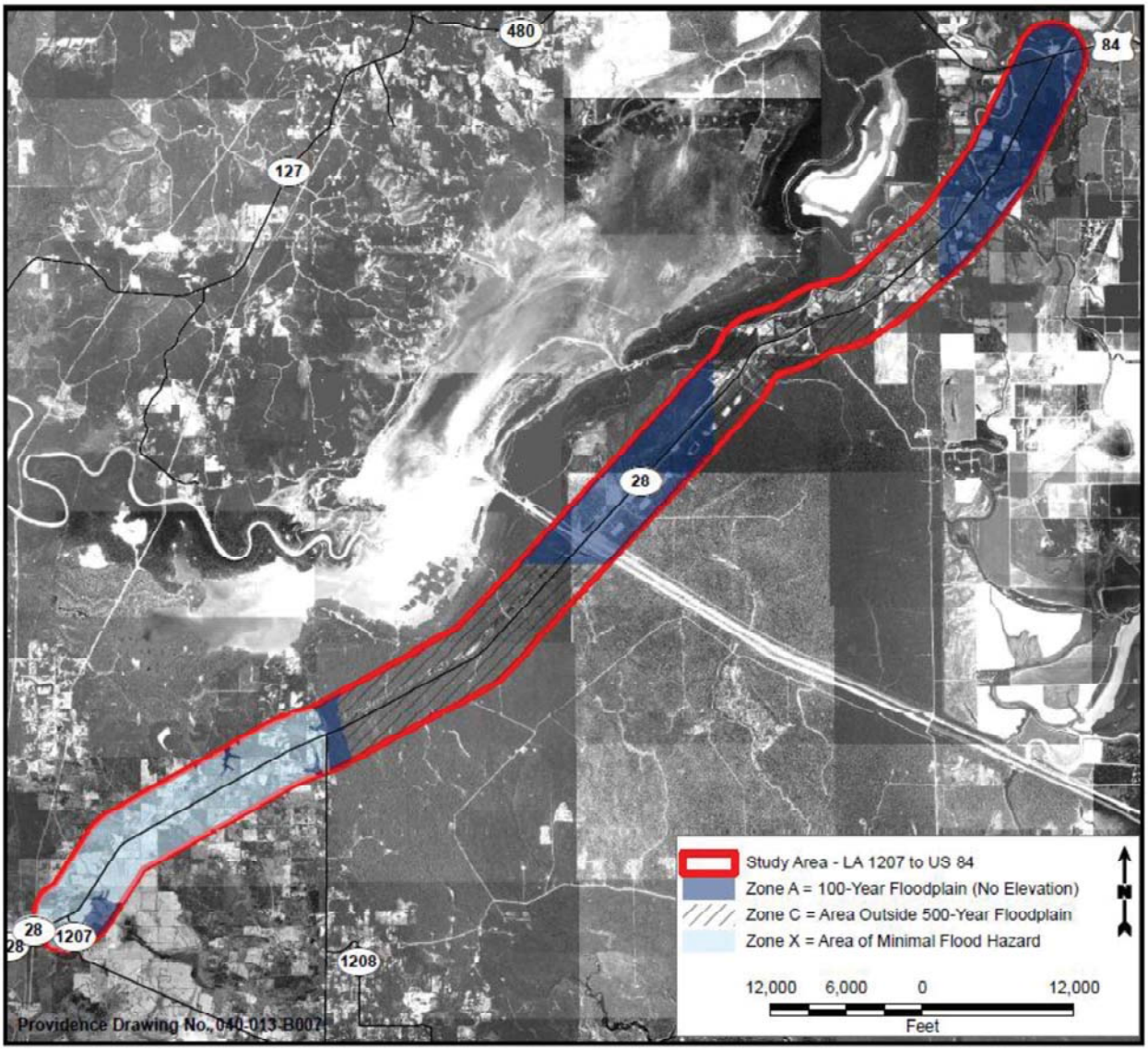
Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) were used to determine the extent of the 100-year floodplain in the project study area. **Figures 9a** and **9b** show the 100-year flood plain consisting of 292.49 acres within the proposed study area.

## 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**

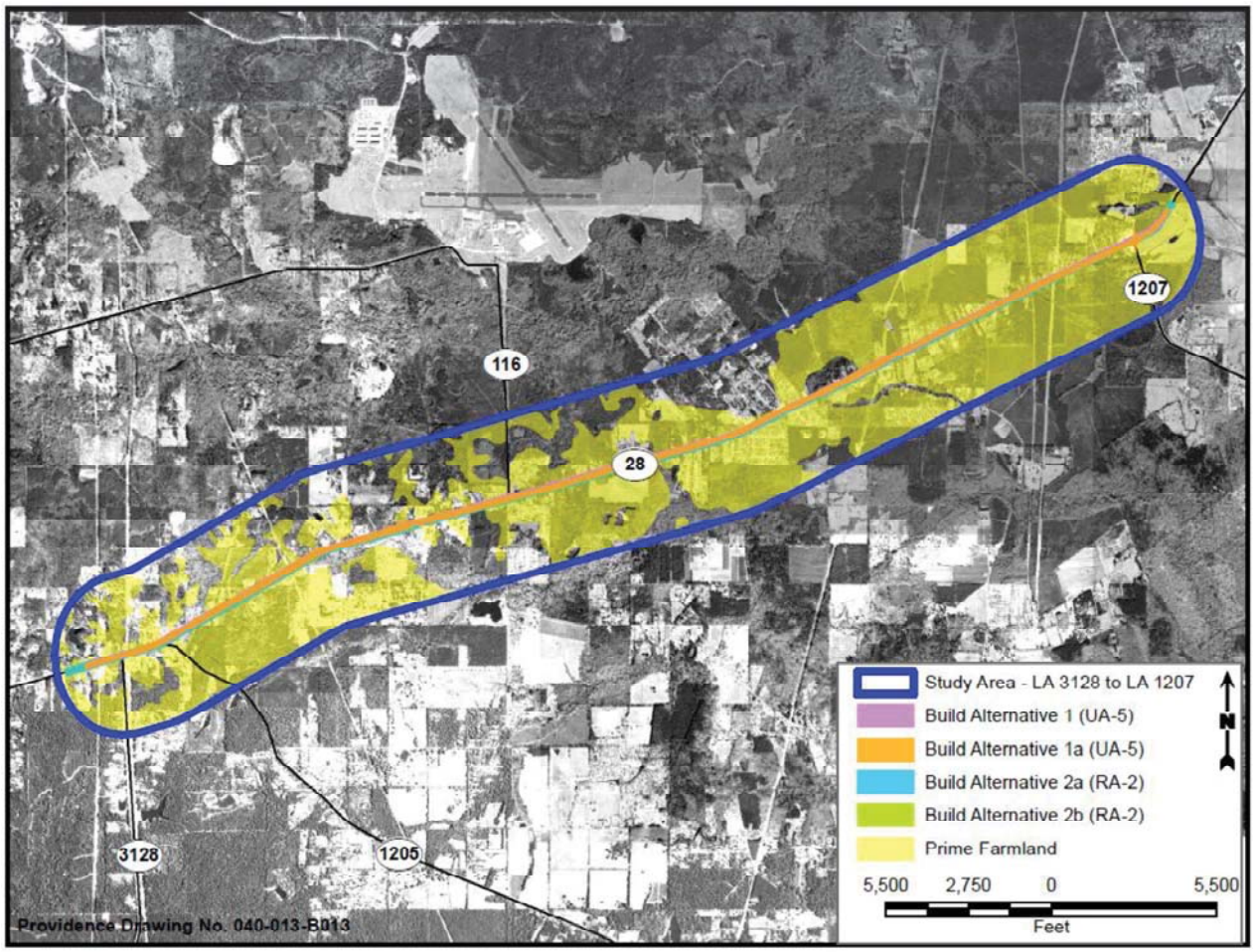



*The Q3 Flood Data obtained from the FIRMS published by the FEMA.*
*Base map comprised of ESRI World Imagery Maps dated June 2013.*

## 3.14 Farmland

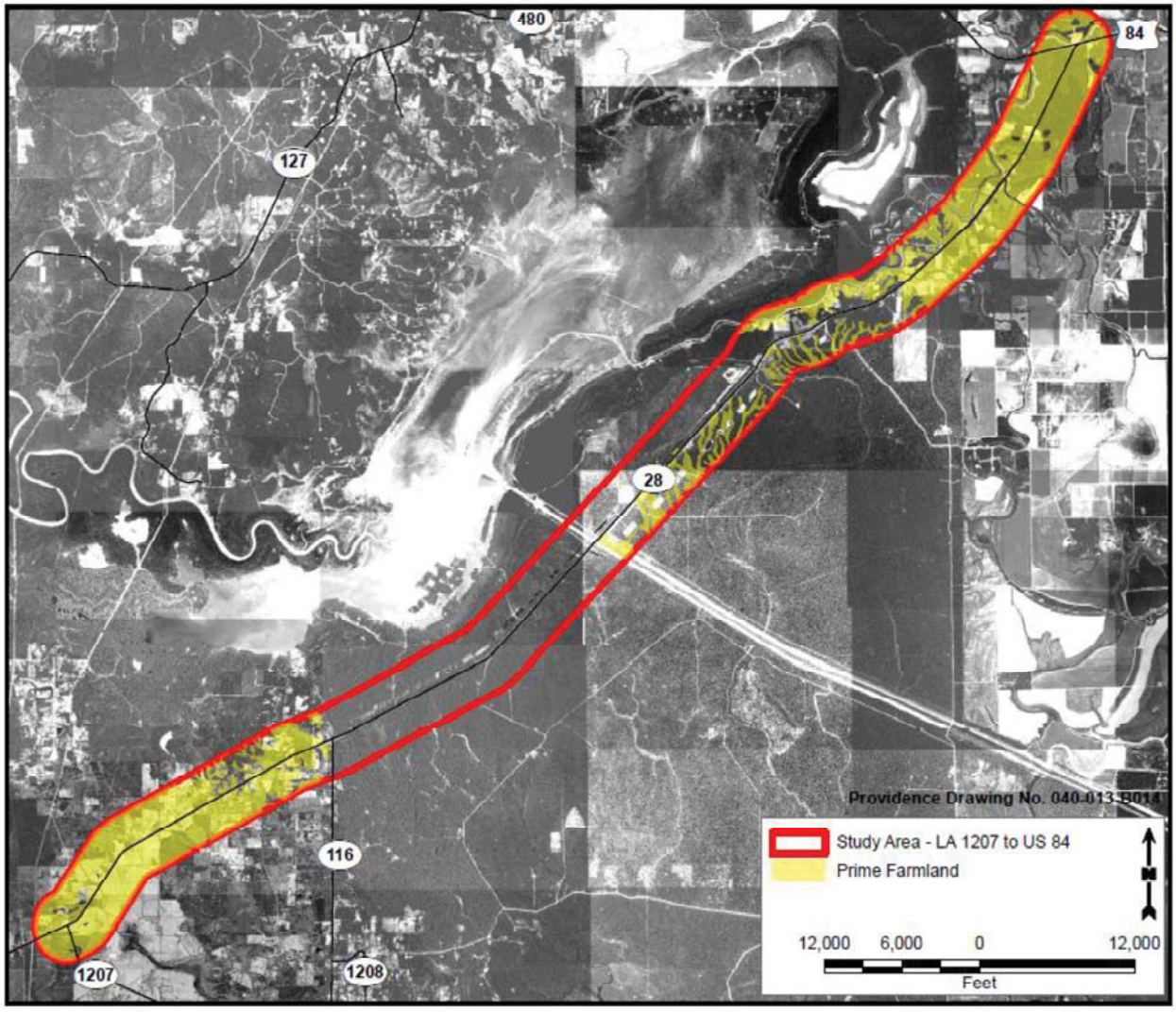
Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. While the Red River alluvial plain supports many crops including cotton, corn, sugarcane, and soybeans and the low areas between the natural levees support soybeans and provide pasture, no prime farmland is expected to be impacted by the proposed project. **Figures 10a** and **10b** show soils 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 a 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 additional 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.

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 review was conducted for the Preferred Alternative. The review is summarized in Chapter 4.16 and a complete copy 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:

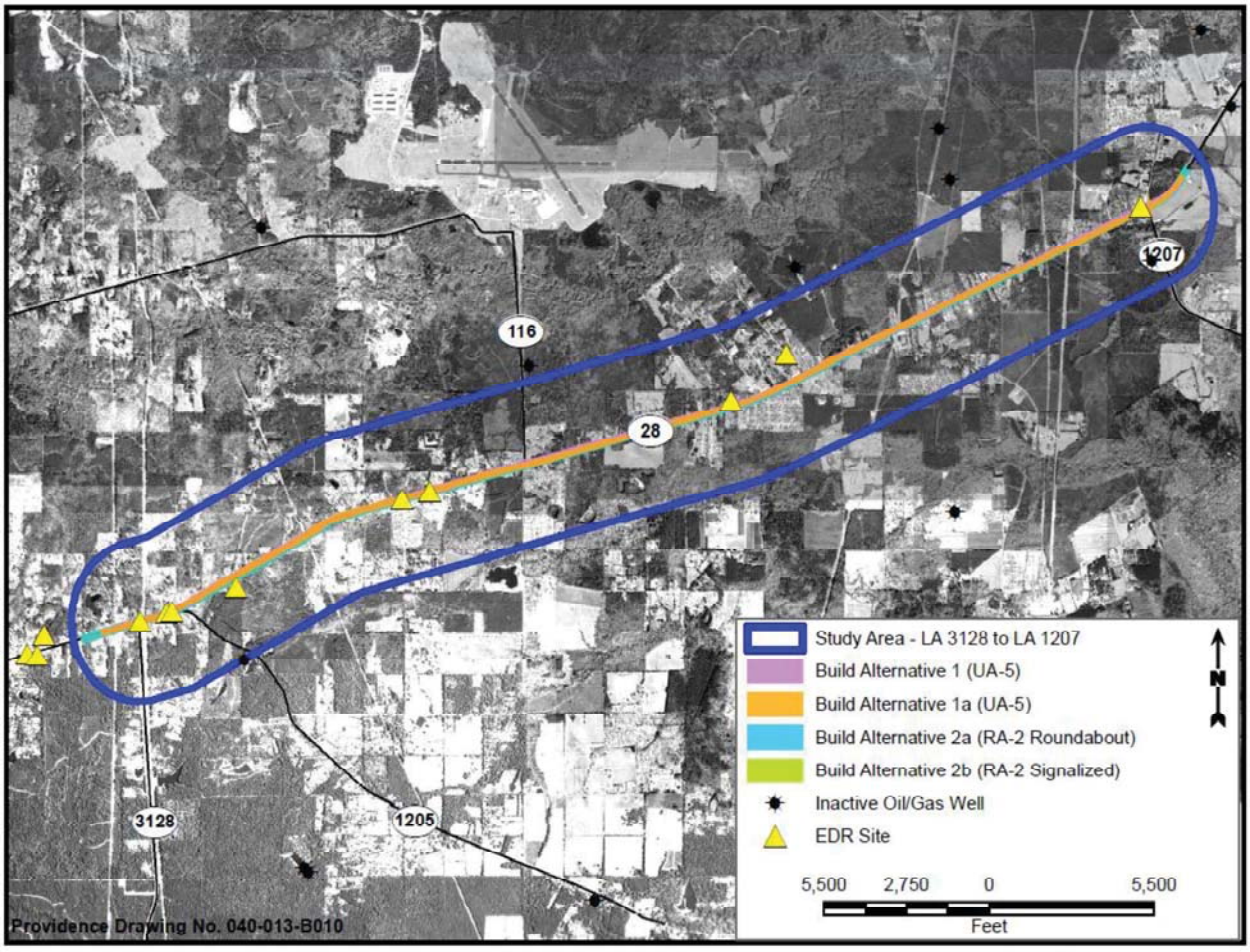
- Sites where hazardous materials or wastes are generated, stored, handled, or disposed
- Sites containing underground storage tanks (USTs)

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*

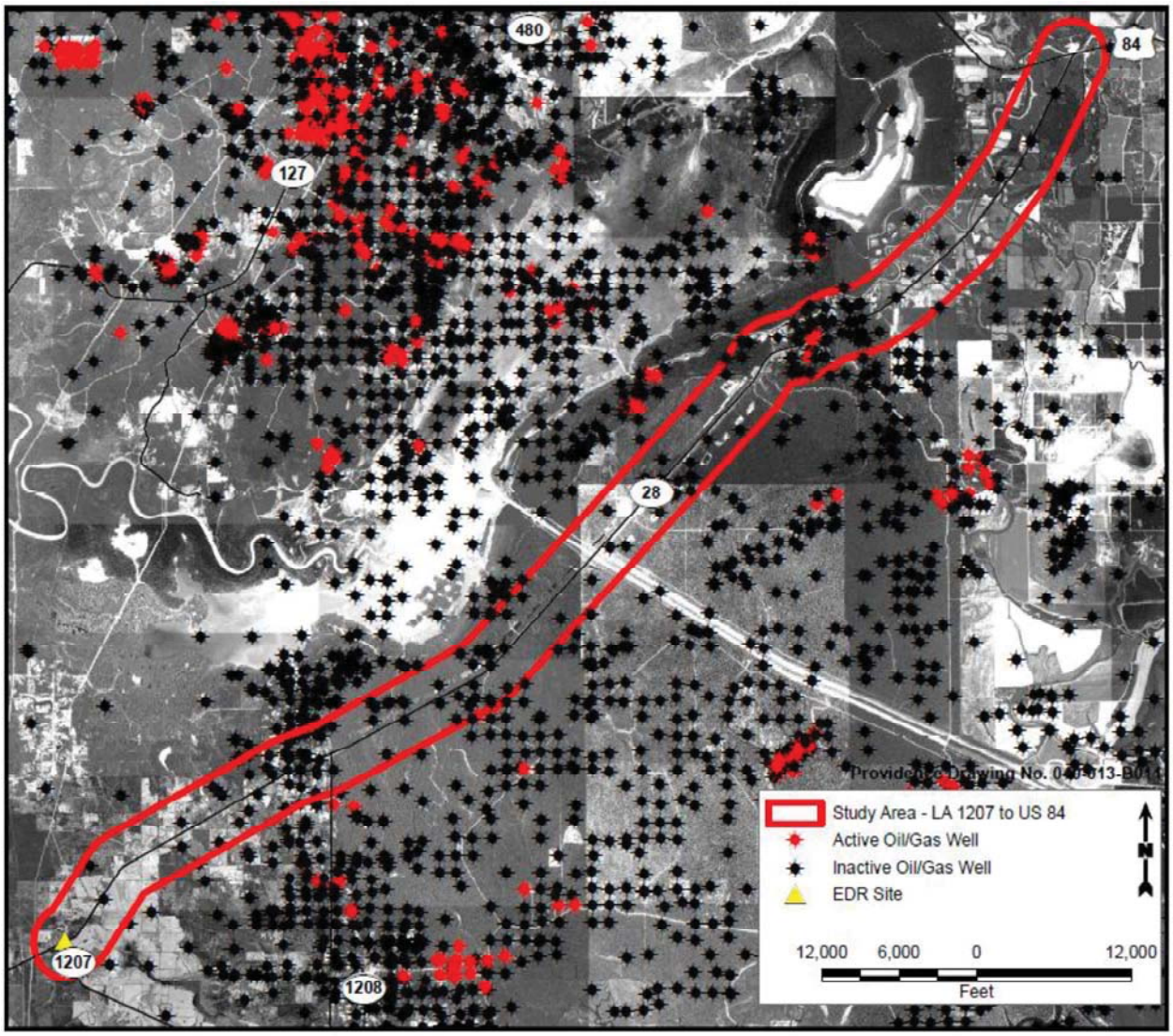
Hazardous waste is defined by 42 USC § 6903 as "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, 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**

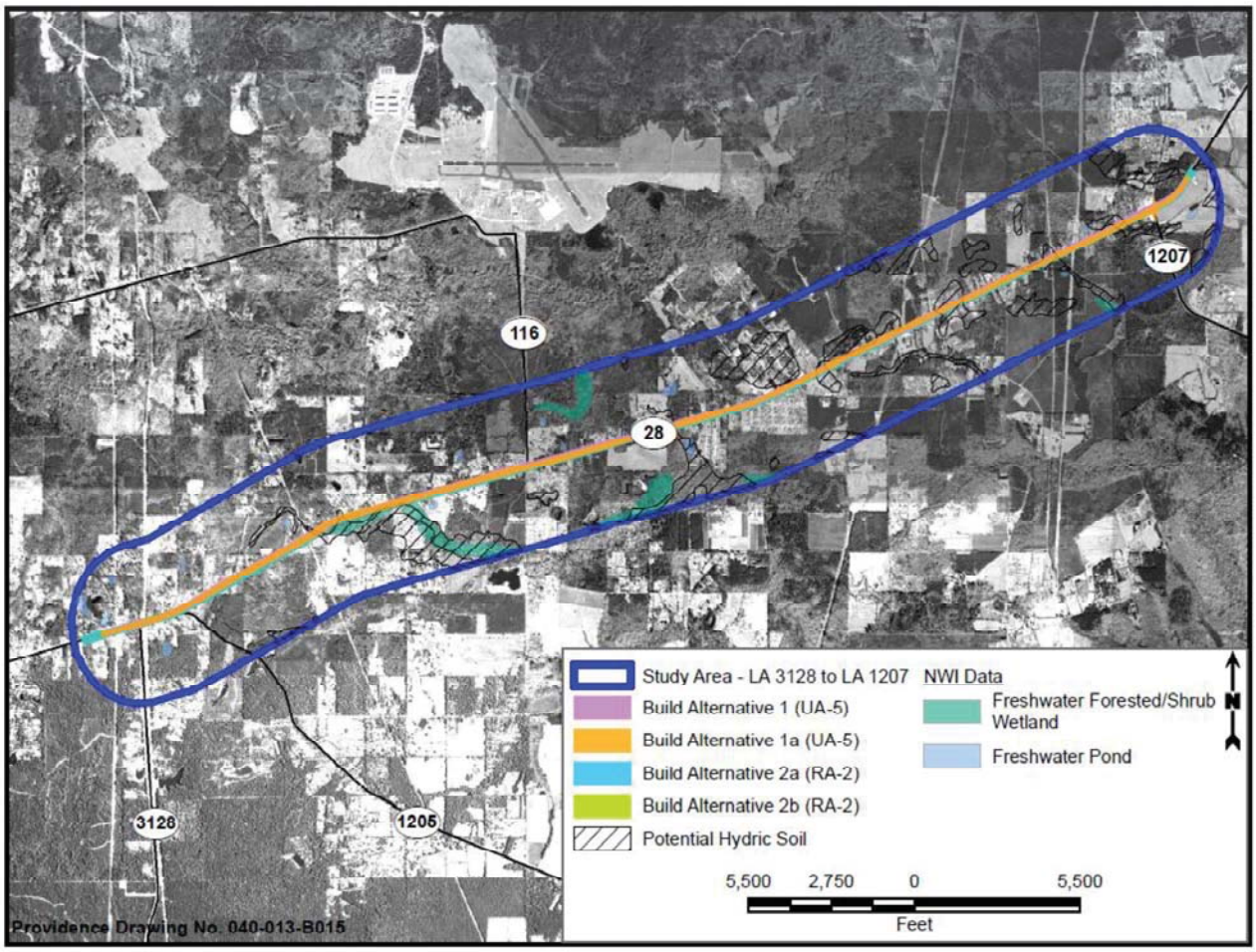
| Well Type | Quantity |
|---|---|
| Dry and Plugged | 1 |
| **Total** | **1** |

## 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.

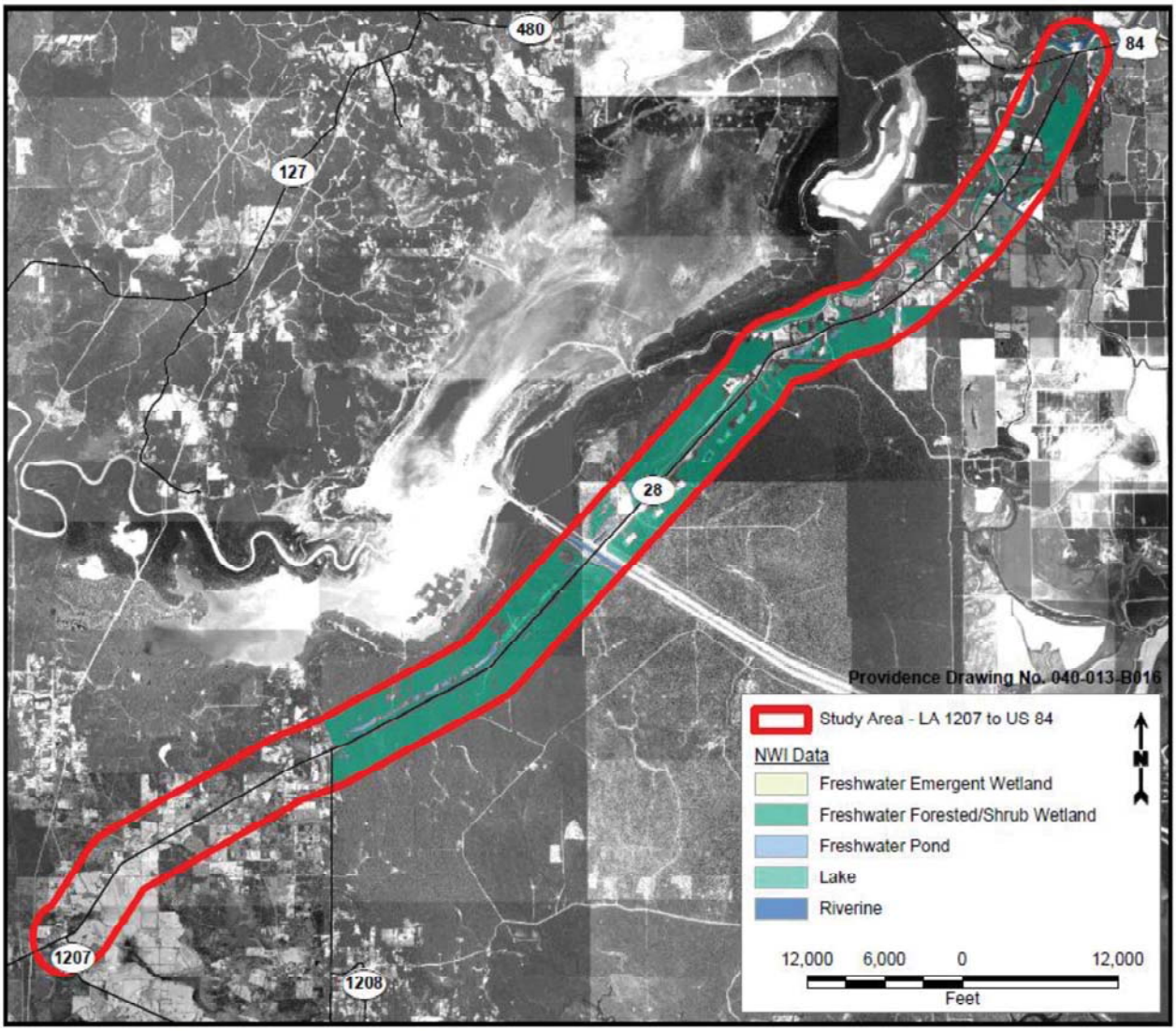
Wetlands potentially present in the project area are believed to be primarily comprised of bottomland hardwood forested wetlands, cypress-tupelo swamp, and riparian habitats associated with other waters of the U.S. (canals, bayous, and other waterways). According to National Wetlands Inventory (NWI) 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

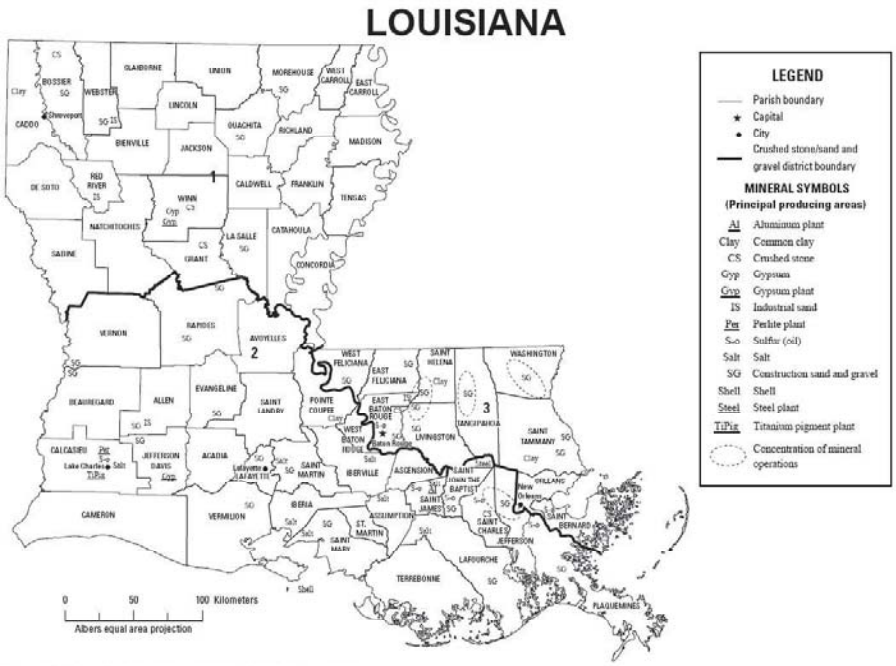
The DOTD Engineering Directives and Standards Manual (EDSM No: I.1.1.21) Treatment of Significant Trees in DOTD Right-of-Way defines significant trees as aesthetically important. Within the existing ROW in the construction study area, no

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

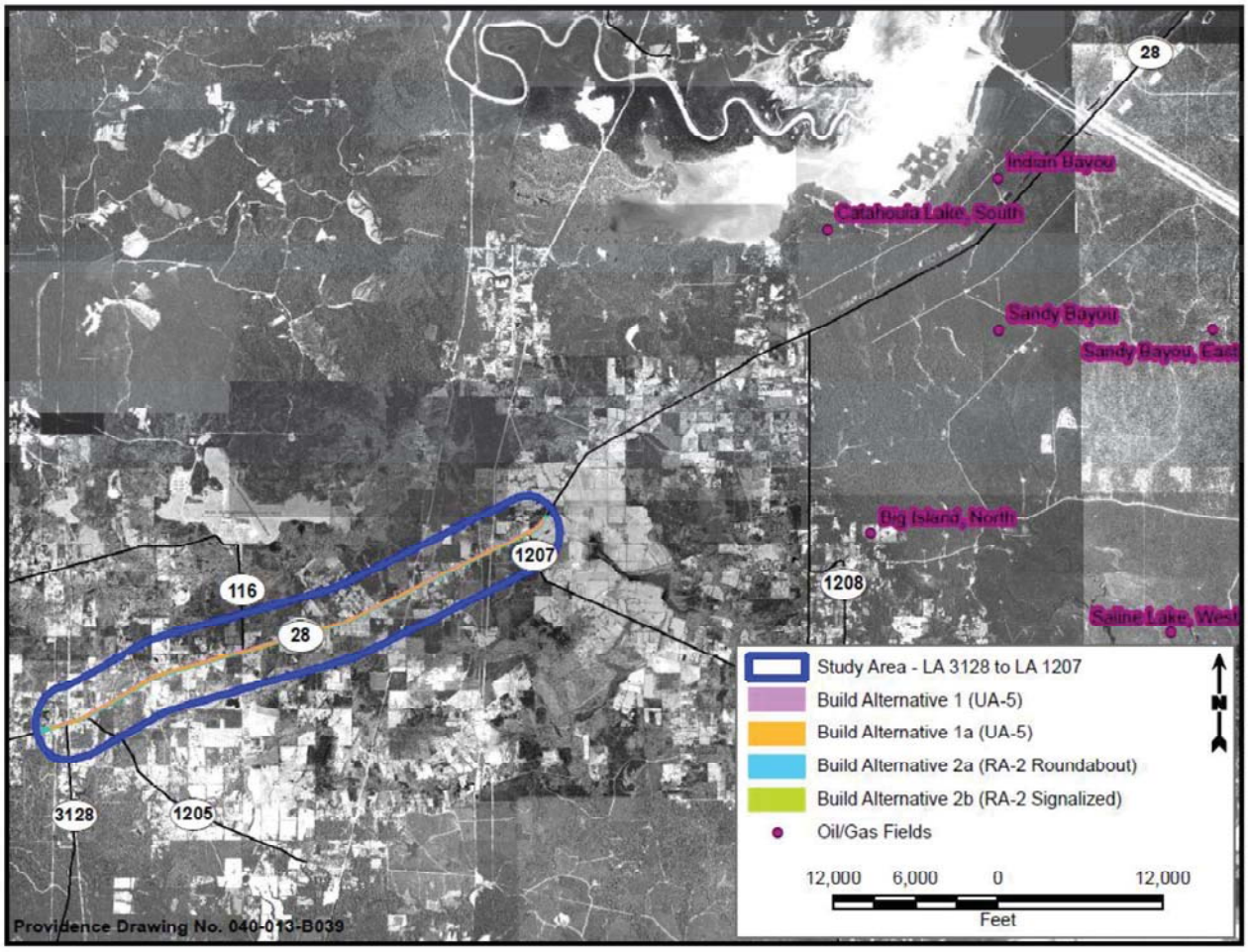
Mineral resources information for the project study area was obtained by researching the LDNR's SONRIS database and the USGS's publicly available data. The USGS *2009 Minerals Yearbook* for Louisiana included the figure below illustrating principal mineral producing areas. Construction sand and gravel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




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

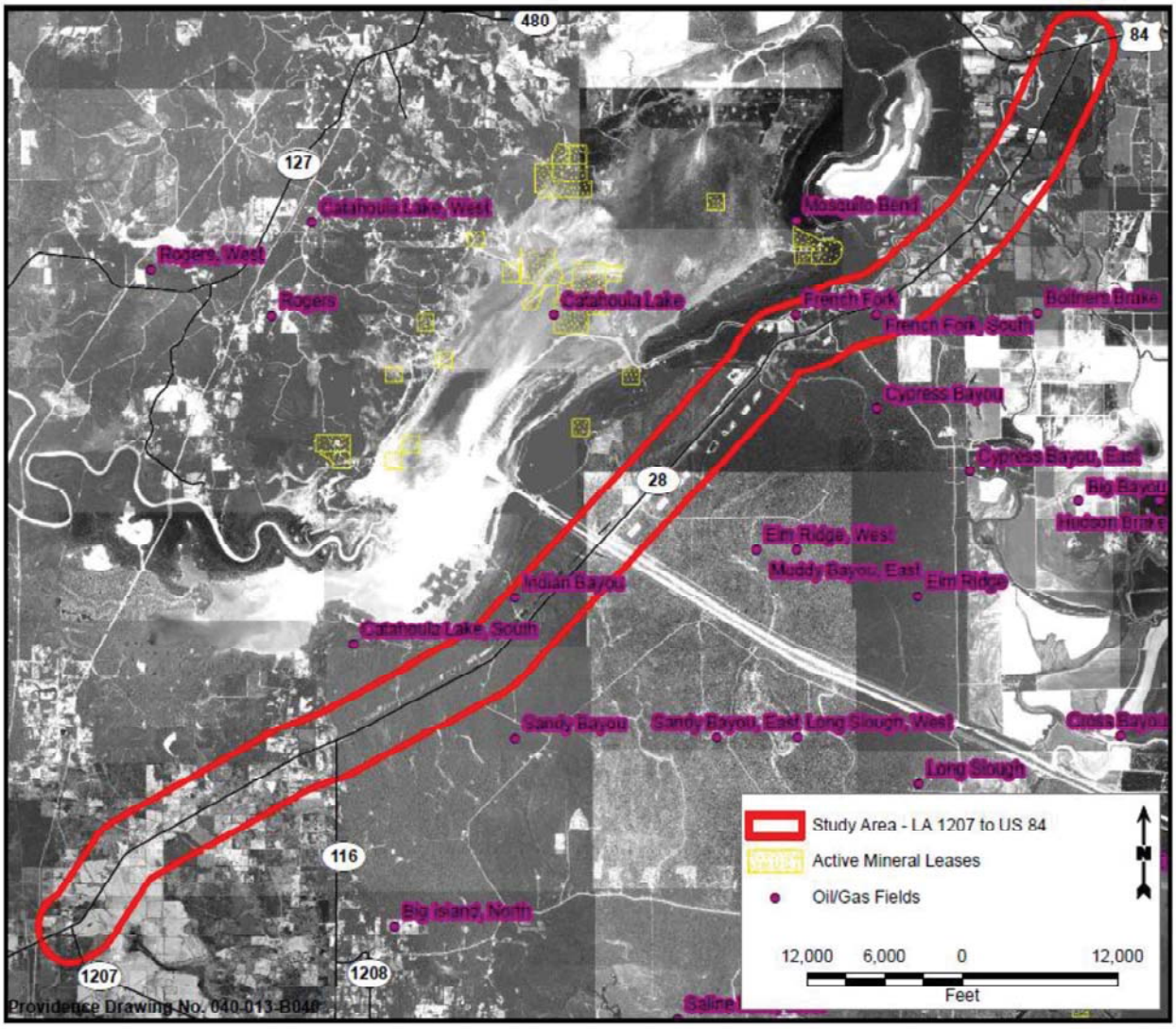
Active mineral leases in the project study area were researched through the State Mineral and Energy Board of the state of Louisiana, the entity that issues leases for the purpose of exploring, prospecting, and/or drilling for and producing oil, gas, and any other liquid or gaseous minerals in solution 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 interchange improvements 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. Agency correspondence referenced in this chapter are included in **Appendix A**, unless stated otherwise.

## 4.1 Land Use and Development

This section addresses impacts to the land use categories of commercial, industrial, residential, and wetland. 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 Chapter 4.18.

## 4.2 Community Facilities and Services

The No-Build Alternative will not impact community facilities.

The Preferred Alternative is likely to affect the Book Worm Academy. It should be noted that the proximity of the building to the ROW is such that impacts may be avoidable. The design phase may consider measures to minimize or avoid impacts to this facility. 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<br>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.

$FT^2$ = Square feet, SQ YD = square yard

**NOTES:**

1. Total acreage for land is based on values provided in **Table 5** of the CSRP.
2. Residence estimated value is based on current $ft^2$ 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.

### 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; however, a response was not received.

### *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.

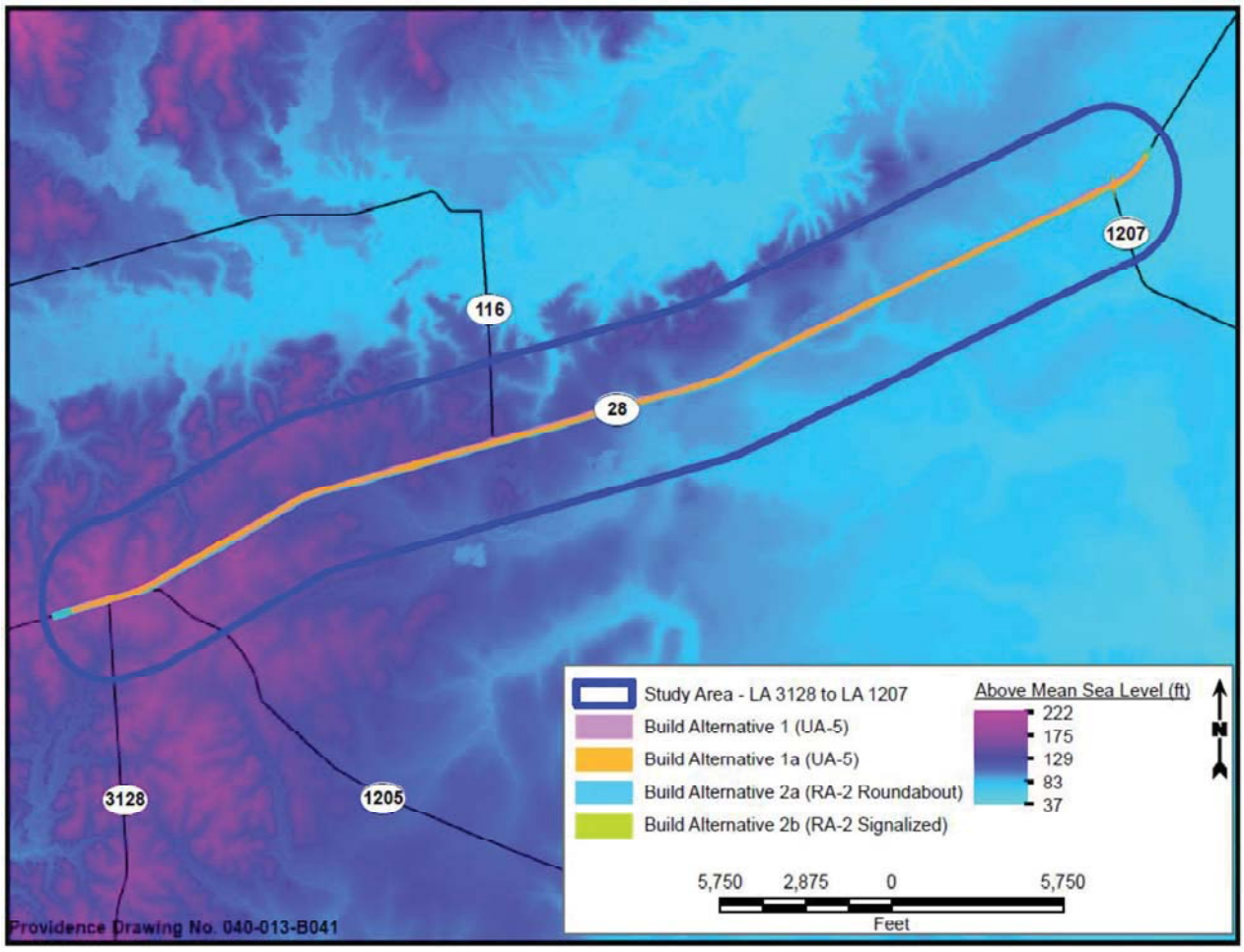
The majority of existing LA 28 is outside of a floodplain; however, there is a small area that is within the floodplain containing roadside ditches designed to convey runoff adjacent to the roadway. Due to the purpose and need of this project, there is no feasible build alternative that does not impact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

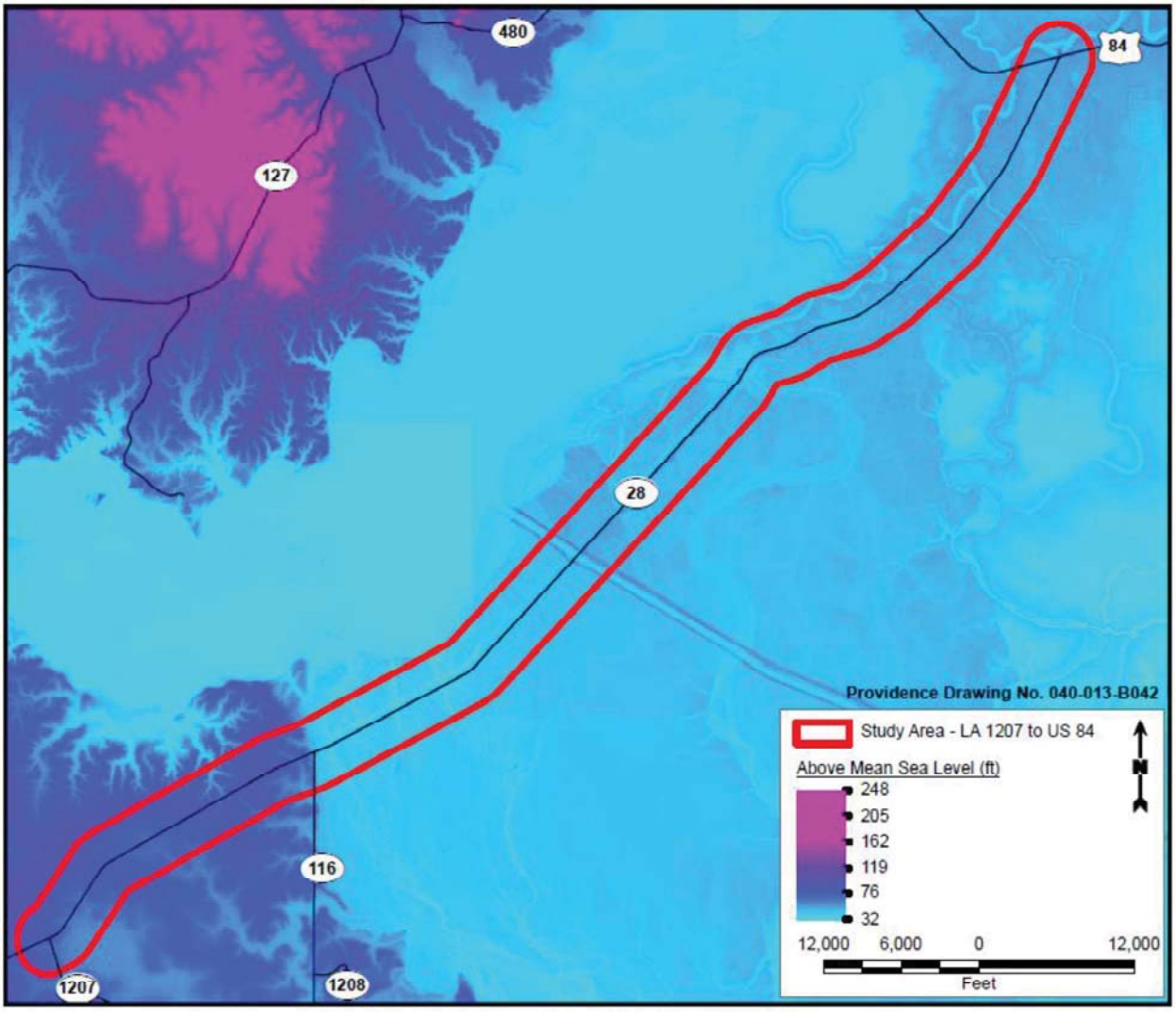
culverts will be designed to convey the 50-year frequency storm. Construction of detention treatment facilities to provide additional storage in the floodplain could be considered; however, additional studies would be required at a later date to determine the amount of storage necessary.

**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

The No-Build Alternative will involve no disturbance of existing soils, the topographic character of the project study area, or prime farmland.

According to USDA guidance, federal agencies involved in projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will need to submit Form AD-1006 or Form CPA-106 Farmland Conversion Impact Rating. In a response letter dated January 22, 2013, the NRCS indicated that the proposed project is exempted from the FPPA regulations located at Subtitle I of Title XV, Sections 1539-1549 and that they do not expect the project to affect NRCS projects that may be occurring in the project area.

## 4.15 Noise

As previously mentioned in Chapter 3.14, the TNM was used to determine traffic noise impacts for 265 noise-sensitive receptors near the proposed Preferred Alternative. 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.

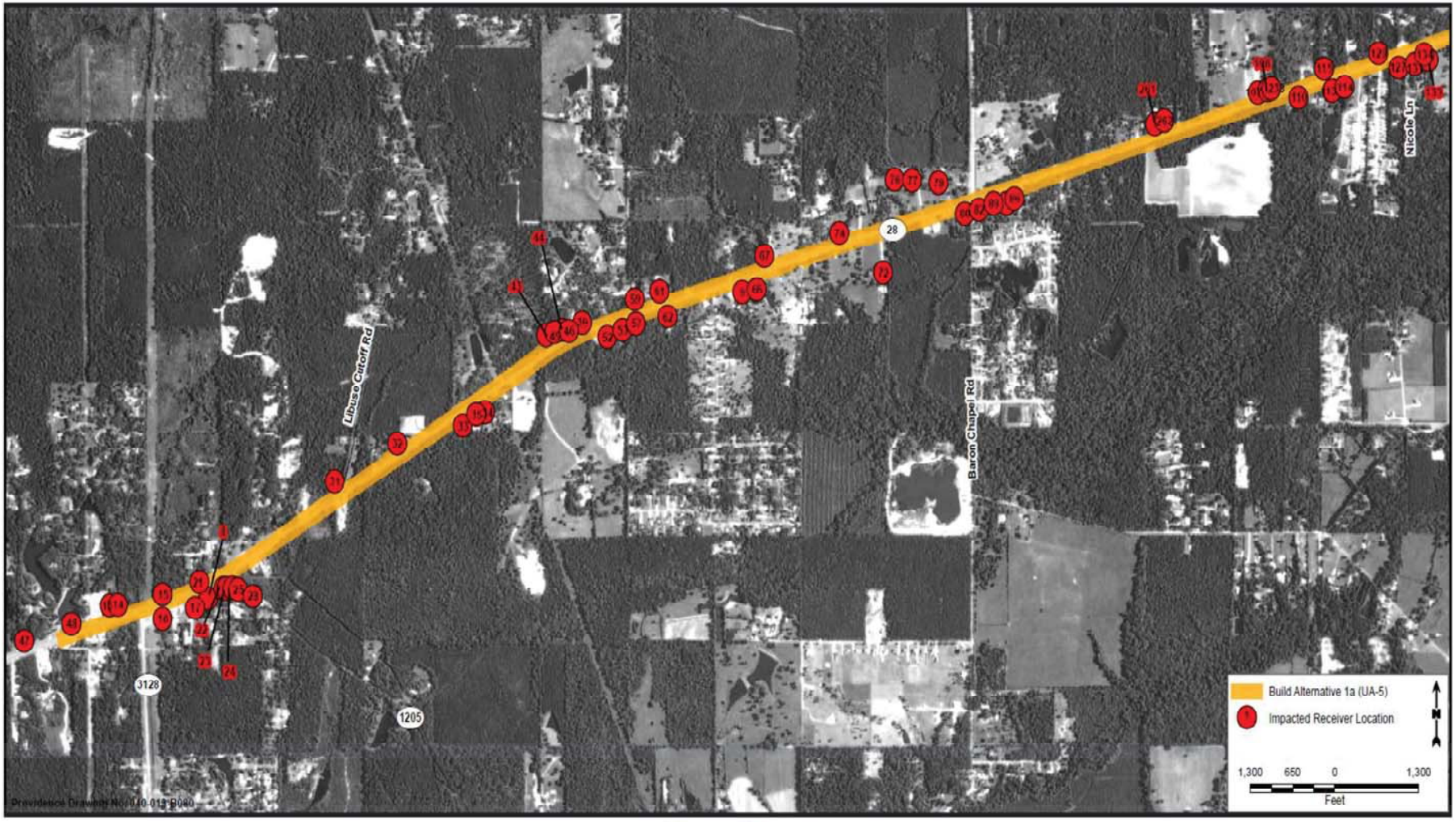
Noise barriers were considered for all impacted receptors. Noise barriers were not considered feasible for 86 of the 111 impacted receivers due to property access needs. Therefore, no noise abatement measures were analyzed for these 85 residences and one commercial structure. Noise barriers were considered 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.

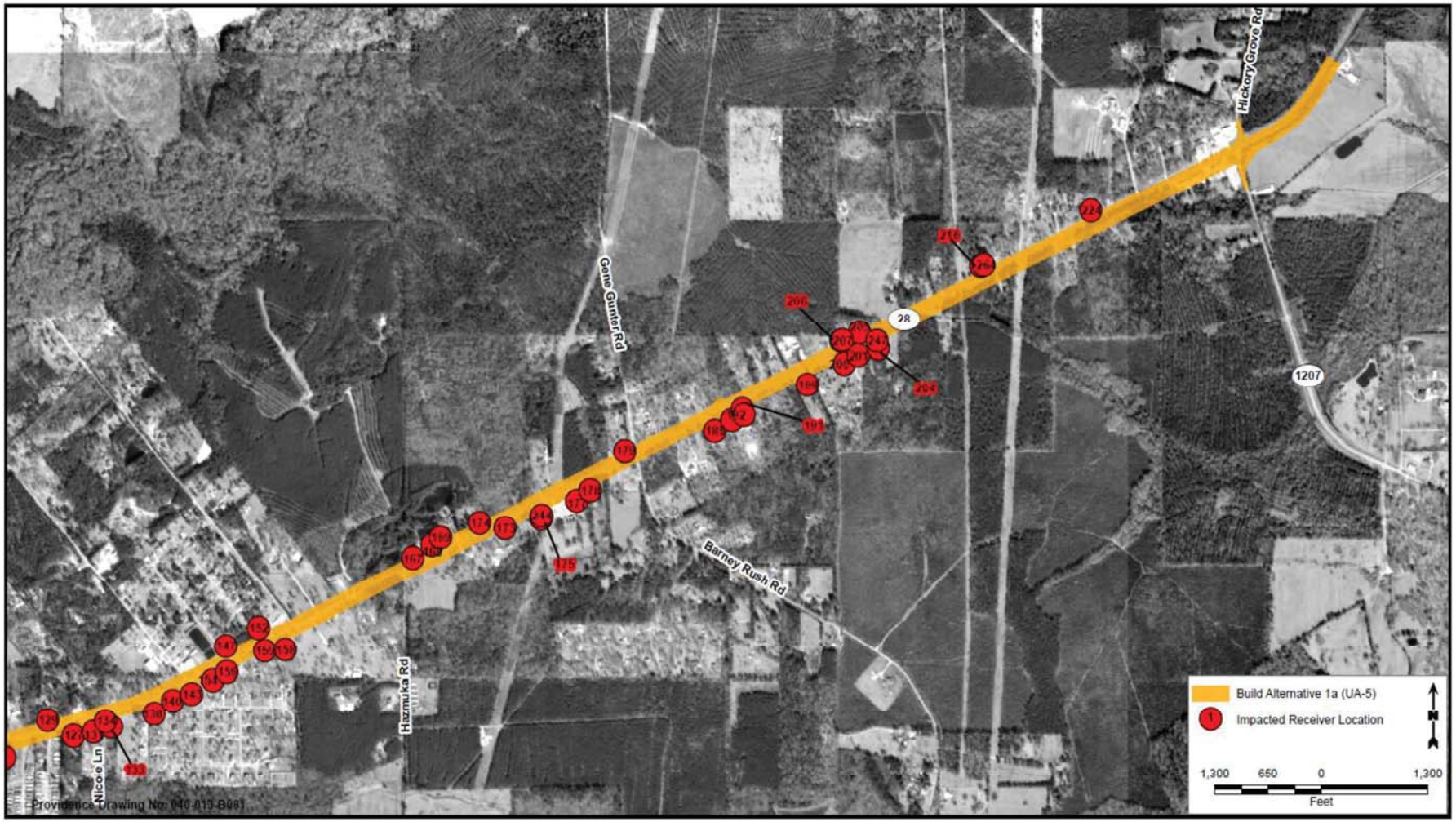
Impacted receivers are illustrated on **Figures 15a** through **15d**. A copy of the full traffic noise analysis is included as **Appendix C**.

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




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

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

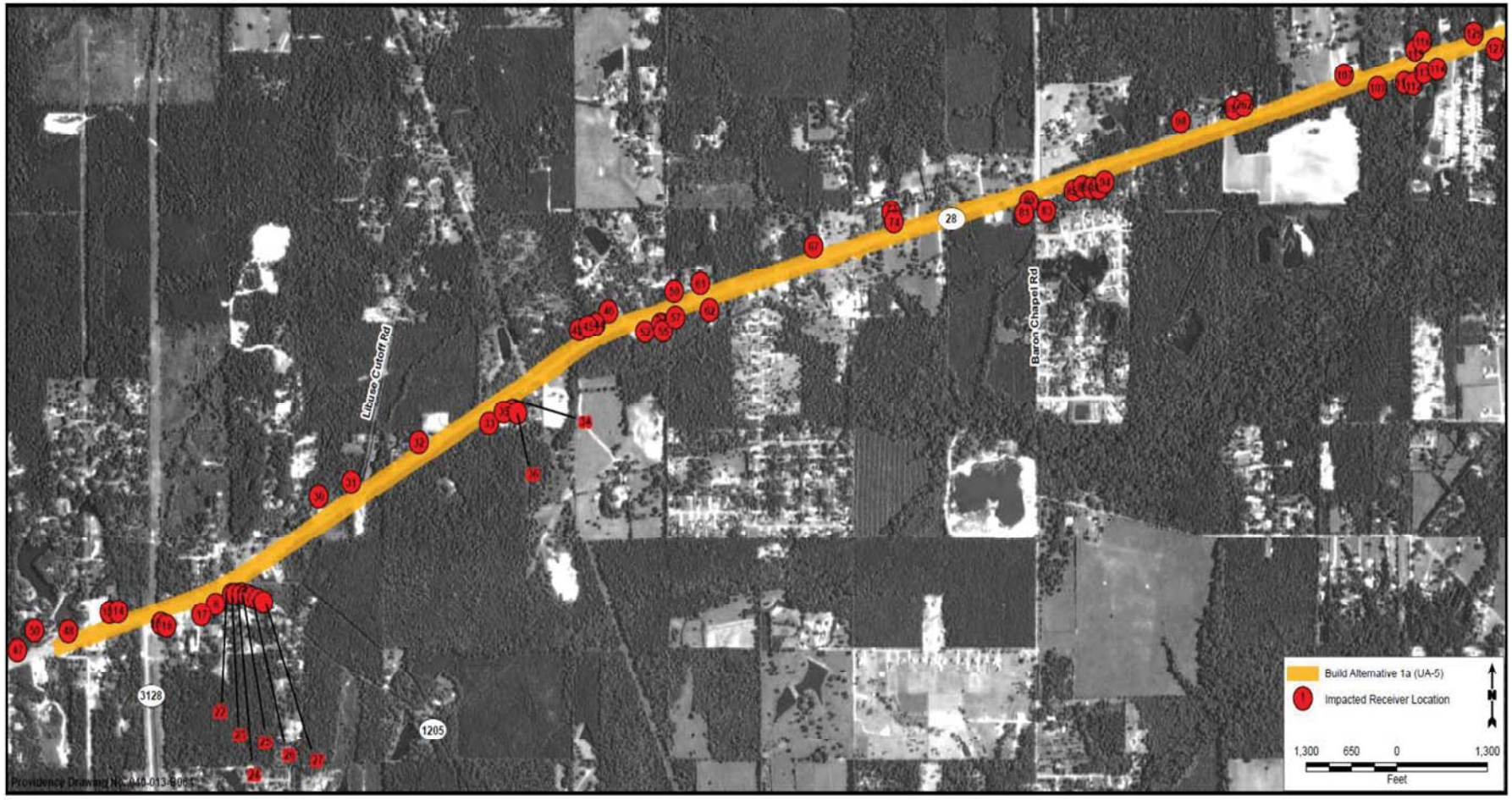



Base map comprised of ESRI World Imagery Maps dated June 2013.

## 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




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

## 4.16 Air Quality

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

The Preferred Alternative is located in Rapides Parish, Louisiana, which is listed as in attainment with the NAAQS for all criteria air pollutants and has no general conformity determination obligations. Louisiana is currently in attainment statewide for CO. The proposed action is consistent with the current DOTD 2015-2018 State Transportation Improvement Program (STIP). The traffic projections for the proposed action do not exceed 140,000 vehicles per day. 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 be 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.

The proposed project adds capacity and the design-year traffic projections within the project limits indicate an average daily traffic of less than 140,000 vehicles per day; therefore, 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 the FHWA threshold (140,000 vehicles per day). 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:

- 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 (THP-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-adjoining 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.

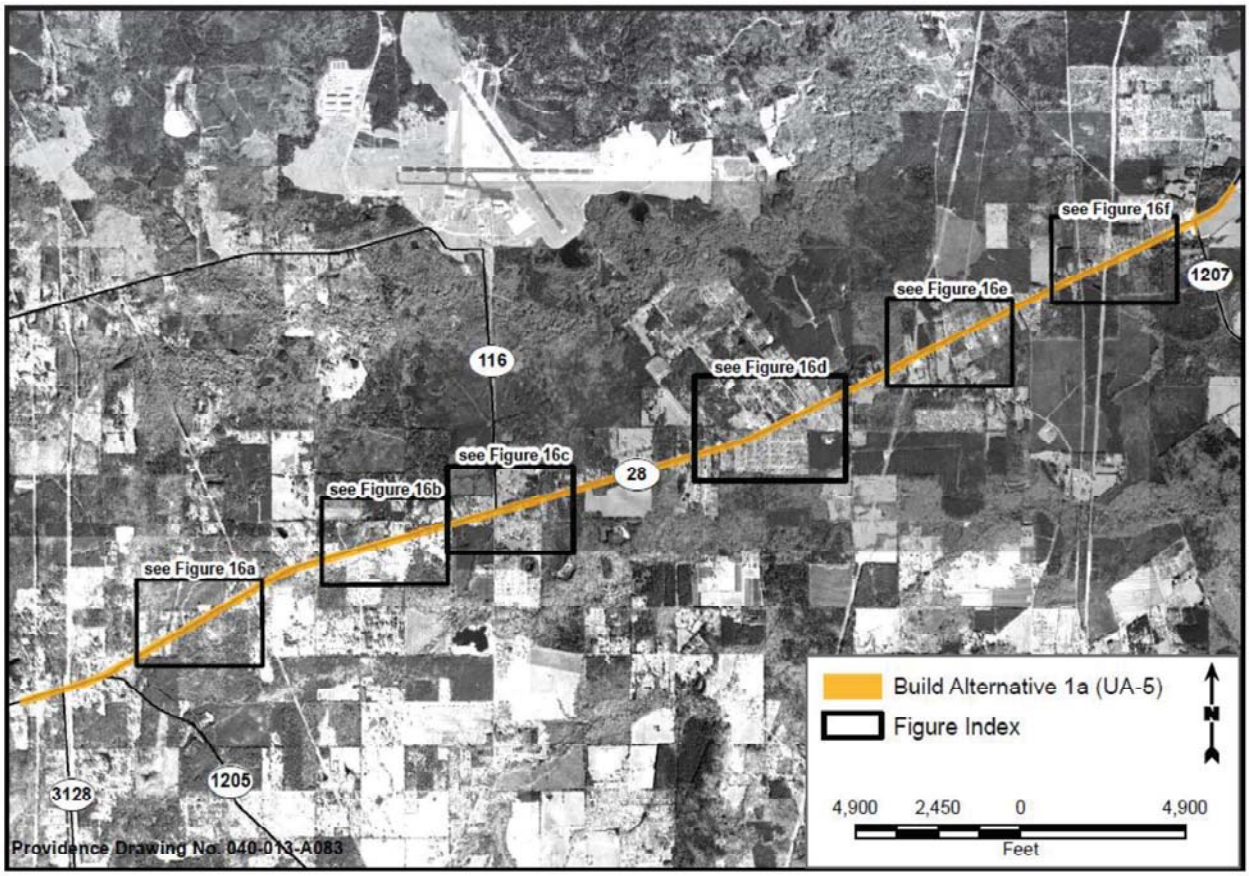
Impacts to the above-referenced wetland habitats include: mechanized clearing, grubbing and filling of the PFO, PSS and PEM wetlands. Construction may require conversion of the forested wetland habitat and scrub-shrub habitat to herbaceous habitat which could potentially reduce the ability to trap sediments 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.

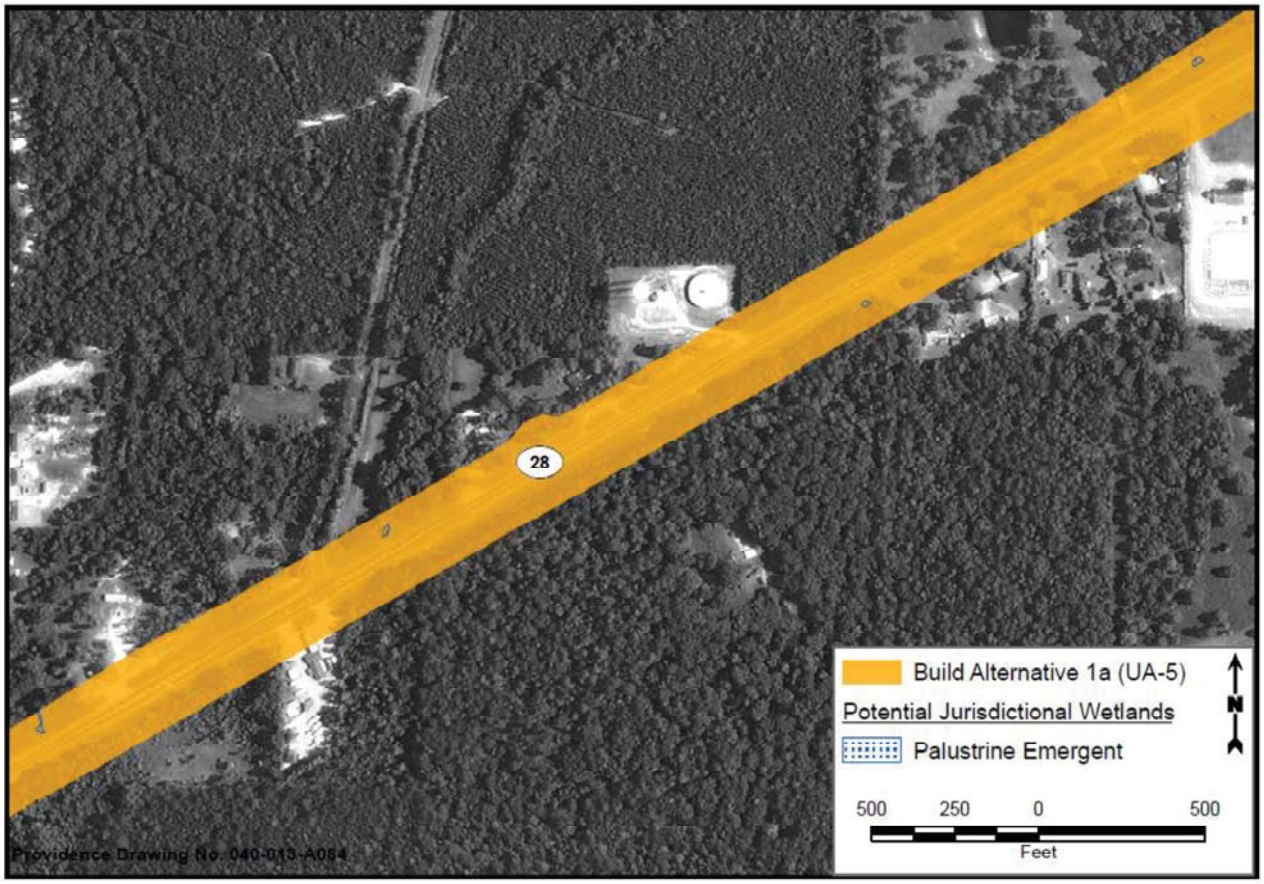
The use of BMPs and control measures for construction could reduce permanent impacts to wetlands outside the construction footprint. The impact within the site will result in a reduction of the areas' ability to provide water quality protection. The loss of denning and nesting habitat for small and large 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**



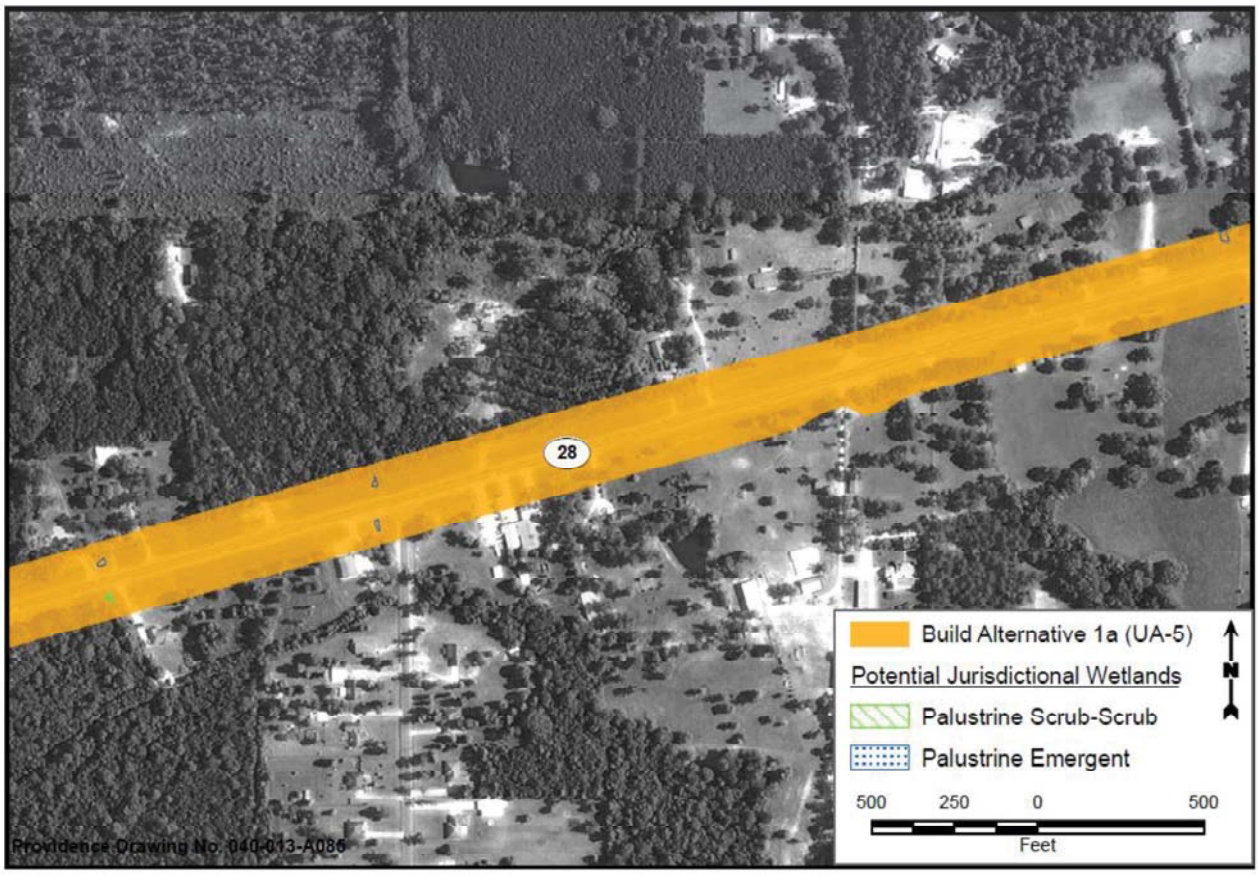

*Base map comprised of ESRI World Imagery Maps dated June 2013.*

## FIGURE 16a
## POTENTIAL JURISDICTIONAL WETLANDS



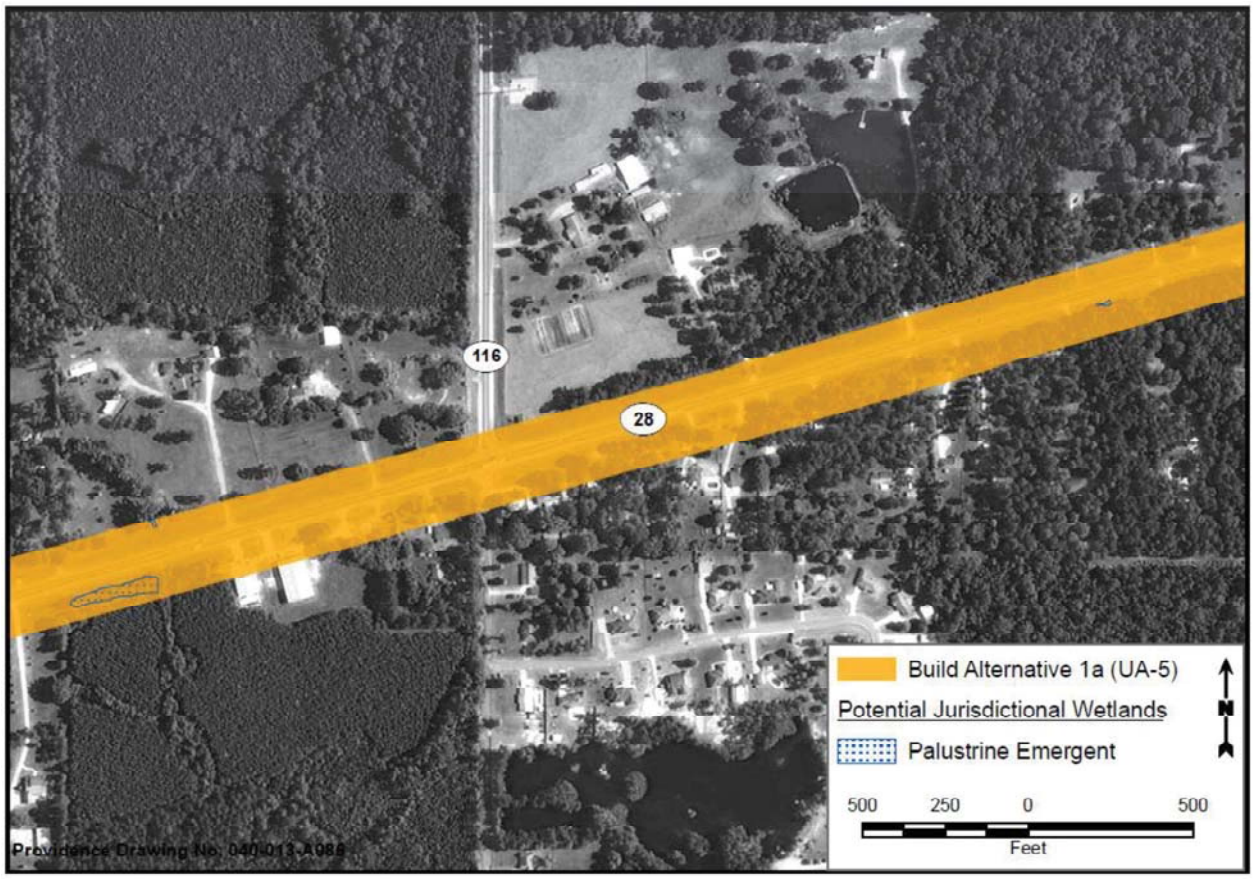

*Base map comprised of ESRI World Imagery Maps dated June 2013.*

## FIGURE 16b
## POTENTIAL JURISDICTIONAL WETLANDS



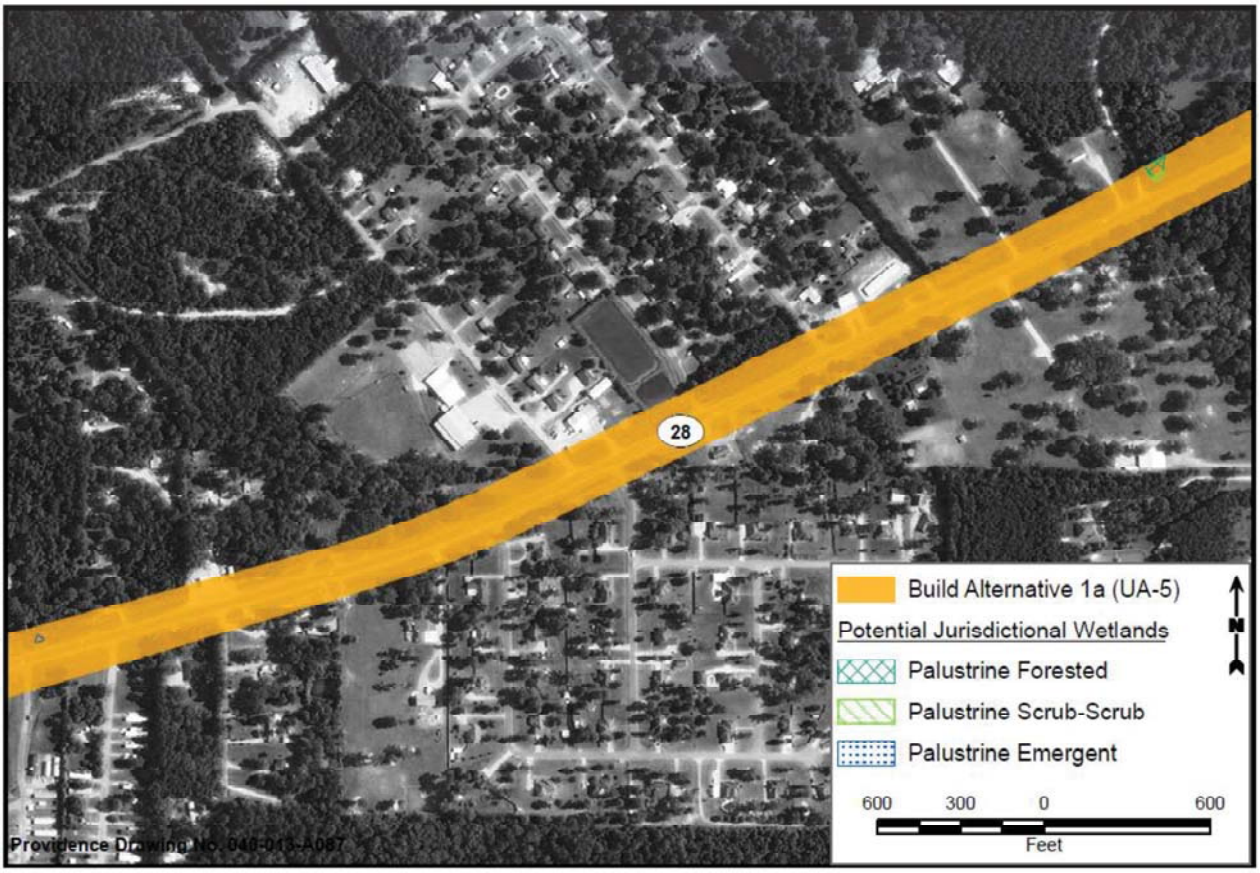

*Base map comprised of ESRI World Imagery Maps dated June 2013.*

## FIGURE 16c
## POTENTIAL JURISDICTIONAL WETLANDS



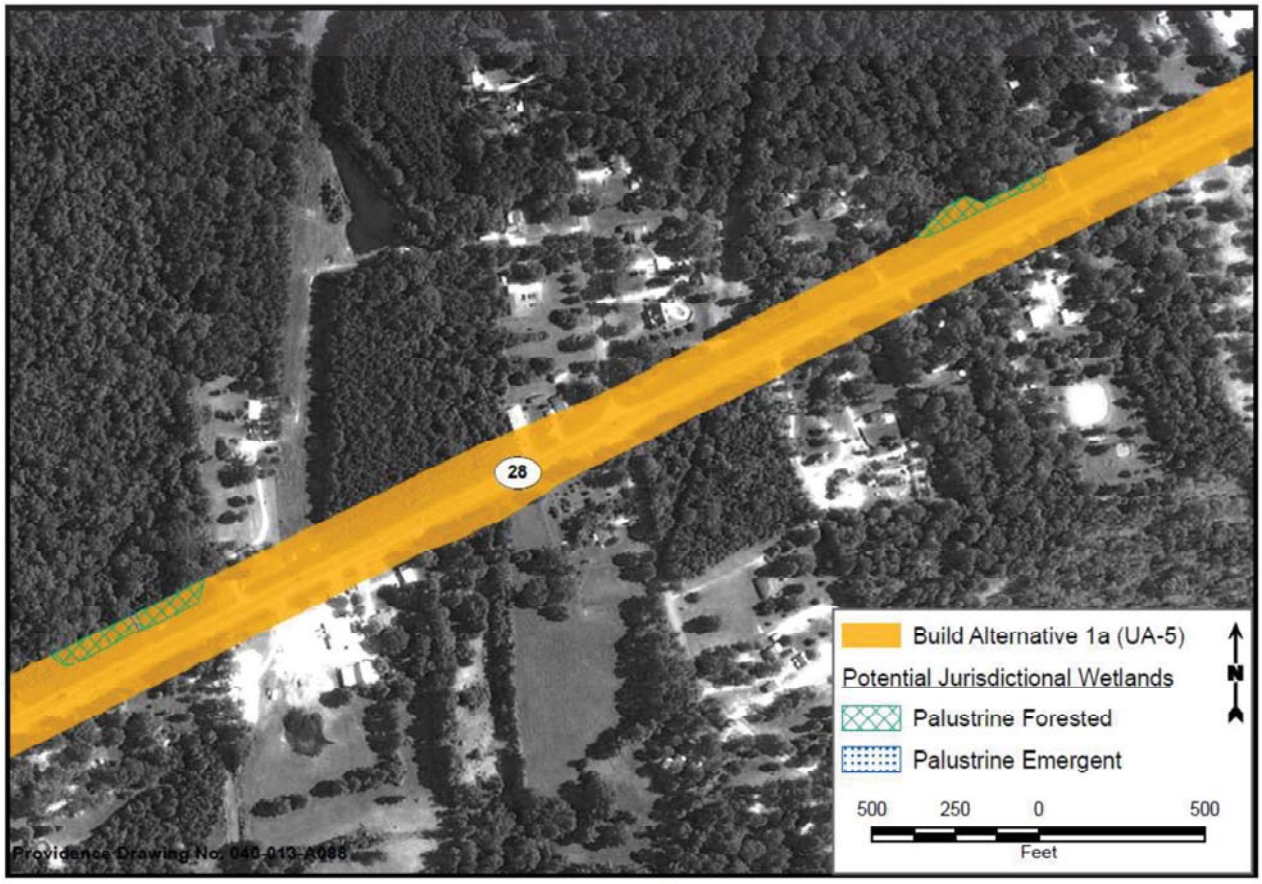

*Base map comprised of ESRI World Imagery Maps dated June 2013.*

## FIGURE 16d
## POTENTIAL JURISDICTIONAL WETLANDS



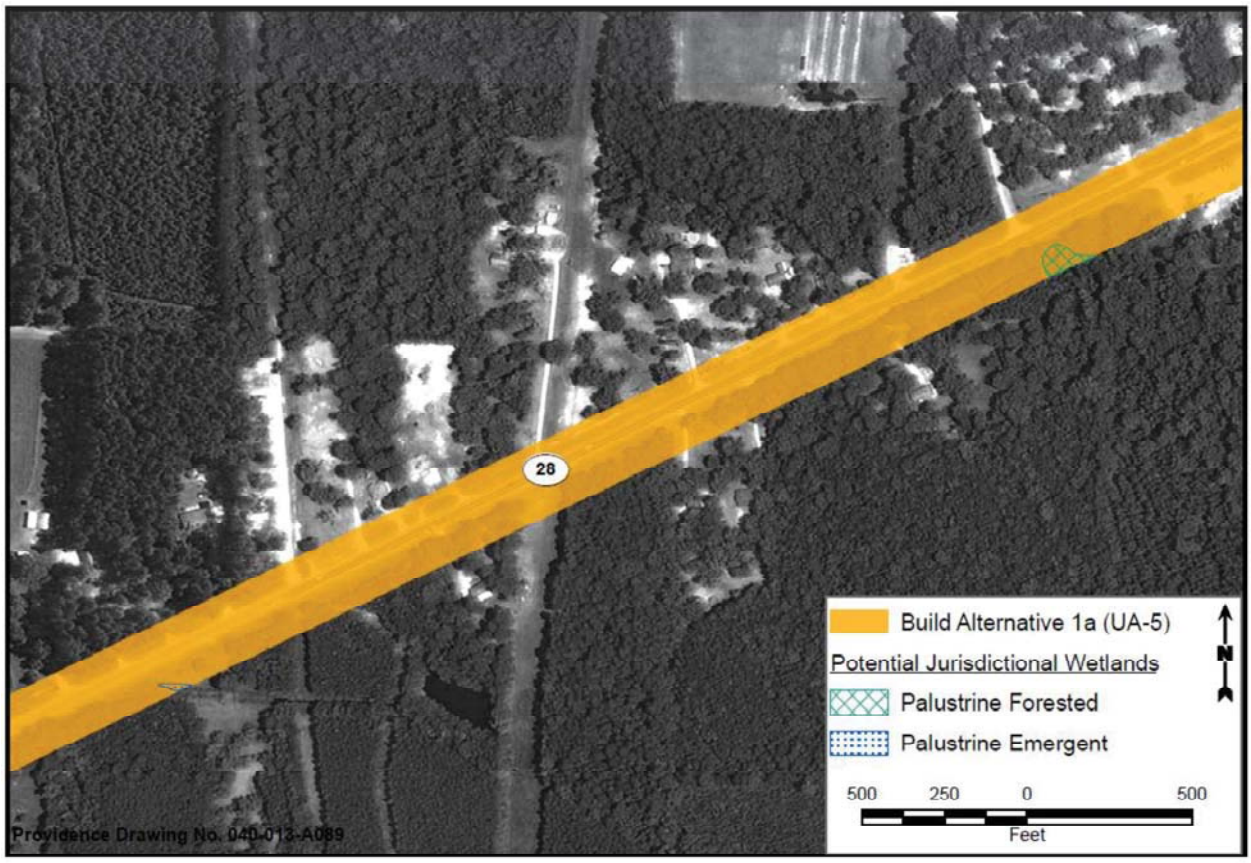

*Base map comprised of ESRI World Imagery Maps dated June 2013.*

## 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 would not be expected under the Preferred Alternative; however, traffic movements will change. 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 on the list of recipients located in **Appendix A.** 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 also located in **Appendix A.**

## 5.2 Public Outreach

Two public meetings were held for the Widening LA 28 East project. **Appendix H** contains advertising information, along with meeting and comment summaries.

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 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. The meeting summary, including handouts, the public notice, invitations, court reporter transcript, sign in sheets, and photographs are included in **Appendix H.**

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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 |
| $L_{eq}$ | Equivalent Sound Level |
| $L_{eq}(h)$ | 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 |