



Environmental Assessment

LA 23 New Orleans & Gulf Coast
Railway Relocation
PE/NEPA Project

Jefferson and Plaquemines Parishes,
Louisiana

RPC Task LA23RR1
RPC/FRA Grant # FR-RLD-0032-14-01-00

March 2018



**LA 23 New Orleans & Gulf Coast Railway Relocation
Jefferson and Plaquemines Parishes, Louisiana**

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Administrative Action: Environmental Assessment

**Submitted Pursuant to 42 U.S.C. §4332, 49 U.S.C. §303, and 64 FR 28545
by the**

Federal Railroad Administration

and the

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

Cooperating Agency:

Naval Air Station/Joint Reserve Base New Orleans

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Date of Approval


Jamie Rennert
Director, Office of Program Delivery
Federal Railroad Administration

The Environmental Assessment (EA) is available for a 30-day comment period required by the Regional Planning Commission. Please refer to the project website www.norpc.org/railroad.html for details on the review period and deadline for comments. The following individuals may be contacted for additional information concerning this EA:

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23 U.S.C. 409 Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

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EXECUTIVE SUMMARY

Project Overview

The Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes (RPC) and the Federal Railroad Administration (FRA) entered into a grant agreement in 2015 to conduct an environmental review and prepare an environmental document for the relocation of the New Orleans and Gulf Coast (NOGC) Railway that serves Jefferson and Plaquemines Parishes in the New Orleans region of Southeast Louisiana (Project). The FRA is the lead Federal agency for the oversight of the environmental process. The Federal agency that agreed to participate in the development of this environmental document as a cooperating agency is the Naval Air Station/Joint Reserve Base New Orleans (NAS JRB). Federal agencies that agreed to participate in the development of this environmental document as participating agencies include the US Coast Guard and the US Army Corps of Engineers.

The National Environmental Policy Act (NEPA) Class of Action is an environmental assessment (EA), which leads to a finding of no significant impact (FONSI) if there are no significant impacts associated with the proposed rail relocation project (Project). This EA was conducted in conformance with the FRA's Procedures for Considering Environmental Impacts, 64 FR 28545 (May 26, 1999) and 49 CFR Part 260.35.

Currently, there is no funding identified for construction of the Project. If FRA funding is used to construct the Project, FRA would require the future project sponsor, which is most likely Rio Grande Pacific Corporation (RGPC), to comply with the commitments and mitigation measures outlined in this document.

Current Rail Operations/Infrastructure

The NOGC Railway is a 32-mile long shortline railroad that operates on the "Westbank" of New Orleans, Louisiana serving Jefferson and Plaquemines Parishes. The NOGC currently interchanges with the Union Pacific Railroad (UPRR) in Westwego, Louisiana. Interchange between the UPRR and NOGC is handled through a Handling Carrier Arrangement (Interchange Agreement). The NOGC currently serves over 20 switching and industrial customers and is the only railroad operating on the Westbank of New Orleans. The UPRR and NOGC alignment is located through a series of residential, commercial and industrial areas. There are approximately 280 public and private highway-rail at-grade crossings along its entire length within both the Westwego and Belle Chasse Subdivisions. Approximately 120 of the existing at-grade crossings are located in the Study Area as defined in the next section.

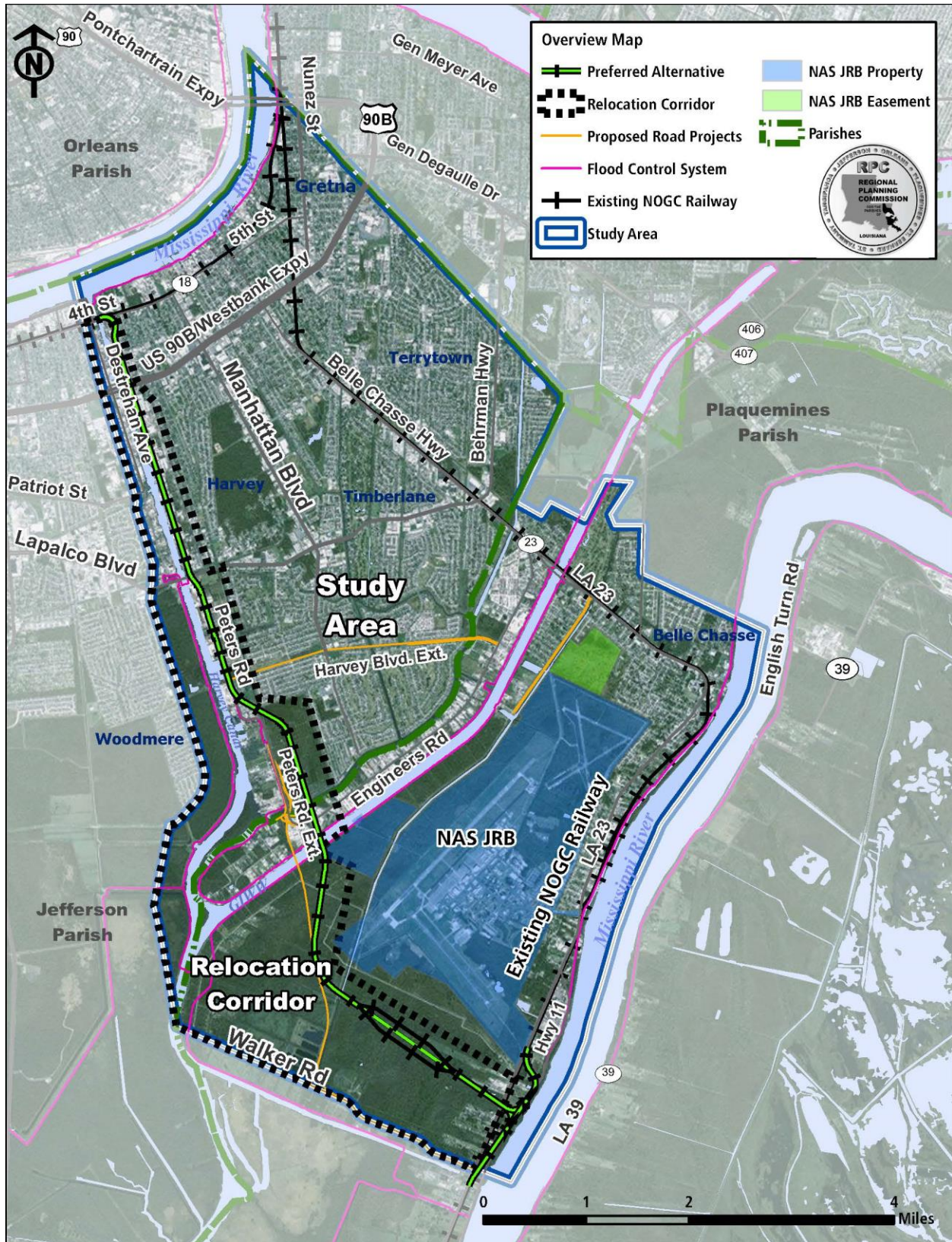
Study Area

The “Study Area” for the Project encompasses portions of the City of Gretna, unincorporated Jefferson Parish including Harvey and Terrytown, and Plaquemines Parish. The boundaries of the Study Area are the Harvey Canal on the west, the Mississippi River on the north, the Jefferson/Orleans Parish line on the east, and Walker Road on the south as shown in **Figure ES-1**. The portion of the NOGC Railway that is subject to analysis within this EA extends from the west side of the Harvey Canal, in Harvey to near the intersection of Louisiana Highway 23 (LA 23)/Belle Chasse Highway and Walker Road in Belle Chasse; a distance of approximately 16 miles.

On the western limit of the Study Area near the Harvey Canal, the NOGC rail corridor parallels LA 18 (4th Street) on the north side and then merges into 4th Street in downtown Gretna. The tracks are located within the center of 4th Street between Dolhonde Street and Amelia Street for approximately 0.46 miles. The NOGC Railway also runs within Madison Street between Americus Street and Stumpf Boulevard for approximately 0.73 miles. Within these limits, the adjacent land use consists of densely developed residences, businesses, schools and churches. The City of Gretna and Jefferson Parish West Bank government offices are located within downtown Gretna.

Beginning south of US Highway 90 Business (US 90B)/Westbank Expressway and extending to Walker Road in Belle Chasse, the NOGC Railway parallels LA 23 for the majority of its length. However, a short segment of the rail corridor diverges from the LA 23 right-of-way and runs parallel to the Mississippi River Levee/Highway 11 then re-emerges back into the LA 23 corridor near Russell Drive. Russell Drive is the main entrance to the NAS JRB, a Navy airport located in the southern portion of the Study Area. Land use adjacent to LA 23 is developed similar to land use patterns along key roadways within Gretna, i.e., densely developed residences, businesses, schools and churches.

Figure ES-1. Study Area Overview Map



Purpose and Need

Vehicular and train traffic is projected to increase within the Study Area due to normal growth in population and NOGC-projected increases in level of industry.¹ Highway-rail traffic conflicts have an adverse impact on the Westbank community including both residential and employment populations. These impacts include safety, congestion, mobility, and quality of life issues. The Project is needed to reduce these impacts and improve current and future congestion, safety, capacity, and livability issues in the region. The Project's purpose and need statement is to:

- Improve safety
- Relieve congestion
- Improve emergency access and evacuation
- Enhance quality of life
- Improve efficiency of rail operations

Alternatives Analysis

The National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §4321 et seq., requires that all of the reasonable alternatives that could achieve the purpose and need for the Project be considered. As part of the tiered Alternatives Analysis process, alternatives were evaluated during various stages of development that consisted of the following stages:

- Review of prior studies pertaining to the development and feasibility of rail realignment alternatives in the following reports (available from RPC upon request):
 - *Plaquemines Parish Intermodal Feasibility Study* (DMJM Harris 2002)
 - *Conceptual Engineering Report, New Orleans & Gulf Coast Railway, Proposed Railroad Relocation & Extension, Jefferson & Plaquemines Parishes, Louisiana* (HDR 2011a)
 - *Transportation Investment Generating Economic Recovery (TIGER) IV Grant Application, New Orleans & Gulf Coast Railroad, Plaquemines Parish, Louisiana* (USDOT 2012)
- Tier I – conceptual alignment options
- Tier II – preliminary alternatives
- Tier II – refinement of preliminary alternatives
- Selection of the Preferred Alternative

¹ Vehicular traffic projections based on LADOTD Historic Traffic Count Data and RPC Travel Demand Model 2040 and 2044 Network. Refer to the *Traffic Analysis Report – Existing Conditions*, July 2015 and *Traffic Analysis Report – No-Build Conditions (2040)*, December 2015 (available from the RPC upon request). Train traffic projections based on NOGC railway estimates.

The Alternatives Analysis involved the interaction of several government agencies, officials, stakeholders, the Project Management Committee (PMC), and the public in order to compare and contrast the alternatives developed for the Project. These entities assisted in the development of Project alternatives, identified additional alternatives, and provided guidance in the evaluation of alternatives.

Conceptual Alignment Options

One of the initial tasks for the EA was to conduct an Alternatives Analysis on an initial set of alternatives that were defined as the conceptual alignment options. Four conceptual alignment options were derived from alternatives that were defined within the prior studies listed above.

The four conceptual alignment options were then evaluated to identify potential fatal flaws (e.g. routes that were not geometrically or engineeringly feasible) and to screen out the options that showed the least amount of promise, or were deemed unreasonable upon further analysis. Based on the analysis of potential impacts, the outcome of this task resulted in eliminating Conceptual Alignment Option 1 and Conceptual Alignment Option 4. These options were eliminated, using predetermined screening criteria, due to greater numbers of residential impacts, higher construction costs (three required movable bridges), and engineering factors such as greater structural impacts and potential modifications to both existing roadway infrastructure (Harvey Canal tunnel) and flood control structures. Conceptual Alignment Options 2 and 3 were retained because they best met the purpose and need and were further evaluated and modified to become the Tier II preliminary alternatives.

Preliminary Alternatives

The initial transition from the retained conceptual alignment options to the preliminary alternatives was accomplished through re-naming only, as follows:

- Conceptual Alignment Option 2 was renamed Preliminary Alternative A; and
- Conceptual Alignment Option 3 was renamed Preliminary Alternative B

The major differences between Preliminary Alternatives A and B include:

- Potential impacts on residential areas – Preliminary Alternative B is located further east compared to Preliminary Alternative A and would impact more residential homes near Paillet Avenue between US 90B and Lapalco Boulevard, in addition to several residential neighborhoods located between Lapalco Boulevard and Bayou Barataria.
- At-grade crossings – Preliminary Alternative B would result in 21 new public at-grade crossings compared to 5 for Preliminary Alternative A.
- Crossing US 90B – Preliminary Alternative A would cross under US 90B within the existing UPRR Hooper Spur ROW, while the alignment for Preliminary Alternative B would result in a three-level crossing that would include an alignment over the Harvey Canal tunnel.

- Crossing Lapalco Boulevard – Preliminary Alternative A would cross Lapalco Boulevard within the existing UPRR Hooper Spur ROW, while Preliminary Alternative B would require an extensive embankment/bridge structure approximately 6,500 feet in length to span Lapalco Boulevard and the proposed Jefferson Parish West Bank Animal Shelter property.

Alternative B was eliminated because it had a greater number of residential impacts, greater number of at-grade crossings, and engineering factors, such as higher structural complexity and cost. Since Alternative B was eliminated, only Alternative A was carried forward. As part of the continuous Alternatives Analysis process, Preliminary Alternative A was further refined and new alignment options were introduced within specific segments of the corridor. These modifications were based on additional data and analysis, as well as stakeholder and PMC input. At the end of the Alternatives Analysis process, the PMC reached consensus on alignment modifications to Preliminary Alternative A to comprise the Preferred Alternative for evaluation in the EA. The No-Build Alternative was also evaluated as part of the EA.

No-Build Alternative

The No-Build Alternative would not construct any improvements to either existing rail facilities or the existing roadway network beyond any projects that are currently planned or programmed by their respective owners including the Louisiana Department of Transportation and Development (LADOTD), Union Pacific Railroad (UPRR), NOGC, and Study Area parishes (Jefferson and Plaquemines parishes). The existing alignment utilized by the NOGC would remain in its current location, without any rail improvements. The existing Gouldsboro Yard in Gretna and the existing NOGC Maintenance Yard in Belle Chasse would also remain. Although the No-Build Alternative does not satisfy the Project's purpose and need, because it maintains the status quo and fails to remedy the Study Area problems associated with safety, congestion, emergency access, quality of life, and rail operational inefficiencies, it is required to be brought forward for further analysis and evaluation under NEPA (40 CFR §§ 1502.14(d) and 1508.25(b)). The No-Build Alternative, as required by NEPA, serves as the basis for comparison of the environmental impacts associated with the Preferred Alternative.

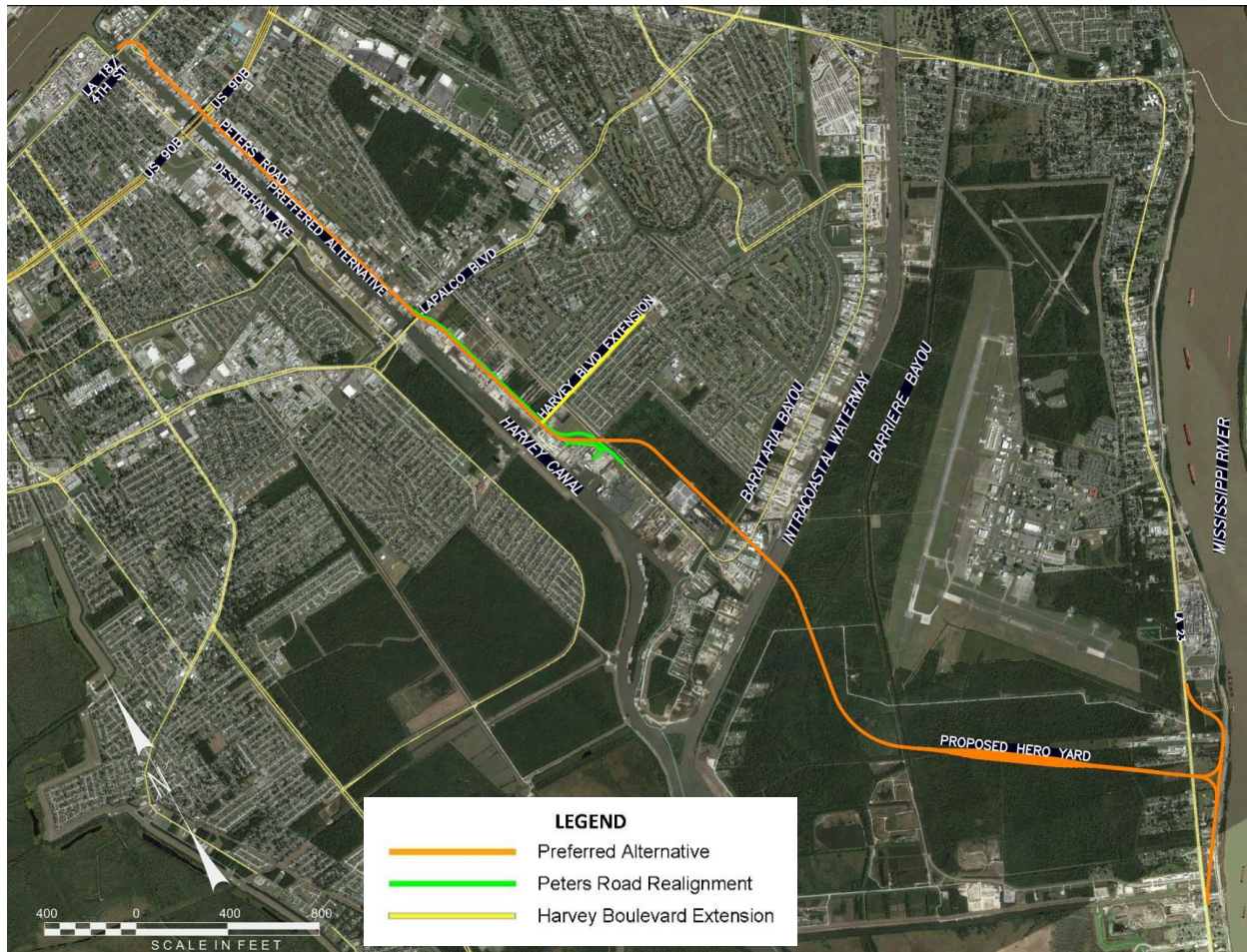
Preferred Alternative

The Preferred Alternative was identified as part of the refinement of the preliminary alternatives and has been evaluated within this EA along with the No-Build Alternative. The Preferred Alternative alignment is shown in orange in **Figure ES-2**. The Preferred Alternative extends from 4th Street (LA 18) to LA 23 for approximately 9.3 miles. From north to south, the Preferred Alternative generally follows a southeastern route along and parallel to existing Peters Road and the proposed Peters Road extension. After crossing the GIWW, the route curves around the southern end of the NAS JRB and then crosses LA 23 to meet up with the existing NOGC track. Connection to the Belle Chasse Subdivision would occur on the east side of LA 23 with a wye² connection. Benefits associated with the Preferred Alternative include

² Railway tracks arranged in the form of a "Y" that are used for turning locomotives and rail cars in the opposite direction.

potentially eliminating 97 at-grade crossings on the existing NOGC route and reducing the number of public at-grade crossings from 73 to 6.

Figure ES-2. Preferred Alignment Map



The Preferred Alternative alignment would require the realignment and reconstruction of Peters Road between Lapalco Boulevard and Murphy Canal (shown in green in **Figure ES-2**). A 6,000-foot (1.14-mile) segment of Peters Road would be reconstructed from Lapalco Boulevard to the south side of the proposed Harvey Boulevard Extension, a separate project that is not part of the Preferred Alternative. A shorter segment of Peters Road would be constructed on new alignment. The limits of new construction extend from just south of the proposed Harvey Boulevard Extension to just south of the Murphy Canal crossing; a distance of approximately 2,700 or 0.51 miles. The total length of the Peters Road reconstruction is estimated at 1.65 miles. Reconstruction of Peters Road as part of the Preferred Alternative for this Project should not be confused with the Peters Road Extension Project, which is a separate project. For that project, plans are underway to extend Peters Road into Plaquemines Parish via a bridge over the GIWW. On its southern end, the Preferred Alternative parallels the Peters Road Extension project.

Estimate of Probable Cost

The estimate of probable cost is approximately \$267 million for the entire Preferred Alternative, which includes \$260 million for the rail portion and \$7 million for the reconstruction of Peters Road.

Summary of Impacts

As summarized in **Table ES-1**, the primary impacts of the No-Build Alternative would include safety and mobility impacts and impacts to community facilities along 4th Street in Gretna and Belle Chasse Highway, while the primary impacts of the Preferred Alternative would include noise impacts, impacts to cultural resources, wetlands impacts, and residential and business/industrial relocations.

Table ES-1. Summary of No-Build Alternative vs. Build Alternative Impacts

Evaluation Criteria	Units	No-Build Alternative	Build Alternative/ Preferred Alternative
Physical Environment Considerations			
Route Length	Miles	16 miles	9.3 miles (4th Street to LA 23 only)
Right-of-Way Acquisition	Acres	0 acres	118 acres
New Bridge Crossings	Number	0	4 located at Murphy Canal, Bayou Barataria/GIWW, Buccaneer Road, and Bayou Barriere
Water Wells Impacted	Number	0	4
Oil and Gas Wells Impacted	Number	0	1
Natural Gas Pipeline Crossing	Number	0	1
Human Environment Considerations			
Future (2040) Train Volumes in the Study Area	Description	Average 5 to 6 trains per day on the Westwego Subdivision and 3 trains per day on the Belle Chasse Subdivision	Up to 13 trains per day in the Relocation Corridor; year 2040 projection
Navigation Impacts	Description	Existing vertical lift bridge on the GIWW	New swing span bridge on the GIWW (new crossing location)
Flood Control Project Impacts	Description	No Impacts	Impacts to the Boomtown Floodwall and Mississippi River levee avoided because the relocated rail ROW >15 feet from the floodwall/levees
Public Health and Safety	Description	High number of highway-rail public at-grade crossings (73 total)	Number of new highway-rail public at-grade crossings reduced significantly (6 total); traffic control devices proposed to improve visibility and safety at new crossings
Highway-Rail Public At-grade Crossings	Number	73	6 new; 2 relocated
At-grade Private Crossings	Number	46	90
Total At-grade Crossings	Number	119	98 along Preferred Alt alignment; 97 eliminated along existing alignment
Reduction in Study Area Wide Driver Delay Costs	Yes/No	No	Yes
Parking and Access	Description	Businesses on Peters Road continue to park in Hooper Spur ROW	Hooper Spur ROW parking would no longer be available

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Evaluation Criteria	Units	No-Build Alternative	Build Alternative/ Preferred Alternative
Residential Relocations	Number	0	2
Business/Industrial Relocations	Number	0	10
Air Quality Impacts	Description	Emissions from traffic slowdowns and idling through congested business and residential areas	Reduced traffic delay and idling would decrease criteria pollutant motor vehicle related emissions
Noise Impacts (without noise walls)	Description	Existing noise levels would remain	Noise impacts on north, center, and southern segments of alignment
	Number of Residential Units Impacted	Not quantified	107 (Moderate Noise Impacts) 0 (Severe Noise Impacts)
Vibration Impacts	Yes/No	No	No
Land Use and Zoning	Description	No Impacts	Consistent with existing land use and zoning
Disproportionate Environmental Justice Impacts	Yes/No	No	No
Recreational Resource Impacts: 4(f) and 6(f) Properties	Number	None impacted	One 4(f) property; No 6(f) properties
Community Facility Impacts	Description	Numerous facilities along 4th Street in Gretna and Belle Chasse Highway impacted by existing trains	Fewer community facilities are located along the more industrial Relocation Corridor
Cultural Resources Impacts	Description	No Impacts	Adverse effect on the Hero Park/River Oaks Academy site
Visual Resources	Description	Undeveloped, wooded area south of NAS JRB expected to become developed as the result of the proposed Peters Road Extension project	Rail relocation would not significantly change the aesthetics of the industrial Relocation Corridor
Natural Environment Considerations			
Within the 100-Year Floodplain	Yes/No	Yes	Yes
Within the Coastal Zone	Yes/No	Yes	Yes
Coastal Zone Impacts	Description	No Impacts	Compensatory mitigation would offset wetland impacts
Wetlands Directly Impacted	Acres	0 acres	53.2 acres
Prime Farmland Impacts	Yes/No	No	No
Threatened and Endangered Species Impacts	Description	No Impacts	Undeveloped, wooded habitat near open water may contain suitable habitat for some species, but no direct or indirect impacts to Federal or state listed T/E species are expected to occur
Energy Resources	Description	Higher fuel consumption due to 6-mile longer route, traffic delays in Gretna, numerous at-grade public road crossings, and Gouldsboro Yard switching operations	Lower fuel consumption due to 6-mile shorter, more efficient route with fewer at-grade public road crossings
Water Quality Impacts	Description	No Impacts	No Impacts
Water Bodies and Waterways	Description	No Impacts	Includes bridge crossings to avoid impacts to waterways
Contaminated Sites	Description	No improvements to existing environmental conditions would occur	Recognized environmental conditions (primarily contaminated soil) would be addressed and remediated

Coordination and Permits Required

The future project sponsor would be required to obtain all permits prior to construction. A permit from the US Army Corps of Engineers (USACE) New Orleans District would be required for the Preferred Alternative under the provisions of Section 404 of the Federal Water Pollution Control Act (Clean Water Act) Amendments of 1972. The Section 404 permit will establish the conditions of mitigation of impacts to jurisdictional wetlands within the Study Area. A USACE Section 10 permit will also be required prior to any work in the Gulf Intracoastal Waterway (GIWW) and if the Project proposes to deposit any dredged or fill material into canals or other waterways. The USACE Section 10/404 permit application also serves as a Joint Permit Application for the Coastal Use Permit (CUP) required from the Louisiana Department of Natural Resources (LDNR) Office of Coastal Management (OCM) and the Section 401 Permit (Water Quality Certification) from the Louisiana Department of Environmental Quality (LDEQ)'s Office of Environmental Services. Prior to construction, the future project sponsor will submit an application for a stormwater general permit for construction activities to LDEQ.

Given the Project's proximity to Federal levees, the Project would require a Section 408 (alteration of USACE civil works projects) review by the USACE. The USACE Regulatory Branch cannot issue a Section 404/Section 10 permit until the Section 408 Request has been approved. The Southeast Louisiana Flood Protection Authority-West (SLFPA-W) also requires a levee permit for any construction involving major excavation within 1,500 feet of any levee within SLFPA-West's jurisdiction.

The GIWW crossing would require a US Coast Guard (USCG) permit. A USCG permit would not be required for waterways that are not being used for navigation and have no potential for navigation such as Murphy Canal, Bayou Barataria, and Bayou Barriere; however, a formal determination of non-navigability from the USCG would be obtained for these waterways at the time of the permit application.

As part of the Section 106 review, the State Historic Preservation Officer (SHPO) was consulted and their concurrence was obtained on FRA's effects determinations for impacts to historic properties. The SHPO is also a signatory to the Memorandum of Agreement that was developed through the Section 106 process.

The Federal Emergency Management Agency (FEMA) requested that the communities' floodplain administrators be contacted for the review and possible permit requirements for the Project.

Commitments and Mitigation Measures

If FRA funding is used to construct the Project, FRA would require the future project sponsor to comply with the commitments and mitigation measures outlined below. These would be implemented during future implementation phases of the Project including permitting, design, construction, and post-construction phases.

Visual Resources. To improve the views for the residential area in the first few blocks south of 4th Street on St. Joseph Lane, RGPC commits to developing a neighborhood park that would be located just south of 4th Street to the east of the proposed curve in the rail alignment.

Depending on cost effectiveness to be determined in the design phase, a 10-foot noise wall may be built to separate the neighborhood from the track, which would block views of the passing trains. If the noise wall is not cost effective, the park would have a decorative wall or landscape screening to dampen the visual and audible effect of passing trains. Jefferson Parish would be responsible for maintaining the park (e.g., mowing and pruning).

Noise and Vibration. FTA/FRA guidance does not require noise mitigation for moderate noise impacts; however, strategies for reduction of noise impacts (e.g. noise walls, wheel truing, etc.) may be implemented during final design if determined to be cost effective.

In order to minimize the potential for impacts of construction noise on local residents, all construction equipment used in the construction phase of the Project will be properly muffled and all motor panels shut during operation. Whenever possible, the contractor will operate during regular daytime working hours. To minimize vibration impacts, peak particle velocities due to pile driving operations will be monitored with a seismograph at critical structures, pavements and utilities during all pile driving operations.

Cultural Resources. FRA determined that the Hero Park/River Oaks Academy site is eligible for listing in the National Register of Historic Places (NRHP), and SHPO concurred with FRA's determination on July 12, 2017 (**Appendix F**). FRA determined the Project, if constructed with financial assistance from FRA, will have an adverse effect on the Hero Park/River Oaks Academy site due to the destruction of five oak trees associated with Hero Park and a former plantation and demolition of one of the two River Oaks Academy buildings. Appropriate mitigation measures and a guiding Memorandum of Agreement (**Appendix G**) were developed through consultation among the FRA, SHPO, and the impacted property owner. Mitigation measures include documenting the historic property in accordance with Historic American Building Survey standards and installation of a historical marker.

Wetland Mitigation. Prior to permitting and design activities, the future project sponsor would be required to conduct an on-site field investigation to delineate the full extent of waters of the United States within the Project's right-of-way in the southern portion of the Study Area generally between the GIWW and the Mississippi River Levee/Highway 11 and to make a proposed jurisdictional determination. The USACE would make the final jurisdictional determination for waters of the United States and define the appropriate mitigation requirements for the Project.

Plant and Wildlife Habitats. During the permitting phase, regulatory agencies would be consulted to determine whether monitoring and/or site specific measures to protect sensitive species or habitat during construction are warranted (such as protective fencing). Locations of any sensitive plant and wildlife species would be mapped on construction drawings. Areas

where vegetation would need to be temporarily removed or disturbed for construction would be re-vegetated as quickly as possible with native vegetation.

Stormwater. As noted by LDEQ in its response to the Solicitation of Views (SOV), all precautions to control nonpoint source pollution from construction activities and to protect the groundwater of the region must be observed. Best management practices would be implemented to control soil erosion.

Contaminated Sites. If any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the Project, notification to LDEQ's Single-Point-of-Contact is required. Additionally, precautions must be taken to protect workers from these hazardous constituents during construction. The Project's right-of-way includes a vacant wooded parcel that was once used as a lay-down yard for a former asbestos pipe coating facility that included an asbestos disposal site. Asbestos contaminated soil was abated in 1986; however, it is likely that there is residual asbestos contaminated soil that would require special handling and disposal procedures.

Air Quality. To minimize potential air quality impacts, particularly related to control of particulate matter, the construction contractor shall comply with all relevant Federal, state, and local laws and regulations.

Traffic and Public Safety. Traffic management plans would be developed during the final design phase of the Project to address and minimize public safety risks and potential traffic delays. Temporary traffic control zones and devices would be implemented in accordance with FHWA's *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways* to adequately and safely accommodate all local and through traffic. Construction operations would be scheduled and sequenced to minimize traffic and rail delays. Prior to construction, information on construction schedules throughout the Study Area would be provided to local emergency response organizations.

Relocations. Business/industrial and residential relocations will be addressed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

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Appendix D	Preferred Alternative Estimate of Probable Cost
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Appendix F	Additional Agency Coordination (USFWS, NMFS, and SHPO)
Appendix G	Draft Memorandum of Agreement between FRA and SHPO

Project Reports Incorporated by Reference

Refer to Section 8.1 for complete citations. These reports are available at www.norpc.org/railroad.html or from RPC upon request.

Agency and Stakeholder Involvement Plan, May 2015
Purpose and Need, August 2015
Agency Scoping Meeting Memorandum, September 2015
Public Meeting Summary, November 2015
Public and Agency Outreach Summary Memorandum, May 2016
Tier I Alternatives Analysis – Screening Evaluation, August 2015
Tier II Alternatives Analysis – Screening Evaluation, June 2016
Gulf Intracoastal Waterway (GIWW) Marine Vessel Traffic Analysis, August 2015
Traffic Analysis Report – Existing Conditions, July 2015
Traffic Analysis Report – No-Build Conditions (2040), December 2015
Traffic Analysis Report – Build Conditions (2040), December 2015
Phase I Cultural Resources Survey and NRHP Research, June 2017 (Not for Public Review)
Phase I Environmental Site Assessment, May 2016

List of Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
AAI	All Appropriate Inquiry
ACS	(US Census) American Community Survey
ADT	Average Daily Traffic
APE	Area of Potential Effects
AREMA	American Railway Engineering and Maintenance Association
ARRA	American Recovery and Reinvestment Act
ASTM	American Society of Testing and Materials
CFR	Code of Federal Regulations
CO	carbon monoxide
CREATE	Chicago Region Environmental and Transportation Efficiency (Program)
CUP	Coastal Use Permit
dB/dBA	decibels/A-weighted decibels (noise levels)
DHH	(Louisiana) Department of Health and Hospitals
EA	environmental assessment
EB	Eastbound
EFH	Essential fish habitat
EPA	US Environmental Protection Agency
FAR	Federal Aviation Regulations
FAST	Fixing America's Surface Transportation (Act)
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FR	Federal Register
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GBN	Ground-borne noise
GBV	Ground-borne vibration
GIWW	Gulf Intracoastal Waterway
HABS	Historic American Building Survey
HCIA	Harvey Canal Industrial Association (recently renamed Westbank Business and Industry Association)
HCT	Harvey Canal Tunnel
HDR	HDR Engineering, Inc.
HSDRRS	Hurricane and Storm Damage Risk Reduction System
HUD	US Department of Housing and Urban Development
IMTT	International Matex Tank Terminal
IRAP	Industrial Rail Access Program
ITS	Intelligent Transportation System
LA 18	Louisiana Highway 18 (4th Street)
LA 1241	Louisiana Highway 1241 (Peters Road Extension)
LA 23	Louisiana Highway 23 (Belle Chasse Highway)
LA 406	Louisiana Highway 406 (Woodland Highway)

Acronym/ Abbreviation	Definition
LA 428	Louisiana Highway 428 (Behrman Highway)
LA 466	Louisiana Highway 466 (Kepler Street)
LA 3017	Louisiana Highway 3017 (Peters Road/Engineers Road)
LA 3018	Louisiana Highway 3018 (Destrehan Avenue)
LADOTD	Louisiana Department of Transportation and Development
LCRP	Louisiana Coastal Resources Program
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
LOS	level of service
LPDES	Louisiana Pollutant Discharge Elimination System
LRFA	Local Rail Freight Assistance (program)
LRSA	Local Rail Service Assistance Act
LWCF	Land and Water Conservation Funds
ug/m3	micrograms per cubic meter
MP	Mile Post
mph	miles per hour
MUTCD	Manual on Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standards
NAS JRB	Naval Air Station Joint Reserve Base New Orleans
NB	Northbound
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NO _x /NO/NO ₂	nitrogen oxides/nitric oxide/nitrogen dioxide
NOGC	New Orleans and Gulf Coast Railway Company
NORM	Naturally Occurring Radioactive Materials
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OCM	Office of Coastal Management
OCPR	(Louisiana) Office of Coastal Protection and Restoration
O ₃	ozone
PI-ESA	Phase I Environmental Site Assessment
PE	Preliminary Engineering
ppb	parts per billion
ppm	Parts per million
PM ₁₀ /PM _{2.5}	particulate matter (smaller than 10 microns in diameter/2.5 microns in diameter)
PMC	Project Management Committee
PPG	Plaquemines Parish Government
PPP	public-private partnerships
PRIIA	Passenger Rail Investment and Improvement Act
REC	Recognized Environmental Condition
RGPC	Rio Grande Pacific Corporation
rms	root-mean-square

Acronym/ Abbreviation	Definition
RPC	Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes
RSIA	Railroad Safety Improvement Act
ROW	right-of-way
RRIF	Railroad Rehabilitation and Improvement Financing
SB	Southbound
SELA	Southeast Louisiana Urban Flood Control Program
SHPO	State Historic Preservation Officer
SIB	State Infrastructure Banks
SLFPA-W	Southeast Louisiana Flood Protection Authority-West
SO ₂ /SO ₃	sulfur dioxide/sulfur trioxide
SOV	Solicitation of Views
STP	Surface Transportation Program
TEA-21	Transportation Equity Act for the 21st Century
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIGER	Transportation Investment Generating Economic Recovery
UPRR	Union Pacific Railroad
US 90B	US Highway 90 Business Route (Westbank Expressway)
USACE	US Army Corps of Engineers
U.S.C.	US Code
USCG	US Coast Guard
USDA	US Department of Agriculture
USDOT	US Department of Transportation
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
VdB	vibration decibels
VOC	Volatile Organic Compounds
WB	Westbound
WBV	West Bank and Vicinity (project)

1.0 PURPOSE AND NEED

1.1 Introduction

The Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes (RPC) and the Federal Railroad Administration (FRA) entered into a grant agreement in 2015 to conduct an environmental review and prepare an environmental document for the relocation of the New Orleans and Gulf Coast (NOGC) Railway that serves Jefferson and Plaquemines Parishes in the New Orleans region of Southeast Louisiana (Project). The FRA is the lead Federal agency for the oversight of the environmental process. The National Environmental Policy Act (NEPA) Class of Action is an environmental assessment (EA), which leads to a finding of no significant impact (FONSI) if there are no significant impacts associated with the proposed rail relocation project (Project). The Project identified a preferred alternative from a range of potential build alternatives that were developed and evaluated as part of the EA. The No-Build Alternative was also evaluated. This EA was conducted in conformance with the FRA's Procedures for Considering Environmental Impacts, 64 FR 28545 (May 26, 1999) and 49 CFR Part 260.35.

Currently, there is no funding or project sponsor identified for construction of the Project. If FRA funding is used to construct the Project, FRA would require the future project sponsor to comply with the commitments and mitigation measures outlined in this document.

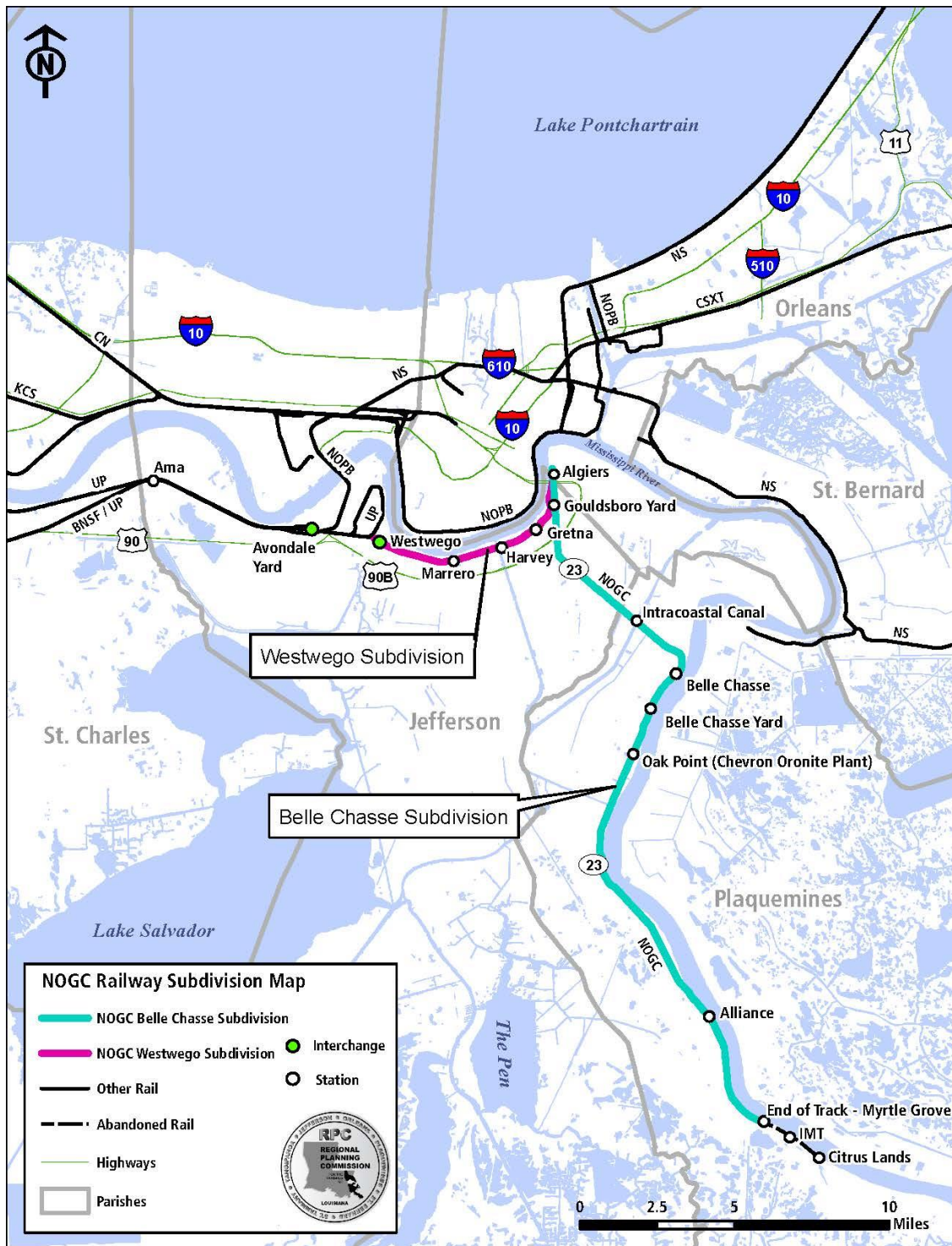
1.2 Project History

The NOGC Railway is a 32-mile long shortline railroad that operates on the "Westbank" of New Orleans, Louisiana serving Jefferson and Plaquemines Parishes. **Figure 1-1** is a map of the NOGC Railway and the limits of its Westwego and Belle Chasse Subdivisions. The NOGC currently interchanges with the Union Pacific Railroad (UPRR) in Westwego, Louisiana (1.5 miles east of Avondale Yard). Interchange between the UPRR and NOGC is handled through a Handling Carrier Arrangement (Interchange Agreement). The NOGC currently serves over 20 switching and industrial customers and is the only railroad operating on the Westbank of New Orleans. The UPRR and NOGC alignment is located through a series of residential, commercial and industrial areas. There are approximately 280 public and private highway-rail at-grade crossings along its entire length within both the Westwego and Belle Chasse Subdivisions. Approximately 120 of the existing at-grade crossings are located in the Study Area (**Figure 1-2**).

In 2002, the Plaquemines Parish Intermodal Feasibility Study (DMJM Harris 2002) was completed for the RPC to examine the feasibility of rail alternatives from West Bridge Junction near Avondale Yard to prospective Millennium Port sites located in lower Plaquemines Parish near Myrtle Grove. The Harvey Canal corridor was one of the alternative routes examined within that study. In 2011, the Rio Grande Pacific Corporation (RGPC) retained HDR Engineering, Inc. (HDR) to develop a Conceptual Engineering Report (HDR 2011a) and Preliminary Environmental Report (HDR 2011b) for the relocation of a substantial portion of the NOGC Railway. In 2012, HDR assisted in the preparation of a Transportation Investment Generating

Economic Recovery IV (TIGER) Grant Application for the Project, which included the 2011 Conceptual Engineering and Preliminary Environmental Reports (USDOT 2012). The Project is included in the 2012 Plaquemines Parish Comprehensive Master Plan (PPG 2012).

Figure 1-1. NOGC Railway Subdivision Map



1.3 Study Area

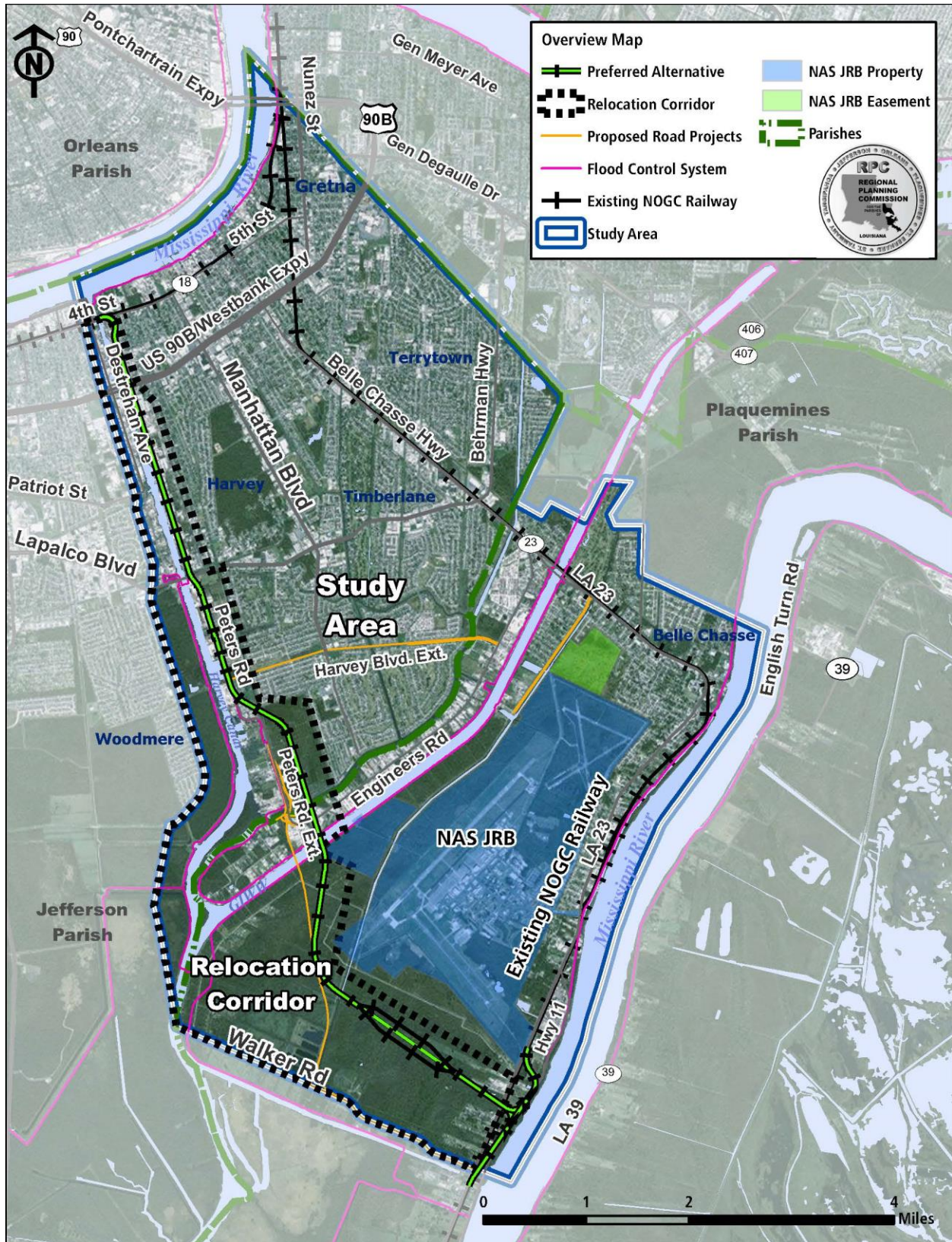
The “Study Area” for the Project encompasses portions of the City of Gretna, unincorporated Jefferson Parish including Harvey and Terrytown, and Plaquemines Parish. The boundaries of the Study Area are the Harvey Canal on the west, the Mississippi River on the north, the Jefferson/Orleans Parish line on the east, and Walker Road on the south as shown in **Figure 1-2**. The portion of the NOGC Railway that is subject to analysis within this EA extends from the west side of the Harvey Canal, in Harvey to near the intersection of Louisiana Highway 23 (LA 23)/Belle Chasse Highway and Walker Road in Belle Chasse; a distance of approximately 16 miles.

On the western limit of the Study Area near the Harvey Canal, the NOGC rail corridor parallels LA 18 (4th Street) on the north side and then merges into 4th Street in downtown Gretna. The tracks are located within the center of 4th Street between Dolhonde Street and Amelia Street for approximately 0.46 miles. The NOGC Railway also runs within Madison Street between Americus Street and Stumpf Boulevard for approximately 0.73 miles. Within these limits, the adjacent land use consists of densely developed residences, businesses, schools and churches. The City of Gretna and Jefferson Parish West Bank government offices are located within downtown Gretna.

Beginning south of US Highway 90 Business (US 90B)/(Westbank Expressway) and extending to Walker Road in Belle Chasse, the NOGC Railway parallels LA 23 for the majority of its length. However, a short segment of the rail corridor diverges from the LA 23 right-of-way and runs parallel to the Mississippi River Levee/Highway 11 then re-emerges back into the LA 23 corridor near Russell Drive. Russell Drive is the main entrance to the Naval Air Station Joint Reserve Base (NAS JRB) New Orleans, a Navy airport is located in the southern portion of the Study Area. Land use adjacent to LA 23 is developed similarly to land use patterns along key roadways within Gretna, i.e., densely developed residences, businesses, schools and churches. Within Jefferson Parish, the railway crosses several principal arterials, including the US 90B frontage roads, Terry Parkway, and Behrman Highway (LA 428). The railway also crosses two major water bodies on moveable bridges: the Harvey Canal near 4th Street in Harvey and the Gulf Intracoastal Waterway (GIWW) in Belle Chasse.

The Study Area is protected by levees and flood protection walls and the southern portion is located within the 100-year floodplain. Land use is primarily industrial, commercial, and residential and also includes undeveloped areas. In addition to the GIWW, the Study Area contains numerous waterways and wetlands and lies within the Mississippi River deltaic plain and the Louisiana Coastal Zone.

Figure 1-2. Study Area Overview Map



1.4 Purpose and Need

Project Purpose. Vehicular and train traffic is projected to increase within the Study Area due to normal growth in population and NOGC-projected increases in level of industry.³ Highway-rail traffic conflicts have an adverse impact on the Westbank community including both residential and employment populations (see photo of a rail-vehicle incident in Gretna below). These impacts include safety, congestion, mobility, and quality of life issues. The purpose of the Project is to improve safety and mobility by reducing the number of at-grade rail crossings in densely populated areas of Jefferson Parish and Plaquemines Parish.

Project Need. The Project is needed due to current and future congestion, safety, capacity, and livability issues in the region. The NOGC Railway relocation will improve the existing transportation network by creating much needed improvements along the existing rail corridor. The Project provides numerous safety benefits as well. The need for the Project includes:



- **Improve Safety**
 - Potentially eliminate the majority of the existing 120 highway-rail at-grade rail crossings (public and private) along the existing NOGC rail corridor within the segment that spans between the Harvey Canal and Walker Road. Most of the private at-grade crossings along the existing route have no active warning system and rely on passive crossbucks signage, train horn noise, and driver awareness.
 - Reduce potential public exposure to hazardous materials within residential and commercial areas.

- **Relieve Congestion**
 - Minimize congestion and delay especially along 4th Street in downtown Gretna, where in-street running of trains between Dolhonde Street and Amelia Street (approximately 0.46 miles) can block side street traffic from 12 minutes to 20 minutes, depending on the overall length of the train sets.
 - The in-street segment on Madison Street extends from Americus Street to Stumpf Boulevard (approximately 0.73 miles). Regular trains average about 25 cars in both directions and it takes about 13 minutes to clear this segment of roadway.
 - The process of train assembly and movement within in-street corridors results in blockage at numerous intersections and motorist delay documented by significant

³ Vehicular traffic projections based on LADOTD Historic Traffic Count Data and RPC Travel Demand Model 2040 and 2044 Network. Refer to the *Traffic Analysis Report – Existing Conditions*, July 2015 and *Traffic Analysis Report – No-Build Conditions (2040)*, December 2015 (available from the RPC upon request). Train traffic projections based on NOGC railway estimates.

congestion and level of service F⁴ operations. This operating condition is a result of the train's reduced speed combined with the longer length of time required for operations to clear.

- **Improve Emergency Access and Evacuation**
 - Improve emergency and hurricane evacuation along LA 23, which is a designated hurricane evacuation route.
 - Improve public safety access for fire, police, and ambulance response. Current railroad freight traffic along the existing rail corridor has a devastating effect on LA 18 and LA 23 by blocking access to adjacent roads, as well as access to public roadways and private businesses. Delay to emergency vehicles is a concern when trains as long as 1.3 miles could potentially block primary emergency response access along LA 18 and LA 23 or along routes that cross LA 18 and LA 23.

- **Enhance Quality of Life**
 - Improve mobility for Westbank area motorists.
 - Eliminate train noise in densely developed residential and commercial areas.

- **Improve Efficiency of Rail Operations**
 - The average operating speed for NOGC trains along the existing rail alignment averages 10 miles per hour (mph), with actual speeds ranging from 2 mph to 4 mph within Gretna. Relocation of the NOGC Railway to an alternate location where development is not as dense would improve the efficiency of NOGC's freight rail operations, with operating speeds of 10 to 20 mph projected.

1.5 Connected Actions

Foreseeable future conditions for this EA assume a certain number of improvements made to the regional roadway network as a result of implementation of the regional near-term *Transportation Improvement Program, New Orleans Urbanized Area, for Fiscal Years 2015-2018* (RPC 2014) and the long-range *Metropolitan Transportation Plan, New Orleans Urbanized Area, for Fiscal Years 2015-2044* (RPC 2015). These projects address overall mobility needs in the multi-parish region through a combination of additional lane capacity on existing roads or better connections between individual roads through a combination of roadway construction, intersection improvements or upgrades to interchanges.

Within the Study Area, the future roadway network includes several connectors which improve mobility options for north-south traffic, as well as traffic traveling within the City of Gretna. The Transportation Improvement Program and Metropolitan Transportation Plan includes approximately \$370 million in transportation improvements within the Study Area as shown in **Table 1-1** (generally listed from north to south).

⁴ See Glossary for definition of Level of Service.

Table 1-1. Study Area Future Roadway Improvements

Project No.	Roadway	Description	Project Cost
H.001413	LA 18/4th Street	New 2-lane roadway extension from Richard St to Burmaster Street/Franklin Avenue in Gretna	\$6.7M ¹
N/A	US 90B at MacArthur Drive	Phase 2 interchange completion; ramp improvements	\$40.1M
N/A	Lapalco Bridge at Harvey Canal	Widen to 6 lanes	\$55M
H.007208	Harvey Boulevard (Manhattan Boulevard to Peters Road)	New roadway extension	\$18.5M
H.007223	Harvey Boulevard (Manhattan to Wall Blvd)	Widen to 4 lanes with median	\$7.8M
H.008068	Peters Road Bridge and Extension: Phase 2	New 2-lane roadway from Boomtown Casino to Walker Road	\$26.3M
H.008069	Peters Road Bridge and Extension: Phase 3	New bridge at the GIWW	\$66M
H.006441	LA 23 (Lapalco Boulevard to Engineers Road)	Widening	\$6.9M
H.004791	LA 23 (Belle Chasse Tunnel)	Replace Belle Chasse Bridge and Tunnel to upgrade to 4 lanes	\$143M
Total			~\$370M

¹ Project cost from the in Metropolitan Transportation Plan; cost in the Transportation Improvement Program is \$8.9M.

The following paragraphs further describe some of the major improvements listed in **Table 1-1**. Another connected action described below, which is not listed in the table, is the on-going Port of New Orleans Master Plan which will determine the disposition of the Perry Street Wharf.

LA 18/4th Street Extension. The Metropolitan Transportation Plan includes a Tier I project that consists of extending LA 18 approximately 1 mile from Richard Street to Burmaster Street. The LA18/4th Street Extension would create one additional public at-grade crossing of the NOGC Railway in the Belle Chasse Subdivision.

Peters Road Improvements and Extension. Plans are underway to extend Peters Road into Plaquemines Parish via a bridge over the GIWW. On its southern end, the proposed rail alignment parallels the Peters Road Extension project.

Harvey Boulevard Extension. Harvey Boulevard is planned to be extended in both east and west directions. To the west, Harvey Boulevard would be widened and extended from its current western terminus at Manhattan Boulevard to the Murphy Canal, and eventually would be extended across Harvey Canal to Peters Road (USDOT/LADOTD/RPC 2008).

LA 23 Improvements. The Plaquemines Parish Comprehensive Master Plan, Community Assessment -Technical Addendum (PPG 2012) includes several key projects to widen and increase the capacity of LA 23.

Perry Street Wharf. Although it is not currently being served by the NOGC Railway, the Perry Street Wharf was once served by the NOGC. The Port of New Orleans is currently conducting a Master Plan study to determine the highest and best use for the Perry Street Wharf. An uncertainty in the future condition is whether the Perry Street Wharf would require future rail service or not. It is therefore also uncertain whether the existing track along 4th Street in Gretna would remain or be removed as a separate action subsequent to the proposed rail relocation.

1.6 Regulations

The following statutes and orders were considered during the preparation of this EA:

- National Environmental Policy Act of 1969, 42 U.S.C. §4321 et seq.
- Council on Environmental Quality Regulations for Implementing the National Environmental Policy Act, 40 CFR Part 1500
- Department of Transportation Order 5610.2(a), August 2011 (Final DOT Environmental Justice Order)
- Federal Railroad Administrative Procedures for Considering Environmental Impacts, 64 FR 28545 (May 26, 1999) and 49 CFR Part 260.35
- Coastal Zone Management Act of 1972, 16 U.S.C. §1451
- Louisiana State and Local Coastal Resources Management Act of 1978
- Endangered Species Act of 1973, 16 U.S.C. §1531 et seq., 50 CFR Part 17
- Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §1801 et seq., 50 CFR Part 600
- Sections 401, 402, and 404 of the Clean Water Act, 33 U.S.C. §1251 et seq.
- National Pollutant Discharge Elimination System Program, 40 CFR Part 122
- Safe Drinking Water Act, Section 1424 (sole source aquifer program)
- Farmland Protection Policy Act, Subtitle I of Title XV, Section 1539-1549
- National Ambient Air Quality Standards
- Sections 9 and 10 of the Rivers and Harbors Act of 1899, 33 U.S.C. §491 and 33 U.S.C. §403
- Section 14 of the Rivers and Harbors Act of 1899 and codified in 33 U.S.C. §408 (“Section 408”)
- Section 106 of the National Historic Preservation Act of 1966, as amended, 16 U.S.C. §470 et seq.
- Section 4(f) of the US Department of Transportation Act of 1966, 49 U.S.C. §303
- Section 6(f) of the Land and Water Conservation Act, CFR Title 36, Chapter 1, Part 59
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, February 11, 1994
- Executive Order 11988, Floodplain Management, May 24, 1977
- Executive Order 11990, Protection of Wetlands, May 24, 1977
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 U.S.C. §61

2.0 ALTERNATIVES

The National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §4321 et seq. requires that all of the reasonable alternatives that could achieve the purpose and need for the Project be considered. This chapter describes the alternatives development process, defined as a tiered Alternatives Analysis; which consisted of the development and evaluation of alternatives at different stages throughout the Project’s duration. The No-Build Alternative, including key features such as rail operating conditions and existing highway-rail at-grade locations are presented herein.

The proposed rail relocation alternatives consist of a new rail line for NOGC operations east of its current location. The rail relocation alternatives and associated improvements were developed with a primary goal to minimize and/or eliminate traffic conflicts at existing highway-rail at-grade locations. The alternatives would result in operational improvements allowing rail traffic to operate at acceptable speeds throughout the Relocation Corridor (described in Section 2.3), and would improve safety along the existing NOGC rail alignment. Each alternative was evaluated based on its ability to satisfy the Project’s purpose and need.

2.1 Alternative Analysis Overview

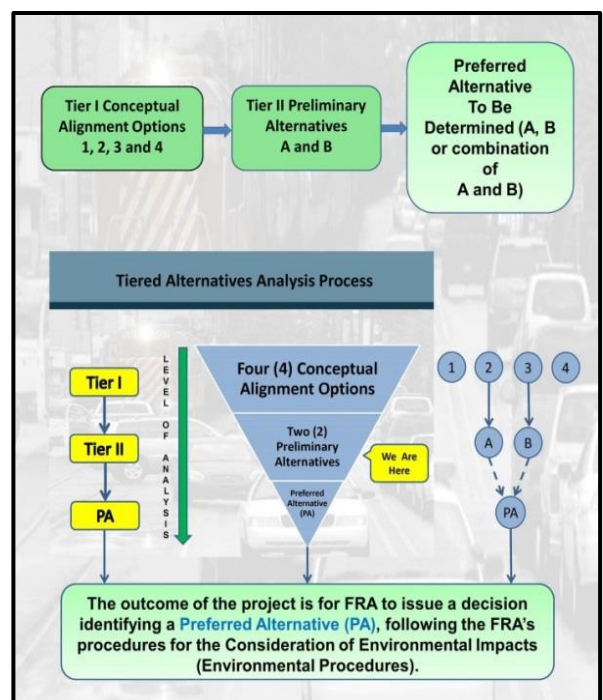
A tiered approach was utilized to develop and evaluate the build alternatives for the proposed relocation of the NOGC Railway. Each step of the engineering and environmental screening evaluation process, known as an Alternatives Analysis, included a progressively more rigorous evaluation of the alternatives in terms of design features, potential environmental impacts, estimated costs, and benefits. The purpose of the tiered Alternatives Analysis process was to identify, evaluate and refine the alternatives in order to recommend and select a preferred alternative (see **Figure 2-1**).

As part of the tiered Alternatives Analysis process, alternatives were evaluated during various stages of development that consisted of the following stages:

- Tier I – conceptual alignment options
- Tier II – preliminary alternatives
- Tier II – refinement of preliminary alternatives
- Selection of the Preferred Alternative

The Preferred Alternative was identified as part of the refinement of the preliminary alternatives and has been evaluated within this EA.

Figure 2-1. Tiered Alternatives Analysis Process



The following steps were undertaken as part of the tiered alternatives development process:

1. Review of prior studies and potential alignment options.
2. Development of conceptual alignment options.
3. Screening of conceptual alignment options that led to the identification of two preliminary alternatives.
4. Development of preliminary alternatives.
5. Public review and comment on the conceptual alignment options and screening, and preliminary alternatives. This was accomplished as part of the September 22, 2015 Public Meeting.
6. Refinement of the preliminary alternatives based on public comments.
7. Identification and evaluation of the Preferred Alternative and its associated features.
8. Refinement of the Preferred Alternative.
9. Selection of the Preferred Alternative that is the subject of this EA.

Purpose and Need. The Alternatives Analysis process was guided by an alternatives ability to meet the Project’s purpose and need (see **Figure 2-2**). In addition to aspects of the purpose and need, the alternatives were evaluated in their ability to meet the following objectives:

- Adequately serve commercial freight rail needs including existing industries.
- Minimize and reduce traffic conflicts associated with at-grade intersections.
- Provide benefits to the community or the environment.

Public Involvement. The Alternatives Analysis involved the interaction of several government agencies, officials, stakeholders, the PMC, and the public in order to compare and contrast the alternatives. These entities assisted in the development of project alternatives, identified additional alternatives, and provided guidance in the evaluation of alternatives. **Figure 2-3** lists the public involvement activities that helped to guide the Alternatives Analysis.

Figure 2-2. Purpose and Need



Figure 2-3. Public Involvement Throughout the Alternatives Analysis



2.2 No-Build Alternative

The No-Build Alternative would not construct any improvements to either existing rail facilities or the existing roadway network beyond any projects that are currently planned or programmed by their respective owners including the Louisiana Department of Transportation and Development (LADOTD), Union Pacific Railroad (UPRR), NOGC, and Study Area parishes (Jefferson and Plaquemines parishes). The existing alignment utilized by the NOGC would remain in its current location, without any rail improvements. The existing Gouldsboro Yard in Gretna and the existing NOGC Maintenance Yard in Belle Chasse would also remain. The No-Build Alternative does not satisfy the Project's purpose and need, but is required to be brought forward for further analysis and evaluation under NEPA (40 CFR §§ 1502.14(d) and 1508.25(b)). The No-Build Alternative, as required by NEPA, serves as the basis for comparison of the environmental impacts associated with the Preferred Alternative. Existing conditions and characteristics associated with the No-Build Alternative are described below.

2.2.1 Existing Rail Subdivisions

Characteristics associated with the existing rail subdivisions, as previously shown in **Figure 1-1**, and the existing rail alignment would remain as-is under the No-Build Alternative. The existing rail subdivisions are summarized below.

Westwego Subdivision. The NOGC Railway currently interchanges with the UPRR in Westwego, Louisiana. The limits of the Westwego Subdivision extend from the Westwego Yard [Milepost (MP) 8.3], east through the cities and/or unincorporated jurisdictions of Westwego, Marrero, Harvey and Gretna in Jefferson Parish to Algiers Junction (MP 1.5). Algiers Junction is located just east of Gouldsboro Yard (MP 1.9) in Orleans Parish. This subdivision is a single-track subdivision with a maximum operating speed of 10 miles per hour (mph). The Harvey Canal movable rail bridge is located at MP 4.4 with its normal position closed to accommodate vehicular traffic on 4th Street. The NOGC Railway does not own track along the Westwego Subdivision, rather they operate within this subdivision under a long-term lease with the UPRR.

Belle Chasse Subdivision. The limits of the NOGC-owned Belle Chasse Subdivision is from end-of-track location (MP 0.0) north of Algiers Junction (MP 0.5), to its end of track location (MP 24.0) located south of Myrtle Grove (MP 23.0). The Gulf Intracoastal Waterway (GIWW) movable rail bridge is located at MP 6.0 with its normal position open to accommodate waterway navigation. The Belle Chasse Subdivision overlays with the Westwego Subdivision at Gouldsboro Yard. For trains traveling to or from the Belle Chasse Subdivision, locomotives are repositioned to the opposite end of the train.

As noted above, the railway crosses two major water bodies on moveable bridges: the Harvey Canal adjacent to 4th Street in Harvey and the GIWW adjacent to LA 23 in Belle Chasse.

2.2.2 Existing Rail Alignment Characteristics

An overview of existing rail alignment characteristics between the Harvey Canal and Walker Road is presented herein. The alignment characteristics are generally described by individual segments along the rail corridor which are depicted in **Figure 2-4**. **Table 2-1** provides a summary of the alignment characteristics by segment, and also includes a summary of the public and private highway-rail at-grade crossings (at-grade crossings) within the Study Area. The location of public at-grade crossings are listed in **Table 2-1**. **Figure 2-5** shows photographs that represent typical conditions along the existing rail alignment.

On the northern limit of the Study Area within Harvey, the NOGC rail corridor parallels LA 18 (4th Street) on the north side beginning at the Harvey Canal extending to near Dolhonde Street (Segment 1). The tracks then merge into 4th Street in downtown Gretna (Segment 2). The tracks are located within the center of 4th Street between Dolhonde Street and Amelia Street for approximately 0.46 miles; there are eleven public at-grade crossings within these limits. Adjacent land use within Segments 1 and 2 consists of densely developed residences, businesses, schools and churches. The City of Gretna and Jefferson Parish West Bank government offices are located within downtown Gretna.

Within Segments 3 through 5, the rail alignment is located within exclusive UPRR right-of-way (ROW). The railroad crosses several residential streets within Gretna with the tracks extending northward past Weidman Street to the Gouldsboro Yard and the Port of New Orleans Perry Street Wharf (Segment 4).

Beginning on the north end of the Belle Chasses Subdivision, the NOGC Railway turns south through Gretna. The tracks run within Madison Street between Americus Street and Stumpf Boulevard for approximately 0.73 miles (Segment 6). The rail alignment continues southward parallel to Madison Street and then merges within exclusive NOGC ROW to US Highway 90 Business (US 90B), which is known as the Westbank Expressway. The alignment crosses the Westbank Expressway eastbound and westbound frontage roads at-grade. After crossing the Westbank Expressway, the alignment is located within exclusive right-of-way through a residential neighborhood in Gretna and Mel Ott Park and then merges into the LA 23 corridor near 23rd Street (Segment 8).

Beginning south of 23rd Street and extending to Main Street in Belle Chasse, the NOGC Railway generally parallels LA 23 for the majority of its length (Segments 9 through 11). Within these limits, that tracks cross several major Westbank collectors and arterial roadways. There are a total of 57 at-grade crossings within these limits; 30 of which are public at-grade crossings.

Within Plaquemines Parish, a short segment of the rail corridor diverges from the LA 23 right-of-way near Main Street and runs parallel to the Mississippi River Levee/Highway 11 then re-emerges back into the LA 23 corridor near Russell Drive (Segment 12). Russell Drive is the main entrance to the NAS JRB. The rail alignment continues in a southerly direction parallel to LA 23

and the Mississippi River to Walker Road (Segment 13). Beyond the Study Area, the NOGC tracks continue south to the end of track near Myrtle Grove.

Figure 2-4. Existing Highway Rail At-Grade Crossings within Study Area

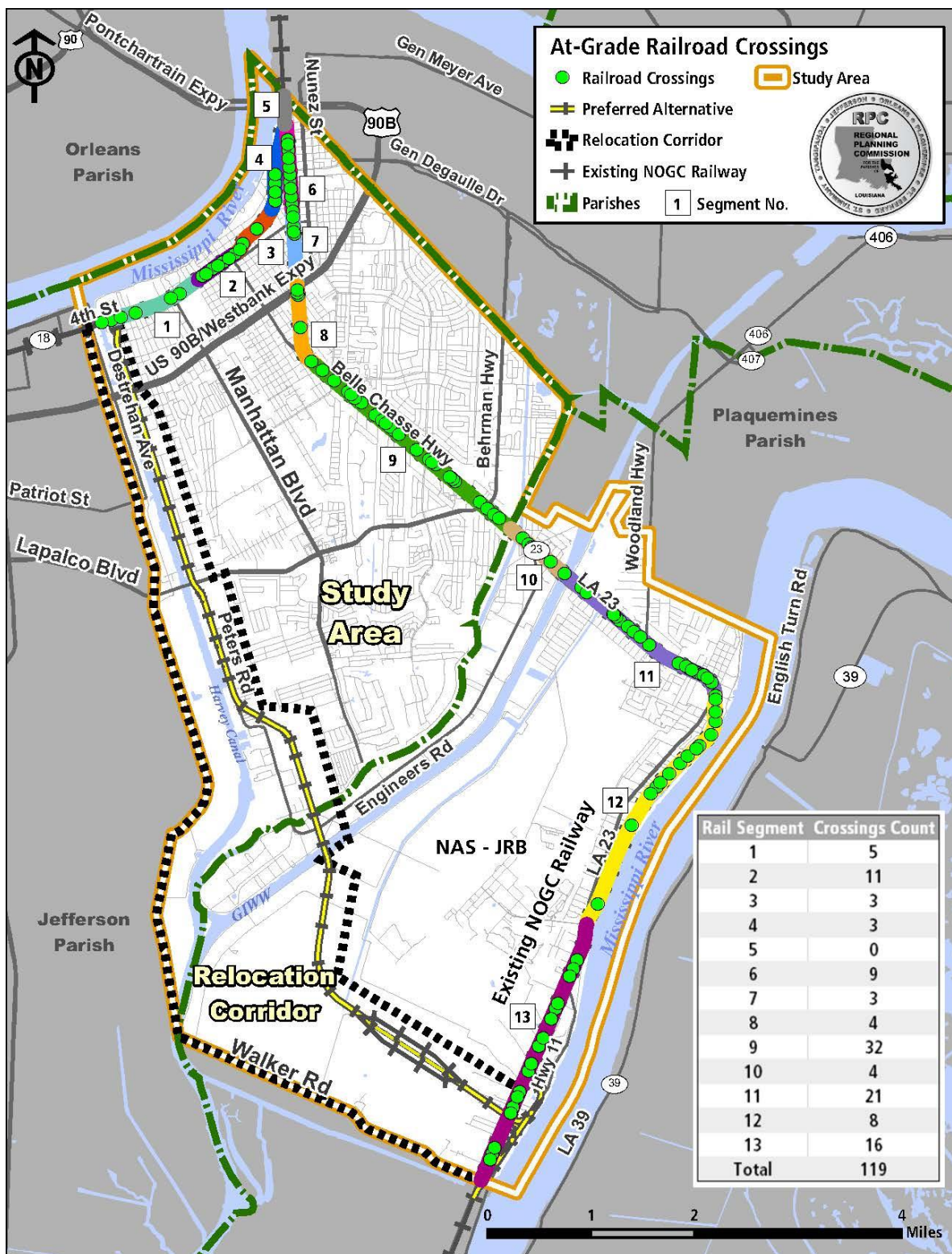


Table 2-1. Existing NOGC Rail Alignment Characteristics within Study Area

Segment No. (see Figure 2-4)	Area	Approximate Segment Limits		Rail Alignment Location	Adjacent Land Use	Length (Miles)	No. of At-grade Crossings			List of Public At-Grade Crossings	Remarks
							Public	Private	Total		
Westwego Subdivision											
1	Harvey	Harvey Canal	Dolhonde Street	Exclusive UPRR ROW; parallel to 4th Street	Industrial	1.06	2	3	5	Bark Dr, Grefer Ln	See Figure 2-5; photo 1
2	Gretna/ Jefferson Parish	Dolhonde Street	Amelia Street	In-street running; Within 4th Street through downtown Gretna	Commercial & Residential	0.46	11	0	11	Dolhonde St, Derbigny St, Weyer St, Huey P Long Ave (NB), Huey P Long Ave (SB), Newton St, Lavoisier St, Lafayette St, Amelia St (SB), Amelia St (NB), Amelia St (north side of tracks)	See Figure 2-5; photo 2
3		Amelia Street	Ocean Avenue	Exclusive UPRR ROW	Industrial	0.52	3	0	3	Fried St, Richard St, Ocean Ave	
4		Ocean Avenue	Jefferson/ Orleans Parish Line	Exclusive UPRR ROW	Commercial & Residential	1.10	3	0	3	Hamilton St, Virgil St, Wiedman St	Access to Gouldsboro Yard & Perry St Wharf
5		Jefferson/ Orleans Parish Line	McDonough Street	Exclusive UPRR ROW	Industrial	0.35	0	0	0	None	
Belle Chasse Subdivision											
6	Gretna/ Jefferson Parish	McDonough Street	Cook Street	In-street running; within Madison Street	Commercial & Residential	0.73	9	0	9	Americus St, Rupp St, Perry St, Isbell St, Burmaster St, Anson Street, Weidman St, Virgil St	See Figure 2-5; photo 3
7		Cook Street	US 90B/ Westbank Expy	Parallel to Madison Street; Exclusive NOGC ROW ¹	Commercial & Residential	0.76	3	0	3	Kepler Street, Stumpf Blvd (NB), Stumpf Blvd (SB)	¹ Behind Westside Shopping Center
8		US 90B/ Westbank Expy	23rd Street ²	Exclusive NOGC ROW through neighborhood	Commercial & Residential	0.72	4	0	4	US 90 B (WB and EB frontage roads), Marie Dr, 23rd St	² Opposite to Mel Ott Park entrance
9		23rd Street	Jefferson/ Plaquemines Parish Line	Exclusive NOGC ROW parallel to LA 23	Commercial & Residential	2.54	14	18	32	25th St, Gretna Blvd (SB), Gretna Blvd (NB), Whitney Ave (SB), Whitney Ave (NB), Fairfield Ave, Wright Ave (SB), Wright Ave (NB), Briant St, Terry Pkwy (SB), Terry Pkwy (NB), Behrman Hwy (SB), Behrman Hwy (NB #1), Behrman Hwy (NB #2-RT Lane)	Major Westbank roadway crossings within this segment
10	Belle Chasse/ Plaquemines Parish	Jefferson/ Plaquemines Parish Line	GIWW	Exclusive NOGC ROW parallel to LA 23	Commercial & Residential	0.67	4	0	4	Burmaster St, Mildred St, Planters Canal St, X St	
11		GIWW	Main Street	Exclusive NOGC ROW parallel to LA 23	Commercial & Residential	1.84	12	9	21	R St, Vista Dr, H St, Woodland Hwy (SB #1-RT Lane), Woodland Hwy (SB #2), Woodland Hwy (NB), Kenneth Dr, Eve St, Kimble St, E 3rd St, Ave G, Main St	See Figure 2-5; photo 4
12		Main Street	Russell Drive	Exclusive NOGC ROW parallel to Mississippi River	Commercial & Residential	2.81	4	4	8	Picou Dr, Tiemaker Rd, Seatrain Rd, Belle Chasse Launch Rd	NOGC Belle Chasse Yard
13		Russell Drive	Walker Road	Exclusive NOGC ROW parallel to LA 23	Commercial, Residential & Industrial	2.67	4	12 ²	16	S. Concord Rd, Sewer Plant Rd, Dockside Rd, Walker Rd	² Four private crossings provide access to the Chevron Oronite Plant
TOTAL						16.03	73	46	119		

Figure 2-5. Photographs of Typical Conditions along the Existing Rail Alignment

Rail Alignment Parallel to 4th Street within Segment No. 1 (photo 1 right)



Rail Alignment/In-Street Running Along 4th Street within Segment No. 2 (photo 2 left)

Rail Alignment/In-Street Running along Madison Street within Segment No. 6 (photo 3 right)



Rail Alignment along LA 23 within Segment No. 11 (photo 4 left)

Within the northern portion of the Study Area, tracks intersect with the existing local street grid within the City of Gretna. Along 4th Street and Madison Street, the tracks are located within the existing roadway (total length 1.19 miles) causing operational issues for both vehicular and train traffic.

Along a 5.8-mile portion of the Belle Chasse Subdivision (Segments 8 through 11), the railway crosses the US 90B frontage roads and then merges into the Belle Chasse Highway corridor. The rail alignment crosses several principal arterials including Terry Parkway, LA 428 (Behrman Highway) and LA 406 (Woodland Highway). Within this subdivision, the number of rail crossings is greatest and includes many at-grade crossings at roadways and private driveways which provide access to individual parcels ranging from individual home sites to large retail shopping centers. As previously shown in **Table 2-1**, there are 119 at-grade crossings located between the Harvey Canal and Walker Road; 73 of which are public at-grade crossings.

2.2.3 Customers Served by the NOGC Railway

The NOGC Railway has a common carrier agreement with the UPRR to serve all customers along the Westwego Subdivision. As shown in **Figure 2-6**, existing customers that are served by NOGC east of the Harvey Canal along 4th Street include:

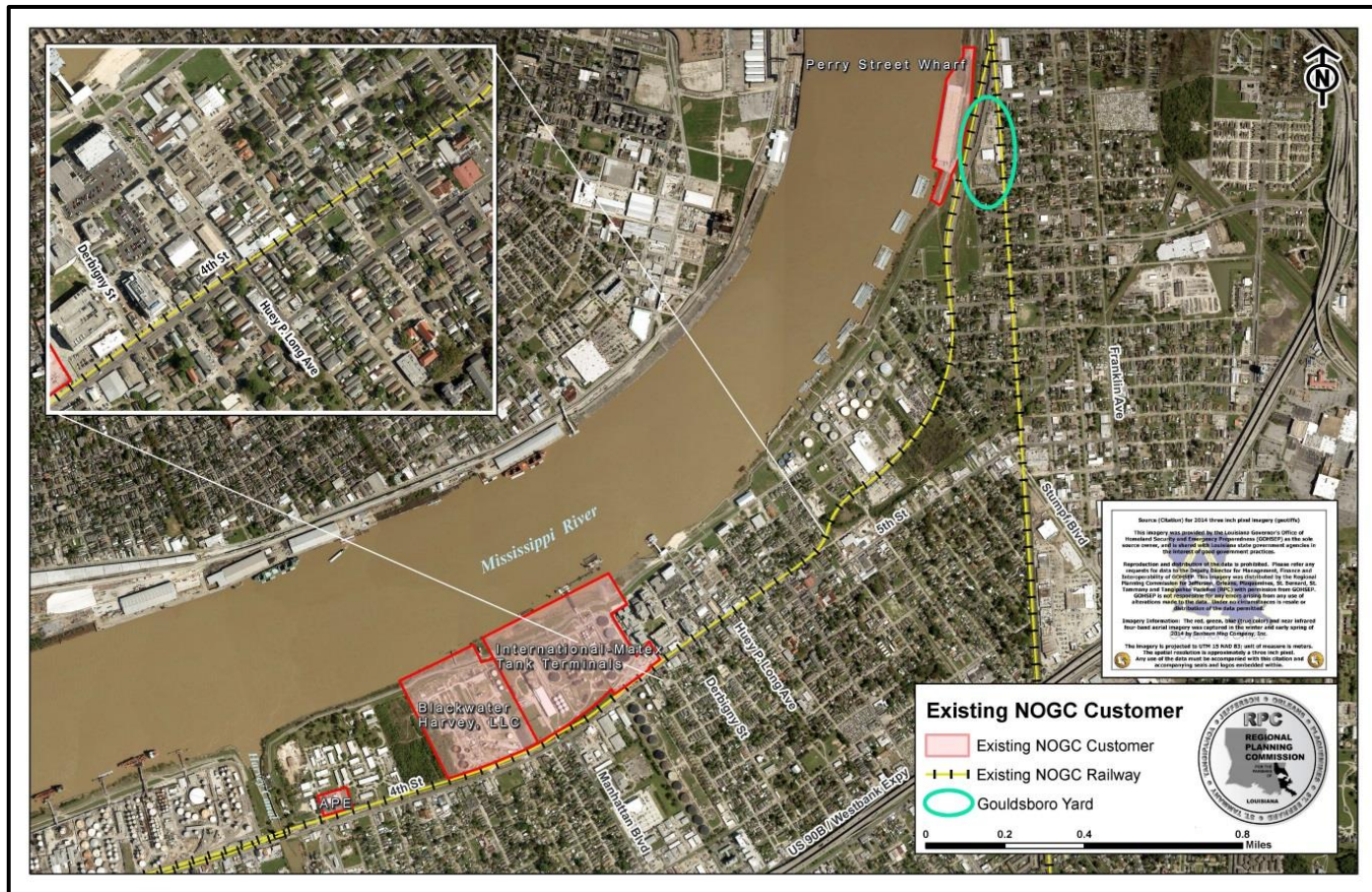
- Abrasive Products and Equipment, LLC (shown as “APE” on **Figure 2-6**)
- Blackwater Harvey, LLC
- International Matex Tank Terminal (IMTT)

According to the NOGC Railway, Abrasive Products and Equipment, LLC has existing rail capacity of three cars and IMTT has rail capacity of nine cars. Blackwater Harvey is currently expanding its operations to include additional tanks and the installation of new track. The upgraded rail capacity of Blackwater Harvey is unknown due to the uncertainty of the length and layout of the tracks being installed. As shown in **Figure 2-6**, all three of these businesses are located between the Harvey Canal and downtown Gretna. The most eastern of these industries is IMTT and to switch them is a west to north movement; subsequently track headroom⁵ east of the IMTT switch is not needed. NOGC presently switches in the most eastern track within Blackwater Harvey and does not use track headroom near Dolhonde Street.

The Port of New Orleans owns the Perry Street Wharf which has historically been served by the NOGC Railway. Although the NOGC has a common carrier obligation to serve all customers, the Perry Street Wharf currently has no industrial rail users. Subsequently, there is no rail service to the Perry Street Wharf facility. Currently, NOGC’s switching operations take place at Gouldsboro Yard, which is immediately adjacent to the Perry Street Wharf.

⁵ Track headroom refers to track on the mainline that would be needed to stage cars to serve the terminals. In this case, no headroom is needed.

Figure 2-6. Existing NOGC Customers



2.2.4 NOGC Operations and Maintenance

Train Volume and Distribution. According to the NOGC Railway, the current train volume in the Westwego Subdivision is 5 to 6 trains per day on average, Monday through Friday. The train schedule is 8 am, 11:30 am, 2:30 pm, 5 pm and 12 midnight. The numbers of cars per train can vary between 5 and 50 cars, with each car having an average length of 60 feet including the coupling. This equates to train lengths ranging from 300 feet to 3,000 feet. A high demand scenario consists of longer trains, varying in size between 60 and 110 cars with 2 locomotives. Under this scenario, train lengths can range from 3,600 feet to 6,600 feet.

The current train volume in the Belle Chasse Subdivision is 3 trains per day on average, Monday through Friday. The train schedule is 11 am, 5 pm and 10 pm. The numbers of cars per train can vary between 90 and 110 cars, with each car having an average length of 60 feet including the coupling. Train lengths range from 5,400 feet to 6,600 feet. As there is no direct connection between the Westwego and Belle Chasse Subdivisions, trains traveling between the two subdivisions must split at Gouldsboro Yard and reassemble. According to NOGC, this process blocks Weidman Street on the Westwego Subdivision for 25 to 30 minutes. When reassembled,

the unit train will block Madison Street from Americus Street to Kepler Street for approximately 40 minutes while the NOGC Railway completes a full set and air test.

Train Operating Speed. The average train operating speed provided by the NOGC Railway for both subdivisions is 10 mph. This operating speed corresponds to the maximum timetable speed as contained in the USDOT Crossing Inventory database for each at-grade crossing. Both of the rail subdivisions traverse populated areas, where dense surrounding development, coupled with the adjacent roadway network, results in numerous public and private at-grade crossings. These existing conditions result in train speeds operating slower than 10 mph due to the number of conflict points between trains and local vehicular and pedestrian traffic.

In-street operations significantly affect train travel time and speed. Typical in-street operating speeds of 2 mph to 4 mph exist. According to NOGC Railway observations of current operational conditions, it takes 12 to 20 minutes for a train to travel the in-street segment on 4th Street between Dolhonde Street and Amelia Street, depending on the direction of travel. Travel along the in-street segment on Madison Street from Americus Street to Stumpf Boulevard takes about 13 minutes to clear.

Maintenance Yard. NOGC’s Belle Chasse Yard is located in Plaquemines Parish where the rail corridor diverges from the LA 23 right-of-way at Main Street and runs parallel to the Mississippi River levee and Highway 11. The maintenance yard is generally located in the northern portion of Segment 12 (Segment 12 is depicted in **Figure 2-4**) and is bounded by Seatrain Road to the north and Belle Chasse Launch Road to the south.

Figure 2-7. Relocation Corridor

2.3 Relocation Corridor

The portion of the Study Area that is the subject of the NOGC Railway relocation has been identified as the “Relocation Corridor” (**Figure 2-7**). The Relocation Corridor is situated on the west side of the Study Area, generally bordering the Harvey Canal from 4th Street southward to the GIWW. Destrehan Avenue is located on the west side of the Harvey Canal, while Peters Road is located on the east side. South of the GIWW, the Relocation Corridor borders the NAS JRB property and extends to LA 23 near Walker Road in Belle Chasse.

Within the Relocation Corridor, land use north of the GIWW is comprised of industrial, commercial and residential use. South of the GIWW, the area is primarily undeveloped, forest land. **Figure 2-8** depicts photographs along Peters Road which generally characterize existing conditions within the Relocation Corridor. The UPRR Hooper Spur track, which is located on the west side of Peters Road, is depicted therein.

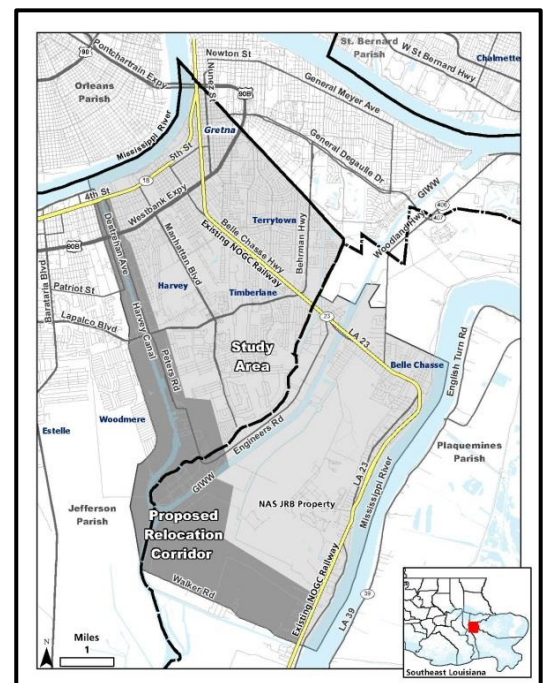


Figure 2-8. Photographs of Existing Conditions within the Relocation Corridor

**Industrial use and UPRR Hooper Spur along Peters Road
Spur along Peters Road
(photo right; view facing south)**



**Peters Road north of Lapalco
Boulevard adjacent to Hooper Spur
(photo left; view facing south)**

**Peters Road south of Lapalco
Boulevard adjacent to
Boomtown Floodwall
(photo right; view facing north)**



2.4 Conceptual Alignment Options

One of the initial EA tasks was to conduct an Alternatives Analysis on an initial set of alternatives which were defined as the conceptual alignment options. The detailed analysis for the conceptual alignment options is included in the *Tier I Alternatives Analysis – Screening Evaluation*,⁶ which is summarized herein. The conceptual alignment options were derived from review of prior studies pertaining to the development and feasibility of rail alignment alternatives in the following reports (available from RPC upon request):

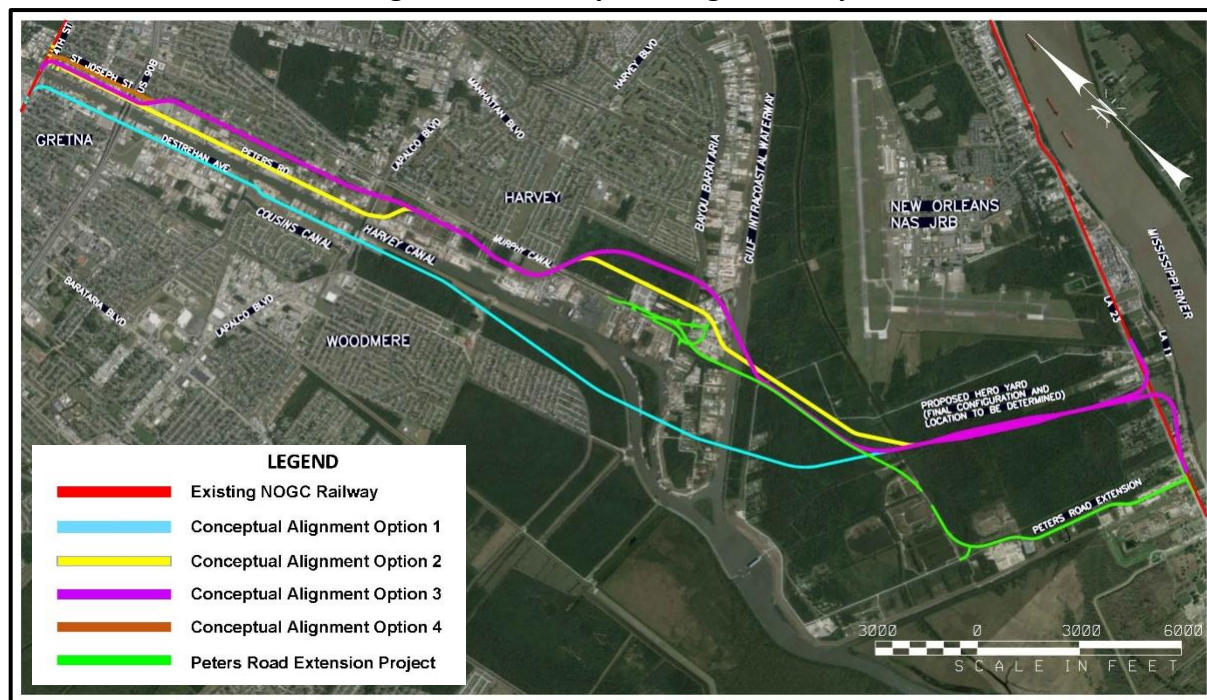
- *Plaquemines Parish Intermodal Feasibility Study* (DMJM Harris 2002)
- *Conceptual Engineering Report, New Orleans & Gulf Coast Railway, Proposed Railroad Relocation & Extension, Jefferson & Plaquemines Parishes, Louisiana* (HDR 2011a)
- *Transportation Investment Generating Economic Recovery (TIGER) IV Grant Application, New Orleans & Gulf Coast Railroad, Plaquemines Parish, Louisiana* (USDOT 2012)

The conceptual alignment options (options) are depicted in **Figure 2-9** (with their corresponding alignment color) and were sequentially numbered from west to east as follows:

- **Option 1** – West of the Harvey Canal generally along Destrehan Avenue (light blue).
- **Option 2** – East of the Harvey Canal following the Hooper Spur track along Peters Road to Lapalco Boulevard (yellow).
- **Option 3** – East of the Harvey Canal following the Hooper Spur track along Peters Road then merging into vacant parcels south of US 90B, continuing south to Lapalco Boulevard (purple).
- **Option 4** – Same as Option 3 except follows St. Joseph Lane from 4th Street to US 90B instead of Peters Road (red segment combined with purple).

⁶ Report available at www.norpc.org/railroad.html or from RPC upon request.

Figure 2-9. Conceptual Alignment Options



2.4.1 Description of Conceptual Alignment Options

As part of the *Tier I Alternatives Analysis – Screening Evaluation*, plans sheets depicting each of the conceptual alignment were developed. The options are described below and an overview map is included within **Appendix A**.

Option 1

The proposed track for Option 1 would begin along the Westwego Subdivision, west of the existing Harvey Canal Bascule Bridge, at a new turnout with a straight move onto the track that crosses 4th Street and Destrehan Avenue and continues south along the east side of Destrehan Avenue. Option 1 track would remain at-grade south of US 90B to a point where it crosses over the Cousins Canal Floodwall, requiring a new bridge east of the Cousins Canal Pump Station. The proposed alignment then crosses under the Lapalco Boulevard Overpass and continues south into the wooded area west of the Harvey Canal West Bank Levee.

The Option 1 alignment crosses over Harvey Canal, Barataria Bayou, and the GIWW, which would require three movable bridges before continuing south and crossing the proposed Peters Road Extension. Option 1 then crosses Bayou Barriere, which would require a bridge. After crossing Bayou Barriere, the proposed Hero Yard would be located south of the New Orleans NAS JRB. The proposed track then proceeds southeast towards LA 23. After crossing LA 23, the Option 1 alignment would connect to the existing NOGC Belle Chasse Subdivision track with a

wye⁷ connection, allowing trains to continue south along the existing track or to operate northward to the NOGC Belle Chase Yard. The rail crossing at LA 23 would either be at-grade or grade separated, depending on public input.

Option 2

The proposed track for Option 2 would begin along the Westwego Subdivision, east of the existing Harvey Canal Bascule Bridge, at a new turnout with a straight move onto new track that crosses 4th Street to the east side of northbound Peters Road. The alignment would continue southward and cross southbound Peters Road near Gold Street to the west side of Peters Road where the alignment would merge into the Hooper Spur right-of-way. In numerous locations along the Hooper Spur, the rails and ties remain in-place.

Option 2 track would then continue south under US 90B and Lapalco Boulevard to a point where the track would cross Peters Road at-grade near the northern boundary of the Boomtown Floodwall in the vicinity of the proposed Jefferson Parish West Bank Animal Shelter (formerly the Hook-n-Slice Golf Range). The track continues south in mostly undeveloped land, requiring a new bridge to cross over Murphy Canal. Continuing south, the track would be grade-separated over Bayou Baratavia, Engineers Road and the GIWW. A movable bridge over the GIWW is proposed.

Option 2 would then cross Buccaneer Road near East Bayou Road and would parallel the east side of the proposed Peters Road Extension before crossing Bayou Barriere, which would require a bridge. After crossing Bayou Barriere, the proposed Hero Yard would be located south of the NAS JRB. The proposed track then proceeds southeast towards LA 23. After crossing LA 23, the Option 2 alignment is identical to Option 1.

Option 3

The proposed track for Option 3 would begin along the Westwego Subdivision, east of the existing Harvey Canal Bascule Bridge at a new turnout with a straight move onto new track that crosses 4th Street to the east side of northbound Peters Road. Option 3 would continue south along the east side of Peters Road under US 90B, where the track shifts to the east just south of 14th Street to an undeveloped north-south utility corridor between Peters Road and Paillet Avenue. The Option 3 alignment would continue southward to Lester Street where the track would be elevated in order to cross Lapalco Boulevard. The grade-separation/bridge structure at this location would be at an elevation to clear both Lapalco Boulevard and the Jefferson Parish West Bank Animal Shelter parcel in its entirety, returning to grade approximately 3,000 feet south of Lapalco Boulevard. In order to be fully elevated over these existing facilities, the grade-separation/bridge structure would be approximately 6,000 feet in length.

⁷ Railway tracks arranged in the form of a “Y” which are used for turning locomotives and rail cars in the opposite direction.

The track would continue south in mostly undeveloped land, requiring a new bridge to cross over Murphy Canal. Between Murphy Canal and the GIWW, the Option 3 alignment would be located further east compared to the Option 2 alignment within this same segment. Continuing south, the track would be grade-separated over Bayou Baratavia, Engineers Road and the GIWW, which would require a movable bridge. Option 3 would then cross Buccaneer Road near East Bayou Road and would parallel the east side of the proposed Peters Road Extension before crossing Bayou Barriere, which requires a bridge. After crossing Bayou Barriere, the proposed Hero Yard would be located south of the NAS JRB. The proposed track would then proceed southeast towards LA 23. After crossing LA 23, the Option 3 alignment is identical to Option 1.

Option 4

The proposed track for Option 4 would begin along the Westwego Subdivision, east of the existing Harvey Canal Bascule Bridge, at a new turnout with a straight move onto new track that would cross 4th Street to the west side of St. Joseph Lane. The track would continue south along the west side of St. Joseph Lane, under the elevated US 90B/Westbank Expressway. South of US 90B, the remaining alignment for Option 4 coincides with Option 3.

2.4.2 Evaluation of Conceptual Alignment Options

This section compares the impacts of each of the four conceptual alignment options. The intent is not to describe all impacts but to briefly outline those impacts that differentiate the options. The impacts considered were categorized as follows:

- **Physical Environment Considerations** – Length of track; acres of required right-of-way (ROW); and required infrastructure including bridge and tunnel improvements, new stationary and moveable bridges, and grade separations.
- **Human Environment Considerations** – Impacts to pedestrian and vehicular traffic, required at-grade rail crossing (safety considerations), number of parcels impacted, and impacts to residences and businesses potentially requiring relocation.
- **Natural Environment Considerations and Estimated Impacts** – Impacts to wetlands and consideration of the 100-year floodplain.

Table 2-2 presents a summary of the key factors that were considered, and comparison of potential impacts associated with the conceptual alignment options that were evaluated as part of the *Tier I Alternatives Analysis – Screening Evaluation*.

Table 2-2. Summary of Conceptual Alignment Option Impacts

Evaluation Criteria	Units	Option 1	Option 2	Option 3	Option 4
Physical Environment Considerations					
Length of track	Track Feet	51,863	50,644	51,981	51,994
Required 50-foot ROW	Acres	60	42	60	60
Major bridge crossings	Number	6	4	5	5
Moveable bridges ¹	Number	3	1	1	1
Harvey Canal Bascule Bridge improvements required	Yes/No	No	Yes	Yes	Yes
Harvey Canal Tunnel (HCT) constraints	Description	Reinforce Top of HCT	None	Overpass of HCT Approach	Overpass of HCT Approach
Bridge over Cousins Canal Floodwall required	Yes/No	Yes	No	No	No
Grade-separation/bridge over Lapalco Boulevard and West Bank Animal Shelter	Yes/No	No	No	Yes	Yes
Connection to existing rail at LA 23 (TBD) ²	Yes/No	Yes	Yes	Yes	Yes
Human Environment Considerations					
Requires new track along a residential street	Yes/No	No	No	No	Yes
At-grade public road crossings	Number	14	5	21	22
At-grade private industry access crossings	Number	33	68	11	11
Number of parcels impacted	Number	105	26	45	48
Potential relocations - commercial	Number	26	10	14	24
Natural Environment Considerations					
Wetlands directly impacted ³	Acres	32	25	26	26
Within the 100-Year floodplain	Yes/No	Yes	Yes	Yes	Yes

Notes:

1. All options require a moveable bridge over the GIWW; Option 1 also requires movable bridges over Harvey Canal and Bayou Barataria.
2. Assumes a grade separation (roadway over rail) at LA 23, however an at-grade crossing is under consideration.
3. Based on an estimate of the track length passing through wetland areas multiplied by 50-foot ROW and converted to acres.

The four conceptual alignment options were evaluated to identify potential fatal flaws (e.g. routes that were not geometrically or engineeringly feasible) and to screen out the options that showed the least amount of promise, or were deemed unreasonable upon further analysis. Based on the analysis of potential impacts, the outcome of this task resulted in eliminating Conceptual Alignment Option 1 and Conceptual Alignment Option 4. These options were eliminated due to greater numbers of residential impacts, higher construction costs (three required movable bridges), and engineering factors such as greater structural impacts and potential modifications to both existing roadway infrastructure (Harvey Canal tunnel) and flood control structures. Conceptual Alignment Options 2 and 3 were retained because they best met the purpose and need.

A public meeting was held on September 22, 2015 at the Mel Ott Park Multi-Purpose Center in Gretna to share the project scope and solicit stakeholder and public input on the Project's purpose and need, to present the range of alternatives under study, and to obtain key information to be considered in the Alternatives Analysis process. The four conceptual alignment options were presented at the public meeting and the public was asked to comment on the options that were eliminated and those that were retained. Of the 18 commenters who filled out the survey questionnaire regarding the conceptual alignment options, the majority (16 commenters) agreed with the elimination of Conceptual Alignment Options 1 and 4. One commenter agreed with eliminating Option 4 because of its proximity to residential neighborhoods, however did not agree with eliminating Option 1 because of personal preference to its more favorable isolated location on the west side of the Harvey Canal.

2.5 Preliminary Alternatives

Two conceptual alignment options were retained as part of the initial Tier I Alternatives Analysis and were further evaluated and modified to become the Tier II preliminary alternatives. The initial transition from the retained conceptual alignment options to the preliminary alternatives was accomplished through re-naming only, as follows:

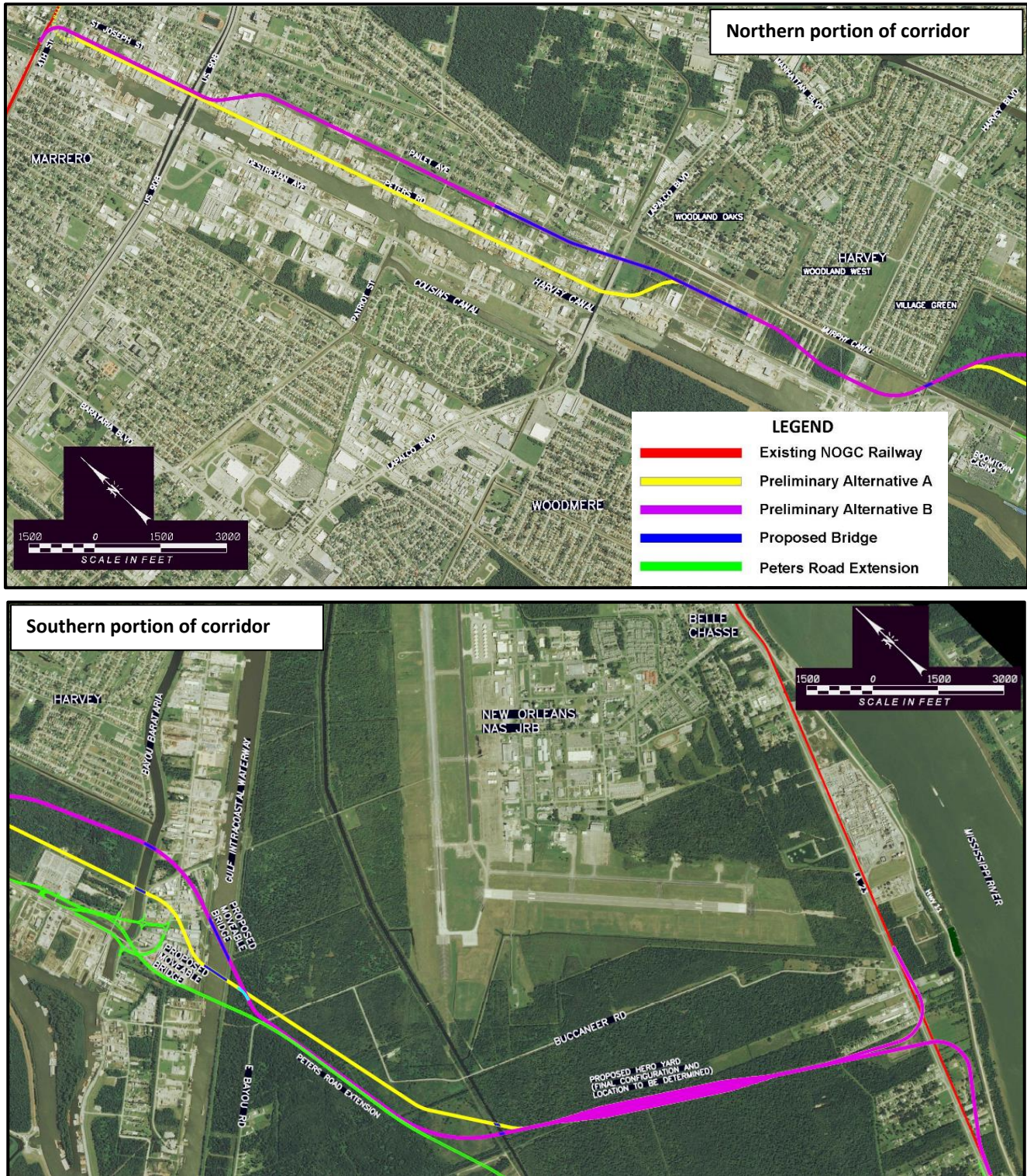
- Conceptual Alignment Option 2 was renamed Preliminary Alternative A; and
- Conceptual Alignment Option 3 was renamed Preliminary Alternative B

The detailed analysis associated with the preliminary alternatives is included in the *Tier II Alternatives Analysis – Screening Evaluation*⁸ and is summarized herein. Throughout the Alternatives Analysis, the preliminary alternatives were formulated and evaluated with input from the public, key stakeholders and the Project Management Committee (PMC). The result of the Tier II Alternatives Analysis is a recommendation on the selection of the preferred alternative by the PMC, with concurrence from the Federal Railroad Administration.

For the initial Tier II screening, the two preliminary alternatives were evaluated. The alignment associated with Preliminary Alternative A is depicted in yellow within **Figure 2-10**, while Preliminary Alternative B is shown in purple. **Appendix A** contains overview maps of the preliminary alternatives; a brief description of each of the preliminary alternatives follows.

⁸ Report available at www.norpc.org/railroad.html or from RPC upon request.

Figure 2-10. Preliminary Alternatives



2.5.1 Preliminary Alternative A Description

Preliminary Alternative A would begin along the NOGC Westwego Subdivision, east of the existing Harvey Canal Bascule Bridge, at a new turnout with a straight move onto new track that would cross 4th Street to the west side of northbound Peters Road. The alignment would continue southward and cross over southbound Peters Road near Gold Street to the west side of Peters Road where the alignment would transition into the UPRR Hooper Spur ROW. In numerous locations along the Hooper Spur, existing tracks and railroad ties remain in-place (previously seen in **Figure 2-8**).

Preliminary Alternative A would continue within the Hooper Spur ROW southward under the elevated portions of US 90B and Lapalco Boulevard, to a point where the track would cross Peters Road at-grade near the southern boundary of the proposed Jefferson Parish West Bank Animal Shelter property.

The alignment would continue south in mostly undeveloped land that is situated between the Jefferson Parish West Bank Animal Shelter property and Murphy Canal. A new bridge would be required to cross Murphy Canal. After crossing Murphy Canal, the alignment would continue again through undeveloped land southward to Bayou Baratavia. The alignment would be grade-separated over Bayou Baratavia, Engineers Road and the GIWW. A movable bridge would be required over the intracoastal waterway.

Preliminary Alternative A would then cross Buccaneer Road at-grade near East Bayou Road and would parallel the east side of the proposed Peters Road Extension before crossing Bayou Barriere, which would require a bridge. After crossing Bayou Barriere, a proposed rail maintenance yard, identified as the Hero Yard, would be located south of the NAS JRB. The alignment would then proceed southeast towards LA 23. The rail crossing at LA 23 would initially be an at-grade crossing and may be grade-separated in the future.

After crossing LA 23, the track would connect to the existing NOGC Belle Chasse Subdivision track with a wye connection, allowing trains to continue south along the existing track or to operate northward to the NOGC Belle Chase Yard.

2.5.2 Preliminary Alternative B Description

Similar to Preliminary Alternative A, Preliminary Alternative B would begin along the NOGC Westwego Subdivision east of the existing Harvey Canal Bascule Bridge at a new turnout with a straight move onto new track that crosses 4th Street to the east side of northbound Peters Road. Preliminary Alternative B would continue south along the east side of Peters Road to US 90B/Westbank Expressway. At the US 90B crossing, a three-level configuration would occur: the proposed rail alignment would be located at-grade; the existing Westbank Expressway is elevated over the rail; and the existing Harvey Canal Tunnel roadway is depressed or below grade. Depending on the horizontal location and length of the Harvey Canal Tunnel crossing, the structural integrity of the Harvey Canal Tunnel may need to be assessed.

South of the Westbank Expressway, the track would shift to the east just south of 14th Street (extended) to an undeveloped north-south utility corridor between Peters Road and Paillet Avenue. The alignment for Preliminary Alternative B would continue southward to Lester Street where the track would be elevated (embankment section/bridge structure) in order to cross over Lapalco Boulevard. The required grade-separation at this location would cross over the Lapalco Boulevard bridge approach span which continues southward where it is elevated over both Peters Road and the Harvey Canal. The rail alignment would continue to be elevated over the Jefferson Parish West Bank Animal Shelter parcel (formerly the Hook-n-Slice Golf Range), returning to grade approximately 3,000 feet south of Lapalco Boulevard.

The alignment would continue south in mostly undeveloped land, requiring a new bridge over Murphy Canal. Between Murphy Canal and Bayou Barataria, the north-south alignment would be located further east compared to Preliminary Alternative A. The alignment would continue southward crossing over Bayou Barataria, Engineers Road and the GIWW on structure/bridge. The GIWW crossing would require a movable bridge.

Preliminary Alternative B would then cross Buccaneer Road at-grade near East Bayou Road and would parallel the east side of the proposed Peters Road Extension before crossing Bayou Barriere, which would also require a bridge. After crossing Bayou Barriere, the proposed Hero Yard would be located south of the NAS JRB. The alignment would then proceed southeast towards LA 23, where an at-grade crossing is proposed. After crossing LA 23, Preliminary Alternative B would connect to the existing NOGC Belle Chasse Subdivision track with a wye connection, allowing trains to continue south along the existing track or to operate northward to the NOGC Belle Chase Yard.

2.5.3 Evaluation of Preliminary Alternatives

An initial assessment of Preliminary Alternatives A and B was conducted. **Table 2-3** presents a summary of the evaluation criteria that were considered as part of the Tier II Alternatives Analysis – Screening Evaluation and a comparison of potential impacts associated with each of the preliminary alternatives. The major differences between Preliminary Alternatives A and B include:

- Potential impacts on residential areas – Preliminary Alternative B would be located further east compared to Preliminary Alternative A and would impact more residential homes near Paillet Avenue between US 90B and Lapalco Boulevard, in addition to several residential neighborhoods located between Lapalco Boulevard and Bayou Barataria.
- At-grade crossings – Preliminary Alternative B would result in 21 new public at-grade crossings compared to 5 for Preliminary Alternative A.
- Crossing US 90B – Preliminary Alternative A would cross under US 90B within the existing UPRR Hooper Spur ROW, while the alignment for Preliminary Alternative B would result in a three-level crossing that would include an alignment over the Harvey Canal tunnel.

- Crossing Lapalco Boulevard – Preliminary Alternative A would cross Lapalco Boulevard within the existing UPRR Hooper Spur ROW, while Preliminary Alternative B would require an extensive embankment/bridge structure approximately 6,500 feet in length to span Lapalco Boulevard and the proposed Jefferson Parish West Bank Animal Shelter property.

Based on the evaluation described above, Preliminary Alternative A was brought forward for further consideration.

Table 2-3. Summary of Preliminary Alternative Impacts

Evaluation Criteria	Units	Preliminary Alternative A	Preliminary Alternative B
Requires new track along or adjacent to a residential street	Yes/No	No	Yes
At-grade public road crossings	Number	5	21
At-grade private industry access crossings	Number	68	11
Number of parcels impacted	Number	26	45
Potential relocations – commercial only	Number	10	14
Length of track	Track Feet	50,644	51,981
Required 50-foot ROW	Acres	42	60
Major bridge crossings	Number	4	5
Moveable bridges crossing GIWW (3 bridge types considered)	Number	1	1
At US 90B, Harvey Canal Tunnel constraints	Description	None	Potential structural evaluation and modification of tunnel approach
Bridge/structure over Lapalco Boulevard and Jefferson Parish West Bank Animal Shelter property	Yes/No	No	Yes; approximately 6,000 feet long
Wetlands Directly Impacted	Acres	25	26
Within the 100-Year Floodplain	Yes/No	Yes	Yes

2.5.4 Preliminary Alternative B Additional Analysis and Elimination

Following the September 22, 2015 public meeting, additional analyses was conducted on Preliminary Alternative B to determine the embankment/bridge requirements associated with crossing Lapalco Boulevard and the proposed West Bank Animal Shelter property. Factors that were considered included maintaining cross street access to Breaux Avenue which is located just north of Lapalco Boulevard and the need to span both Lapalco Boulevard and the animal shelter property. Based on the additional analyses, it was determined that the grade-separation would need to be approximately 6,500 feet long, which would include both embankment and bridge sections.

Based on the potential to impact a greater number of residential homes, potential structural conflicts at US 90B over the Harvey Canal Tunnel and higher estimated construction cost associated with the Lapalco Boulevard/animal shelter property crossing (6,500-foot long bridge/embankment section), Preliminary Alternative B was recommended for elimination by the PMC. Preliminary Alternative B would also have impacts on businesses and future land use and development along the Peters Road corridor. The rail alignment would bisect several currently vacant parcels, potentially rendering the parcels undevelopable in the future. As such, Alternative B was eliminated from further consideration.

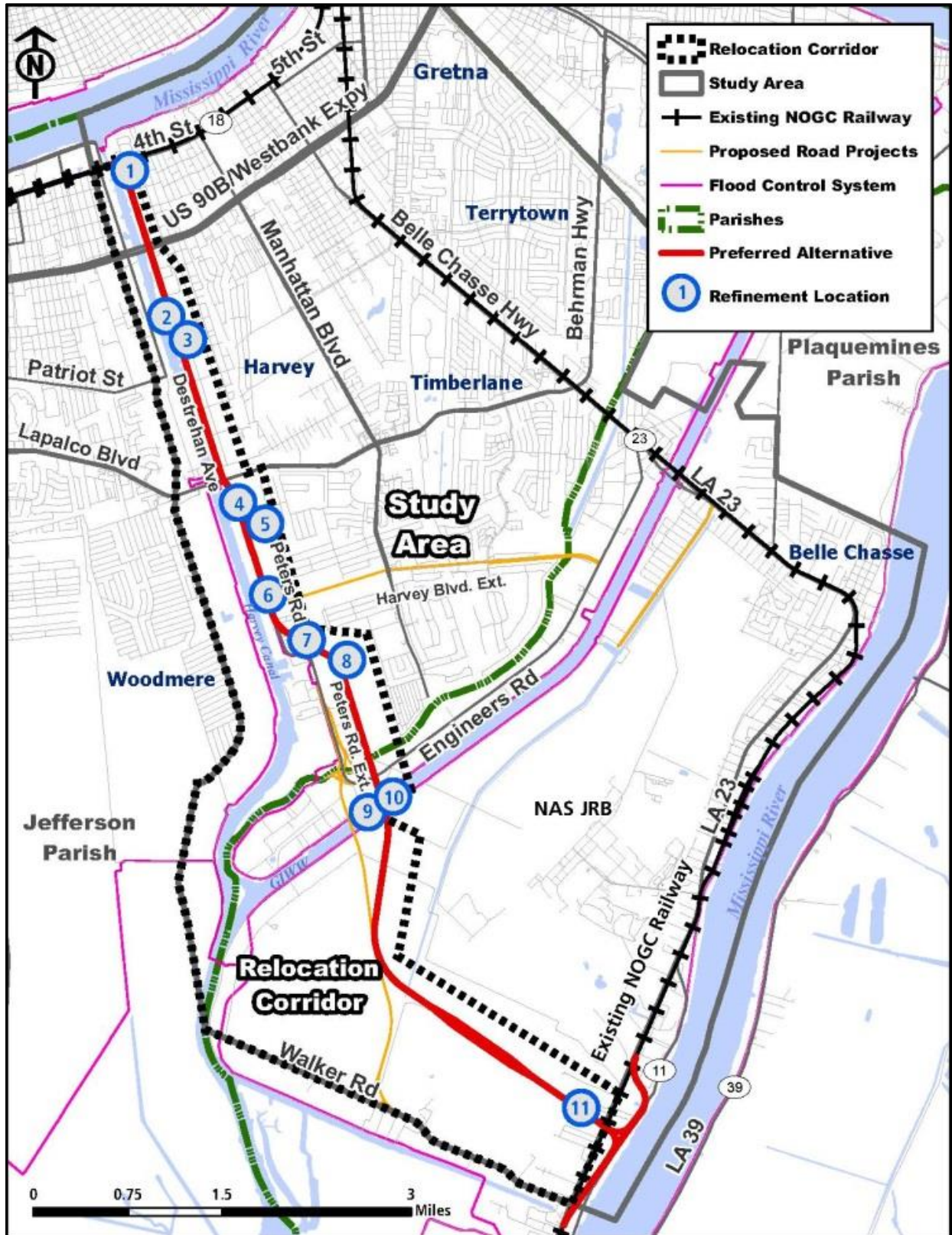
2.6 Refinement of Preliminary Alternative A and Additional Considerations

As part of the continuous Alternatives Analysis process, Preliminary Alternative A was further refined and new alignment options were introduced within specific segments of the corridor. These modifications were based on additional data and analysis, as well as stakeholder and PMC input. The detailed analysis and mapping associated with the refinements to the preliminary alternatives is included within the *Tier II Alternatives Analysis – Screening Evaluation* and summarized herein. Presented by location from north to south, the rail alignment refinements are listed in **Table 2-4** with their corresponding locations throughout the Relocation Corridor shown in **Figure 2-11**.

Table 2-4. Summary of Rail Alignment Refinements

Refinement Location	Description of Rail Alignment Refinements
No. 1	Curve from double track mainline along 4th Street to Peters Road.
No. 2	Rail alignment along the west side of Peters Road – 4th Street to south of Lapalco Boulevard.
No. 3	Rail alignment along the east side of Peters Road – 4th Street to south of Lapalco Boulevard.
No. 4	Rail alignment along Peters Road south of Lapalco Boulevard.
No. 5	Rail alignment within undeveloped parcels south of Lapalco Boulevard.
No. 6	Rail alignment along the west side of Peters Road parallel to USACE floodwall including Peters Road reconstruction.
No. 7	Rail alignment crossing the Murphy Canal.
No. 8	Rail alignment within undeveloped parcels between Murphy Canal crossing and GIWW.
No. 9	Rail alignment crossing the GIWW.
No. 10	Movable bridge type crossing the GIWW and proximity to NAS JRB.
No. 11	Rail alignment crossing LA 23 and connection to existing track at LA 23.

Figure 2-11. Rail Alignment Refinement Locations



2.6.1 Curve from Double Track Mainline Along 4th Street to Peters Road

Several horizontal curves for the segment of rail that begins on 4th Street and ties into the UPRR Hooper Spur on the west side of Peters Road were evaluated. Curve radii evaluated ranged from a larger 8 degree 30 minute curve (8.5°) to a smaller 12.5° curve.

- The maximum train speed at an 8.5° curve is 10 mph, while the maximum speed at a 12.5° curve reduces to 5 mph. NOGC indicated a preference for a larger 8.5° curve for operational purposes.
- A larger radius curve (8.5° curve) would locate the track closer to St. Joseph Lane which is a residential street. The 8.5° curve would also encroach onto the third block south of 4th Street near Jennie Street.
- The proposed curve would cross Peters Road twice potentially leading to operational concerns if vehicles are “trapped” within the curve. The appropriate rail crossing warning signs and rail crossing devices on Peters Road and Gold Street would mitigate this concern.
- As part of the Preferred Alternative, the PMC recommended a 10.5° curve at this location as a tradeoff between the operational considerations and neighborhood impacts.

2.6.2 Rail Alignment along the West Side of Peters Road – 4th Street to South of Lapalco Boulevard

The UPRR Hooper Spur is located on the west side of Peters Road and the existing rail right-of-way varies in width from 20 feet to 35 feet. Portions of the out-of-service track remain in place.

- Freight rail service on the Hooper Spur diminished over the years and completely ceased following Hurricane Katrina in 2005 when its then limited-customer base (two to three companies) relocated.
- With the exception of the horizontal curve alignment from 4th Street, there would be no public at-grade crossings throughout this segment of Peters Road from Jennie Street to Lapalco Boulevard. In contrast, there are numerous private driveways along the Hooper Spur. In addition, several businesses located on the west side of Peters Road appear to be encroaching within the Hooper Spur ROW using this area for parking.
- There would be no impacts at US 90B as the rail would be located at-grade beneath the elevated portion of US 90B.
- The crossing at Lapalco Boulevard would be along the existing Hooper Spur track and would not impact traffic north side of Lapalco Boulevard at the Lapalco/Peters entrance-exit ramp.
- The PMC recommended evaluating a rail alignment option on the east side of Peters Road for comparison to the west side alignment; see Section 2.6.3 below for the east side comparison.

2.6.3 Rail Alignment along the East Side of Peters Road – 4th Street to South of Lapalco Boulevard

For comparison purposes, a rail alignment option on the east side of Peters Road was evaluated.

- New 50-foot wide rail ROW would be required throughout the limits. The ROW was estimated to be 14.6 acres and would directly impact approximately 29 businesses/structures.
- The east side rail alignment would result in 12 new public at-grade crossings including an at-grade crossing at the heavily traveled Lapalco-Peters entrance/exit ramp.
- There would be no traffic impacts at US 90B as the rail alignment would be at-grade beneath the elevated portion of US 90B; however the rail alignment could potentially have structural impacts on the Harvey Canal Tunnel.
- As part of the Preferred Alternative, the PMC recommended to locate the alignment on the west side of Peters Road within the existing Hooper Spur ROW.

2.6.4 Rail Alignment within Undeveloped Parcels South of Lapalco Boulevard

Further analysis of Preliminary Alternative A was conducted during the Tier II Alternatives Analysis within the segment located south of Lapalco Boulevard to Murphy Canal.

- Preliminary Alternative A would cross Peters Road at-grade approximately 600 feet south of Lapalco Boulevard. The at-grade crossing could potentially result in traffic impacts.
- If future traffic on Peters Road increased to a level that would warrant a grade separation between Peters Road and Lapalco Boulevard, the at-grade rail crossing would be too close to Lapalco Boulevard thus making a highway grade separation difficult to achieve.
- Options evaluated with regard to the location of the rail alignment included closer to Murphy Canal or centered within the vacant parcels. With either option, the alignment would bisect several parcels of land rendering them generally undevelopable in the future.
- Potential neighborhood impacts would occur due to the proximity of the alignment near several Harvey subdivisions including Woodland Oaks, Woodland West and Village Green.
- Currently no local streets intersect with Peters Road along this segment; however, the proposed extension of Harvey Boulevard, located between Woodland West and Village Green, would result in a public at-grade crossing.
- The PMC recommended eliminating this segment option due to residential impacts and the potential inability to implement future roadway improvements along Peters Road.

2.6.5 Rail Alignment along Peters Road South of Lapalco Boulevard

Another option identified as part of public comments included keeping the rail alignment within the Hooper Spur rail right-of-way on the west side of Peters Road adjacent to the USACE Boomtown Floodwall (floodwall). The alignment is approximately 1.7 miles between Lapalco Boulevard and Murphy Canal.

- An initial evaluation of ROW, land rights, easements and ownership adjacent to the floodwall was conducted for this segment.
- Initial considerations and impacts associated with the rail alignment included:
 - Access Impacts: Ingress and egress impacts for businesses located within the floodwall protection system.
 - Structural Impacts: Geotechnical analyses to determine if the railroad would have impacts on the floodwall structural foundation system.
 - Neighborhood Impacts: Proximity of the alignment near several Harvey subdivisions including Woodland Oaks, Woodland West and Village Green. The alignment adjacent to the floodwall is farther away from these neighborhoods.
- The PMC recommended continuing to evaluate the alignment along the west side of Peters Road following consultation with the USACE New Orleans District; see Section 2.6.6 below for the continued evaluation.

2.6.6 Rail Alignment along the West Side of Peters Road Parallel to Floodwall

Public comments and consultation with the USACE New Orleans District provided additional insight to further evaluate the rail alignment option within the UPRR Hooper Spur right-of-way on the west side of Peters Road adjacent to floodwall.

- Further analysis of existing ROW, servitudes and easements along Peters Road parallel to the floodwall was undertaken. The proposed rail ROW would be 50 feet in this segment.
- Based on consultation with the USACE New Orleans District, it was indicated that the “T-wall” floodwall and the supporting H-piles were designed to accommodate the continued presence and operation of the adjacent railroad and its associated rail loadings. USACE also noted that 15 feet of clearance between the rail and floodwall shall be provided.
- The rail alignment located adjacent to the floodwall would require drainage improvements. PMC members suggested closing in the existing drainage swale on the west side of Peters Road to provide space for the 50-foot rail corridor. This in turn would require shifting Peters Road to the east to provide sufficient space for both the proposed rail and drainage system improvements. Forty feet (40 feet) of additional roadway ROW would be required on the east side of Peters Road as part of its relocation.

- The proposed extension of Harvey Boulevard would form a “T” intersection with relocated Peters Road. With the rail alignment located on the west side of Peters Road, an at-grade crossing would be avoided altogether.
- Peters Road would be completely reconstructed on new alignment between the proposed extension of Harvey Boulevard to just south of the Murphy Canal crossing. The proposed ROW in this segment is 80 feet wide.
- The rail alignment would cross Peters Road just north of Hassel’s RV and Trailer Park.
- As part of the Preferred Alternative, the PMC recommended locating the proposed alignment on the west side of Peters Road adjacent to the floodwall and relocating Peters Road to the east.

2.6.7 Rail Alignment Crossing Murphy Canal

The initial rail alignment crossing the Murphy Canal consisted of a 45 degree angle crossing of both the Murphy Canal and a perpendicular outfall canal. In order to minimize potential neighborhood impacts in close proximity to the Village Green subdivision, the location of the rail crossover/proposed bridge at Murphy Canal was shifted to the south.

2.6.8 Rail Alignment within Undeveloped Parcels between Murphy Canal Crossing and GIWW

The propose rail alignment between the Murphy Canal and the GIWW was evaluated during both the Tier I and Tier II Alternatives Analysis.

- Preliminary Alternative A and Preliminary Alternative B were initially considered in this segment. A third option was suggested by NOGC Railway to provide a secondary option to cross the GIWW at an optimal alignment; however this alignment is located closer to the Timber Ridge and Timberlane Village subdivisions.
- NOGC requested an 8,000-foot clear siding north of GIWW for train meets. To avoid residential impacts, the PMC recommended locating the siding south of the GIWW.
- The *Phase I Environmental Site Assessment*⁹ (PI-ESA) that was conducted for the Project indicates that the vacant wooded parcel was once used as a lay-down yard for a former asbestos pipe coating facility which included an asbestos disposal site. Asbestos contaminated soil was abated in 1986; however, it is likely that there is residual asbestos contaminated soil that would require special handling and disposal procedures.
- As part of the Preferred Alternative, the PMC recommended retaining Preliminary Alternative A within this segment.

2.6.9 Rail Alignment Crossing the GIWW

The rail alignment crossing the GIWW was evaluated during both the Tier I and Tier II Alternatives Analysis.

⁹ Report available at www.norpc.org/railroad.html or from RPC upon request.

- The track profile and vertical geometry requirements to clear Bayou Baratavia, the GIWW levees, and waterway crossing of the GIWW were coordinated with the US Coast Guard and USACE.
- During Tier II, Preliminary Alternative A was refined to include a longer tangent section on the northern approach to the GIWW and to provide a more desirable angle for the waterway crossing, i.e., the original 30 degree skew to the waterway was modified to a 15 degree skew.
- The rail alignment would be elevated over both Bayou Baratavia and the GIWW. The required bridge would be approximately 30 feet high at these fixed locations in order to be 6 feet above the GIWW levees and to clear Engineers Road.
- Due to operational limitations, the maximum vertical grade of the rail alignment would be 1 percent on both approaches. Given the railroad grade restriction of 1 percent, the bridge would begin and end approximately 3,000 feet north and south of Engineers Road.
- The crossing location of the GIWW would potentially impact property and businesses located between Bayou Baratavia and the GIWW; ROW and relocation impacts would be due to the location of bridge columns and piers.
- Potential encroachment onto NAS JRB airspace was considered.
- Preliminary Alternative B and the NOGC-suggested GIWW crossing were eliminated because of their proximity to the NAS JRB airspace.
- As part of the Preferred Alternative, the PMC recommended retaining Preliminary Alternative A for the GIWW crossing because the alignment crosses the GIWW at a more desirable angle and does not impact NAS JRB airspace.

2.6.10 Movable Bridge Options Crossing the GIWW

Multiple movable bridge options were evaluated for the GIWW crossing including a swing span, rolling bascule and vertical lift.

- The type of movable bridge crossing the GIWW is restricted to either a swing span or a bascule type due to air right restrictions from NAS JRB. The swing span option would not interfere with the air rights, while the bascule type would interfere only when in the open position. The vertical lift option would be a permanent obstruction within the air rights.
- The bridge would span the levees on each side of the GIWW; have a 150-foot wide navigation channel with a minimum 110-foot vertical clearance.
- The top of rail would be approximately 6 feet above the levee elevation. Multiple options were investigated for the crossing alignments (Skew from 55 degrees to 15 degrees).
- An unequal arm, swing span movable bridge was identified as the most viable option for the Preferred Alternative.

2.6.11 Rail Alignment Crossing LA 23 and Connection to Existing Track at LA 23

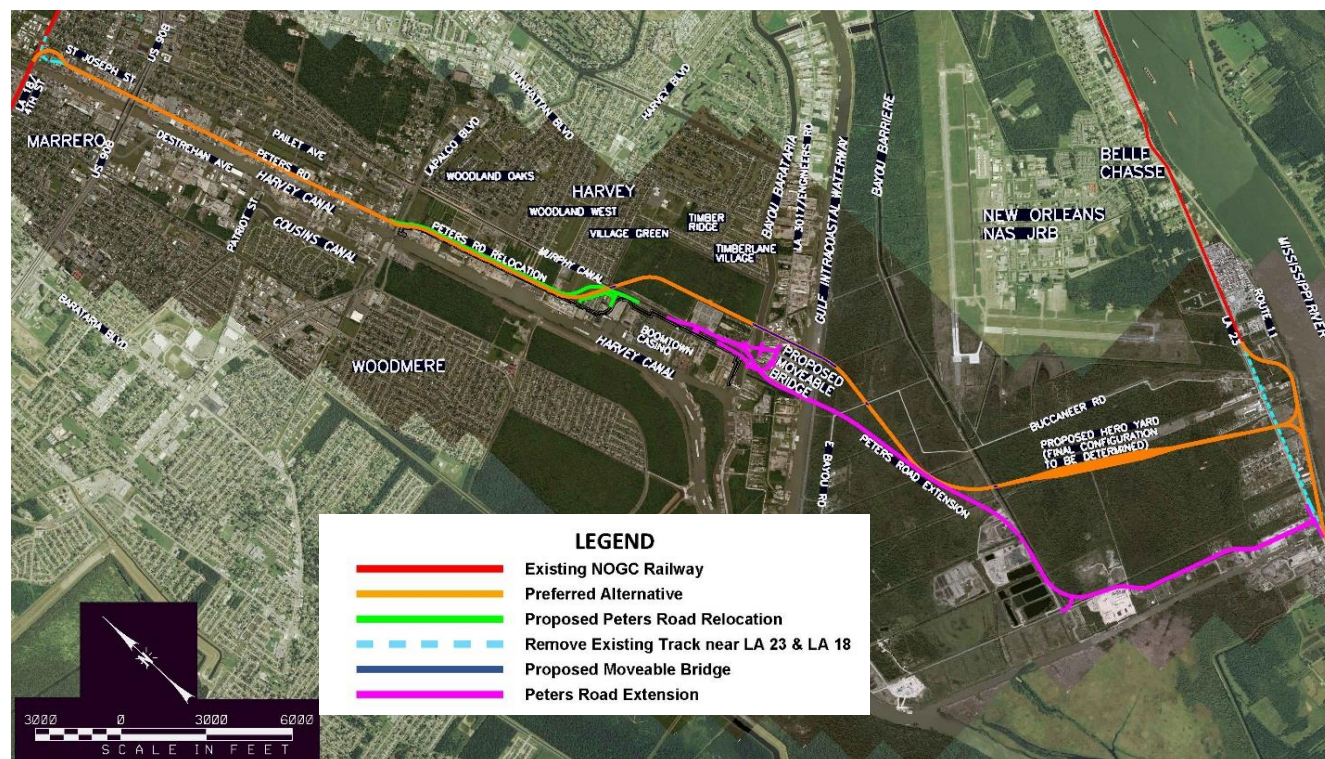
NOGC's Belle Chasse Yard and Chevron's Oronite Plant are located north of the proposed at-grade crossing at LA 23. Service to these facilities shall be maintained. Likewise, a connection to the southern portion of the NOGC Belle Chasse Subdivision shall remain.

- Initially, a dual crossing of LA 23 was considered in order to minimize both track length and property impacts. The options considered for the crossing at LA 23 included: 1) an at-grade crossing and 2) reconstruction of LA 23 which would include a bridge elevated over the proposed track. The PMC requested further analyses on a single crossing at LA 23.
- Based on consultation with the USACE New Orleans District, a 15 feet horizontal clearance shall be provided between the proposed rail and Mississippi River levee.
- Concurrence was reached that it would be cost prohibitive to elevate the railroad over LA 23. In the future, the crossing would be grade separated (LA 23 raised over the rail) as warranted and as funding becomes available.

2.7 Preferred Alternative

The Preferred Alternative was defined following an extensive Alternatives Analysis that included an evaluation of alignment options within various segments of the Relocation Corridor. The north and south portions of the Preferred Alternative are shown in **Figure 2-12**; the Preferred Alternative is described below.

Figure 2-12. Preferred Alternative

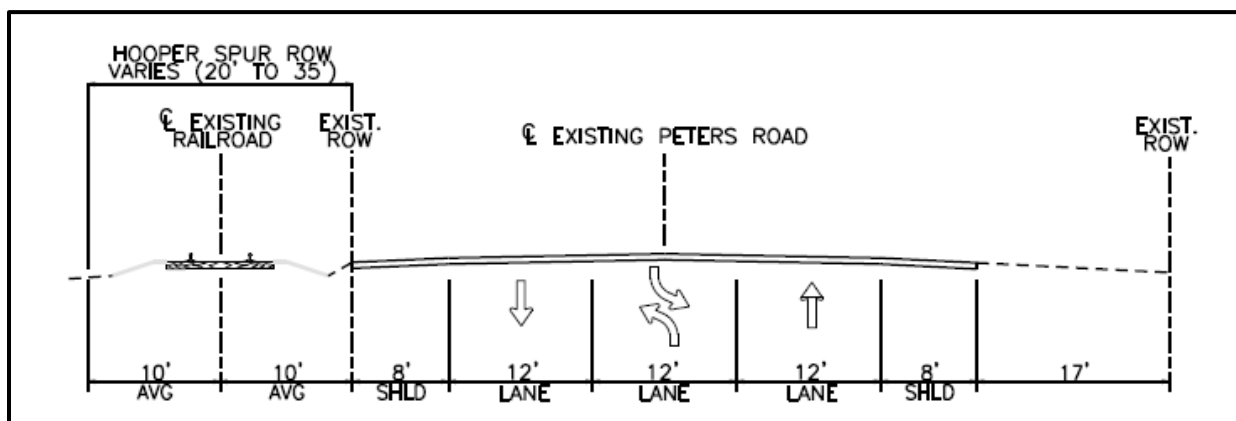


2.7.1 Rail and Roadway Typical Sections

The entire main line for the Preferred Alternative would be a single-track line. The proposed rail and roadway typical sections for the Preferred Alternative were developed using NOGC/UPRR rail standards and Louisiana Department of Transportation and Development (LADOTD) roadway standards, respectively. Typical sections were developed for the at-grade rail improvements along various segments of the alignment including along Peters Road/Hooper Rail Spur, Peters Road/USACE Boomtown Floodwall, rail on new alignment, and within the proposed Hero Yard. These various typical sections are presented in greater detail within **Appendix B**, Sheets 3 and 4.

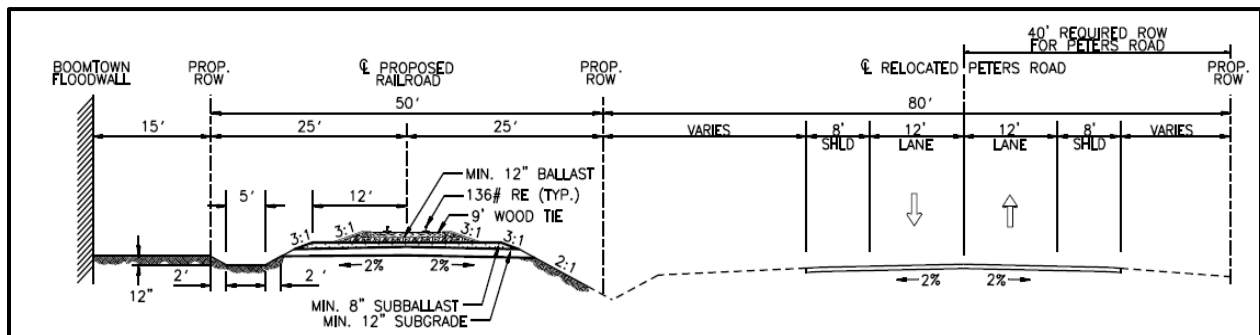
Beginning at 4th Street and extending south to Gold Street, the Preferred Alternative would be constructed on new alignment within a required 50-foot right-of-way. After crossing Peters Road just south of Gold Street, the Preferred Alternative would be constructed on the west side of Peters Road within the Hooper Rail Spur ROW as shown in **Figure 2-13**. The existing UPRR ROW ranges from 20 to 35 feet wide within these limits.

Figure 2-13. Proposed Typical Section: Along Peters Road – Gold Street to Lapalco Boulevard



From Lapalco Boulevard to south of the proposed Harvey Boulevard Extension, the Preferred Alternative would be constructed on new alignment within a required 50-foot rail right-of-way. As required by the USACE, the rail ROW would be offset 15 feet from the adjacent Boomtown Floodwall (**Figure 2-14**). Peters Road would be relocated to the east to accommodate the rail ROW and drainage for both the rail and Peters Road. Peters Road would be reconstructed east of the rail ROW. The existing Peters Road ROW is 80 feet wide within these limits. Forty feet (40 feet) of additional roadway right-of-way would be required for the Peters Road reconstruction.

Figure 2-14. Proposed Typical Section: Along Peters Road – Lapalco Boulevard

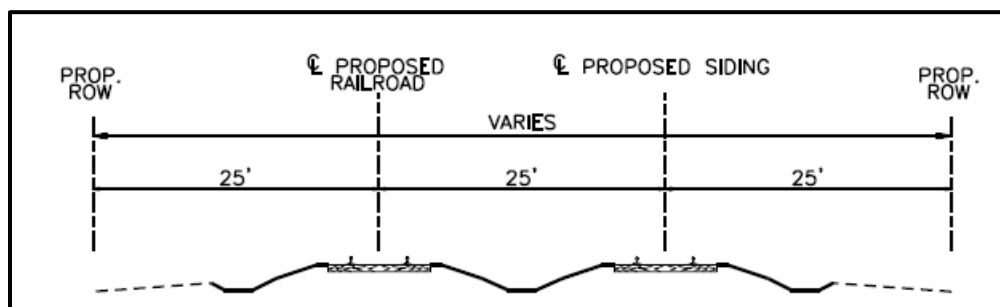


Between the proposed Harvey Boulevard Extension to just south of Murphy Canal, the Preferred Alternative would be constructed on new alignment within a required 50-foot rail right-of-way. Within these same limits, Peters Road would be relocated eastward from its current alignment to a new location. The proposed Peters Road ROW would be 80 feet wide within these limits, thus 80 feet of additional roadway right-of-way would be required for the reconstruction of Peters Road.

On the north and south approaches to the proposed movable bridge over the GIWW, the required ROW would be approximately 250 feet to 300 feet wide, respectively in order to accommodate the embankment associated with the approach spans for the elevated structure.

As part of the proposed Hero Yard, an 8,520-foot siding would be provided. Due to its overall length, the siding would extend beyond the eastern and western limits of the Hero Yard. The siding would be constructed on new alignment within a required 75-foot rail right-of-way (Figure 2-15) on the approaches to the Hero Yard.

Figure 2-15. Proposed Typical Section: Along NOGC Siding



The proposed typical section within the Hero Yard would accommodate the proposed main line track, ten yard tracks and the siding track. The main line track would be centered within the yard and bordered by 5 yard tracks on each side. The siding track would be located on the north side of the yard. The required rail ROW width within the Hero Yard would be 285 feet wide.

2.7.2 Preferred Alternative Alignment

The horizontal and vertical alignment controls are much more stringent for trains than for roadways for several reasons. Railroads require gentler grades, wider turning radii, and larger transitional lengths than roadways due to the size and weight of trains. While FRA has developed design standards for railroads, each railroad has developed their own stringent horizontal and vertical controls to meet the specific needs of their train systems. The horizontal and vertical alignments for the Preferred Alternative, discussed herein and detailed in the Conceptual Plans in **Appendix B**, were designed to meet or exceed NOGC/UPRR design criteria. The Preferred Alternative alignment is depicted within **Appendix B**, Sheets A-1 to A-14. Appendix B sheet numbers are referenced within the discussion below.

Horizontal Alignment

The Preferred Alternative single-track alignment would begin along the NOGC Westwego Subdivision approximately 100 feet east of the existing Harvey Canal Bascule Bridge. A new turnout consisting of a 10.5° horizontal curve would cross 4th Street to the east side of northbound Peters Road. The horizontal curve would bisect several parcels of land between Peters Road and St. Joseph Lane. The horizontal curvature of the alignment would continue southward to just north of Jennie Street and would then cross over to the west side of Peters Road where the proposed track would connect to the UPRR Hooper Spur track (Sheet A-1).

The Preferred Alternative track would then continue along the west side of Peters Road within the UPRR Hooper Spur right-of-way south under US 90B (Sheet A-1) to Lapalco Boulevard (Sheet A-1 to Sheet A-4). Within these limits, the existing UPRR ROW varies from 20 feet to 35 feet. From 4th Street to Lapalco Boulevard, the track begins at Station 0+00 and ends at Station 145+00¹⁰; a distance of approximately 14,500 feet, or 2.7 miles.

From Lapalco Boulevard to south of the proposed Harvey Boulevard Extension, the Preferred Alternative would parallel the existing Boomtown Floodwall along Peters Road (Sheet A-5 to Sheet A-6). The proposed 50-foot rail ROW would be located at least 15 feet from the floodwall. The Preferred Alternative alignment would parallel the floodwall on top of the USACE's perpetual underground floodwall easement. Based on consultation with the USACE New Orleans District, the "T-wall" floodwall and the supporting H-piles were designed to accommodate the continued presence and operation of the railroad and its associated rail loadings. From Lapalco Boulevard to just south of the Harvey Boulevard Extension, the track begins at Station 145+00 and ends at Station 205+00; a distance of approximately 6,000 feet, or 1.1 miles. Peters Road would be relocated to the east and reconstructed within these limits. The Preferred Alternative alignment would parallel the floodwall within these limits to a point where the track would diverge from the floodwall.

¹⁰ Station numbers are shown on the Appendix B Preferred Alternative Conceptual Plans. See Glossary for definition of Station.

After diverting from the floodwall, the Preferred Alternative would shift east parallel to existing Peters Road and then cross over Murphy Canal (Sheet A-6). Within these limits, the track begins at Station 205+00 and ends at Station 225+00; a distance of approximately 2,000 feet, or 0.4 miles. The rail would cross Peters Road at-grade. A new bridge would be required to cross over Murphy Canal.

Between the proposed Harvey Boulevard Extension to south of Murphy Canal, Peters Road would be constructed as a two-lane roadway on new alignment; the proposed roadway ROW is 80 feet. Access improvements to Hassel's RV and Trailer Park and businesses located inside the floodwall are proposed within this area. As part of the Peters Road relocation, approximately 8.9 acres of roadway right-of-way would be required from Lapalco Boulevard to south of the Murphy Canal crossing.

Between the Murphy Canal crossing and Bayou Barataria, the alignment would continue south in mostly vacant, undeveloped land (Sheet A-6 to Sheet A-7). As previously described in Section 2.6.8, the Phase I ESA that was conducted for the Project indicates that the vacant wooded parcel was once used as a lay-down yard for a former asbestos pipe coating facility which included an asbestos disposal site. Asbestos contaminated soil was abated in 1986; however, it is likely that there is residual asbestos contaminated soil that would require special handling and disposal procedures. Within these limits, the track begins at Station 225+00 and ends at Station 280+00; a distance of approximately 5,500 feet, or 1.04 miles.

A new grade-separation/bridge would begin just north of Bayou Barataria and extend southward over the GIWW (Sheet A-7 to Sheet A-8). At a 1 percent grade, the bridge would begin and end approximately 3,000 feet north and south of Engineers Road. The required bridge would be approximately 30 feet high at its fixed location in order to be 6 feet above the GIWW levees and to clear Engineers Road. The crossing over the GIWW would require a movable bridge; a swing span option is recommended as it will not interfere with the NAS JRB air rights. The movable bridge would span the levees on each side of the GIWW; have a 150-foot wide navigation channel with a minimum 110-foot vertical clearance. Some businesses would be impacted within the footprint of the GIWW bridge. Within these limits, the track begins at Station 280+00 and ends at Station 312+00; a distance of approximately 3,200 feet, or 0.6 miles.

The Preferred Alternative would then cross Buccaneer Road near East Bayou Road. A bridge is proposed at this location to cross an adjacent drainage swale that parallels Buccaneer Road. The alignment would continue in mostly undeveloped land south of the GIWW and parallel to the east side of the proposed Peters Road Extension before crossing Bayou Barriere, which also would require a bridge (Sheet A-8 to Sheet A-10). Within these limits, the track begins at Station 312+00 and ends at Station 390+00; a distance of approximately 7,800 feet, or 1.5 miles.

After crossing Bayou Barriere, a proposed rail maintenance yard, identified as the Hero Yard, would be located south of the New Orleans NAS JRB (Sheet A-10 to Sheet A-12). An 8,250-foot

clear siding would be provided within the Hero Yard for train meets. Within these limits, the track begins at Station 390+00 and ends at Station 475+00; a distance of approximately 8,500 feet, or 1.6 miles. The proposed Hero Yard would accommodate the proposed main line track, ten yard tracks of varying length and the siding track. The siding track would be accessed using turnouts within Hero Yard. Ancillary features such as offices, maintenance shops, access roads, internal roads and fencing would be provided as part of the development of the Hero Yard.

The Preferred Alternative alignment proceeds southeast towards LA 23 (Sheet A-12). The rail crossing at LA 23 would be an at-grade crossing. From the Hero Yard to the east side of LA 23, the track begins at Station 475+00 and ends at Station 488+00; a distance of approximately 1,300 feet, or 0.24 miles. After crossing LA 23, the track would connect to the existing NOGC Belle Chasse Subdivision track with a wye connection, allowing trains to operate northward to the NOGC Belle Chase Yard and Chevron Oronite Plant (Sheet A-13) or to continue south along the existing track (Sheet A-14). As part of the wye connection, which is located within immediate proximity to the Mississippi River Levee/Highway 11, 15 feet of clearance shall be provided between the proposed rail and Mississippi River Levee. A portion of existing track along LA 23 would be removed upon construction of the wye connection.

From 4th Street to the east side of LA 23, the length of the Preferred Alternative is approximately 9.3 miles.

Vertical Alignment

From 4th Street to the Murphy Canal crossing, the Preferred Alternative vertical profile would generally be constructed at-grade to coincide with existing elevations at adjacent roadways and driveway access points. This would provide a smooth transition for vehicular traffic as it crosses over the rail tracks at these key locations.

Within undeveloped, vacant parcels, the Preferred Alternative vertical alignment would generally be constructed at-grade or to an elevation that is consistent with the 100-year floodplain elevation. Within the Hero Yard, the vertical profile of the yard tracks and siding would match the profile of the proposed main line alignment.

The track profile and vertical geometry requirements of the grade-separation/bridge to clear Bayou Baratavia, the GIWW levees, and crossing of the GIWW were coordinated with the US Coast Guard and USACE. Based on the railroad grade restrictions of 1 percent, the grade-separation would begin and end approximately 3,000 feet north and south of Engineers Road. The required movable bridge would be approximately 30 feet high at its fixed location in order to be 6 feet above the GIWW levees and to clear Engineers Road.

Similar to the northern portion of the corridor, the Preferred Alternative vertical alignment at LA 23 and along the wye connection would generally be constructed at-grade to match existing

elevations of adjacent public and private at-grade crossings, and tie-in points to the existing NOGC track along LA 23.

2.7.3 Right-of-Way and Relocations

Required Rail and Roadway Right-of-Way

Required right-of-way for the Preferred Alternative and Peters Road is depicted within **Appendix B**. Plan Sheets B-1 through B-14 illustrate the existing and required ROW width throughout the corridor as follows:

- Preferred Alternative on new alignment: Required ROW - 50 feet
- Preferred Alternative along existing UPRR Hooper Spur: Existing ROW - 20 to 35 feet
- Preferred Alternative along Peters Road adjacent to the Boomtown Floodwall: Required ROW - 50 feet (to be taken from existing highway ROW)
- Preferred Alternative embankment section on the northern approach to the GIWW: Required ROW - 250 feet
- Preferred Alternative embankment section on the southern approach to the GIWW: Required ROW - 300 feet
- Hero Yard: Required ROW - 285 feet
- Siding west and east of Hero Yard: Required ROW - 75 feet
- Wye connection east of LA 23: Required ROW - 50 feet
- Peters Road reconstruction: Required ROW - 40 feet
- Peters Road on new alignment: Required ROW - 80 feet

As part of the required right-of way for the Project, residential and business/industrial structure relocations associated with the Preferred Alternative are anticipated. Relocations are shown within **Appendix C** in the ROW and Relocation Map set and are more fully described in Section 3.12.

Right-of-Way Associated with Remnant Parcels

There are several locations along the corridor, where the required right-of-way for the Preferred Alternative and/or relocated Peters Road would leave parcels isolated. Damages to the remaining portions of these parcels would likely occur. Therefore, in certain locations, it is recommended that remnant parcels be purchased as part of the overall ROW acquisition for the Project. Remnant parcels are shown within **Appendix C** within the ROW and Relocation Map set. The north end of the Project between 4th Street and Jennie Street is just one area where the acquisition of remnant parcels would be required for the rail.

Table 2-5 summarizes the required ROW for the Project. The total estimated acres includes ROW for the new rail alignment, the Peters Road realignment, and the remnant parcels. As shown, approximately 118 acres of right-of-way would be required to construct the Project.

Table 2-5. Estimated Right-of-way

Rail Relocation		Roadway Relocation		Total Estimated ROW
Rail ROW	Remnant Parcel ROW	Roadway ROW	Remnant Parcel ROW	
90.25	15.02	8.94	3.64	117.85 acres
Total Rail ROW 105.27 acres		Total Roadway ROW 12.58 acres		

2.8 Engineering Components Associated with the Preferred Alternative

A brief description of the engineering components associated with the Preferred Alternative is presented herein along with an Estimate of Probable Cost.

2.8.1 Rail Improvements

Trackwork

Approximately 113,449 track feet of rail would be constructed as part of the Preferred Alternative which includes the mainline, wye connection, siding and yard tracks as shown in **Table 2-6**. Rail tracks within the Hero Yard would include an 8,520-foot long siding and 10-yard tracks of varying lengths. The proposed track would consist of 136 pound (136#) continuously welded rail with wood ties. Manual and electric turnouts would be installed. A catenary track control signal system is also proposed.

Table 2-6. Preferred Alternative Track Length

Location	Track Length (TF)
4th Street to LA 23	48,954
Wye Connection:	
LA 23 to North	4,279
LA 23 to South	4,753
Tangent in-between	1,724
Siding	8,520
Hero Yard Track	48,284
Subtotal	116,575
Less Turnouts	3,126
Total	113,449

Public At-Grade Crossings

On the north end of the corridor, a new turnout consisting of a 10.5° horizontal curve would connect the proposed rail from 4th Street to the Hooper Rail Spur. The alignment of the connection relative to the existing roadway network would result in four new public at-grade crossings including 4th Street, Peters Road (2 lane - northbound segment), Gold Street, and Peters Road (4 lane - northbound and southbound). Near Murphy Canal, a fifth public at-grade crossing would occur where the proposed rail would cross relocated Peters Road. An additional public at-grade crossing would occur where the proposed rail crosses LA 23 on the south end of the corridor. All six of these public at-grade crossings would be concrete. Advance warning signs, pavement markings, signal gates and flashing lights are proposed at each of the six public at-grade crossings. Signing and pavement marking plans which illustrate the proposed traffic control measures for each of these crossing locations are included in **Appendix B**, Sheets D-1 to D-5.

Two additional public at-grade crossings would occur on the east side of LA 23 at Dockside Road and East Walker Road. These are existing crossings which would simply be shifted/relocated eastward away from LA 23 as part of the wye connection. Although these at-grade crossings are considered “public” per the USDOT Crossing Inventory database, they exhibit characteristics associated with a private at-grade crossing; low traffic volume roadway providing access to limited uses. Industry access crossings (wood) and advance warning signs in accordance with the *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways*¹¹ would be installed at these locations. See Section 3.11.3 for additional details on at-grade crossings.

Private At-Grade Crossings

Along the 9.3-mile main line alignment from 4th Street to LA 23, there would be approximately 85 private at-grade crossings. As part of the existing densely developed industrial land use along Peters Road, the majority of these crossings would occur at existing driveways that provide access to existing commercial and industrial businesses located along the corridor. The remainder of the private at-grade crossings would occur east of LA 23 along the north and south segments of the wye connection; 5 additional private at-grade crossings would occur in these segments. Industry access crossings (wood) and advance warning signs in accordance with MUTCD would be installed at all private at-grade crossings.

2.8.2 Bridges and Structures

There would be four proposed bridge structures associated with the Preferred Alternative. Conceptual plans which illustrate the bridge type and layout for each of these locations are included within **Appendix B**, Sheets C-1 to C-5.

¹¹ <http://mutcd.fhwa.dot.gov/>

Murphy Canal Bridge

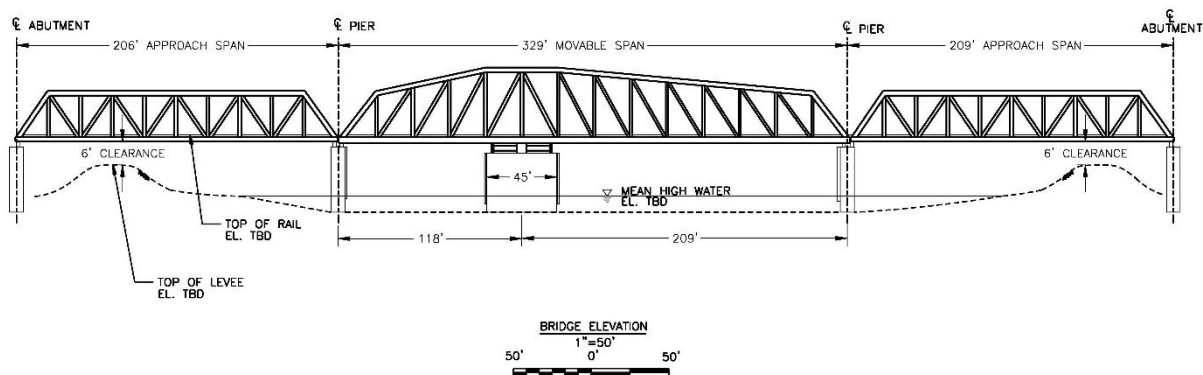
The proposed rail bridge over Murphy Canal would be a steel through-plate girder/floor beam bridge with a span length of approximately 160 feet (Sheet C-1). The superstructure would be supported by precast concrete bent caps and concrete drilled shaft foundations. The Preferred Alternative alignment crosses the Murphy Canal at a skewed angle; as such the bents would be arranged at a 45 degree angle to the rail centerline. The substructure would be comprised of reinforced precast concrete caps (including flanking wingwalls) supported by drilled shaft foundations. As required by AREMA, the minimum horizontal clearance between the centerline of track and adjacent girder (flange) is 9 feet. Permanent shoring would be provided at the canal banks and 1 foot of freeboard (minimum) from the low chord elevation is proposed.

GIWW Crossing – Movable Bridge and Approaches

Title 14 of the Code of Federal Regulations (CFR), Federal Aviation Regulations (FAR) Part 77 defines imaginary airspace surfaces surrounding civilian and military airports in the United States. These imaginary surfaces are designed to promote air safety and the efficient use of navigable airspace. Based on this regulation and in consultation with the NAS JRB, the proposed rail bridge structure over the GIWW is within the inner horizontal surface of the imaginary airspace, which has an air right restriction on construction at an elevation of 150 feet in height or above. The proposed alignment of the Preferred Alternative and associated location of the bridge crossing the GIWW is approximately 1 mile north of NAS JRB Runway 14-32. The Preferred Alternative is located within the air rights of NAS JRB. The air rights limit the maximum elevation of any structures to approximately 120 feet at the GIWW. The adjacent GIWW levees are approximately 20 feet higher than the waterway.

Three movable bridge types were initially considered for the GIWW crossing including a swing span, rolling bascule and vertical lift. Upon further evaluation it was determined that a swing span movable bridge would not impact the NAS JRB air rights restrictions (**Figure 2-16**). Based on consultation with the US Coast Guard, it was indicated that any bridge that crosses the GIWW will need a navigation envelope that features a 150-foot horizontal clearance between the fenders and 100-foot vertical clearance from the low chord of the bottom of girder at mean high tide.

Figure 2-16. GIWW Movable Bridge Swing Span Option



As shown in **Figure 2-16**, the proposed GIWW swing span bridge would consist of three spans with a center 329-foot steel truss swing main span, and 206-foot and 209-foot steel truss approach spans. The swing main span, which would be supported by a reinforced concrete pivot pier, would provide the required 150 feet of horizontal clearance, and unlimited vertical clearance in the open position (see also Sheets C-2 and C-3 in **Appendix B**).

A GIWW bridge and approaches would begin north of Bayou Barataria and extend southward over the GIWW. At a 1 percent grade, the bridge would begin and end approximately 3,000 feet north and south of Engineers Road. The required bridge would be approximately 30 feet high at its fixed location in order to be 6 feet above the GIWW levees and to clear Engineers Road. The bridge structure would provide at least 16 feet, 6 inches of vertical clearance above existing roadways; such as Engineers Road and others.

The conceptual design assumes that the bridge approaches would be constructed on fill. On the northern approach, the required ROW widens to 250 feet at the bridge approach span in order to accommodate the compacted embankment section (Sheet B-7). On the southern approach, the required ROW widens to 300 feet to accommodate the embankment section (Sheet B-8).

In order to minimize ROW associated with the compacted embankment sections for the approaches, retaining walls could be considered as an alternative.

Due to the potential location of bridge columns and piers, the crossing location of the GIWW would potentially impact property and businesses located between Bayou Barataria and the GIWW. For ROW estimation purposes, some of the parcels of land within this area were identified as remnant parcels and have been included in the required Project ROW. ROW impacts could be mitigated in the future design phase of the Project with topographic surveys and more advanced bridge design.

Buccaneer Road Bridge

The proposed rail bridge over Buccaneer Road would be a 50-foot steel beam bridge with 30-foot prestressed concrete box beams on each approach. The superstructure would be supported by precast concrete pile bent caps and steel H-piles. The total length of the bridge is approximately 110 feet (Sheet C-4). The prestressed concrete box beams would be 30 inches deep. The Preferred Alternative alignment crosses Buccaneer Road at a 73 degree angle. Class 1 concrete riprap side slopes would be 1 foot-6 inches thick and configured on a 2 to 1 slope. The bridge structures would provide at least 16 feet, 6 inches of vertical clearance above Buccaneer Road.

Bayou Barriere Bridge

Similar to the Murphy Canal bridge, the proposed rail bridge over Bayou Barriere would be a steel through-plate girder/floor beam bridge with a span width of approximately 115 feet (Sheet C-5). The superstructure is supported by precast concrete bent caps and concrete drilled shaft foundations. The Preferred Alternative alignment crosses Bayou Barriere at a skewed angle; however the bents are set back with sufficient clearance to be arranged at a 90 degree angle. As required by American Railway Engineers and Maintenance Association (AREMA), the minimum horizontal clearance between the centerline of track and adjacent girder flange is 9 feet. Permanent shoring would be provided at the canal banks and 1 foot of freeboard (minimum) from the low chord elevation is proposed.

2.8.3 Roadway Improvements

The Preferred Alternative alignment would require the reconstruction of Peters Road between Lapalco Boulevard and Murphy Canal. As part of this environmental study, Jefferson Parish and LADOTD PMC members recommended reconstructing Peters Road similar to its current roadway typical section which consists of a 2-lane roadway with 12-foot lanes and 8-foot shoulders, all within 80 feet of ROW. A 6,000-foot (1.14-mile) segment of Peters Road would be reconstructed from Lapalco Boulevard to the south side of the proposed Harvey Boulevard Extension. Forty feet (40 feet) of additional roadway right-of-way would be required within these limits.

A shorter segment of Peters Road would be constructed on new alignment. The limits of new construction extend from just south of the proposed Harvey Boulevard Extension to just south of the Murphy Canal crossing; a distance of approximately 2,700 or 0.51 miles. Within the new construction limits, the required ROW is 80 feet. Access improvements to Hassel's Trailer Park are also proposed as part of the overall Peters Road reconstruction. The total length of the Peter Road reconstruction is estimated at 1.65 miles.

2.8.4 Utilities

The existing drainage system along Peters Road varies depending on location. Between 4th Street and Lapalco Boulevard, subsurface drainage exists. Review of LADOTD Peters Road as-built plans indicate that the primary drainage collection system consists of a mainline collector which varies in size from 24 inches to 48 inches, while cross drains are typically 24 inches in diameter. Between Lapalco Boulevard and Murphy Canal, an open swale drainage system exists along Peters Road. As part of the USACE Boomtown Floodwall project, new culverts, inlets and driveway cross drains were installed on the west side of Peters Road.

Overhead power lines are located on both sides of the roadway throughout the Peters Road corridor. Other utilities in proximity to the Preferred Alternative alignment include water, sewer, telecommunications, gas lines, and others. See Section 3.13 and Section 3.23.7 for potential impacts to existing utilities including adjustment, relocation, or modification.

2.8.5 Construction Sequencing

Depending on funding availability, the entire Project could be constructed at once or broken down into phases to create smaller projects that can be built as funding becomes available. Factors such as existing land use, traffic volumes, and business access would all be considered to determine the optimal construction phasing, with the goal of minimizing construction impacts.

Between Lapalco Boulevard and Murphy Canal, reconstruction of Peters Road would have to be completed prior to implementing the rail construction in order to accommodate Peters Road vehicular traffic and to minimize delays.

2.8.6 Preferred Alternative Railroad Operations

Once the proposed improvements are constructed, NOGC trains could potentially operate at speeds around 20 mph. NOGC may consider a maximum speed of 25 mph to avoid prolonged operation in the critical speed range for harmonic rocking, 15 to 21 mph. Slower speeds on the northern portion of the corridor may occur due to public at-grade crossings and private at-grade crossings including numerous driveway access points. South of Murphy Canal to LA 23, rail operations would essentially be uninterrupted due to the isolated nature of the corridor and the absence of vehicular traffic.

The proposed Hero Yard would improve NOGC operations by providing increased storage capacity and an 8,520-foot siding. The Hero Yard would provide a number of operational benefits, including a location to meet trains, additional storage, and capacity for growth opportunities on the southern end of the corridor such as the Plaquemines Parish port facility and others. Switching operations would be more efficient within the Hero Yard compared to Gouldsboro Yard, which requires the train to split and block streets within Gretna.

The three existing rail customers that are located on the north side of 4th Street between the Harvey Canal and Dolhonde Street would continue to be served by the NOGC.

2.8.7 Estimate of Probable Cost

An estimate of probable cost was prepared for the Preferred Alternative, which includes railroad infrastructure and roadway improvements. The estimate includes specific design elements and is more detailed compared to the costs estimates that were developed during the Tier I and Tier II Alternatives Analysis process. The quantities for certain items were estimated based on quantities generated from the conceptual plans, and right-of-way and relocation maps.

The subcategories for the railroad category are road crossings, trackwork, right-of-way, earthwork, subballast, and bridges/structures. Construction items associated with these subcategories are generally described below:

- The road crossings subcategory includes public and private at-grade crossings, crossing signals and warning signs associated with the railroad.
- The trackwork subcategory includes items such as track construction, turnouts, and signals.
- The right-of way subcategory includes purchase of ROW for both rail and roadway; parcel surveys, appraisals, negotiations and closing costs; and relocation costs.
- The earthwork subcategory includes clearing and grubbing, embankment, excavation, and stabilization.
- The subballast subcategory assumes a 12-inch thick, 15-foot wide subballast.
- The bridges/structures subcategory includes the four proposed railroad bridge structures, one of which consists of the GIWW crossing which is a movable bridge swing span option.

Contingencies for each of these categories have been included as shown in **Appendix D**. In addition, estimated costs for environmental mitigation, final design, and construction management are included as a percentage of the overall rail infrastructure estimate.

In addition to the trackwork/sidings within the Hero Yard, contingency costs would provide for the installation of ancillary facilities such as an interior access road and fencing around Hero Yard.

Roadway reconstruction costs for the proposed Peters Road improvements have also been included in the estimate of probable cost. Between Lapalco Boulevard to just south of the Murphy Canal, the estimated length is approximately 8,700 feet or 1.65 miles. LADOTD planning-level unit costs (\$2014) for new roadway construction for a 2-lane rural roadway were utilized. Per LADOTD guidance (LADOTD 2014), a unit cost of \$3.5 million per mile was used. A 20 percent contingency was applied to the roadway construction unit cost to account for drainage, utility relocations and other unknowns.

While the Preferred Alternative uses existing rail right-of-way along the Hooper Road Spur, right-of-way acquisition would be necessary to implement the proposed improvements on new alignment. Using available GIS parcel data, an average assessed value was determined for all parcels. The developed parcels had an average assessed value of approximately \$108,900 per acre.

The estimate of probable cost is shown in **Table 2-11**, which is estimated to be approximately \$267 million for the entire Project, which includes \$260 million for the Preferred Alternative and \$7 million for the reconstruction of Peters Road. Details of quantities and unit prices are included in **Appendix D**.

Annual maintenance costs were not estimated for the Project. Annual maintenance costs would be borne by the NOGC Railway for both the rail infrastructure physical plant and the GIWW moveable bridge. Maintenance costs would typically include such items as tie replacement, rail reconditioning, structure maintenance, repainting and other typical maintenance items.

It should be noted that the estimated maintenance cost for a swing span movable bridge similar to that proposed for the GIWW crossing could range from \$100,000 to \$200,000, annually.

Table 2-11. Estimate of Probable Cost

Category	Estimated Cost
Road Crossings	\$8,930,400
Trackwork and Signals	\$52,687,293
Right-of-way	\$19,956,240
Earthwork	\$7,342,799
Subballast	\$4,274,417
Structures and Bridges	\$151,915,200
Subtotal Rail 1	\$245,106,349
Environmental Mitigation (1 percent)	\$2,451,063
Final Design (3 percent)	\$7,353,190
Construction Management (2 percent)	\$4,902,127
Subtotal Rail 2	\$14,706,381
Total Rail (estimated)	\$259,812,730
Total Rail (rounded)	\$260,000,000
Peters Road Reconstruction (estimated)	\$6,930,000
Peters Road Reconstruction (rounded)	\$7,000,000
Total Estimate of Probable Cost	\$267,000,000

Funding for the design, right-of-way acquisition, and construction of the Project has not been identified at this point and would need to be secured from some combination of Federal, state, local, or private funding sources. A brief discussion on potential funding and financing sources is provided in Chapter 5 of this EA.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Chapter 3 describes the affected environment (existing conditions) by resource category followed by a description of direct impacts for the No-Build Alternative and the Build Alternative (Preferred Alternative). Mitigation measures for anticipated Project impacts are also discussed. If FRA funding is used to construct the Project, FRA would require the future project sponsor to comply with the commitments and mitigation measures outlined in this chapter.

Table 3-1 presents a summary of the direct impacts that are described in each section. The last section in Chapter 3 describes the secondary (indirect) and cumulative impacts of the Preferred Alternative. Data sources for resource maps in this chapter are provided in Section 9.3.

Table 3-1. Summary of No-Build Alternative vs. Build Alternative Impacts

Evaluation Criteria	Units	No-Build Alternative	Build Alternative/ Preferred Alternative
Physical Environment Considerations			
Route Length	Miles	16 miles	9.3 miles (4th Street to LA 23 only)
Right-of-Way Acquisition	Acres	0 acres	118 acres
New Bridge Crossings	Number	0	4 located at Murphy Canal, Bayou Barataria/GIWW, Buccaneer Road, and Bayou Barriere
Water Wells Impacted	Number	0	4
Oil and Gas Wells Impacted	Number	0	1
Natural Gas Pipeline Crossing	Number	0	1
Human Environment Considerations			
Future (2040) Train Volumes in the Study Area	Description	Average 5 to 6 trains per day on the Westwego Subdivision and 3 trains per day on the Belle Chasse Subdivision	Up to 13 trains per day in the Relocation Corridor; year 2040 projection
Navigation Impacts	Description	Existing vertical lift bridge on the GIWW	New swing span bridge on the GIWW (new crossing location)
Flood Control Project Impacts	Description	No Impacts	Impacts to the Boomtown Floodwall and Mississippi River levee avoided because the relocated rail ROW >15 feet from the floodwall/levees
Public Health and Safety	Description	High number of highway-rail public at-grade crossings (73 total)	Number of new highway-rail public at-grade crossings reduced significantly (6 total); traffic control devices proposed to improve visibility and safety at new crossings
Highway-Rail Public At-grade Crossings	Number	73	6 new; 2 relocated
At-grade Private Crossings	Number	46	90
Total At-grade Crossings	Number	119	98 along Preferred Alt alignment; 97 eliminated along existing alignment
Reduction in Study Area Wide Driver Delay Costs	Yes/No	No	Yes
Parking and Access	Description	Businesses on Peters Road continue to park in Hooper Spur ROW	Hooper Spur ROW parking would no longer be available
Residential Relocations	Number	0	2
Business/Industrial Relocations	Number	0	10

Evaluation Criteria	Units	No-Build Alternative	Build Alternative/ Preferred Alternative
Air Quality Impacts	Description	Emissions from traffic slowdowns and idling through congested business and residential areas	Reduced traffic delay and idling would decrease criteria pollutant motor vehicle related emissions
Noise Impacts (without noise walls)	Description	Existing noise levels would remain	Noise impacts on north, center, and southern segments of alignment
	Number of Residential Units Impacted	Not quantified	107 (Moderate Noise Impacts) 0 (Severe Noise Impacts)
Vibration Impacts	Yes/No	No	No
Land Use and Zoning	Description	No Impacts	Consistent with existing land use and zoning
Disproportionate Environmental Justice Impacts	Yes/No	No	No
Recreational Resource Impacts: 4(f) and 6(f) Properties	Number	None impacted	One 4(f) property; No 6(f) properties
Community Facility Impacts	Description	Numerous facilities along 4th Street in Gretna and Belle Chasse Highway impacted by existing trains	Fewer community facilities are located along the more industrial Relocation Corridor
Cultural Resources Impacts	Description	No Impacts	Adverse effect on the Hero Park/River Oaks Academy site
Visual Resources	Description	Undeveloped, wooded area south of NAS JRB expected to become developed as the result of the proposed Peters Road Extension project	Rail relocation would not significantly change the aesthetics of the industrial Relocation Corridor
Natural Environment Considerations			
Within the 100-Year Floodplain	Yes/No	Yes	Yes
Within the Coastal Zone	Yes/No	Yes	Yes
Coastal Zone Impacts	Description	No Impacts	Compensatory mitigation would offset wetland impacts
Wetlands Directly Impacted	Acres	0 acres	53.2 acres
Prime Farmland Impacts	Yes/No	No	No
Threatened and Endangered Species Impacts	Description	No Impacts	Undeveloped, wooded habitat near open water may contain suitable habitat for some species, but no direct or indirect impacts to Federal or state listed T/E species are expected to occur
Energy Resources	Description	Higher fuel consumption due to 6-mile longer route, traffic delays in Gretna, numerous at-grade public road crossings, and Gouldsboro Yard switching operations	Lower fuel consumption due to 6-mile shorter, more efficient route with fewer at-grade public road crossings
Water Quality Impacts	Description	No Impacts	No Impacts
Water Bodies and Waterways	Description	No Impacts	Includes bridge crossings to avoid impacts to waterways
Contaminated Sites	Description	No improvements to existing environmental conditions would occur	Recognized environmental conditions (primarily contaminated soil) would be addressed and remediated

3.1 Air Quality

This section provides a description of current air quality standards, and an overview of the existing conditions and potential impacts to air quality that may result from the No-Build Alternative and the Preferred Alternative.

3.1.1 Air Quality Standards

The Clean Air Act, 42 U.S.C. §§ 7401 – 7671q, as amended, authorizes the US Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for the primary air pollutants, known as criteria pollutants, to protect the public health and welfare. The sources of air pollution expected from the Project include motor vehicle traffic and locomotives. The criteria pollutants assessed include nitrogen oxides (NO_x), carbon monoxide (CO), ozone (O₃), sulfur dioxide (SO₂), volatile organic compounds (VOCs), and particulate matter in two size ranges, one being smaller than 10 microns in diameter (PM₁₀) and the other being particles smaller than 2.5 microns in diameter (PM_{2.5}).

Nitrogen Oxides. When combustion temperatures are high, as in automobile engines, atmospheric nitrogen gas may combine with oxygen gas to form various oxides of nitrogen. Of these, nitric oxide (NO) and nitrogen dioxide (NO₂) are the most significant air pollutants. This group of pollutants is generally referred to as nitrogen oxides or NO_x. Nitric oxide is relatively harmless to humans but in the atmosphere quickly converts to NO₂ by reacting with ozone. Nitrogen dioxide has been found to be a lung irritant and can lead to respiratory illnesses.

Carbon Monoxide. Carbon monoxide is a colorless and odorless gas that is a product of incomplete combustion. CO is absorbed by the lungs and reacts with hemoglobin to reduce the oxygen carrying capacity of the blood. At low concentrations, CO has been shown to aggravate the symptoms of cardiovascular disease. It can cause headaches and nausea and, at sustained high concentration levels, can lead to coma and death.

Ozone. Ozone (O₃) is a strong oxidizer and an irritant that affects the lung tissues and respiratory functions. Exposure to ozone can impair the ability to perform physical exercise, can result in symptoms such as tightness in the chest, coughing, and wheezing, and can ultimately result in asthma, bronchitis, and emphysema. In 2008 EPA lowered the O₃ NAAQS to 75 parts per billion (ppb) and in 2015 lowered it further to 70 ppb.

Sulfur Dioxide. SO₂ is colorless gas with direct toxicity as a respiratory irritant, and is also oxidized to form sulfur trioxide (SO₃) which combines with water vapor in the atmosphere to form sulfuric acid (H₂SO₄) mist. The sulfuric acid mist reacts further with atmospheric ammonia to produce small ammonium sulfate particles. Besides contributing to atmospheric haze, these particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death. In 2010, EPA revised the primary SO₂ standards by establishing a new 1-hour standard at a level of 75 ppb. As the NAAQS attainment/nonattainment designations are being issued for this new standard in various parts

of the country, EPA is revoking the two existing primary standards (24-hour and annual) because they would not provide additional public health protection given a 1-hour standard at 75 ppb. Those standards are still presented in the existing conditions table (**Table 3-2**), as they have not been formally revoked in all parts of the country.

Volatile Organic Compounds. VOCs are a general class of compounds containing hydrogen and carbon and are a precursor to the formation of ozone. While concentrations of VOCs in the atmosphere are not generally measured, emissions of VOCs are regulated to help prevent the formation of ground-level ozone, which is formed when emissions of VOCs and nitrogen oxides (NO_x) react in the presence of sunlight. Ozone is regulated as a regional pollutant and is typically not assessed on a microscale basis.

Particulate Matter. Particulate matter is made up of small solid particles and liquid droplets. PM₁₀ refers to particulate matter with a nominal aerodynamic diameter of 10 micrometers or less, and PM_{2.5} refers to particulate matter with an aerodynamic diameter of 2.5 micrometers or less. Particulates can enter the body through the respiratory system. Particulates over 10 micrometers in size are generally captured in the nose and throat and are readily expelled from the body. Particles smaller than 10 micrometers, and especially particles smaller than 2.5 micrometers, can reach the air ducts (bronchi) and the air sacs (alveoli) in the lungs. Particulates are associated with increased incidence of respiratory diseases, cardiopulmonary disease, and cancer.

3.1.2 Existing Conditions Compared to NAAQS

The NAAQS and existing monitoring conditions at New Orleans metro locations closest to the Relocation Corridor are presented in **Table 3-2**. The monitor data were taken from EPA's national air quality monitoring database (www3.epa.gov/airdata/ accessed March 28, 2016).

Jefferson and Plaquemines Parishes are classified as attainment for all NAAQS criteria pollutants and have no general conformity determination obligations (LDEQ SOV response, June 9, 2015). Therefore, the Study Area, which includes areas east of the Mississippi in Plaquemines and Jefferson Parishes, is in attainment with the NAAQS.

The ambient monitoring data presented in **Table 3-2** indicates that St. Bernard Parish, just across the Mississippi River, east of the Study Area, has been measuring 1-hour SO₂ concentrations greater than the NAAQS. The EPA has thus designated St. Bernard Parish as a nonattainment area for the SO₂ 1-hour NAAQS.

The proposed construction and operating area would not involve areas east of the Mississippi River (St. Bernard Parish). Furthermore, due to very stringent Federal fuel sulfur standards for gasoline and diesel fuel, SO₂ emissions from highway vehicles and locomotives are extremely low, and therefore, such emissions would have no measurable effect on SO₂ concentrations in the immediate project vicinity. Also, implementation of the Project would serve to slightly reduce urban-wide emissions of both locomotives and highway vehicles. Therefore, the project-

related emissions would have no measurable effect on air quality in the nearby St. Bernard Parish SO₂ non-attainment area.

Table 3-2. National Ambient Air Quality Standards and Existing Conditions

Pollutant	Averaging Period	Existing Monitor Values				NAAQS	Monitor Site City, Parish	
		Units	2013	2014	2015			Average
Particulate Matter (PM ₁₀)	24-hr ¹	ug/m3	52.0	53.0	65.0	56.7	150	New Orleans, Orleans
Particulate Matter (PM _{2.5})	Annual ²	ug/m3	7.9	7.8	8.0	7.9	12	Marrero, Jefferson
	24-hr ³	ug/m3	18.0	17.0	21.0	18.7	35	
Nitrogen Dioxide	Annual ²	ppb	6.43	6.70	6.29	6.5	53	Kenner, Jefferson
	1-hr ⁴	ppb	46	42	45	44.3	100	
Ozone	8-hr ⁵	ppm	0.066	0.071	0.068	0.068	0.07	Kenner, Jefferson
Carbon Monoxide	8-hr ⁶	ppm	2.1	4.9	2.7	-	9	Baton Rouge, East Baton Rouge
	1-hr ⁶	ppm	1.8	1.3	2.3	-	35	
Sulfur Dioxide	Annual ⁷	ppb	4.30	3.87	2.88	-	30	Chalmette, St. Bernard
	24-hr ⁶	ppb	74.1	21.1	22.5	-	140	
	1-hr ⁸	ppb	181	79	82	114	75	

Notes:

1. Not to be exceeded more than once per year on average over 3 years
2. Annual mean, averaged over 3 years
3. 98th percentile, averaged over 3 years
4. 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
5. Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
6. Not to be exceeded more than once per year
7. Annual arithmetic average
8. 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years

Besides the SO₂ nonattainment across the Mississippi River east of the Study Area, the only other pollutant approaching the NAAQS in the metropolitan area is ozone, measured on an 8-hour basis. Ozone is produced by photochemical atmospheric reactions involving VOC and NO_x, which are considered precursor emissions for ozone formation. Therefore, this impacts discussion below focuses on VOC and NO_x emissions, as these are of greatest concern in the immediate project vicinity.

Since 2008, coal demand in the United States has declined due to an increase in lower-cost natural gas, an increase in renewable energy resources (wind and solar energy), and environmental regulations. The NOGC Railway does not currently transport coal and there are no future plans to have it transport coal as a result of implementation of the Project, which is being driven by the need for safety improvements by minimizing at-grade public crossings. It is apparent that barge transport of coal is currently the preferred means of coal movement to the lower Mississippi River export terminals, for economic reasons. If any of the coal export facilities downriver ever want to receive coal by rail via the NOGC, any unloading and conveying

facilities they would need to construct at the ports would be subject to potential permitting by the relevant state air and water regulatory agencies.

While it does not appear likely that there would be demand for coal to be carried on the NOGC Railway, if that ever happened it is expected that fugitive coal dust emissions from rail cars would be minimal in the Study Area. When trains are loaded with coal at their origin, there can be significant coal dust emissions as the trains accelerate to cruising speeds of 50 to 60 mph. After a short time at that speed, all exposed dust is eroded from the coal, and the fugitive dust emissions drop to very low levels. Furthermore, as trains slow down to lower speeds, such as the 20 mph maximum in the NOGC project corridor, there is no potential for significant additional fugitive dust emissions from open-top rail cars.

No-Build Alternative – From south to north, the existing rail route follows the western edge of the Mississippi River upstream to Belle Chasse, then northeast along Belle Chasse Highway, and then north to the Gouldsboro Yard to turn around, as seen in **Figure 1-1**. The existing rail line contains numerous highway-rail at-grade roadway crossings creating traffic slowdowns and idling through congested business and residential areas, which increases emissions from both automobiles and locomotives. Future VOC and NO_x emissions from this type of transportation system would typically be lower than the existing conditions emissions due to the establishment of state and Federal emission control programs, such as the Federal Motor Vehicle Emission Control Program, and Federal emissions standards for locomotives. These programs are tending to reduce NO_x and VOC emissions from existing mobile source activity.

Build Alternative – The Preferred Alternative reroutes the rail line away from densely traveled and populated areas to a less traversed corridor along Peters Road. The new route would reduce traffic idling time and create fewer delays. Reduced traffic delay and idling would decrease criteria pollutant motor vehicle related emissions. The Preferred Alternative also shortens the rail route and would eliminate the necessity of a turn around at Gouldsboro Yard in Gretna, Louisiana. This relocation would decrease train operation time and fuel use, also tending to decrease emissions of air pollutants and greenhouse gas emissions such as carbon dioxide (CO₂).

The Preferred Alternative would result in a reduction in VOC, NO_x, PM, CO, and CO₂ emissions, as compared to the No-Build Alternative. While these reductions are not expected to be large in the context of total emissions in the New Orleans metropolitan area, together with the emission reductions due to tighter emissions standards on new motor vehicles and locomotives, implementation of the Project would help to augment the ongoing trend toward lower urban area emissions.

3.2 Water Quality

The Clean Water Act (33 U.S.C. §§ 1251–1387), as amended, was enacted to maintain and restore the chemical, physical, and biological integrity of waters of the United States. Under Clean Water Act Section 303(d), the Louisiana Department of Environmental Quality (LDEQ) develops and the Environmental Protection Agency (EPA) reviews a list of Louisiana water

bodies every two years that do not meet water quality standards for designated uses. These are “impaired” waters for which Total Maximum Daily Load standards are set to improve water quality. On July 21, 2015, the 2014 Louisiana Water Quality Inventory: Integrated Report (305(b)/303(d)) was approved by EPA with Integrated Report Category revisions on 43 sub-segments. A segment of the GIWW within the Study Area that was listed on the Draft 2010 and 2012 303(d) lists for fecal coliform and turbidity is not listed on the Final 2014 303(d) list or Draft 2016 303(d) lists. No other water bodies within the Study Area appear to be included on the 2014 303(d) list.¹²

The Study Area is adjacent to the Mississippi River, which receives numerous wastewater discharges and also drains over 40 percent of the continental United States. Due to the concern for the Louisiana citizens who depend on the river for their drinking water supply, the Early Warning Organic Compound Detection System was established in 1986. The Early Warning Organic Compound Detection System is a cooperative agreement between LDEQ, potable water works, and industries along the river to provide warnings of possible contamination and data concerning the river’s water quality and help deter unreported discharges or spills of organic waste into the river. The Mississippi River also carries elevated nutrient levels into the Gulf of Mexico which contributes to hypoxic conditions offshore.

No-Build Alternative – Without the Project, existing water quality conditions would be expected to remain.

Build Alternative – Construction of the Preferred Alternative is unlikely to result in adverse impacts to water quality within the Study Area, because Federal and state stormwater regulations require railroads and other industrial facilities to take steps to prevent stormwater pollution. A Stormwater Pollution Prevention Plan would need to be prepared as part of Best Management Practices (BMPs). Localized water quality could be temporarily affected during construction, but use of BMPs would minimize potential water quality impacts. A Section 401 Permit (Water Quality Certification) would be required from the LDEQ’s Office of Environmental Services prior to construction.

3.3 Water Bodies and Waterways

The largest waterways in the Study Area are the Mississippi River, the GIWW, and the Harvey Canal. The Study Area is bounded on both the northwest and southeast by the Mississippi River. The Relocation Corridor generally parallels the Harvey Canal and crosses Murphy Canal, Bayou Barataria, the GIWW, and Bayou Barriere from north to south. The Study Area also includes other smaller bayous, canals, and ditches.

No-Build Alternative – Without the Project, no new impacts to water bodies or waterways would occur.

Build Alternative – The Preferred Alternative includes the construction of bridges to cross Murphy Canal, Bayou Barataria, the GIWW, and Bayou Barriere (see **Appendix B**, Sheets A-6, A-

¹² <http://www.deq.louisiana.gov/portal/tabid/69/Default.aspx> accessed on April 13, 2016

7, A-8, and A-10 for these waterway crossing locations). The GIWW crossing requires a moveable bridge to avoid impacts to navigation.

The US Coast Guard (USCG) administers Section 9 of the Rivers and Harbors Act of 1899 and issues bridge permits over navigable waters. Based on coordination with the USCG, the GIWW crossing would require a USCG permit. A USCG permit would not be required for waterways that are not being used for navigation and have no potential for navigation such as Murphy Canal, Bayou Barataria, and Bayou Barriere; however, a formal determination of non-navigability from the USCG would be obtained for these waterways at the time of the permit application.

Section 3.4 (Navigation) provides additional information on the existing and proposed GIWW moveable bridge.

3.4 Navigation

The NOGC Railway currently crosses the Gulf Intracoastal Waterway (GIWW) parallel to the LA 23 - Belle Chasse Highway Judge Perez Bridge. Both the NOGC Railway bridge and the Judge Perez Bridge are vertical lift bridges. The NOGC Railway bridge remains in the raised position unless a train is approaching and provides five feet of vertical clearance above mean high water when closed and 102 feet of vertical clearance when open. The Judge Perez Bridge provides 40 feet of vertical clearance above mean high water when closed and 100 feet of vertical clearance when open. Each bridge provides 125 feet of horizontal clearance. The Judge Perez Bridge is operated by the Louisiana Department of Transportation and Development (LADOTD), while the NOGC rail bridge is operated by NOGC employees.

Between 2012 and 2014, the bridge pair averaged seven openings per day or almost 5,200 per year. The average height of vessels (which required an opening) passing under the bridge was 47.3 feet with the average maximum height of 83 feet. Marine traffic remained fairly static throughout those years despite industrial or seasonal variability. The greatest impacts to maritime traffic during the period studied was due to tropical storm and hurricane activity at or near the Louisiana Gulf Coast.

For more details, refer to the *Gulf Intracoastal Waterway (GIWW) Marine Vessel Traffic Analysis* report¹³ referenced in Section 8.1.

No-Build Alternative – If no improvements are made, maritime traffic would continue to navigate the GIWW under existing conditions. Currently, LADOTD and RPC are completing an environmental assessment (EA) for replacing the LA 23/Belle Chasse Highway Judge Perez Bridge. All build alternatives for that EA currently feature a 73-foot vertical clearance, but the construction of any replacement depends on the results of that EA and funding availability.

¹³ Report available at www.norpc.org/railroad.html or from RPC upon request.

Build Alternative – The Preferred Alternative includes construction of a new swing span bridge where the Preferred Alternative crosses the GIWW (see **Appendix B**, Sheets C-1 and C-2). The proposed rail bridge would be designed to minimize impacts to maritime navigation. The existing NOGC rail bridge parallel to the LA 23/Belle Chasse Highway Judge Perez Bridge would no longer be used and would likely be removed; removal of the existing bridge is not part of the Project.

If the Preferred Alternative is constructed, maritime traffic would largely continue to navigate the GIWW under existing conditions. Under proposed operating conditions, the new swing span rail bridge would remain open by default. It would only close by request of the railroad to allow a train to cross the GIWW and would reopen after the train passes. The LA 23/Belle Chasse Highway Judge Perez Bridge, and the Preferred Alternative GIWW swing span bridge when closed, would remain impediments to maritime vessels on the GIWW. Based on discussions with the USCG and the navigation industry, 150 feet appears to be the current minimum horizontal clearance which the USCG will consider on the GIWW.

3.5 Floodplains and Flood Zones

Executive Order 11988, Floodplain Management, requires Federal agencies to avoid to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

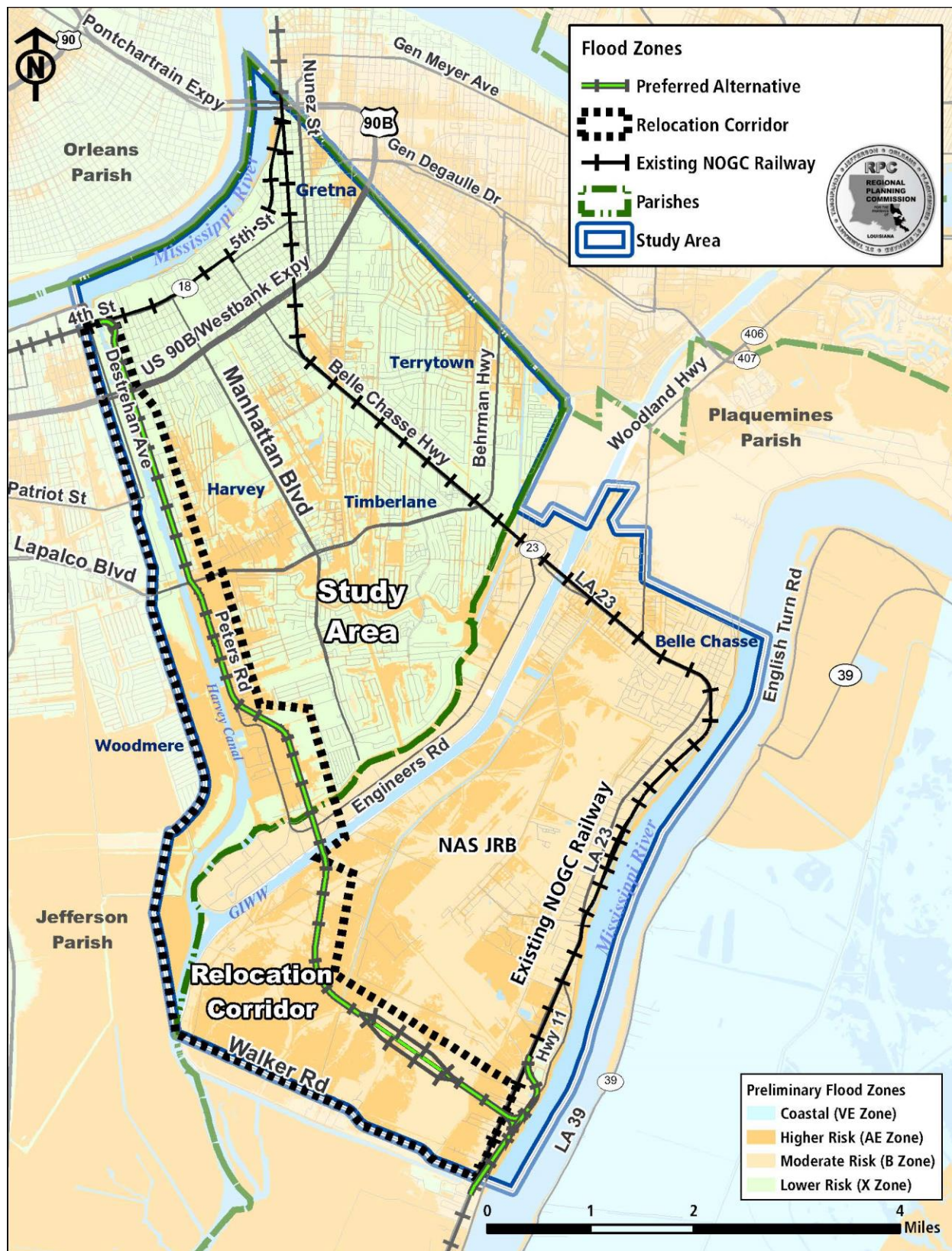
The Federal Emergency Management Agency (FEMA) issues Flood Insurance Rate Maps as a part of the National Flood Insurance Program which designate the Special Flood Hazard Area in land areas covered by the floodwaters of the 1 percent annual chance flood, or “100-year” flood. The Study Area contains areas within designated 100-year floodplains. Areas range from lower risk (X zones) to higher risk (AE zones) as shown on **Figure 3-1**.

No-Build Alternative – The existing NOGC Railway would continue to operate in the 100-year floodplain having various flood zone risk levels as shown on **Figure 3-1**.

Build Alternative – The Preferred Alternative alignment would be constructed and operated within the 100-year floodplain having flood zone risk levels (low to high) as shown on **Figure 3-1**. Potential impacts to floodplains based on the Preferred Alternative alignment include filling, grading, new bridges and culverts, and other activities.

Impacts to the 100-year floodplain typically require coordination and approval from the local floodplain administrator(s) and FEMA. The local entities with review and/or approval authority in the Relocation Corridor include Jefferson Parish, Plaquemines Parish, and FEMA. During the permitting process, the floodplain administrators will be contacted for the review and possible permit requirements for the Project.

Figure 3-1. Flood Zones Map



3.6 Wetlands

Executive Order 11990, Protection of Wetlands, requires Federal agencies to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. The northern portion of the Study Area and Relocation Corridor above the GIWW is mostly urban and wetland areas are therefore limited. The southern portion of the Study Area and Relocation Corridor below the GIWW contains extensive wetlands. Undeveloped portions of the Study Area contain various types of freshwater wetlands (e.g., forested/shrub, pond, emergent) with a range of hydrologic conditions (e.g. permanent to seasonal inundation/saturation). **Figure 3-2** displays potential wetland areas by type based on USFWS's National Wetland Inventory (NWI) data.

Section 404 of the Clean Water Act establishes a Federal program to regulate the discharge of dredge and fill material into waters of the United States. The US Army Corps of Engineers (USACE) has the primary regulatory authority for issuing permits and enforcing Section 404 requirements. The USACE also issues permits and enforces Section 10 of the Rivers and Harbors Act of 1899, as amended, 33 U.S.C. §403, for navigable waters of the United States to protect commercial navigation.

No-Build Alternative – No direct or indirect wetland impacts would occur if the Project is not constructed.

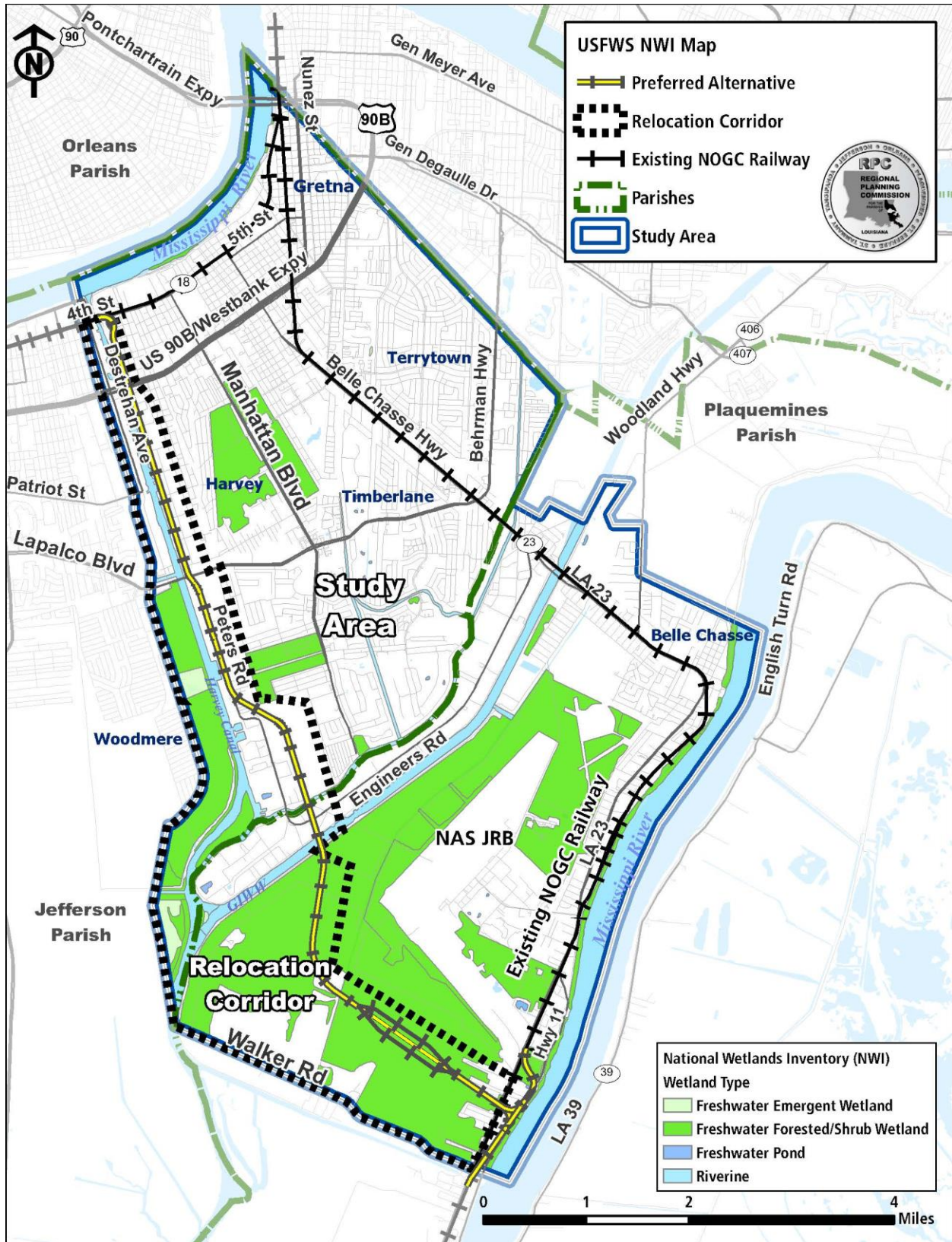
Build Alternative – A query of NWI data was performed to identify waters of the United States, including wetlands potentially impacted by the Preferred Alternative. **Table 3-3** lists wetland impacts and type. The riverine impacts are at Bayou Barataria and the GIWW. The other impacts are all located south of the GIWW.

Table 3-3. Potential Wetland Impacts by Type

Wetland Type	No. of Acres Impacted
Freshwater Forested/Shrub Wetland	52.3
Freshwater Pond	0.1
Riverine	0.8
Total Wetland Impacts	53.2

Prior to permitting and design activities, the future project sponsor would be required to conduct an on-site field investigation to delineate the full extent of waters of the United States within the area and to make a proposed jurisdictional determination. The USACE would make the final jurisdictional determination for waters of the United States for the Preferred Alternative.

Figure 3-2. USFWS NWI Map



Fill within waters of the United States, including wetlands, associated with construction of the Preferred Alternative would likely require authorization by an Individual Permit under Section 404 of the Clean Water Act (33 U.S.C. §1344). Authorization under Section 10 of the Rivers and Harbors Act 33 (33 U.S.C. §403) would also be required for activities in navigable waters of the United States (such as the GIWW).

Impacts to waters of the United States would require mitigation to compensate for adverse effects in accordance with Clean Water Act Section 404(b)(1) Guidelines (40 CFR 230). Purchasing credits from an approved mitigation bank is the USACE-preferred method of mitigation, based on the latest joint USACE and USEPA guidance, and is often lower in cost and risk, and has a shorten implementation time compared to permittee-responsible mitigation (e.g., on-site wetland restoration). The web-based RIBITS (Regulatory In lieu fee and Bank Information Tracking System) at <https://ribits.usace.army.mil> provides information on mitigation and conservation banking and in-lieu fee programs across the country.¹⁴ RIBITS allows users to access information on the types and numbers of mitigation and conservation bank and in-lieu fee program sites, associated documents, mitigation credit availability, service areas, as well information on national and local policies and procedures that affect mitigation and conservation bank and in-lieu fee program development and operation. The number of operating mitigation banks and availability of credits may change depending on the length of time until permit evaluation for the Project.

3.7 Coastal Zones

The Coastal Zone Management Act of 1972, 16 U.S.C. §§ 1451 – 1464, declares a national policy to preserve, protect, and develop, and where possible, restore or enhance the resources of the Nation’s coastal zone. The Study Area lies within the Louisiana Coastal Zone as designated by Louisiana Department of Natural Resources (LDNR), Office of Coastal Management (OCM). Under the Louisiana State and Local Coastal Resources Management Act of 1978, the OCM of LDNR is charged with implementing the Louisiana Coastal Resources Program (LCRP). The OCM administers the Coastal Use Permit (CUP) program to ensure activities in the Coastal Zone are performed in accordance with the guidelines in the LCRP. The CUP program specifically focuses on activities that may increase the loss of wetlands and aquatic resources. The LCRP requires compensatory mitigation for impacts to vegetated wetlands in the Louisiana Coastal Zone.

No-Build Alternative – No direct or indirect impacts to the Coastal Zone would occur if the Project is not constructed.

Build Alternative – Since the Project is located in the coastal zone and could impact approximately 53 acres of wetlands, the future project sponsor would be required to obtain a Coastal Use Permit/Section 404 Permit with compensatory mitigation. Compensatory mitigation would be determined during the permitting process. A Joint Permit Application

¹⁴ <https://ribits.usace.army.mil> accessed on April 13, 2016.

would be required from the OCM and USACE for the CUP and the USACE permits under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

3.8 Soils and Prime Farmland

Recognizing that millions of acres per year of prime farmland are lost to development, Congress passed the Farmland Protection Policy Act to minimize the extent to which Federal programs contribute to the unnecessary conversion of farmland (7 CFR Part 658). Prime farmland is described as soils that have a combination of soil and landscape properties that make them highly suitable for cropland, such as high inherent fertility, good water-holding capacity, and deep or thick effective rooting zones, and that are not subject to periodic flooding.

The majority of soil deposits across south Louisiana are categorized as alluvium, which indicates they were deposited by rivers. Alluvium comes in a variety of soil textures from sandy and silty to heavy clays, depending on the source of the sediment. Areas laid down as alluvium typically have flat, deep soils, often with considerable organic matter content that became mixed into the soil as it travelled down the river system. **Table 3-4** identifies by soil type those soils within the required right-of-way, which includes the rail and road rights-of-way and remnant parcels. As noted in the table, soils within the categories Cancienne (CM/CO), Carville (Ct) and Shriever (Sk) fall within categories considered prime farmlands. However, as noted in the discussion that follows, their location within the boundary of the New Orleans Urbanized Area exempts them from the rules and regulations of the Farmland Protection Policy Act.

Table 3-4. Preferred Alternative Right-of-Way Soils

Soil Type	Map Unit Symbol	Acres	Percent of Right-of-Way	Prime Farmland Soil Type
Aquents, dredged	AN	1.6	1.3%	No
Cancienne silt loam, 0-1% slopes	Cm	5.3	4%	Yes
Cancienne silty clay loam, 0-1% slopes	Co	9.5	7.7%	Yes
Carville silt loam	Ct	0.7	0.5%	Yes
Rita mucky clay	Ra	53.3	43.2%	No
Shriever clay, 0-1% slopes	Sk	2.5	2.1%	Yes
Water	W	0.9	0.8%	No
Westwego clay, 0-0.5% slopes	Ww	49.7	40.2%	No
	Total	123.5	100%	

Source: USDA National Resources Conservation Service (NRCS) Soil Survey Geographic Database (or SSURGO).

No-Build Alternative – If no improvements are made, soils in the right-of-way would not be disturbed by a rail construction process and would remain as under existing conditions.

Build Alternative – Although many of the soil types in the right-of-way would be conducive to farming in rural areas, the vast majority of the Relocation Corridor is built out with industrial, commercial, and residential land uses. According to the US Department of Agriculture’s Soil

Survey Geographic Database (SSURGO) data, the acres of Cancienne (Cm) impacted by the build alternative are along the Harvey Canal between 4th Street and Lapalco Boulevard, a fully developed industrial area adjacent to the Harvey Canal. There remain few, if any, unaltered acres which would be suitable for farming. This same SSURGO data indicates that the Shriever (Sk) soils and Cancienne (CO) soils occur in an area between Cedar Drive and River Oaks Drive, northwest of LA 23. This area is currently vacant, but aerial photography indicates the location bears the scars of a previous activity which appears shielded from adjacent residential areas by existing overgrown vegetation and trees. The area surrounding this site has a development pattern typical of the suburban development occurring on the edges of the Belle Chasse. Parcels along LA 23 which fall against the fence line of the NAS/JRB base, which were once in cultivation, now house a combination of residential, industrial and commercial land uses. Given the density and types of development in these areas, return of the land to farming or agricultural activities remains unlikely.

The US Department of Agriculture (USDA) does not categorize prime farmland soils as such if they are located within a US Census urban area boundary. An overlay of the areas classified as urban in the 2010 US Census on the Preferred Alternative ROW indicated that less than 1 acre of ROW could be considered prime farmland. The US Department of Agriculture also indicated that proposed construction areas associated with the Preferred Alternative are within urban areas and are therefore exempt from the rules and regulations of the Farmland Protection Policy Act (USDA SOV response, May 12, 2015).

If the Preferred Alternative is constructed, soils in the right-of-way would be disturbed and built up with a variety of fill. While these soils would be impacted during the construction process, the overall impact would be minimal considering these soils have already been heavily altered by previous man-made construction, especially north of the GIWW. The Preferred Alternative has no impacts on prime farmlands.

3.9 Noise and Vibration

Noise and vibration associated with construction and operation of the Project are subject to review by the FRA. FRA has noise and vibration impact assessment methods (FRA 2012). These methodologies are appropriate to evaluate noise and vibration from trains that travel at speeds of 90 mph or higher. For train speeds lower than 90 mph, FRA endorses use of noise and vibration impact assessment methodologies published by the Federal Transit Administration (FTA 2006). Train speeds proposed for the Project are lower than 90 mph, therefore project-related noise and vibration were evaluated using FTA methods. Both FTA and FRA noise and vibration impact assessment methods are intended for use with passenger trains.

3.9.1 Noise

Noise Overview

Noise is unwanted or undesirable sound. Sound travels through the air as waves of tiny air pressure fluctuations caused by vibration. The intensity or loudness of a sound is determined by how much the sound pressure fluctuates.

Loudness of a sound depends on the amplitude of the fluctuations above and below atmospheric pressure associated with a particular sound wave. The mean value of the alternating positive and negative pressure fluctuations is the static atmospheric pressure, not a useful descriptor of sound. However, the effective magnitude of the sound pressure in a sound wave can be expressed by the “root-mean-square” (rms) of the oscillating pressure measured in Pascals, a unit named after Blaise Pascal, a 17th century French mathematician. In calculation of the ‘rms’, the values of sound pressure are squared to make them all positive and time-averaged to smooth out variations. The ‘rms’ pressure is the square root of this time-averaged value.

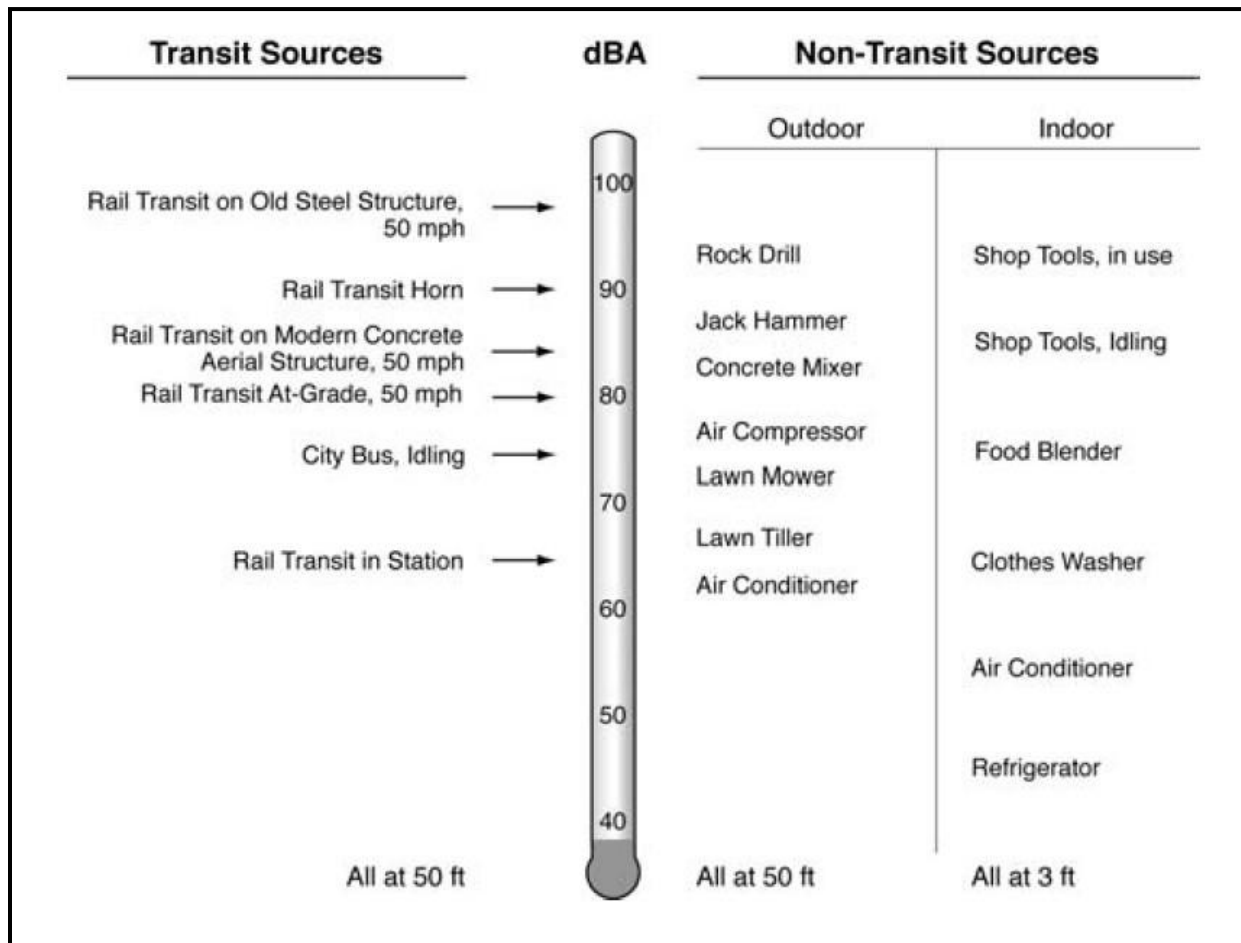
The quietest sound that can be heard by most humans, the “threshold of hearing,” is a sound pressure of about 20 microPascals, and the loudest sounds typically found in our environment range up to 20 million microPascals. Because of the difficulty in dealing with such an extreme range of numbers, acousticians use a compressed scale based on logarithms of the ratios of the sound energy contained in the wave related to the square of sound pressures instead of the sound pressures themselves, resulting in the “sound pressure level” in decibels (dB). The ‘B’ in dB is always capitalized because the unit is named after Alexander Graham Bell, a leading 19th century innovator in communication. Sound pressure level (Lp) is defined as:

$$L_p = 10 \log_{10} (p_{rms}^2 / p_{ref}^2) = 20 \log_{10} (p_{rms} / p_{ref}) \text{ dB,}$$

where $p_{ref} = 20 \text{ microPascals}$

Inserting the range of sound pressure values mentioned above results in the threshold of hearing at 20 microPascals at 0 dB and a typical loudest sound of 20 million microPascals at 120 dB” (FTA 2006). Because of the logarithmic nature of the decibel unit, when two identical noise sources are added together, the resulting increase is 3 dB (not the arithmetic sum of the two noise levels). Most sounds consist of a broad range of sound frequencies, from low frequencies to high frequencies. The average human ear does not perceive all frequencies equally. Therefore, the A-weighting scale was developed to approximate the way the human ear responds to sound levels; it mathematically applies less “weight” to frequencies we do not hear well, and applies more “weight” to frequencies we do hear well. Typical A-weighted noise levels for various types of sound sources are summarized in **Figure 3-3**.

Figure 3-3. Typical Noise Levels



Source: Transit Noise and Vibration Impact Assessment (FTA 2006)

Noise Descriptors

The equivalent average sound level (Leq) is often used to describe sound levels that vary over time, usually a one-hour period. It is a mean energy-based average noise level. The Leq is often described as the constant sound level that is an equivalent exposure level to the actual time-varying sound level over the period (hour). Using twenty-four consecutive 1 hour Leq values, it is possible to calculate daily cumulative noise exposure. A common community noise rating is the Day-Night Average Sound Level (DNL or Ldn). The Ldn is the 24-hour Leq but includes a 10 dBA penalty on noise that occurs during the nighttime hours (between 10 pm. and 7 am.) where sleep interference might be an issue. The 10 dBA penalty makes the Ldn useful when assessing noise in residential areas, or land-uses where overnight sleep occurs.

Noise Screening Assessment

The first step in the noise analysis is a screening assessment. The purpose of the screening assessment is to determine if noise-sensitive land uses exist close enough to the proposed rail line to be affected by project-related noise. If noise-sensitive land uses exist within the screening distance, they are evaluated for potential noise effects. The Project includes only

freight trains, therefore the noise screening distances from the CREATE (Chicago Regional Environmental and Transportation Efficiency) program were used (CREATE 2013). The CREATE distances were selected because they were developed for use on freight trains. They also provide guidance on how to tailor the screening distances to an individual project, which results in a more meaningful and contextual screening process. Use of CREATE noise screening distances for this EA was approved by FRA.

The first step in the CREATE noise screening process is to determine the train activity category (low, medium, high). The Project proposes to operate less than 40 trains per day, which is considered low train activity according to CREATE. The next step is to identify the ambient land use conditions (normal suburban, urban residential, and noisy urban residential). Land use in the Relocation Corridor includes residential, industrial/light industrial, and open spaces. Based on the density of residential development (the only noise-sensitive land use in the Relocation Corridor), the portion of the Relocation Corridor that is noise-sensitive was classified as urban residential for the purposes of the noise screening assessment. Using these two pieces of information, the noise screening distance was determined to be 300 feet. This screening distance corresponds to urban residential, low freight train activity, and a setting that does not include rows of intervening buildings or obstructions.

Noise-sensitive land uses were identified within 300 feet in three portions of the Relocation Corridor. In the northern-most section of the Relocation Corridor where the proposed track connects with the existing track on 4th Street, there are homes within 300 feet of the proposed rail line. In the center of the Relocation Corridor, where the proposed alignment jogs eastward to cross Murphy Canal, there is a mobile home park (Hassel's RV and Trailer Park) on the west side and a residential neighborhood (Village Green) on the east side of the alignment. In the southern-most section of the Relocation Corridor, there is a row of homes on River Oaks Drive that is roughly parallel with the proposed alignment. Therefore, noise analyses were performed to evaluate the potential for noise effects in these three areas. The FTA's General Noise Assessment spreadsheet model was used in these analyses.

Existing Noise Levels within the Relocation Corridor

The first step in the FTA's General Noise Assessment is to identify existing noise levels. Existing noise levels were determined using methods published by the FTA (FTA 2006). Table 5-7 in FTA's guidance document (FTA 2006) shows how to estimate existing noise levels based on a variety of factors including population density. This analysis estimated noise levels using census block data. The cluster of homes in the northern-most portion of the Relocation Corridor consists of more than one census block. This resulted in a range of existing noise levels. The lowest noise level was selected and that corresponds to a lower allowable project-related noise level.

The mobile home park and residential neighborhood in the middle of the Relocation Corridor lie within two different census blocks. Therefore each area was assigned a unique existing noise level based on census block data.

The row of residences on River Oaks Drive in the southern portion of the Relocation Corridor is located within the 2011 aviation noise contours associated with the runways at Naval Air Station Joint Reserve Base New Orleans (NAS JRB). A comparison between existing noise levels determined using census block data and the aviation noise contours showed that the aviation noise contours are dramatically louder than population-based estimates of existing noise. Therefore, the aviation noise contours were used to represent existing noise levels in that row of residences in the southern portion of the Relocation Corridor. Those aviation noise contours have not been updated since 2011, but are considered to still be valid for the purposes of this analysis.

Table 3-5 presents the estimates of existing noise levels (on an Ldn basis) determined for the areas for which a General Noise Assessment is being performed.

Table 3-5. Existing Day-Night Noise Levels (Ldn)

Residential Area	Ldn (dBA)
Northern-most near 4th Street	50
Central (east side) near Village Green	55
Central (west side) near Hassel's RV and Trailer Park	60
Southern-most along River Oaks Drive	65

Source: HDR 2017

Existing noise levels shown in the table above were used in the FTA General Noise Assessment spreadsheet model. These exiting noise levels would be associated with the No-Build Alternative. The model was used to calculate the distance from the proposed rail line to a point where moderate and severe noise impacts (as defined by FTA) no longer occurred.

General Noise Assessment – Potential Preferred Alternative Impacts

Table 3-6 shows the input parameters used with the FTA General Noise Assessment spreadsheet model. This analysis assumed that freight trains were evenly distributed throughout a 24-hour period, resulting in the same number of trains/hour during daytime and nighttime hours. This analysis also conservatively assumed that there are no rows of intervening buildings.

Table 3-6. General Noise Assessment

Input Parameter	Value
Existing Noise level (Ldn)	50, 55, 60, 65
Number of locomotives per train	2
Speed (mph)	10
Average number of events per hour	0.542
Average number of rail cars/train	110

Source: HDR and NOGC 2017

The FTA General Noise Assessment spreadsheet model calculates train noise at a fixed distance. It also calculates the distance to Moderate and Severe noise impact contours. Using that feature, noise impact contours were plotted in each of the three portions of the Relocation Corridor where noise-sensitive land uses were located within the noise screening distances. Using GIS and aerial photographs, noise impacts were identified where residences were located inside the noise impact contours.

Note that in the center portion of the Relocation Corridor, different existing noise levels on either side of the Preferred Alternative alignment resulted in different distances to the noise impact thresholds. The noise impact contours were plotted in each area, and the number of residences inside those contours was counted (the number of noise impacts was determined). FTA spreadsheet models are included in **Appendix E**.

Readers and reviewers are reminded that the General Noise Assessment spreadsheet models were only used to calculate the distance to the noise impact thresholds. Noise modeling results shown in **Appendix E** do not reflect the distances to any specific noise-sensitive land uses (however the distance to the noise impact contours are correct and were utilized in this analysis).

This analysis assumes that a quiet zone would be built in the northern-most portion of the Relocation Corridor, where the Project proposes to cross 4th Street and St. Joseph Lane. Therefore locomotive horn noise was not modeled in that area.

Table 3-7 shows the results of the impact determinations. Based on the FTA General Noise Assessment methodology, the Project would have 107 moderate noise impacts and no severe noise impacts.

Table 3-7. Noise Impact Summary

Location	Moderate Noise Impacts	Severe Noise Impacts
Northern terminus	53	0
Central (east side)	3	0
Central (west side)	49	0
Southern end of corridor	2	0
Total Noise Impacts	107	0

Source: HDR 2017

If the Project is built, it would relocate a portion of existing freight trains from the existing alignment, which travels through densely developed residential neighborhoods in Gretna. Reducing freight train activity in residential areas is a net benefit attributable to the Preferred Alternative. The number of residences experiencing train noise and vibration would decrease. These benefits have not been quantified, but they will occur if the Project is constructed.

Noise Mitigation

FTA/FRA guidance does not require noise mitigation for moderate noise impacts; however, strategies for reduction of noise impacts (e.g. noise walls, wheel truing, etc.) may be implemented during final design if determined to be cost effective.

3.9.2 Vibration

This section describes basic vibration concepts and descriptors, and presents the assessment of project-related vibration for the Preferred Alternative.

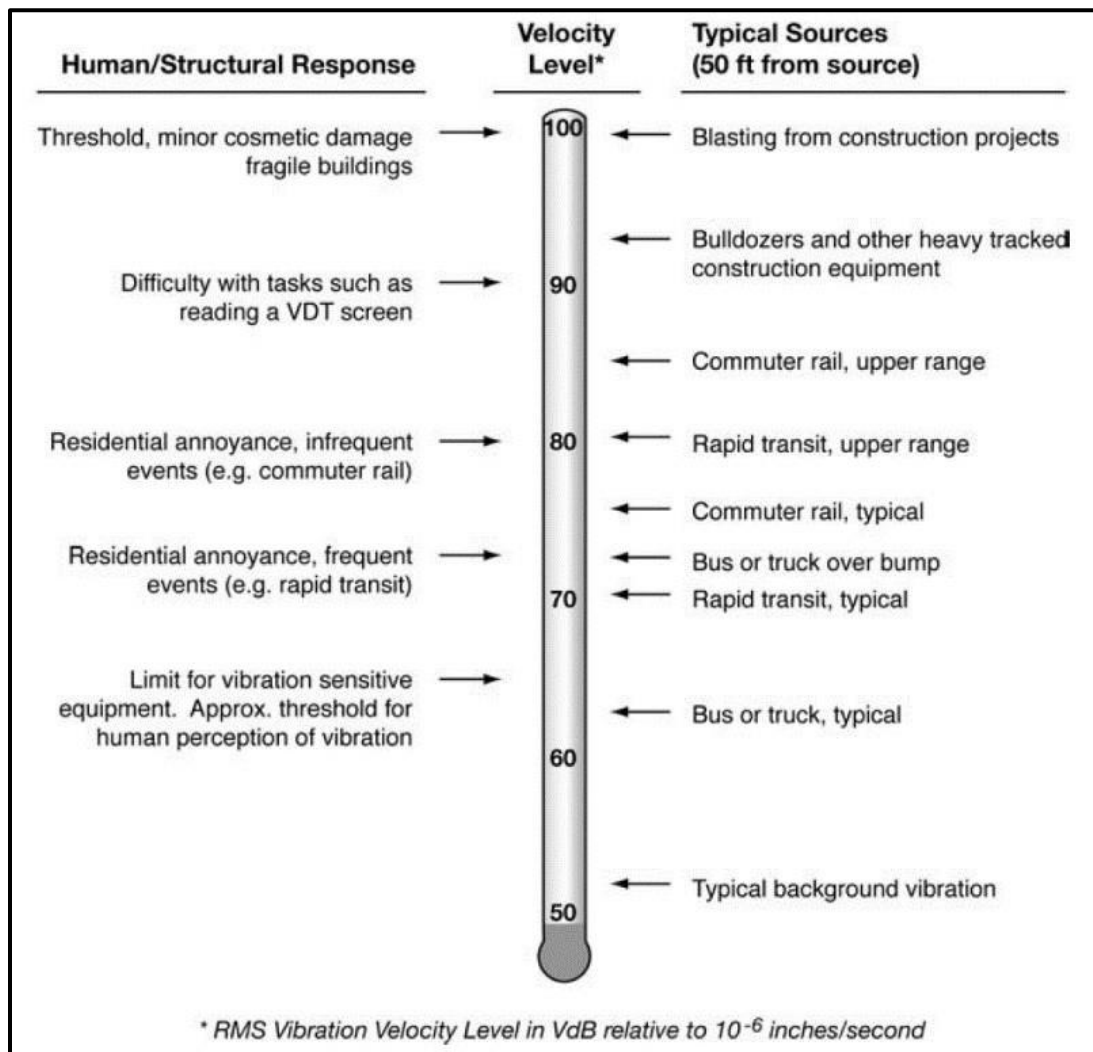
Vibration Descriptors

Vibration consists of rapidly fluctuating motions. However, human response to vibration is a function of the average motion over a longer (but still short) time, such as one second. The root mean square (RMS) amplitude of a motion over a one-second period is commonly used to predict human response to vibration. For convenience, decibel notation is used to describe vibration relative to a reference quantity. The FTA has adopted the notation VdB (for vibration decibels), which indicates decibels relative to a reference quantity of one microinch per second (10^{-6} in/s).

Ground-borne vibration (GBV) can be a serious concern for residents or at facilities that are vibration-sensitive, such as laboratories or recording studios (however neither of these land uses exist within the Relocation Corridor). The effects of ground-borne vibration include perceptible movement of building floors, interference with vibration-sensitive instruments, rattling of windows, and the shaking of items on shelves or hanging on walls. Additionally GBV can cause the vibration of room surfaces resulting in ground-borne noise (GBN). Ground-borne

noise is typically perceived as a low frequency rumbling sound. **Figure 3-4** illustrates common vibration sources and the human and structural response to ground-borne vibration.

Figure 3-4. Example Vibration Velocity Levels



Source: Federal Railroad Administration, *High Speed Ground Transportation Noise and Vibration Impact Assessment*, September 2012. DOT/FRA/ORD-12/15.

In contrast to airborne noise, ground-borne vibration and ground-borne noise is not an everyday experience for most people. The background vibration level in residential areas is usually 50 VdB or lower—well below the threshold of perception for humans, which is around 65 VdB. Levels at which vibration interferes with sensitive instrumentation can be much lower than the threshold of human perception, such as for medical imaging equipment or extremely high-precision manufacturing. Most perceptible indoor vibration is caused by sources within a building such as the operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads, though in most soils GBV dissipates very rapidly and it's not a common environmental concern.

Vibration Screening Assessment – Potential Preferred Alternative Impacts

The first step in the evaluation of project-related vibration is the screening assessment. FTA classifies vibration-sensitive land uses into three categories.

- Vibration Category 1 - High Sensitivity: where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance, such as electron microscopes, high-resolution lithographic equipment and magnetic resonance imaging devices.
- Vibration Category 2 – Residential: where people sleep, such as homes, hotels, and hospitals.
- Vibration Category 3 – Institutional: where vibration has potential to interfere with activities within the building, but there are not particularly vibration-sensitive equipment present, such as schools, places of worship, quiet offices, and other institutions.

Based on a review of the Relocation Corridor, the vibration-sensitive land uses in the Relocation Corridor are all residences (Category 2 land use according to the FTA Vibration Assessment Methodology). **Table 3-8** shows the FTA vibration screening distances. For this study, the conventional commuter railroad was used to represent project-related trains (both types of train utilize diesel-electric locomotives).

Table 3-8. FTA Vibration Screening Distances

Table 9-2 Screening Distances for Vibration Assessments			
Type of Project	Critical Distance for Land Use Categories* Distance from Right-of-Way or Property Line		
	Cat. 1	Cat. 2	Cat. 3
Conventional Commuter Railroad	600	200	120
Rail Rapid Transit	600	200	120
Light Rail Transit	450	150	100
Intermediate Capacity Transit	200	100	50
Bus Projects (if not previously screened out)	100	50	--

* The land use categories are defined in Chapter 8. Some vibration-sensitive land uses are not included in these categories. Examples are: concert halls and TV studios which, for the screening procedure, should be evaluated as Category 1; and theaters and auditoriums which should be evaluated as Category 2.

Source: Transit Noise and Vibration Impact Assessment (FTA 2006)

This analysis utilized a vibration screening distance of 200 feet. A contour line was plotted at 200 feet from the proposed alignment. Residences were identified inside that contour distance in the same three areas where noise-sensitive land uses were identified inside the noise

screening contours. Therefore a General Vibration Assessment was performed using FTA guidelines.

General Vibration Assessment – Potential Preferred Alternative Impacts

Using FTA methods, a General Vibration Assessment was performed to evaluate project-related vibration levels and the potential for ground-borne vibration impacts as defined by FTA. FTA vibration impact thresholds are based on the sensitivity of the receiving land use, and also on the frequency of vibration events (train pass-byes). FTA provides guidance on applying the vibration impact criteria for freight trains. Locomotives are heavier than rail cars, yet there are fewer of them per train. So FTA recommends use of the few event criterion to evaluate vibration from locomotives. Similarly, there are many rail cars in a modern long-haul freight train. So FTA recommends use of the frequent event vibration criterion to evaluate vibration from rail cars. Use of the frequent event criterion results in a larger vibration impact contour distance. Therefore this analysis conservatively focused on that criterion. **Table 3-9** presents the data used, standard FTA adjustments applied, and results of the General Vibration Assessment performed for this analysis.

Table 3-9. General Vibration Assessment Summary

Receptors	FTA Vibration Land Use Category	Peak Day Predicted Build Volumes	Average Track Speed (mph)	Vibration Frequency event	FTA Vibration Impact Criterion (VdB)	Adjustments to Generalized Ground Surface Vibration Curve								Find distance to impact	
						Source Adjustments		Path Adjustments			Receiver Adjustments		Total Adjustments (VdB)		
						Speed Adjustment (VdB)	Track Conditions Adjustment (VdB)	Propagation Geology Adjustment (VdB)	1-2 Story Masonry Structure (VdB)	Wood Frame Structure (VdB)	1-5 Floors Above Grade (VdB)	Floor Amplification (VdB)		Adjusted vibration impact criterion (VdB)	Distance to adjusted criterion (feet)
Buildings where vibration would interfere with interior operations	1	13	20	frequent	65	-8.0	NA	0	-7	NA	NA	NA	-15.0	80.0	85
Single-family residences	2	13	20	frequent	72	-8.0	NA	0	NA	-5	-2	6	-9.0	81.0	75
Multi-family residences	2	13	20	frequent	72	-8.0	NA	0	-7	NA	-2	6	-11.0	83.0	60
Multi-family residences above ground-floor commercial shops (assuming basements are present)	2	13	20	frequent	72	-8.0	NA	0	NA	NA	-4	6	-16.0	88.0	30
Institutional land uses with primarily daytime use	3	13	20	frequent	75	-8.0	NA	0	-7	NA	NA	NA	-15.0	90.0	25
Theaters and Auditoria	1/ Special	13	20	frequent	72	-8.0	NA	0	-7	NA	NA	NA	-15.0	87.0	35

Source: HDR 2017

Results of the General Vibration Assessment show that vibration impacts are expected to occur between the rail line and a maximum distance of approximately 85 feet from the rail line. The vibration impact threshold for residences extends out to 75 feet, and analysis results indicate that vibration impacts are not projected to occur from trains traveling in the Relocation Corridor because no residences are located within 75 feet of the proposed track. **Table 3-10** shows the General Vibration Assessment for areas with special track work (i.e., crossovers, turn-outs).

Table 3-10. Vibration Levels Due to Special Trackwork

Receptors	FTA Vibration Land Use Category	Peak Day Predicted Build Volumes	Average Track Speed (mph)	Vibration Frequency event	FTA Vibration Impact Criterion (VdB)	Adjustments to Generalized Ground Surface Vibration Curve								Find distance to impact using generalized vibration curve: Rapid Transit or Light Rail Vehicle	
						Source Adjustments		Path Adjustments			Receiver Adjustments		Total Adjustments (VdB)	Adjusted vibration impact criterion (VdB)	Distance to adjusted criterion (feet)
						Speed Adjustment (VdB)	Track Conditions Adjustment (VdB)	Propagation Geology Adjustment (VdB)	1-2 Story Masonry Structure (VdB)	Wood Frame Structure (VdB)	1-5 Floors Above Grade (VdB)	Floor Amplification (VdB)			
Buildings where vibration would interfere with interior operations	1	13	20	frequent	65	-8.0	0	10	-7	NA	NA	NA	-5.0	70.0	230
Single-family residences	2	13	20	frequent	72	-8.0	0	10	NA	-5	-2	6	1.0	71.0	210
Multi-family residences	2	13	20	frequent	72	-8.0	0	10	-7	NA	-2	6	-1.0	73.0	170
Institutional land uses with primarily daytime use	3	13	20	frequent	75	-8.0	0	10	-7	NA	NA	NA	-5.0	80.0	85

Source: HDR 2017

Results of this General Vibration Assessment show that vibration impacts are expected to occur at single family residences if they are between the rail line and distances 210 feet from the rail line. Analysis results show that there are no residences within that distance.

Analysis results also show that the farthest vibration impact distance of 230 feet is associated with land uses where vibration will interfere with interior operations. A review of land use in the Relocation Corridor did not find any vibration-sensitive land uses within 230 feet.

Therefore, analysis results indicate that vibration impacts are not expected to occur under the Build Alternative.

Vibration Mitigation

Vibration mitigation measures are unnecessary for this Project due to a lack of vibration impacts. Even if there were vibration impacts, there would be no practical way of mitigating those impacts for this type of freight rail project. The FTA and FRA guidance documents both discuss vibration mitigation measures that are effective in mitigating vibration from passenger trains and other forms of public transit. Those mitigation measures are not effective on freight

trains, because the vehicles are so much heavier than vehicles used in passenger/transit services. There is no practical way to mitigate ground-borne vibration due to freight trains.

3.10 Threatened and Endangered Species and Essential Fish Habitat

Plants and animals with Federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened species are protected under the Endangered Species Act (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.). The US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) are responsible for consultations and incidental take permitting under the Endangered Species Act. Protection is also afforded to Louisiana state-listed species, and the Louisiana Department of Wildlife and Fisheries (LDWF) enforces the state regulations (LA Rev Stat § 56:1904 (2016)). The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §1801 et seq., 50 CFR Part 600) regulates the management of marine fish stocks (essential fish habitat).

A desktop review of the USFWS Information for Planning and Conservation online database, the Louisiana Natural Heritage Program online rare animal and plant species database, and prior environmental studies was conducted to determine if there are likely to be any federally and state protected endangered and threatened species or any designated critical habitat within the Study Area. **Table 3-11** provides a summary of the threatened and endangered species with the potential to occur in the Study Area based on the parish lists of rare species issued by the USFWS and LDWF's Natural Heritage Program. The desktop review did not identify any wildlife refuges, critical habitats, or fish hatcheries in the Study Area. Inclusion in **Table 3-11** does not imply that a species will occur within the Study Area, but acknowledges only the potential for occurrence in the area. No species-specific surveys were conducted for this evaluation.

Several migratory bird species of conservation concern protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act were identified. The Relocation Corridor lies within the migratory routes of several migratory bird species of conservation concern. Due to the presence of undeveloped wooded habitat near open water, the Study Area may contain suitable habitat for the bald eagle and peregrine falcon, which have state threatened or endangered species status. As reported by the *Plaquemines Gazette* on May 24, 2016, a bald eagle was rescued and relocated from the nearby NAS JRB to the Freeport-McMoRan Audubon Species Survival Center. Effects on migratory birds and bald eagles are difficult to quantify, however, because they are not stationary and can occupy all habitat types, including developed lands.

Table 3-11. Threatened and Endangered Species in Jefferson and Plaquemines Parishes

Common Name	Scientific Name	Federal Status	State Status
Piping plover	<i>Charadrius melodus</i>	Threatened	Threatened/Endangered
Red knot	<i>Calidris canutus rufa</i>	Threatened	-
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted	Endangered
Peregrine Falcon	<i>Falco peregrines</i>	-	Threatened/Endangered
Brown pelican	<i>Pelecanus occidentalis</i>	Delisted	Endangered
Atlantic sturgeon (Gulf subspecies)	<i>Acipenser oxyrinchus desotoi</i>	Threatened	Threatened
Pallid sturgeon	<i>Scaphirhynchus albus</i>	Endangered	Endangered
West Indian manatee	<i>Trichechus manatus</i>	Endangered	Endangered
Hawksbill sea turtle	<i>Eretmochelys imbricate</i>	Endangered	-
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	-
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered	-
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened	-
Diamondback terrapin	<i>Malaclemys terrapin</i>	-	Restricted Harvest

Source: USFWS and LDWF online reports for Jefferson and Plaquemines Parishes (June 2016):
<https://www.fws.gov/southeast/lafayette/#threatened-and-endangered-species-section>
<http://www.wlf.louisiana.gov/wildlife/species-parish-list>

Although desktop evaluation identified several species of threatened and endangered birds, fish, reptiles and mammals that are believed to occur within Jefferson and Plaquemines parishes, based on protected species habitat descriptions, aerial photographs, topographic maps, NWI maps, and prior environmental studies within the Study Area, it is unlikely that suitable habitat occurs in the Study Area for any listed species. For example, threatened or endangered species such as manatee, sea turtles, piping plover, and red knot are found along the Louisiana Gulf Coast but are unlikely to be found within the Project's right-of-way or construction areas. The Mississippi River and GIWW in and adjacent to the Study Area may provide suitable habitat for the Gulf sturgeon and pallid sturgeon.

The presence or absence of suitable habitat does not confirm the presence or absence of a listed species.

No-Build Alternative – No direct or indirect impacts to Federal or state threatened or endangered species would occur if the Project is not constructed.

Build Alternative – Based on desktop reviews, FRA made a No Effect determination for all federally-listed species except the Atlantic sturgeon and pallid sturgeon. On September 26,

2016, FRA initiated informal consultation with USFWS and requested concurrence with the May Affect/Not Likely to Adversely Affect determination for the Atlantic sturgeon and pallid sturgeon. On October 19, 2016, the USFWS Louisiana Field Office concurred with FRA's determination (see **Appendix F**). Additional consultation with resource agencies during the permitting phase prior to construction may be needed to confirm that there would be no impacts, since changes to habitat and listed species could occur prior to construction.

The Project may impact the bald eagle, which is a state-listed species and protected by the federal Bald and Golden Eagle Protection Act. If nesting bald eagles are discovered, federal and state guidelines for avoidance and minimization will be followed. If Project activities will occur within a 660-foot radius of a nest site, coordination with the Louisiana Department of Wildlife and Fisheries will be required.

Essential fish habitat (EFH) for commercially important and federally protected species may occur in Harvey Canal, Bayou Baratavia, and the GIWW within the Study Area. Per FRA communication with NMFS, EFH coordination is not necessary for this Project (**Appendix F**).

3.11 Transportation Systems

Transportation systems and the built human environment must work together to serve the institutional, economic, and cultural aspects of a local community. These transportation systems must allow personal, commercial, and industrial vehicles to maneuver the urban environment.

The NOGC Railway tracks are identified as two separate subdivisions: the Belle Chasse and the Westwego Subdivisions. The Westwego portion operates through Westwego, Harvey, Gretna, and into a portion of Algiers, while the Belle Chasse Subdivision operates from Algiers and Gretna, and along existing LA 23 into the heart of Belle Chasse. According to the NOGC Railway, the current train volume in the Westwego Subdivision is 5 to 6 trains per day on average, Monday through Friday, ranging from 5 to 50 cars (300 to 3,000 feet long), but up to 110 cars during high demand (6,600 feet long). Meanwhile, the current train volume on the Belle Chasse Subdivision is 3 trains per day on average, Monday through Friday, ranging from 90 and 110 cars (5,400 to 6,600 feet long). The average operating speed for these trains is 10 mph with in-street operating speeds between 2 and 4 mph.

When the longest of potential trains operate in the Westwego Subdivision, the process of train assembly and movement within the in-street corridor results in blockage at numerous intersections. Additionally, trains traveling between the Westwego and Belle Chasse Subdivisions must split at the Gouldsboro Yard and reassemble, a process taking 25 to 30 minutes and blocking several Gretna streets. This process results in the greatest amount of potential motorist delay, congestion, and several intersections operating at level of service (LOS)¹⁵ F. This condition comes as a result of the train's reduced speed combined with the longer length of time required for operations to clear to the area.

¹⁵ See Glossary for a definition of Level of Service.

Similarly, existing conditions analysis shows that when trains operate within the Belle Chasse Subdivision, increased delay creates some reduction in level of service for traffic operations within the Gouldsboro Yard to Stumpf Boulevard segment in Gretna. This reduction is not as significant as that found in the Westwego Subdivision due to the lower frequency of operations. The intersection level of service found and delays observed are not outside of those found in most typical urban roadway operations (LOS C/D or better).

A separate, more detailed discussion of traffic conditions is presented within the *Traffic Analysis Report – Existing Conditions* report¹⁶ referenced in Section 8.1. This report provides a complete analysis of automobile traffic delays resulting from rail activity within the corridor, which includes maximum queue lengths, crossing vehicle delay, and intersection level of service.

3.11.1 Regional Roadway Network

Regional vehicular movement on the Westbank is influenced greatly by the Mississippi River, which has only two regional bridge crossings locally: the Huey P. Long Bridge (more than 7 miles west of the Study Area) and the Crescent City Connection at the northern-most point in the Study Area. These two crossings influence vehicle flows onto the east-west limited access arterial, US 90B - Westbank Expressway. The Gulf Intracoastal Waterway similarly funnels Study Area traffic southeast to/from New Orleans through two arterial crossings: the LA 407 - General DeGaulle Avenue bridge (1 mile northeast of the Study Area in Orleans Parish) and the LA 23 - Belle Chasse Highway (Judge Perez) bridge.

Numerous state and Federal roadways are located within the Study Area. Those roadways that travel parallel to the Mississippi River include LA 18 (4th Street and Lafayette Street), US 90B (Westbank Expressway), LA 428 (Behrman Highway and Lapalco Boulevard), LA 3017 (Engineers Road), LA 406 (Woodland Highway), and LA 23 (Belle Chasse Highway). Other state highways that carry vehicle traffic perpendicular to the Mississippi River include Peters Road, Destrehan Avenue, and Belle Chasse Highway. Other important arterials within the Study Area include Manhattan Boulevard, Terry Parkway, and Gretna Boulevard.

Within the Study Area, NOGC rail tracks interact with Federal or state highways at-grade in several locations as follows: The rail 1) shares right-of-way and lanes with 4th Street from Dolhonde Street to Huey P. Long Avenue; 2) crosses over Kepler Street; 3) crosses over Behrman Highway; and 4) crosses over Woodland Highway. As detailed within the *Traffic Analysis Report – Existing Conditions* report¹⁷, these interactions cause congestion and delays for vehicle movements within the region as a whole and within the Study Area in particular.

No-Build Alternative – If no rail relocation occurs, the regional roadway network would experience conditions consistent with those described within the *Traffic Analysis Report – No-*

¹⁶ Report available at www.norpc.org/railroad.html or from RPC upon request.

¹⁷ Ibid.

*Build Conditions (2040)*¹⁸, i.e., intersection delays and congestion. The 2040 regional roadway network would likely feature a variety of improvements throughout the Study Area from road extensions, intersection improvements, upgrades to interchanges, and the addition of lane capacity. It would likely have a similar percentage of heavy trucks present on local roadways. According to the NOGC, future rail traffic within the no-build scenario would remain as found currently, 5 to 6 trains per day on average in the Westwego Subdivision and 3 trains per day on average in the Belle Chasse Subdivision with train lengths of 5,500 to 6,000 feet, operating between 5 and 10 mph.

The 2040 No-Build scenario analysis results generally indicate no improvements in overall level of service compared to the existing conditions. By 2040, the roadway projects in the long-range transportation plan allow for the redistribution of vehicle traffic through the network. The expectation is that some corridors identified as currently congested would see some improvement as traffic shifts onto other roadways. Train volumes are anticipated to remain similar to existing conditions as part of the 2040 No-Build scenario. Therefore, train traffic in the existing Westwego and Belle Chasse Subdivisions would maintain the periods of delay currently experienced by motorists traveling in the area, as a result of passing train traffic.

Build Alternative – If rail relocation occurs, traffic flow through Gretna and along the LA 23 corridor would generally improve. The congestion found at the highway-rail crossings would be reduced and potentially eliminated as rail service running through Gretna would be relocated to the Peters Road corridor. Rail service would continue along 4th Street, but could potentially end at the International Matex Tank Terminal (IMTT) along the riverfront at the Gretna City Limits, which is west of the current at-grade crossing at Dolhonde Street. *Traffic Analysis Report – Future Conditions, Build 2040*¹⁹ describes the forecasted traffic analysis. The 2040 regional roadway network would feature a variety of improvements around the Study Area from road extensions, intersection improvements, upgrades to interchanges, and the addition of lane capacity.

The 2040 Build Alternative results analysis generally indicates that as trains operate in the relocated rail corridor, an impact at the roadway crossings would occur with LOS D or better projected for train lengths less than 5,600 feet. Trains longer than 5,600 feet might result in some decrease in LOS to a value of E.

As detailed in the Traffic Analysis Report, relocating the rail traffic from the Belle Chasse Subdivision along LA 23 would alleviate at-grade intersection vehicle congestion for several arterial and local street at-grade crossings in this corridor. The relocation would increase rail traffic in the Peters Road corridor as well as associated delays created when trains cross through the at-grade crossings on Peters Road. Locations impacted within the Preferred Alternative, in Jefferson Parish there would be five public at-grade crossings: 1) LA 18/4th Street; 2) Peters Road (2-lane northbound only); 3) Gold Street; 4) Peters Road (4-lane); and 5) at Peters Road reconstruction north of Hassel’s RV and Trailer Park. Trains traveling through

¹⁸ Ibid.

¹⁹ Ibid.

the first three intersections would block vehicle access for a small subset of the Peters Road Corridor, as well as diminish access to 4th Street (LA 18) for east-west trips to Gretna and Westwego. South of Gold Street, Peters Road remains passible with traffic able to access one of two other east-west connections: Westbank Expressway (US 90) or Lapalco Boulevard to bypass the area and rejoin LA 18 outside of the corridor area. Continuous traffic flow along Peters Road south of Harvey Boulevard would stop during periods when trains would cross the corridor. However, options remain for traffic to avoid these locations, using a combination of other roads to bypass the area. The option to use any of the available bypasses would need to be weighed against the time and distance added to travel in these areas versus awaiting the resumption of highway connectivity once trains finish passing. Travel time delays and long traffic queues of stopped motorists at the crossings would be likely outcomes by those unable or unwilling to use an alternative route.

Meanwhile, there would be only one additional new public at-grade crossing in Plaquemines Parish crossing LA 23 between Cedar Drive and River Oaks Drive. Trains crossing at this location would stop traffic flow on LA 23 south of Belle Chasse. Traffic traveling north could opt to use the proposed Peters Road extension to travel northeast away from the crossing and bypass the crossing. Traffic destined to the regional network could continue on Peters Road to either Lapalco Boulevard or the Westbank Expressway (US 90). Traffic destined to LA 23 could use Engineers Road (LA 3017) to continue east back to the corridor. Using either bypass could add time and minimal distance to trips originating south of Belle Chasse. With advance notice via signage of a train crossing ahead, traffic traveling south on LA 23 could utilize the same bypass route. However, if this notice does not occur or if discovery occurs upon arriving at the crossing, it might be determined infeasible to turn around to use the bypass route. In these instances, additional time spent in travel on LA 23 southbound would be associated with waiting times for trains to pass and traffic flow to return to normal.

3.11.2 Rail Transportation

The New Orleans region represents an important junction within the national freight rail transportation network. The Huey P. Long Bridge, located several miles west of the Study Area, is the southern-most crossing of the Mississippi River in the United States. Additionally, the New Orleans region boasts a nationally relevant oil/gas industry, one of the largest maritime port complexes in the world, and six Class I freight rail companies operating through its jurisdictions. In particular to this study, Westbank industrial clients in Jefferson Parish and Plaquemines Parish are served by the NOGC Railway, which provides freight service from Westwego, Louisiana to the Gouldsboro Yard in Algiers to Myrtle Grove, Louisiana (32 miles). These factors combined make the rail transportation network in the New Orleans region heavily used and in demand.

No-Build Alternative – If no rail relocation occurs, the rail transportation network will experience conditions consistent with those described within *Traffic Analysis Report – No-Build Conditions (2040)*.²⁰ Train traffic would remain at the same volumes through the existing

²⁰ Report available at www.norpc.org/railroad.html or from RPC upon request.

Westwego and Belle Chasse subdivisions. Local vehicular transportation congestion and delays would persist throughout the area as trains continue operating in the streets of the City of Gretna and parallel to the LA 23 corridor. The 2040 No-Build scenario analysis results generally indicate no improvements in overall level of service from the existing condition. According to the NOGC, 2040 No-Build scenario rail traffic would remain the same at current levels (**Table 3-12**).

Build Alternative – By relocating the Belle Chasse Subdivision rail traffic to the Peters Road corridor, the future increase in train volume within the Relocation Corridor would be 3 trains per day in addition to existing traffic levels found in the Belle Chasse Subdivision. The resulting total rail traffic will feature up to 13 trains per day with average lengths assumed from 3,000 to 6,000 feet in length (50 to 100 rail cars). The average train operating speed provided by the NOGC Railway in the relocated rail corridor is estimated at 10 to 20 mph.

Table 3-12 compares existing rail volumes to both the 2040 No-Build and Build Alternatives.

Table 3-12. Comparison of Train Traffic (Existing vs. 2040 NOGC Forecasts)

Location	Existing Conditions	2040 No-Build Alternative	2040 Build Alternative
Westwego Subdivision	5 to 6 trains per day (average), Mon-Fri	5 to 6 trains per day (average), Mon-Fri	Maintain service to existing customers along LA 18 between Peters Road and Gretna City Limit
Belle Chasse Subdivision	3 trains per day (average), Mon-Fri	3 trains per day (average), Mon-Fri	Loss of traffic in corridor as compared to no-build scenario
Relocation Corridor	---	---	Up to 13 trains per day: 10 new trains (5 NB and 5 SB), plus 3 existing trains per day, from Westwego and Belle Chasse

Source: NOGC Railway

Under the Build Alternative, NOGC Railway traffic would primarily operate in the relocated railway corridor and a very limited portion of the Westwego Subdivision, oriented to client deliveries to customers east of the International Matex Tank Terminal (IMTT) facility along the riverfront at the Gretna City limit. Depending on the disposition of the Perry Street Wharf, rail traffic through Gretna would decrease significantly or there would be no rail traffic along 4th Street. The Port of New Orleans owns the Perry Street Wharf, which has historically been served by the NOGC Railway. Although the NOGC has a common carrier obligation to serve all customers, the Perry Street Wharf currently has no industrial rail users. Subsequently, there is no rail service to the Perry Street Wharf facility. Currently, NOGC’s switching operations take place at Gouldsboro Yard, which is immediately adjacent to the Perry Street Wharf. Whether or not there will be future rail traffic to the Perry Street Wharf (from approximately rail segment 1 to segment 5 in Figure 2-4) depends on Port of New Orleans decisions about the future use of Perry Street Wharf. With the Preferred Alternative, rail operations would cease on track between Gouldsboro Yard/Perry Street Wharf and the Chevron Oronite Plant (from approximately rail segment 6 to segment 13 in Figure 2-4). The majority of this track is located parallel to Belle Chasse Highway/LA 23 from Mel Ott Park in Gretna southward to Belle Chasse.

Service would discontinue on the section of the Belle Chasse Subdivision from the Jefferson/Plaquemines Parish line to near Russell Drive under the Preferred Alternative. As a result, none of the intersections on the Westwego Subdivision east of the Gretna City Limit or along the Belle Chasse Subdivision between Gouldsboro Yard and Russell Drive would experience rail-induced delay created by the operation of the NOGC Railway. For more details, see *Traffic Analysis Report – Future Conditions, Build 2040*.²¹

3.11.3 Local Vehicular Transportation

The majority of the Study Area has a development pattern that can be described as post-war, car-dependent suburban. While the older portions of Gretna, closer to the river, have a grid street pattern, smaller lots, and a history of mixing land uses within an area, the rest of the Study Area has commercial corridors and separated single-family residential subdivisions. These areas contain higher intensity uses along state-owned highways/arterial roadways with less intense, more residential uses located off main thoroughfares, tucked away from high volume roads.

Within the Study Area, NOGC rail tracks interact with local roadways throughout the length of the rail corridor. As detailed within the *Traffic Analysis Report – Existing Conditions*,²² these interactions cause congestion and delays for vehicle movements throughout the Study Area.

No-Build Alternative – If no rail relocation occurs, the rail transportation network would experience conditions consistent with those described within *Traffic Analysis Report – No-Build Conditions (2040)*.²³ Train traffic would remain at the same volumes through the existing Westwego and Belle Chasse subdivisions. Local vehicular transportation congestion and delays would persist throughout the area as trains continue operating in the streets of the City of Gretna and parallel to the LA 23 corridor. The 2040 local roadway network would feature a variety of improvements throughout the Study Area from road extensions, intersection improvements, upgrades to interchanges, and the addition of lane capacity; however, none of these projects would create a separation between the existing at-grade rail and road/driveway crossings in the Westwego and Belle Chasse Subdivisions.

Even with a redistribution of traffic associated with the proposed highway system improvements in the 2040 network, daily delay would remain higher in the Westwego Subdivision, driven in large part by the slow travel times encountered in these areas as a result of in-street rail operations and opportunities for interruption by on-street vehicles within the City of Gretna. A total of 119 public and private existing at-grade crossings are located along the existing NOGC rail corridor within the Study Area as shown in **Figure 3-5**.

²¹ Report available at www.norpc.org/railroad.html or from RPC upon request.

²² Ibid.

²³ Ibid.

Build Alternative – If rail relocation improvements are completed, rail service would be less frequent in most segments of the existing NOGC rail corridor east of the Harvey Canal. As shown in **Table 3-13**, service through at-grade crossings in segments 2 through 12 would be reduced, based upon the needs generated by existing customers. As noted previously, the disposition of rail traffic to the Port of New Orleans Perry Street Wharf remains uncertain. In addition, it remains possible the future might include no NOGC Railway traffic along Belle Chasse Highway through Gretna and Terrytown with the Preferred Alternative. The number of public and private at-grade crossings in the existing NOGC corridor regularly crossed by rail service would decrease from 119 to 22. It remains uncertain whether existing track along 4th Street in Gretna would be removed as a separate action subsequent to the proposed rail relocation. Should all tracks and crossings remain, the NOGC has the responsibility of crossing maintenance.

The Preferred Alternative would eliminate numerous sources of congestion along the Belle Chasse Highway corridor. **Table 3-14** presents the future highway-rail at-grade crossings along the Preferred Alternative alignment. As shown in **Table 3-14**, there would be six new public at-grade crossings between 4th Street (LA 18) and LA 23, and two additional public at-grade crossings east of LA 23, that are simply relocations of the grade crossings at Dockside Road and East Walker Road. Also shown in **Table 3-14**, the majority of the new at-grade crossings along the Preferred Alternative alignment are at the 85 private driveways, with passing trains blocking driveway access points to industrial and related commercial businesses located along the rail line between 4th Street (LA 18) and rail crossing of Peters Road at the Murphy Canal. Trains passing along the corridor will create delay for those entering/exiting businesses along the corridor equivalent to the time required for trains to clear individual driveways.

Figure 3-5. Existing At-Grade Railroad Crossings in the Study Area

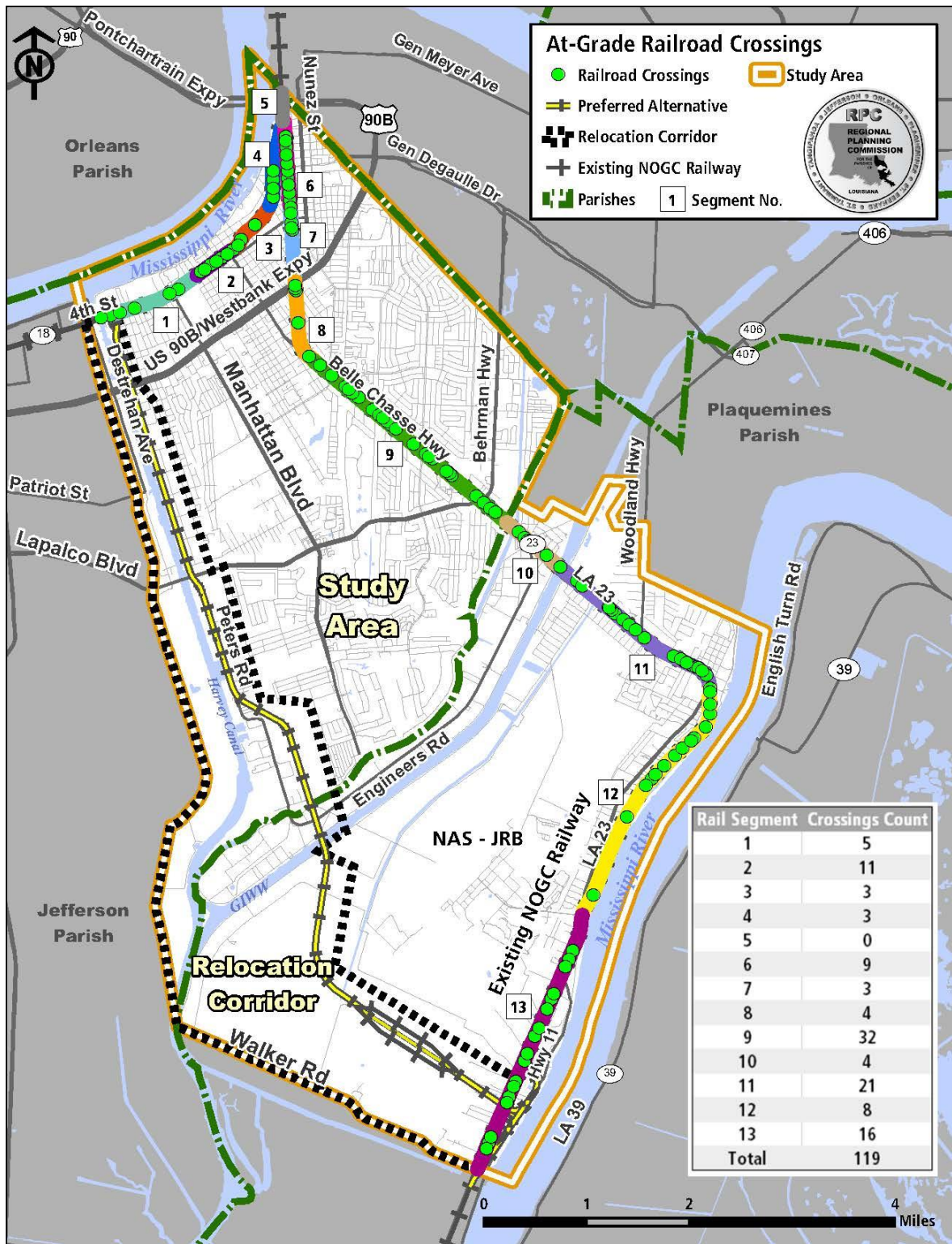


Table 3-13. Future Highway Rail At-Grade Crossings along Existing NOGC Rail Corridor

Segment No.	Approximate Segment Limits		Existing No. of Public and Private At-grade Crossings	Future No. of Public and Private At-grade Crossings	Notes
Westwego Subdivision					
1	Harvey Canal	Dolhonde Street	5	5	See Note 1
2	Dolhonde Street	Amelia Street	11	0	See Note 1
3	Amelia Street	Ocean Avenue	3	0	See Note 1
4	Ocean Avenue	Jefferson/ Orleans Parish Line	3	0	See Note 1
5	Jefferson/ Orleans Parish Line	McDonough Street	0	0	See Note 1
Belle Chasse Subdivision					
6	McDonough Street	Cook Street	9	0	
7	Cook Street	US 90B/ Westbank Expy	3	0	
8	US 90B/ Westbank Expy	23rd Street	4	0	
9	23rd Street	Jefferson/ Plaquemines Parish Line	32	0	
10	Jefferson/ Plaquemines Parish Line	GIWW	4	0	
11	GIWW	Main Street	21	0	
12	Main Street	Russell Drive	8	1	See Note 2
13	Russell Drive	Walker Road	16	16	See Note 3
Total No. of At-grade Crossings			119	22	
No. of At-grade Crossings Eliminated				97	

Notes:

1. Assumes rail service to existing customers along 4th Street between the Harvey Canal and Dolhonde Street; no foreseeable service to Perry Street Wharf.
2. Access to NOGC Belle Chasse Yard would be maintained; therefore the at-grade crossing at Belle Chasse Launch Road would remain. Also assumes Seatrain Road crossing and crossings northward would be eliminated.
3. Existing at-grade crossings within this segment would remain in-place to provide continued access to both NOGC's Belle Chasse Yard and the Chevron Oronite Plant.

Table 3-14. Future Highway-Rail At-Grade Crossings along the Preferred Alternative

Sheet No. ¹	Approximate Limits ² ; Station Limits (Sta #)		No. of New and Relocated At-grade Crossings			List of Public At-Grade Crossings and Station Locations and Remarks
			Public	Private	Total	
A-1	LA 18/4th St; Sta 0+00	South of US 90B; Sta 46+00	4	18	22	<ul style="list-style-type: none"> • LA 18/4th St; Sta 4+00 • Peters Road (2-lane, NB only); Sta 5+00 • Gold St; Sta 11+00 • Peters Road (4-lane); Sta 15+00
A-2	South of US 90B; Sta 46+00	South of Norman St; Sta 84+00	0	17	17	
A-3	North of Aimee St; Sta 84+00	South of Joseph St; Sta 128+00	0	22	22	
A-4	North of Breaux Ave; Sta 128+00	South of Hydradyne; Sta 166+50	0	13	13	Note: 5 of the 13 private crossings provide access to businesses on the west side of the Boomtown Floodwall None
A-5	North of Abandoned Warehouses; Sta 166+50	South of Entergy Substation; Sta 207+00	0	9	9	Note: 9 private crossings provide access to businesses on the west side of the Boomtown Floodwall
A-6	North of Hassel's; Sta 207+50	South of Boomtown; Sta 252+00	1	3	4	<ul style="list-style-type: none"> • Relocated Peters Rd; Sta 223+00 Note: 1 private crossing provides access to businesses on the west side of the Boomtown Floodwall
A-7	North of Pull-a-Part; Sta 252+00	South of Peters Rd; Sta 294+50	0	0	0	
A-8	North of GIWW; Sta 294+50	South of Buccaneer Rd; Sta 334+00	0	1	1	
A-9	Vacant land; Sta 334+00	Vacant land; Sta 380+00	0	0	0	
A-10	West of Bayou Barriere; Sta 380+00	Vacant land; Sta 420+30	0	1	1	
A-11	Vacant land; Sta 420+30	Vacant land; Sta 463+50	0	0	0	
A-12	West of Burt Dr; Sta 463+50	East of LA 23; Sta 488+07	1	1	2	<ul style="list-style-type: none"> • LA 23/Belle Chasse Highway; Sta 486+00
Subtotal			6	85	91	Limits: 4th Street to LA 23
A-13	South of Sewer Plant Rd; No Sta #	South of Chevron Park; No Sta #	1 ³	1	2	<ul style="list-style-type: none"> • The existing public crossing at Dockside Road will be relocated to the east as part of the wye connection; not included in the total number of new at-grade crossings ³
A-14	South of Access Rd 4; No Sta #	Bedalamenti Ln; No Sta #	1 ⁴	4	5	<ul style="list-style-type: none"> • The existing public crossing at E. Walker Road will be relocated to the east as part of the wye connection; not included in the total number of new at-grade crossings ⁴
Total No. of New and Relocated At-grade Crossings			8	90	98	

Notes:

1. See Appendix B, Preferred Alternative Conceptual Plans.
2. Approximate limits defined by street names, businesses or other physical features as shown on individual plan sheets A-1 through A-14 within Appendix B.

3.11.4 Parking and Access

Study Area parking and access reflects this same car-dependent suburban built environment. Highest volume elevated roadways such as the Westbank Expressway have limited access, while other high volume arterials (i.e., Belle Chasse Highway, Lapalco Boulevard, or Behrman Highway) generally limit curb cuts and vehicular access, while restricting parking to off-street dedicated parking lots. Lastly, lower volume roads provide the greatest access and largely allow parking on-street as space allows. This has occurred in the City of Gretna along 4th Street and Madison Street where on-street parking co-exists with the travel way for vehicles and the active rail line imbedded in the street surface. This creates challenging conditions in areas where rail lines are closest to the curb line and eliminate on-street parking on one side of the roadway. Some residents have taken the initiative to park in these areas, over the rail tracks, moving their vehicles as necessary when trains pass. In downtown Gretna, portions of the existing street area between the rail line and existing curbs have become critically needed on-street parking areas used to facilitate delivery zones for businesses as short-term parking/parking by permission for residents and business patrons.

Developed parcels along the Harvey Canal between 4th Street and Lapalco Boulevard average 350 to 400 feet of depth from the edge of Peters Road to the Canal. Most businesses with longer frontage along Peters Road have delineated off-street parking, staging and delivery areas inside of floodwalls, fences/gates or similar structures marked clearly as employee/visitor only. Sites south of Lapalco have greater depth between Peters Road and the Canal, making organization of large surface lots possible. Along Peters Road, the roadway typical section does not include curbs or sidewalks. The lack of clearly defined driveways and absence of on-street parking zones results in business patrons regularly crossing this area to pull up in front of businesses or parking their vehicles on the Hooper Spur during periods of parking overflow (i.e. demand for parking exceeding supply) or during delivery activities. **Figure 3-6** is a photograph of vehicles parked within the abandoned Hooper Spur ROW (abandoned rails shown in the bottom left of the photograph with parked vehicles facing the rails). A lack of frequent train travel in this area along with a lack of parking controls or enforcement prevent quantification of this demand. In addition, lack of regular enforcement actions allows vehicles to keep using this area. Generally, the process remains self-regulated, with those parking on the Hooper Spur coming and going as necessary or working with adjacent property owners to move vehicles as to not block existing parking areas/spaces.

Figure 3-6. Photograph of Parking within Abandoned Hooper Spur



No-Build Alternative – If no improvements are made, the parking and access patterns in the Study Area would persist. Parking activities in Gretna on 4th Street and Madison Street would continue as found within the current practices. However, an increase in train volumes may discourage some from using portions of the curb zone closest to the rail line, pushing this demand onto adjacent streets. Businesses along Peters Road would continue to use the Hooper Spur as described, along with a combination of their front, side and rear yards for vehicle parking, storage and deliveries.

Build Alternative – If the Preferred Alternative is built, the existing parking and access patterns in the Study Area would generally remain unchanged, but open areas on top of the Hooper Spur (see **Figure 3-6**) would no longer be available as overflow parking areas south of LA 18. The Build Alternative means that those visiting businesses in this area would lose access to the Hooper Spur as a parking area. The quantity of the loss remains unknown, as the Project's final design has yet to be complete. Individual businesses in this area which use the Hooper Spur for more than short-term parking would be at the greatest potential loss, but the area is not an official parking lot or parking zone and its use for such remains inconsistent with its purpose. Finding an alternative for parking in this area may become evident later in the design phase of this Project as part of the general discussion of community impacts. As a state highway, access management policies would need to be maintained on Peters Road consistent with current and future LADOTD policies.

3.12 Residential and Industrial Structure Relocations

This section discusses the potential residential and industrial structure relocations. Any relocations would be performed in accordance with Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 U.S.C. §61.

No-Build Alternative – No relocations would be required for the No-Build Alternative.

Build Alternative – As part of the required right-of way for the Project, relocations associated with the Preferred Alternative are anticipated. Between 4th Street and Jennie Street, relocations are anticipated due to the horizontal curve alignment associated with connecting the Preferred Alternative from 4th Street to Peters Road. In addition, the crossing location of the GIWW would potentially impact property and businesses located between Bayou Barataria and the GIWW; impacts would primarily be due to the location of bridge columns and piers. These impacts could be mitigated in the future design phase of the Project with topographic surveys and more advanced bridge design. Relocations are also anticipated on the south end of the corridor which are associate with the wye connection east of LA 23.

The Preferred Alternative would require a total of 12 relocations (10 industrial and 2 residential structures) as shown in **Table 3-15**. The locations of residential and industrial structures requiring relocation are shown on the Right-of-way and Relocation Map sheets in **Appendix C**.

Table 3-15. Location and Number of Estimated Industrial and Residential Relocations

General Location of Relocation	Number/Type of Relocations		Appendix C Map Sheet No.
	Industrial	Residential	
Track curve along Peters Road between Gold Street and Jennie Street	3	--	1 of 14
Near the intersection of Peters Road Relocation and the Preferred Alternative near Murphy Canal	1	--	6 of 14
Between Barataria Bayou and Engineers Road	2	--	7 of 14 and 8 of 14
Between Engineers Road and United Tugs Road	2	--	7 of 14 and 8 of 14
On the GIWW near the end of United Tugs Road	1	--	8 of 14
Between LA 23 and the Mississippi River levee/Highway 11 south of the wye that connects the proposed alignment to the existing NOGC Belle Chasse Subdivision	1 ¹	2	14 of 14
Total	10	2	

Notes:

1. Current site of Southern Arch, a wood salvage and interior design company and the Hero Park/River Oaks Academy site.

3.13 Utilities

The following overhead and underground utilities have been identified within the Project’s right-of-way, with confirmation of their exact location required during future surveys:

- Overhead power (Entergy Louisiana) and communication (AT&T/AT&T Fiber; Cox Communications) lines extend along and across the Relocation Corridor and provide service to adjacent neighborhoods and industries. Utility poles are located within the Project’s right-of-way.

- Underground water lines and sewer lines (Jefferson Parish) as well as underground natural gas (ATMOS Energy) serve properties along the Peters Road corridor as well as extend into the adjacent neighborhoods.
- Existing subsurface and open swale drainage systems (LADOTD and Jefferson Parish) are located within the Project's right-of-way.
- The National Pipeline Mapping System Public Map Viewer indicates that a Gulf South Pipeline Company, LP natural gas transmission pipeline crosses Peters Road at Lapalco Boulevard and is currently in service.
- Four water wells and one oil/gas well fall within the Project's right-of-way limits. Hazards associated with oil/gas wells are described in more detail in Section 3.18, Contaminated Sites.

No-Build Alternative – No utility relocations would be required for the No-Build Alternative.

Build Alternative – Construction of the Preferred Alternative would require some adjustment, relocation or modification of existing public utilities along Peters Road from 4th Street to just south of Murphy Canal as well as within the vicinity of proposed at-grade crossings. Overhead and underground utilities may require coordination and potential relocations during project design and construction. For example, overhead power and communication lines and utility poles that are located within the project right-of-way may need to be relocated.

Drainage upgrades would need to be made to the existing subsurface and open swale drainage systems along the corridor. Along Peters Road between 4th Street and Lapalco Boulevard, an evaluation of the existing subsurface drainage system would be required to ensure that the rail alignment would not impede existing drainage patterns. The proposed rail bed including ballast, would need to be designed to a certain elevation in order to allow existing stormwater runoff to adequately flow to area inlets along the roadway and to inlets which are located on private property. South of Lapalco Boulevard to the Murphy Canal crossing, a new open swale drainage system would be required to accommodate the required drainage for both the Preferred Alternative alignment adjacent to the Boomtown Floodwall and the reconstruction of Peters Road.

Project design would include utility surveys and subsurface utility investigations to determine the horizontal and vertical location of utility infrastructure. This would be followed by design phase services that would identify potential utility impacts and potential relocations or adjustments. Utility coordination for the Project would employ methods including phased relocation or modification to minimize interruptions in service. All modifications, relocations or adjustments would remain subject to coordination with the affected utilities. Coordination would be required to ensure that overhead and underground utilities meet American Railway Engineering and Maintenance Association (AREMA) standards within the proposed ROW. For pipelines and other underground infrastructure, Louisiana One Call²⁴ would be contacted prior to commencing construction operations.

²⁴ Louisiana One Call (811) is the regional notification center for compliance with the Louisiana Underground Utilities and Facilities Damage Prevention Law.

3.14 Flood Control Projects

The Study Area contains or is adjacent to levees that serve as flood control and hurricane risk reduction in the Greater New Orleans area. Portions of the recently constructed \$14.45 billion Hurricane and Storm Damage Risk Reduction System (HSDRRS) are included in the Study Area. The West Bank and Vicinity (WBV) project, which is part of the HSDRRS, is defined as the risk reduction features on the west bank of the Mississippi River in St. Charles, Jefferson, Orleans and Plaquemines parishes (USACE 2013a). The WBV features located within the Study Area include a portion of the Harvey and Algiers Canal levees (shown in orange in **Figure 3-7**) as well as portions of the Federal Mississippi River and Tributaries project levees (shown in blue in **Figure 3-7**).

Figure 3-7. Major Components of the West Bank and Vicinity Project



Source: <http://www.mvn.usace.army.mil/Portals/56/docs/PAO/FactSheets/WBV.pdf> accessed on May 31, 2016.

No-Build Alternative – The No-Build Alternative would not relocate the existing rail and therefore has no impact on flood control projects.

Build Alternative – Impacts of the Preferred Alternative on WBV projects within the Study Area are discussed in the following sections.

GIWW West Closure Complex. The GIWW West Closure Complex is a major feature of the WBV project which reduces risk for residences and businesses in three parishes on the Westbank: Orleans, Jefferson, and Plaquemines parishes. Construction of the complex eliminated 26 miles

of levees and floodwalls parallel to the canals from the WBV perimeter risk reduction system and allows the Harvey and Algiers canals to serve as a detention basin for rainwater draining from the three parishes (USACE 2013b). The GIWW West Closure Complex is not impacted by the Project because it is located in the southwest corner of the Study Area outside the Project's right-of-way.

Harvey Canal West Bank Levee. The Harvey Canal West Bank Levee parallels the west side of the Harvey Canal and is not impacted by the Project, which is located on the east side of the Harvey Canal.

Algiers Canal Floodwall. The Algiers Canal Floodwall connects to Boomtown Floodwall on the west side of Peters Road. Since the proposed rail alignment crosses over from the west side to the east side of Peters Road north of Boomtown Casino, the Project has no impact on the Algiers Canal Floodwall.

Boomtown Floodwall. The Boomtown Floodwall, which roughly parallels the east side of the Harvey Canal along Peters Road, is part of the WBV project that allows the Harvey and Algiers Canals to serve as a detention basin for rainwater. A portion of the existing Hooper Spur and the proposed rail relocation alignment parallels the Boomtown Floodwall on top of the USACE's perpetual underground floodwall easement. USACE New Orleans District staff indicated that the floodwalls were designed to account for railroad loads and that the ROW for the relocated rail alignment paralleling the floodwall must be at least 15 feet from the floodwall. The Project would not impact the floodwall because it will comply with the USACE 15-foot buffer.

GIWW (Algiers Canal) Levees. Levees are located along both sides of the GIWW (also referred to as the Algiers Canal in this area). The Project crosses the GIWW and requires a movable bridge. The Project will continue to be coordinated with USACE to ensure it does not impact the GIWW/Algiers Canal levees.

Cousins Canal Floodwall, Cousins Canal Pump Station, and Lapalco Floodgate. The Cousins Canal Floodwall, Cousins Canal Pump Station, and Lapalco Floodgate are in the vicinity of Lapalco Boulevard to the west of Peters Road. Since the proposed rail alignment does not cross these features and is located several hundred feet away from Peters Road, it does not impact these features.

Mississippi River Levees. The levees along the Mississippi River that parallel LA 23/Belle Chasse Highway in Plaquemines Parish are part of the WBV project. USACE New Orleans District staff indicated that the ROW for the relocated rail alignment must be at least 15 feet from the Mississippi River levees. The proposed track for the wye connection east of LA 23 would be greater than 15 feet from the Mississippi River levee at its closest location and therefore would have no impact on the Mississippi River levees.

Southeast Louisiana Urban Flood Control Program (SELA) Projects: Murphy Canal. The proposed rail relocation alignment crosses Murphy Canal, which is part of the Southeast

Louisiana Urban Flood Control Program (SELA). The proposed rail relocation alignment crosses at the juncture between SELA 16 – Murphy Canal, North and SELA 16a – Murphy Canal, South. No impacts to the SELA program are expected.

HSDRRS Borrow Areas. Several borrow areas are located in the southwest corner of the Study Area and one borrow area is located near the NAS JRB.²⁵ The proposed rail alignment does not cross or impact these borrow areas.

3.14.1 Permitting

Title 33, Section 208.10 of the CFR requires the Secretary of the Army, through the USACE and its authorized delegates (e.g., levee districts and other local project sponsors), to operate and maintain federally authorized and constructed flood control and hurricane risk reduction projects. Levee districts, as state sponsors of most of these projects, are partners with the USACE and must operate and maintain the projects, as well as protect the structural integrity by administering a proactive flood control permit program. The permit program is overseen by local levee districts in cooperation with the Louisiana Office of Coastal Protection and Restoration (OCPR), Louisiana Department of Transportation and Development (LADOTD), and the USACE. Permit applications are submitted to the appropriate levee district as the permitting agency, with the USACE, OCPR, and LADOTD providing technical input. Within the USACE New Orleans District, a flood control permit is required for subsurface work (e.g., excavation, pile driving) within 1,500 feet of the centerline of Mississippi River and Tributaries levees and all work within 300 feet of the levee centerline or 250 feet from the visible levee toe for the Mississippi River and Tributaries projects.

In addition, Title 33, Section 408 of the U.S.C. prohibits the use or alteration of any Federal project for navigation and flood control unless the Secretary of the Army, on the recommendation of the Chief of Engineers, grants permission for the alteration or permanent occupation or use of any such Federal public works based on the judgment that such occupation or use “will not be injurious to the public interest and will not impair the usefulness of such work.” Given the Preferred Alternative’s proximity to the Federal levees, the Project would require a Section 408 (alteration of USACE civil works projects) review by the USACE. The USACE Regulatory Branch cannot issue a Section 404/Section 10 permit until the Section 408 Request has been approved.

It is anticipated that the Preferred Alternative would also require a flood control permit from one or more levee districts and reviewed by OCPR, LADOTD, and the USACE. The levee districts with jurisdiction in the Study Area are the West Jefferson Levee District and Algiers Levee District, which make up the Southeast Louisiana Flood Protection Authority – West, and the Plaquemines Parish Government. The Southeast Louisiana Flood Protection Authority-West (SLFPA-W) will require a levee permit as the project will include construction involving major excavation within 1,500 feet of levees within the SLFPA-West’s jurisdiction along the Harvey Canal, GIWW and Mississippi River.

²⁵ www.nolaenvironmental.gov/viewer/nola_viewer.aspx accessed on January 29, 2016.

3.15 Land Use and Zoning

3.15.1 Land Use

Existing Land Use. Existing land development in the Study Area is a combination of residential, commercial, industrial and vacant land. Within the Relocation Corridor, the Peters Road Corridor has historically been one of Jefferson Parish's primary heavy industrial areas supporting oil field exploration and industrial services since its inception. Parcels fronting the west side of Peters Road are adjacent to the Harvey Canal, a commercial-industrial waterway. The most common land use activities in this area include the types of heavy industrial activities associated with marine commerce, ship building and rehabilitation, refining, manufacturing, and mechanical and oil field services, along with storage yards and abandoned warehousing. Parcels fronting the east side of Peter Road, while holding activities that are generally industrial, back up to established residential and commercial areas between 4th Street and Lapalco Boulevard.

In Plaquemines Parish, the Relocation Corridor traverses land areas currently undeveloped with some larger lot residential development/agricultural development near the GIWW as well as individual smaller lot residential development concentrated along local streets intersecting with LA 23 southwest of the NAS/JRB base. These areas are also interspersed with commercial and industrial uses.

Future Land Use. As the three units of government comprising the Study Area (City of Gretna, Jefferson Parish and Plaquemines Parish) used three different categorization techniques for land use, these have been generalized and tabulated (**Table 3-16** and **Figure 3-8**). As seen in **Figure 3-8**, future land uses in the Study Area (2020-2030) include varying densities of residential development, along with commercial development clustered along corridors or in nodal proximity to major intersections. Similarly, industrial development would be encouraged along specific corridors such as within the existing industrial corridors near Peters Road, Engineers Road, and LA 23.

Two of the three jurisdictions comprising the Study Area, the City of Gretna and Plaquemines Parish, continue to work on their comprehensive plans which would guide future land use decisions in the Study Area. Within the Relocation Corridor, only the future land use plans and current zoning ordinances of Jefferson Parish and Plaquemines Parish apply as the Gretna City Limits do not extend into this area.

Jefferson Parish has an adopted Comprehensive Plan²⁶ which includes a future land use map identifying the Relocation Corridor as having heavy industrial land uses, which is consistent with the current uses found in this area.

²⁶ Envision Jefferson 2020. Adopted in 2003.

Plaquemines Parish’s adopted long-range land use approach encourages a transition of land use in the vacant areas in the Relocation Corridor into a combination of industrial uses and business parks. In addition, future land use decisions in this area remain subject to the outcomes of the Joint Land Use Study completed for the NAS/JRB New Orleans base in December 2010.²⁷ This study, accepted by the Parish, discourages future residential development around the base and its runways due to the noise and safety requirements associated with maintenance of the ongoing airfield operations. Under the terms of this plan’s enforcement by the Parish, this would generally discourage an expansion of future residential land uses near the NAS JRB. The future land use map for Plaquemines Parish anticipates an expansion of industrial and commercial activities within the Relocation Corridor west of the NAS/JRB Base made possible by future improvements to highway access created through the extension of Peters Road across the GIWW, generally parallel to the proposed rail corridor, through the Relocation Corridor.

Table 3-16. Future Study Area Generalized Land Use (2020-2030)

Land Use Categories	Total Acres	Percent of Total
Business	119	0.6%
Commercial	1,389	6.7%
Business Park	3,120	15.0%
Port – Marine	73	0.3%
Industrial	3,064	14.7%
Mixed-Use	456	2.2%
Civic	4,989	24.0%
Planned Unit Development	25	0.1%
High Density Residential	306	1.5%
Medium Density Residential	277	1.3%
Low Density Residential	5,925	28.5%
Agriculture	7	0.0%
Recreation and Open Space	563	2.7%
Resource Conservation	86	0.4%
Under Study	415	2.0%
Total	20,814	100%

Source: City of Gretna, Plaquemines Parish, Jefferson Parish, 2016

No-Build Alternative – Since there would be no improvements involved, there would be no impacts to the existing land uses as a result of the No-Build Alternative. Existing developed areas would remain, with no changes anticipated in the demand for residential development in the City of Gretna, as well as commercial development along the highly traveled LA 23 corridor in both Jefferson and Plaquemines Parishes.

Build Alternative – Implementation of the Preferred Alternative would relocate the existing NOGC railway away from areas with primarily residential/commercial existing and future land

²⁷ Naval Air Station Joint Reserve Base (NAS JRB) New Orleans, Joint Land Use Study, December 2010, completed by GCR, Inc. and Burk-Kleinpeter, Inc., www.JLUSNewOrleans.com.

uses to the primarily industrial Relocation Corridor. The Project would affect a few residential areas. The Project's proposed intersection at LA 18 would place the rail on the edge of the industrial area, adjacent and directly visible to three blocks of residential land use on St. Joseph Lane (1 block east of Peters Road) between LA 18 and Jennie Street. In addition, the rail would cross LA 23 in Plaquemines Parish in an area containing a combination of residential, commercial and industrial activities. The proposed location of this crossing would be in an area where the existing land uses remain vacant/undeveloped, and offers a potential buffer of nearby developed areas from the proposed railway.

3.15.2 Zoning

Regulation of land use within the Study Area occurs through application of zoning found in the Jefferson Parish Comprehensive Zoning Ordinance,²⁸ the City of Gretna Code of Ordinances,²⁹ and Plaquemines Parish Code of Ordinances.³⁰

The information presented in this section looks at the general overview of what is currently permitted by zoning maps and ordinance text in place at the time of survey. The results of this review are shown in **Table 3-17**, **Table 3-18**, and **Figure 3-9**.

As the City of Gretna, Jefferson Parish and Plaquemines Parish have differing zoning definitions, the various zoning categories have been generalized, with a summary of land areas found in each presented in **Table 3-17**. As shown in the table, the majority of the Study Area remains zoned for Single Family, Two Family, Multiple Family, and Rural/Single Family residential (53 percent). Behind residential zones, the NAS JRB military facility in Belle Chasse and the various industrial zones are the second largest zone district types (17 percent). The various commercial zones within the Study Area comprise just over 11 percent of the total.

A similar pattern appears in the Relocation Corridor (**Table 3-18** and **Figure 3-9**), with the majority of the area (58.8 percent) being zoned for a host of residential activities including Single, Two-Family and Multiple Family, along with Rural/Single Family. The greatest concentration of residential zoning in the Relocation Corridor appears in Plaquemines Parish south of the GIWW to LA 23. Industrial zoning only applies to 31.5 percent of the Relocation Corridor, with the majority of these areas found along Peters Road within Jefferson Parish, and within Plaquemines Parish along Engineers Road as well as some parcels along LA 23 extending north toward the proposed rail corridor west of the NAS JRB base.

²⁸ Jefferson Parish Municipal Code, Part II, Chapter 40.

²⁹ City of Gretna Code of Ordinances, Chapter 102.

³⁰ Plaquemines Parish Code of Ordinances, Appendix B.

Table 3-17. Existing Study Area Generalized Zoning

Generalized Zoning Districts	Total Acres	Percent of Total
Business Core	111	0.5%
General Commercial	676	3.3%
General Offices	84	0.4%
Heavy Industrial	1,412	6.9%
Industrial	1,463	7.1%
Light Industrial	804	3.9%
Military	3,603	17.5%
Medical Services	11	0.1%
Neighborhood Commercial	315	1.5%
Office Warehouse	34	0.2%
Mixed Use	1,049	5.1%
Planned Unit Development	25	0.1%
Multiple Family Residential	588	2.9%
Two Family Residential	330	1.6%
Single Family Residential	6,350	30.9%
Rural/Single Family	3,685	17.9%
Unrestricted	21	0.1%
Total	20,561³¹	100%

Source: City of Gretna, Plaquemines Parish, Jefferson Parish, 2016

Table 3-18. Relocation Corridor Generalized Zoning

Generalized Zoning Districts	Total Acres	Percent of Total
General Commercial	7	0.1%
Heavy Industrial	420	8.1%
Industrial	1,158	22.3%
Light Industrial	480	9.2%
Military	8	0.1%
Mixed Use	49	0.9%
Multiple Family Residential	14	0.3%
Two Family Residential	1	0.0%
Single Family Residential	458	8.8%
Rural/Single Family	2,583	49.7%
Unrestricted	21	0.4%
Total	5,199	100%

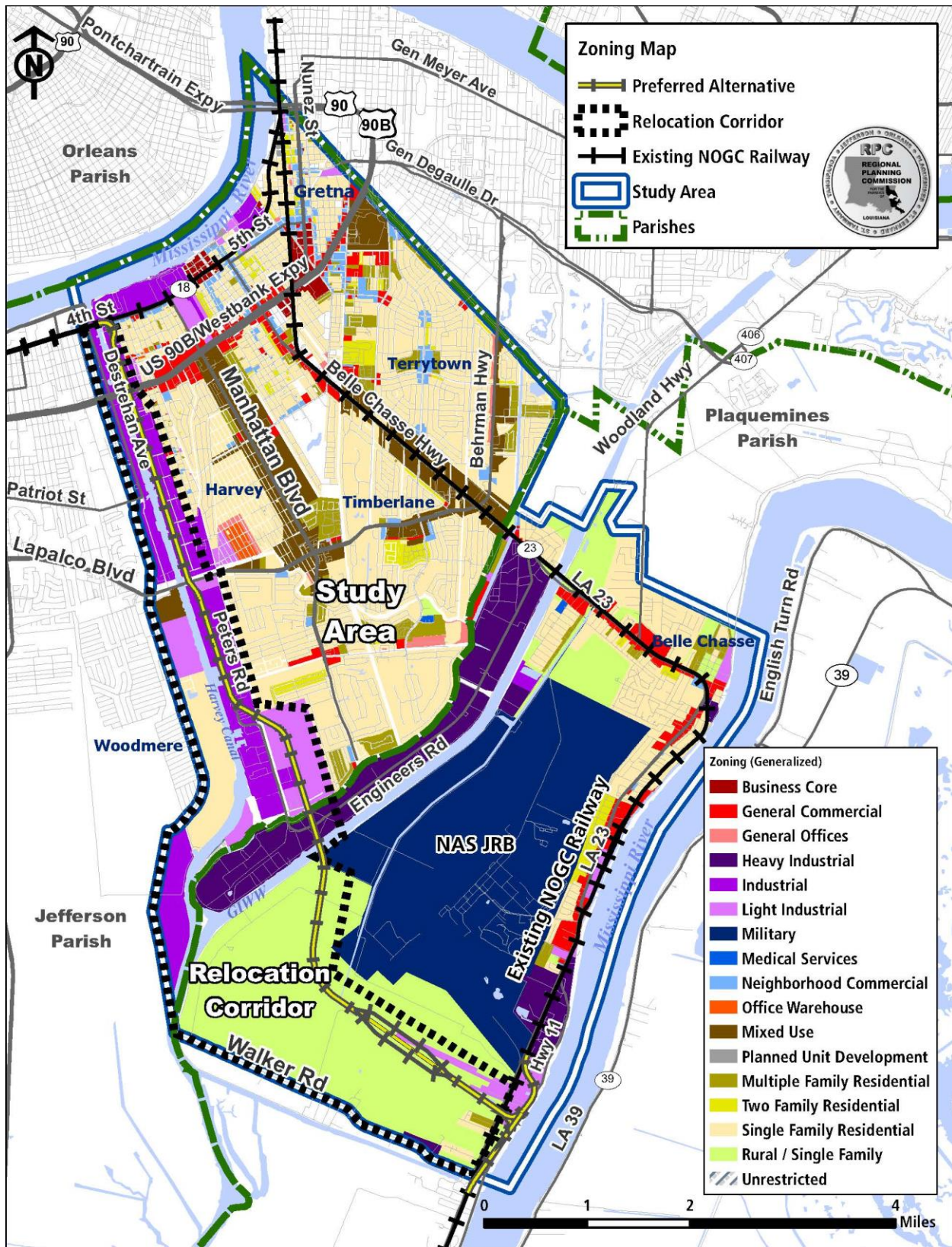
Source: City of Gretna, Plaquemines Parish, Jefferson Parish, 2016

³¹ As this land use and zoning data originates from three different government units, the total acreage comprising the Study Area is slightly different in Table 3-16 and 3-17 (1 percent difference).

No-Build Alternative – Since there would be no improvements involved and existing rail lines would remain in use, there would be no requirements to change or update zoning as a result of the No-Build Alternative.

Build Alternative – The Preferred Alternative would have no impact on current industrial zoning applied within the Jefferson Parish portion of the Relocation Corridor. It could stimulate changes in the zoning applied in the Plaquemines Parish portion of the Relocation Corridor as there is a disconnect between current zoning and the future land use pattern illustrated in **Figure 3-8**. The pace of any zoning changes would be determined by the property owner in response to general market demands for the future land uses shown on the map. The timing and locations for such decisions remain subject to private sector decisions, but as seen in **Table 3-17**, **Table 3-18**, and **Figure 3-9**, the areas of greatest potential change would be in the Plaquemines Parish portion of the Relocation Corridor where the majority of the area southwest of the NAS JRB facility remain zoned by Plaquemines Parish as Rural/Single Family.

Figure 3-9. Existing Study Area Generalized Zoning



3.16 Community Facilities

The Study Area contains over 200 community facilities ranging from public facilities, including government buildings and courthouses, to museums, medical facilities, and libraries. The less developed, more industrial Relocation Corridor has only five community facilities by comparison. **Table 3-19** and **Figure 3-10** summarize the number and location of community facilities within the Study Area and Relocation Corridor.

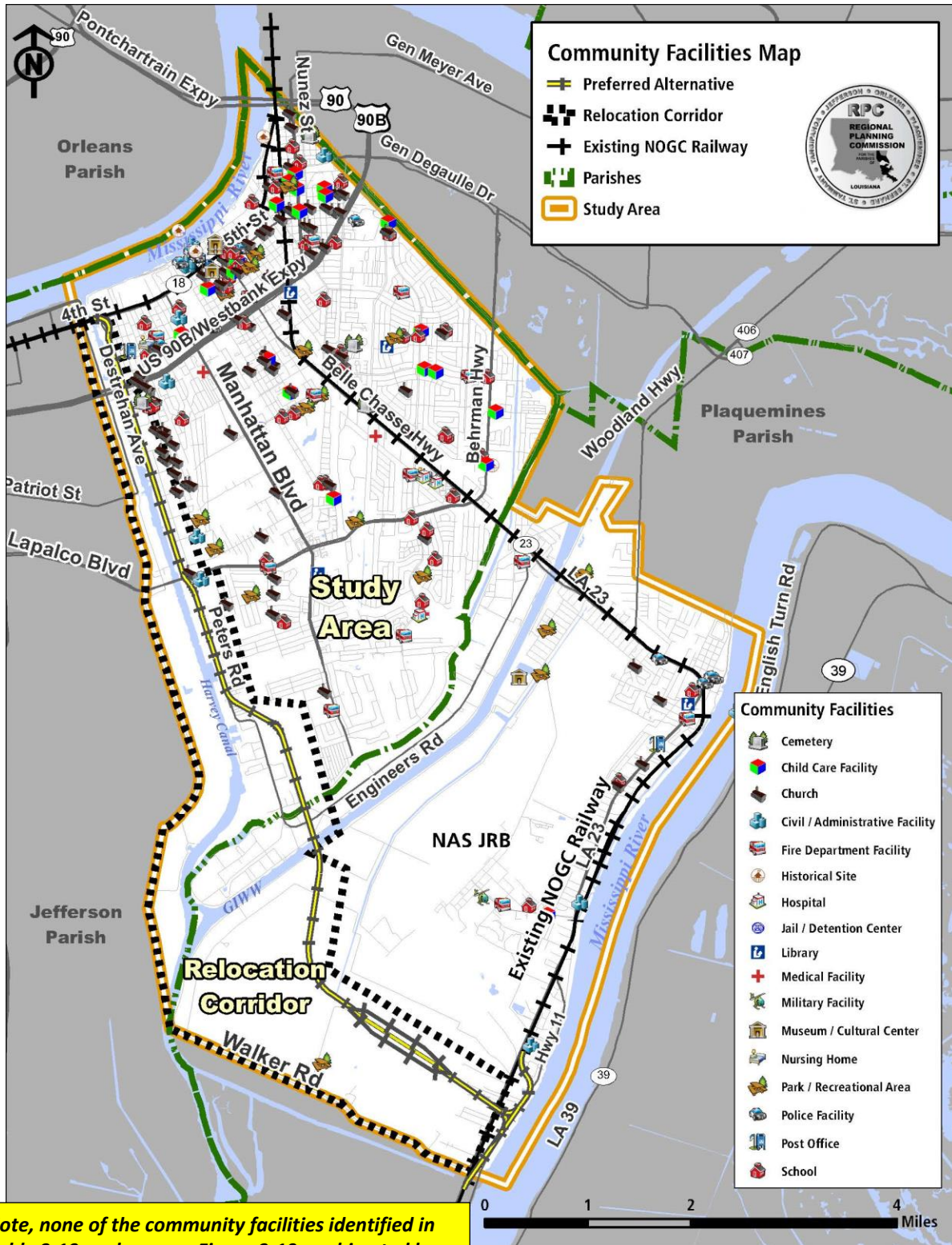
Table 3-19. Community Facilities

Community Facilities	No. of Community Facilities in the Study Area	No. of Community Facilities in the Relocation Corridor	Apparent Distance to Project
Cemetery	4	1	+/- 690 feet
Child Care Facility	21	-	-
Church	76	4	+/- 250-1,000 feet
Civil/Administrative Facility	13	1	+/- 165-250 feet
Fire Department Facility	14	-	-
Historical Site	4	-	-
Hospital	4	-	-
Jail/Detention Center	1	-	-
Library	4	-	-
Medical Facility	3	-	-
Military Facility	1	-	-
Museum/Cultural Site	4	-	-
Nursing Home	2	-	-
Park/Recreational Area	10	-	-
Police Facility	13	-	-
Post Office	3	-	-
School	46	-	-
Total Community Facilities	224	6	-

Source: USGS Geographic Names Information System (GNIS), 2016 and field observation.

No-Build Alternative – If the NOGC Railway is not relocated, Study Area trains would continue to operate along 4th St/LA 18 through downtown Gretna and along LA 23. Residents utilizing community facilities throughout the Study Area would continue to hear and see freight trains traversing the corridor. Intersection congestion and delay would persist along these regional roadway networks and local streets alike, blocking access in some instances, to these facilities.

Figure 3-10. Community Facilities Map



Build Alternative – No community facilities are bisected by the ROW of the Build Alternative. Of the six community facilities in the Relocation Corridor, the Verbo Christian Church (located at 2855 Lapalco Boulevard, on the ramp between Lapalco Boulevard and Peters Road) and the Jefferson Parish Westbank Animal Shelter (2701 Lapalco Boulevard, on ramp between Peters Road and Lapalco Boulevard) are closest to the Preferred Alternative. Verbo Christian Church is approximately 258 feet east of the proposed rail line while the Jefferson Parish Westbank Animal Shelter is approximately 165 feet. Review of the noise analysis indicates both sites are outside of the area identified as receiving impacts from the Build Alternative (See Section 3.9.1., Noise). Vibration analysis results (See Section 3.9.2. – Vibration) also show that vibration impacts are not expected at either location under the Build Alternative.

3.17 Demographics and Environmental Justice

According to the US Census American Community Survey (ACS) 2009-2014, the Study Area has a population of 109,480. The ACS shows that the Study Area features a diversity of races and ethnicities of people. It is 49 percent white and 37 percent Black or African American with the remaining 14 percent identifying as Asian, Multiple Races, or Other Races. Only 13 percent of the Study Area identifies as ethnically Hispanic. The median income is \$40,997, while 22.2 percent are below the poverty line. As **Figure 3-11** identifies, the Study Area has a variety of population densities. It is of note that the Preferred Alternative would operate within an area of lower population, along Peters Road and south of the NAS JRB. Meanwhile, the existing alignment of the NOGC Railway travels through various pockets of medium and higher density populations.

3.17.1 Census Geographies

The census geographies that comprise the Study Area can be seen in **Table 3-20** and **Figure 3-12**.

Table 3-20. Census Geographies

Parish	Census Tracts	Block Groups	Parish	Census Tracts	Block Groups	
Jefferson	250.01	1 to 4	Jefferson	258	1,2	
	250.02	1 to 3		259	1 to 3	
	250.03	1 to 3		260	1 to 3	
	251.02	1 to 3		261	1 to 3	
	251.03	1 to 3		262	1	
	251.04	1 to 2		263	1,2	
	252.01	1 to 2		278.03	1,2	
	252.02	1 to 4		278.04	1 to 4	
	253	1,2		278.05	1 to 3	
	254	1 to 3		278.07	1	
	255	1,2		278.12	1	
	256	1		Plaquemines	502	1 to 5
	257	1,2			503	1 to 3

Figure 3-11. Population Density Map

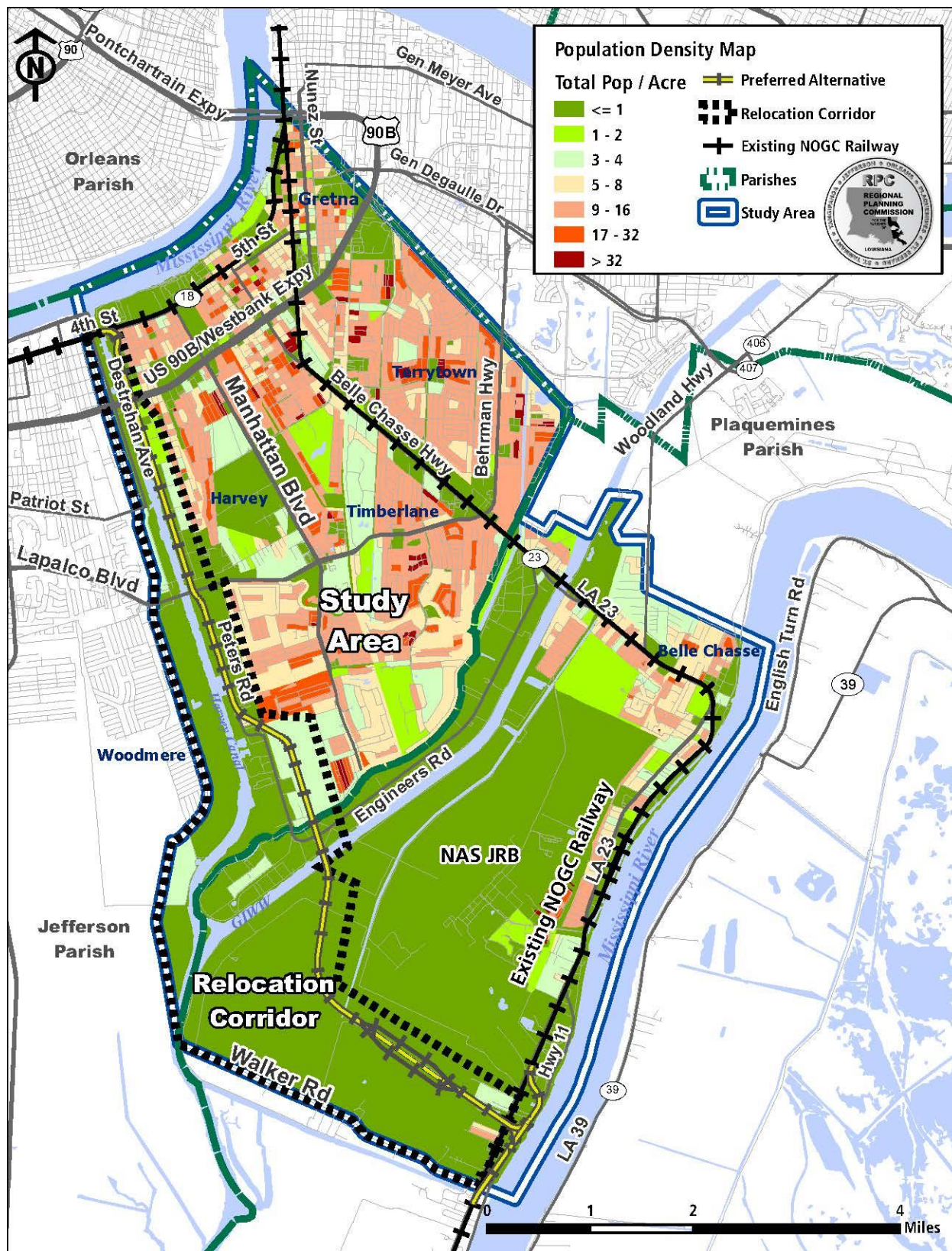
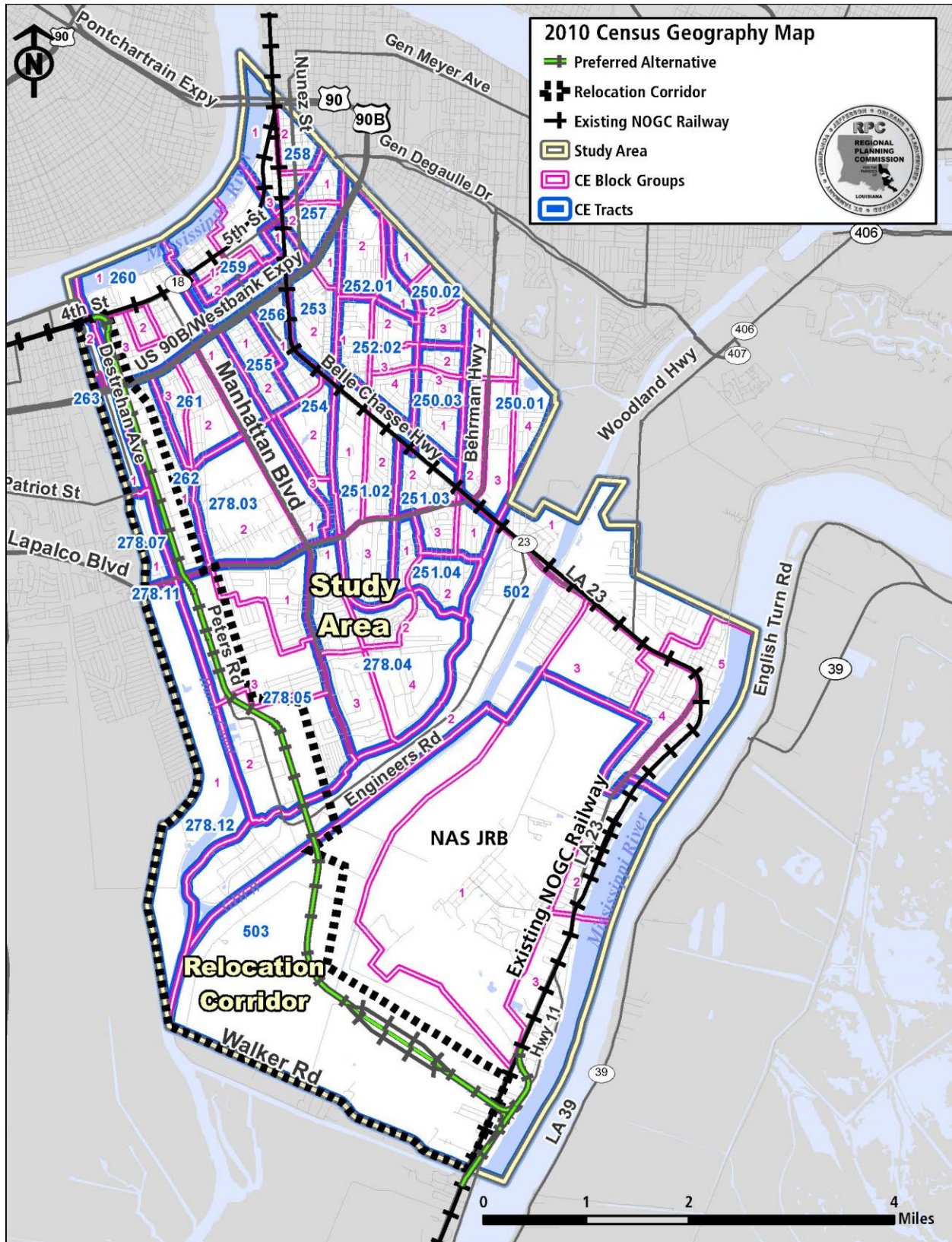


Figure 3-12. Census Geography Map



3.17.2 Race and Ethnicity

The racial and ethnic demographics of the Study Area are racially and geographically diverse. Some census block groups are categorized as almost entirely white while others are comprised almost entirely with minorities. Areas with apparent concentrations of minorities include: 1) in Jefferson Parish along both sides of the Harvey Canal south of Lapalco, 2) along both sides of the Westbank Expressway as it enters Orleans Parish, and 3) between the Harvey Canal and the Verret Canal. The percentages and distribution of minority races can be seen in **Table 3-21** and **Figure 3-13**.

Table 3-21. Study Area Demographics Compared to Local Parishes and Louisiana

Race	Study Area		Jefferson Parish		Plaquemines Parish		Louisiana	
	Number	%	Number	%	Number	%	Number	%
White	53,750	49%	276,653	64%	16,310	69%	2,890,570	63%
Black	40,176	37%	115,490	27%	5,006	21%	1,477,781	32%
American Indian	523	<1%	2,302	<1%	397	2%	28,807	<1%
Asian	6,246	6%	17,851	4%	778	3%	75,409	2%
Pacific Islander	112	0.1%	154	<0.1%	0	0%	1,671	<0.1%
Multiple Races and Other	8,673	8%	22,078	5%	1,054	4%	126,811	3%
Total	109,480	100%	434,528	100%	23,545	100%	4,601,049	100%
Percent of Minority Races	51%		36%		31%		37%	

Ethnicity	Number	%	Number	%	Number	%	Number	%
Hispanic	14,698	13%	57,335	13%	1,329	6%	210,524	5%
Non-Hispanic	94,782	87%	377,193	87%	22,216	94%	4,390,525	95%
Total	109,480	100%	434,528	100%	23,545	100%	4,601,049	100%

Source: US Census American Community Survey (ACS) 5 Year Estimates (2009-2014)

3.17.3 Income and Poverty

Within the Study Area, there is a wide distribution of incomes and levels of poverty. Of the 26 census tracts that intersect the Study Area, 14 contain a higher portion of their population in poverty than the Louisiana average of 19.6 percent. These census tracts are largely located adjacent to the Mississippi River and Orleans Parish with two other high poverty census tracts adjacent to the southern part of the Harvey Canal. Of the five census tracts through which the Preferred Alternative transverses, three have a poverty level above the national average.

Similarly, those census tracts with fewer instances of poverty contain a higher level of median income. The census tracts with the highest levels of median income are located adjacent to the Mississippi River and Orleans Parish, while the three tracts with the lowest median income are located just south of the Westbank Expressway between the Harvey Canal and the Gretna city limits. The highest median incomes can be found surrounding the Stonebridge Subdivision near the Plaquemines Parish boundary. See **Table 3-22** for additional data. **Figure 3-14** and **Figure 3-15** show median income and percentage poverty by census tract.

Table 3-22. Study Area Income and Poverty

Parish	Study Area Census Geographies	Income <i>Median Household Income (dollars)</i>	Poverty <i>Percent of Individuals Below Poverty</i>
Jefferson	Census Tract 250.01	\$46,577	24.2%
	Census Tract 250.02	\$49,314	12.8%
	Census Tract 250.03	\$61,729	11.9%
	Census Tract 251.02	\$79,063	7.8%
	Census Tract 251.03	\$42,375	18.2%
	Census Tract 251.04	\$52,271	10.4%
	Census Tract 252.01	\$30,000	35.5%
	Census Tract 252.02	\$37,024	27.5%
	Census Tract 253	\$39,619	12.2%
	Census Tract 254	\$45,080	20.9%
	Census Tract 255	\$25,044	42.0%
	Census Tract 256	\$26,563	34.1%
	Census Tract 257	\$25,690	30.9%
	Census Tract 258	\$26,458	26.4%
	Census Tract 259	\$31,341	19.6%
	Census Tract 260**	\$32,054	30.3%
	Census Tract 261	\$24,042	39.7%
	Census Tract 262**	\$23,984	42.0%
	Census Tract 263	\$44,638	13.0%
	Census Tract 278.03	\$27,250	39.8%
Census Tract 278.04	\$102,292	2.8%	
Census Tract 278.05**	\$63,827	14.2%	
Census Tract 278.07	\$72,736	3.6%	
Census Tract 278.12	\$33,250	44.3%	
Plaquemines	Census Tract 502**	\$68,802	7.9%
	Census Tract 503**	\$55,133	6.1%
Study Area Median/Average		\$40,997	22.2%

Source: US Census ACS 5 Yr (2009-2014). Tables S1903 and S1701.

Note: ** denotes Census Tracts through which the Preferred Alternative transverses

Figure 3-14. Median Income by Census Tract Map

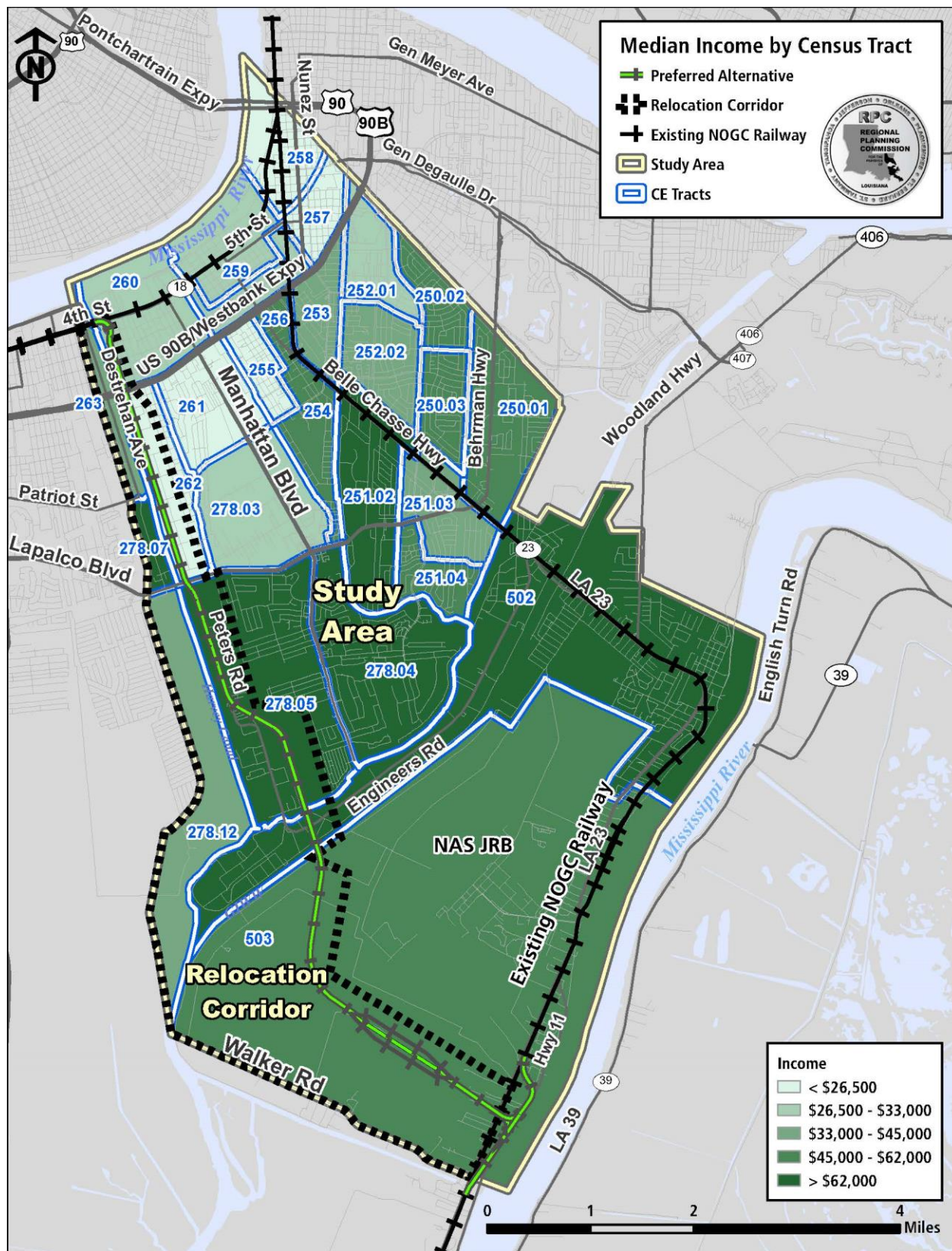
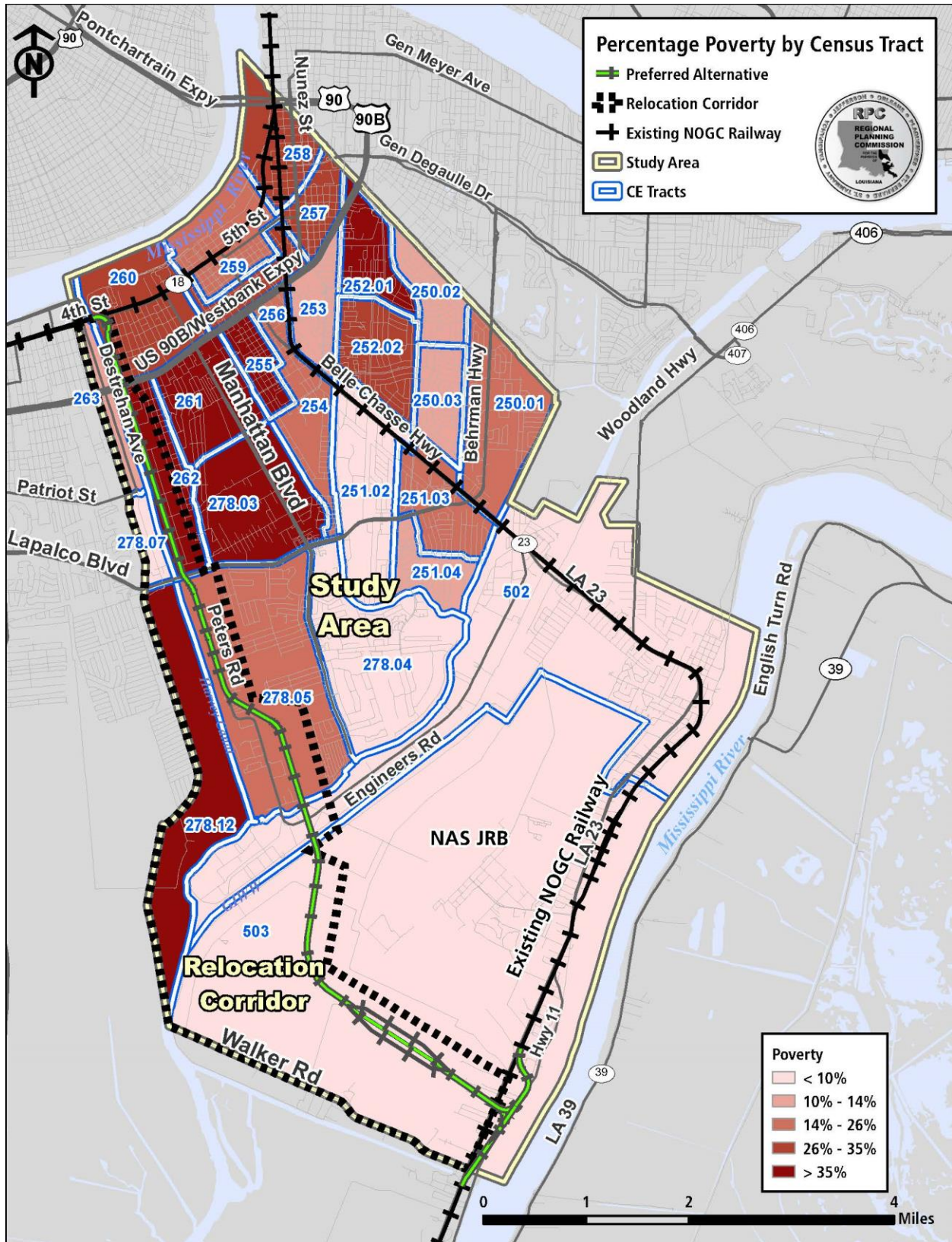


Figure 3-15. Percentage Poverty by Census Tract Map



3.17.4 Environmental Justice

Environmental Justice means ensuring that the environment and human health are fairly protected for all people regardless of race, color, national origin, or income. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, February 11, 1994, and Department of Transportation Order 5610.2(a)³² requires DOT agencies to consider how federally-assisted projects may have disproportionately high and adverse human health or environmental effects on minority and low-income populations. This DOT Order provides guidance for consideration of all people regardless of race, color, national origin or income. Specifically, this order mandates to avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.

What are disproportionately high and adverse human health and environmental effects on minority populations and low-income populations?

Disproportionately high and adverse impacts are those which must be predominantly borne by a minority or low income population as determined by the following three factors (to the extent practicable):

- (a) Whether there is or will be an impact on the natural or physical environment that significantly (as employed by NEPA) and adversely affects a minority population, low-income population, or Indian tribe. Such effects may include ecological, cultural, human health, economic, or social impacts on minority communities, low-income communities, or Indian tribes when those impacts are interrelated to impacts on the natural or physical environment; and
- (b) Whether environmental effects are significant (as employed by NEPA) and are or may be having an adverse impact on minority populations, low-income populations, or Indian tribes that appreciably exceeds or is likely to appreciably exceed those on the general population or other appropriate comparison group; and
- (c) Whether the environmental effects occur or would occur in a minority population, low-income population, or Indian tribe affected by cumulative or multiple adverse exposures from environmental hazards.

How do we determine if there is a minority population present?

A minority is a person who is:

- (1) Black (having origins in any of the black racial groups of Africa);
- (2) Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);
- (3) Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or

³² Department of Transportation Order 5610.2(a). August 2011. *Final DOT Environmental Justice Order*.
http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/orders/order_56102a/index.cfm

- (4) American Indian and Alaskan Native (having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).

A minority population is a readily identifiable group of minority persons who live in close geographic proximity to each other. The most common way to identify whether a minority population is present is to utilize census data collected by the US Bureau of the Census. The ACS surveys a portion of the US population and estimates population data based upon that survey information. This survey asks participants to identify themselves racially as one or more of the following: Caucasian or White, African American or Black, Asian or Pacific Islander, or American Indian or Alaskan Native. Additionally, the census asks participants to identify themselves ethnically as either Hispanic or not-Hispanic. This data represents the most reliable demographic and income data available until the next decennial census in 2020. This Environmental Justice analysis was completed with the 2009-2014 ACS 5-Year Estimates.

How do we determine if a low income population is present?

Low income has been defined as a household with an income at or below the Department of Health and Human Service's poverty guidelines. A low-income population is an area where an identifiable group of low-income people live in geographic proximity. Like the racial and ethnic information noted above, it is regularly collected by the US Bureau of the Census, and is available at the census block group level. The latest data set readily available for income at the block group level is from the American Community Survey, 5 Year Estimates (2009-2014).

What are the geographic boundaries?

Block groups, which are subsets of census tracts, vary greatly in size, but they are the smallest geography for which racial, ethnic and economic data are readily accessible. Blocks are the smallest census geography available, but this racial, ethnic, and economic data are not accessible at this level.

How do we establish a threshold?

After the project's geographic area is determined, the next step in the process is to determine the threshold for comparison, in order to assess whether there is a minority or low-income community present.

One method of establishing a threshold is to use a larger geography, such as the parish or state in which the project resides for comparison. As seen in **Table 3-23**, the values found for the two parishes within the Study Area provide comparison for analyzing the presence of minority/low-income populations in each census tract through which the Relocation Corridor passes. According to the 2014 ACS, Jefferson Parish and Plaquemines Parish, respectively had 36 percent and 31 percent of their populations categorized as a minority. Similarly, according to the 2014 ACS, Jefferson Parish and Plaquemines Parish respectively had 16.8 percent and 13.7 percent of their low-income populations (percentage of households below the poverty level) in 2014. For comparison, both Parishes have a lower percentage of households in poverty and a

lower percentage of individuals reporting minority status as compared to the State of Louisiana as a whole for the same period.

Table 3-23. Comparison Census Geographies

Comparison Geography	Low Income Population <i>Percent of Households with Income at or below Poverty Guideline</i>	Minority Status <i>Percent of Minority Races</i>
Study Area	20.2%	46.0%
Jefferson Parish	16.8%	36%
Plaquemines Parish	13.7%	31%
State of Louisiana	19.6%	37%

Source: US Census ACS 5 Year Estimates (2009-2014). S1701 and B2001

Using data found in the ACS for each Parish as a threshold for comparison, two of the ten census tracts within the Relocation Corridor had both higher percentages of minority and low-income populations (defined as percentage of households below the poverty guideline) than found for all of Jefferson Parish: census tracts 262 and 278.12. In addition, one tract had a greater percentage of populations below poverty and another had a higher percentage of minority population than the Parish average. **Table 3-24** presents the results of this threshold analysis.

Table 3-24. Environmental Justice Considerations by Relocation Corridor Census Tracts

Parish	Relocation Corridor Census Geographies	Total Census Tract Population	Low-Income Population <i>Percent of Households with Income at or below Poverty Guideline</i>	Minority Status <i>Percent of Minority Races</i>
Jefferson	<i>Census Tract 260**</i>	1,889	30.3%	28%
	<i>Census Tract 262**</i>	1,312	42.0%	98%
	Census Tract 263	2,601	13.0%	8%
	<i>Census Tract 278.05**</i>	8,674	14.2%	74%
	Census Tract 278.07	8,738	3.6%	35%
	<i>Census Tract 278.12</i>	4,053	44.3%	88%
Plaquemines	<i>Census Tract 502**</i>	8,549	7.9%	11%
	<i>Census Tract 503**</i>	4,622	6.1%	22%
All Relocation Corridor Census Tracts		101,196	20.2%	46%

Note: ** denotes census tracts through which the Preferred Alternative traverses
 Source: US Census ACS 5 Year Estimates (2014-2009). S1701 and B2001

No-Build Alternative – If the NOGC Railway is not relocated, it would maintain its current path through urban, demographically diverse neighborhoods and along heavily trafficked local and

arterial streets. As the above existing demographic conditions analysis reveals, the Study Area as a whole contains proportionally more minorities (51 percent) than Jefferson or Plaquemines Parishes, as well as the state of Louisiana. Additionally, the Study Area as a whole contains proportionally more individuals below poverty than the state of Louisiana. The problems identified within the Project's purpose and need (see Section 1.4) would not be remedied and these Study Area populations would continue to experience these problems.

Build Alternative – As seen in **Table 3-24**, the Relocation Corridor contains eight census tracts and 101,196 people³³. Of these eight census tracts, three have higher concentrations of low-income individuals living below the poverty line as compared to the state average. Meanwhile, another three census tracts have a larger concentration of minority individuals than the state average. However, there are two census tracts that share these criteria: census tracts 262 and 278.12.

Census tract 263 is noteworthy as it contains the Preferred Alternative. In Jefferson Parish, the Preferred Alternative improvements would be constructed along an existing industrial corridor with future land uses designated as industrial in nature as well. Meanwhile, in Plaquemines Parish, the Preferred Alternative occurs through largely undeveloped areas and areas designated as Business Park and Mixed Use.

Residents within the rest of the Study Area will benefit from reduced at-grade intersection crossing congestion and delay along with less noise and vibration. The potential adverse effects associated with the Preferred Alternative within the Relocation Corridor of visual obstruction and increased vibration would not be limited to these minority and/or low-income areas. These adverse impacts would be experienced along the entire corridor. Since the adverse impacts to minority and/or low-income households would not be disproportionately high and adverse, there are no Environment Justice concerns with the Preferred Alternative.

3.18 Public Health and Safety

On any given day, train traffic on either the Westwego or Belle Chasse Subdivision blocks roadways. The duration of the blockage varies based upon train length and speed. When blockages occur, this condition creates breaks in the roadway network, impeding travel between neighborhoods as well as within portions of the Study Area.

3.18.1 Emergency Vehicle Response

When trains pass through the at-grade crossings, this situation also blocks access by area residents to emergency services (EMS, police, and/or fire vehicles) from stations and facilities located away from Downtown and the Riverfront corridor in Gretna. The Gretna Fire Department's main fire station (David Crockett Fire Station, 1136 Lafayette Street), the City's Police Department (200 5th Street) as well as the closest regional general hospital to Downtown (Ochsner Medical Center, Westbank Campus, 2500 Belle Chasse Highway), are south of the Westwego Subdivision. During the periods when the 5 trains per day pass, they can block

³³ US Census ACS 5 Year Estimates (2014-2009)

an individual crossing for up to 21 minutes, given current speed and train composition information (see *Traffic Analysis Report – Existing Conditions*). With an average train length of 5,100 feet, trains traveling in this Subdivision can also block the majority of existing at-grade crossings simultaneously while traveling east within the City of Gretna and the 4th Street corridor, before their turn north toward Gouldsboro Yard. During this time, emergency responders caught in traffic can either wait the additional time for the crossing to open or choose to travel around to the closest open crossing. Either option adds significantly to the response time incurred by waiting residents for receipt of service.

3.18.2 Vehicle and Pedestrian Interaction

According to FRA accident data³⁴ for Jefferson Parish for the period from 2003 to 2012, there were a total of 11 vehicular accidents reported involving NOGC trains and vehicles in the Westwego Subdivision. All of these accidents occurred along the 4th Street corridor between Dolhonde Street and Amelia Street and involved vehicle damages often created when drivers did not yield to the oncoming or moving train or sideswipes. The majority of these accidents appeared within the section of 4th Street where trains run in-street, with the intersections at Dolhonde Street and Derbigny Street being the locations where more than one incident occurred. One of the contributing factors to accidents is the presence of vehicles on 4th Street running in the opposing lane to the current in-street track or parked within designated spaces on shoulders or edges of the roadway. In more than one incident, the vehicle driver cited perception problems regarding distances between the operating train and their vehicle, created in-part by the current conditions.

Within the same data, for the period 2001 to 2010, there were a total of 8 vehicular accidents reported involving NOGC trains at the grade crossing locations identified and examined in this study. As with those incidents within the Westwego Subdivision, the reported description of each appears to indicate a failure to yield to the passing train or train service equipment by motorists as a contributing factor to the incident. A cluster of accidents appeared near the Fairfield Avenue intersection located southeast of the Whitney Avenue/LA 23 intersection. This location has overhead signals, cross bucks with warning flashers and bells, but no crossing gates.

There were no pedestrian accidents reported in either Subdivision at the locations examined during the periods for the data review.

Due to the nature of the surrounding development pattern, combined with the general geography in reference to the Mississippi River, most of the crossings within the Westwego Subdivision east of the Harvey Canal occur at low-volume roadways. The number of vehicles on a daily basis does not exceed 2,500, with most traffic crossing 4th Street, as found on Derbigny and Dolhonde Street, generated by adjacent land uses. In the case of Derbigny and Dolhonde

³⁴ <http://safetdata.fra.dot.gov>. This document and the information contained herein is prepared solely for the purpose of identifying, evaluating and planning safety improvements on public roads which may be implemented utilizing federal aid highway funds; and is therefore exempt from discovery or admission into evidence pursuant to 23 U.S.C. 409.

Streets, the demand to cross 4th Street follows the demand to access the campus of Jefferson Parish West Bank Government buildings (courthouse, jail and district attorney's office) located in downtown Gretna between 4th Street and the Mississippi River.

By comparison, locations with higher traffic volumes, like those along the Belle Chasse Subdivision, would have more vehicles passing across the NOGC Railway in a given day of operation. Heavier traffic volumes crossing this subdivision are less likely to encounter a train as this rail line has less frequently scheduled service than the Westwego Subdivision. The presence of a higher volume of traffic required that all at-grade crossings along LA 23 south of Gretna Boulevard employ a full suite of train crossing warning systems including overhead signals, cross bucks with warning flashers and bells, but no crossing gates. In addition, the traffic signals at these locations interconnect with the train crossing signals, allowing for unimpeded traffic to flow through the movements of the intersection not blocked by passing trains.

No-Build Alternative – As part of the No-build Alternative, the NOGC Railway would remain in its current location. The issues identified previously with blocked street crossings throughout the Study Area when trains pass or assemble would remain. There would be no apparent improvement in overall public health and safety as emergency response conditions in the portions of Gretna crossed by the rail would not improve. Vehicle and pedestrian interactions would remain as described, with the potential remaining for accidents as trains cross through the City. Generally, the conditions described above would remain.







Build Alternative – The Preferred Alternative would reduce rail service in the Westwego Subdivision to those customers located west of Dolhonde Street. Continued rail service to the Perry Street Wharf is uncertain. Service along a portion of the Belle Chasse Subdivision would relocate to the Preferred Alternative corridor, removing the potential for rail to cross the various east-west streets with grade crossings in Gretna and along LA 23 extending to Walker Road. Within these limits, it is estimated that 97 public and private at-grade crossing would be eliminated. This reduction in at-grade crossings would create improved access to the area for emergency vehicles and potentially eliminate the need for emergency vehicle detours during periods of rail operations.

With the Build Alternative, trains would operate in a corridor with very few public at-grade crossings. Only six new public highway-rail at-grade intersections would be required over the 9.3-mile length of the rail relocation. These six intersections would be located where the Preferred Alternative crosses 4th Street, Peters Road (2-lane northbound), Gold Street, Peters Road (4-lane section), relocated Peters Road (near Hassel's RV and Trailer Park), and at LA 23 (between River Oaks Drive and Cedar Drive). The lack of public crossings means less impedance to access and traffic flow for emergency vehicles as a result of train operations. Each of these new public at-grade crossings would feature several safety warning signs and traffic control devices to aid drivers in navigating these crossings safely, which include overhead signals, cross bucks with warning flashers and bells, and crossing gates. These signs and traffic control devices would improve at-grade crossing and train visibility to motorists and pedestrians, which could

reduce the potential for vehicle/train or pedestrian/train incidents. See **Appendix B**, Sheets D-1 through D-5.

While specific designs will be defined in later project development phases, the Federal Highway Administration standards³⁵ for highway-rail at-grade crossings include several recommended safety features. All highway-rail at-grade crossings and low-volume road-rail crossings would include the Grade Crossing sign (Crossbuck) at the intersection and would include the Grade Crossing Advance Warning sign. Several other advance warning signs can be used to alert drivers of conditions (see **Table 3-25**). In addition to these signs, various on-street markings are recommended. These markings include stop lines, dynamic envelope pavement markings, and railroad pavement marking symbols. **Figure 3-16** provides an example layout of safety devices for a highway-rail grade crossing.

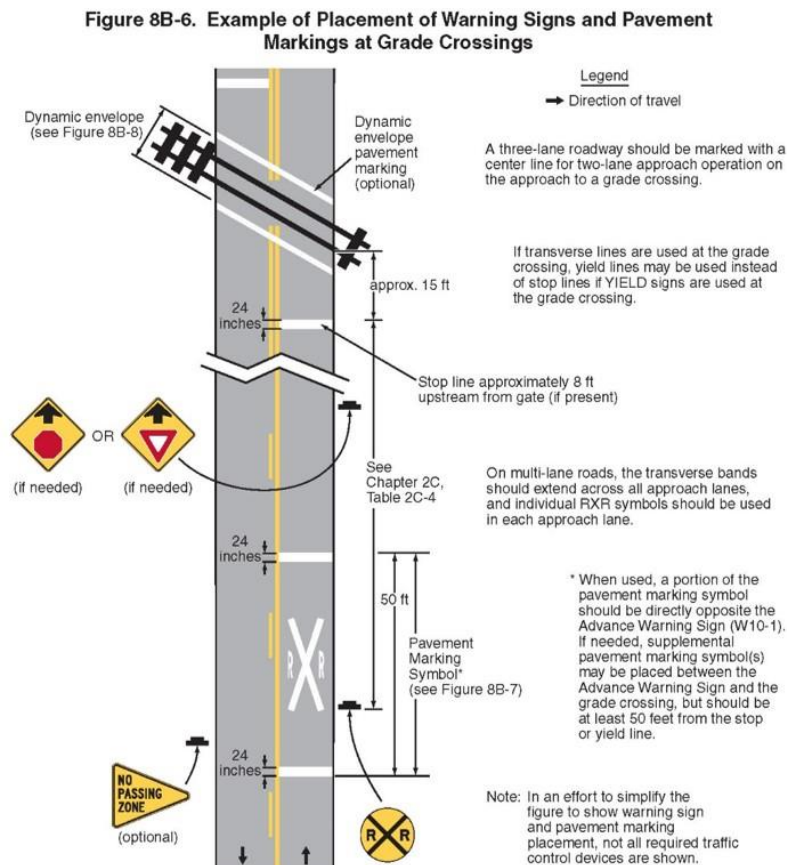
Table 3-25. Road-Rail Crossing Signage

Recommended Signs	 Grade Crossing sign (Crossbuck)	 Grade Crossing Advance Warning sign		
Optional Traffic Control/Advance Warning Signs	 Diagonal Crossing (W10-12)	 Parallel Crossing (W10-3)	 Stop Sign (if needed)	 Yield Sign (if needed)

Source: *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways*. FHWA. 2009 Edition. Updated in 2012.

³⁵ *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways*. FHWA. 2009 Edition. Updated in 2012.

Figure 3-16. Road-Rail Crossing Signage and On-street Markings Example



Source: *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways*. FHWA. 2009 Edition. Updated in 2012. Page 765.

3.19 Contaminated Sites

A Phase I Environmental Site Assessment (PI-ESA) was conducted for the Relocation Corridor utilizing selected procedures outlined in American Society of Testing and Materials (ASTM) Standard E 1527-13 to provide All Appropriate Inquiry (AAI) into the Relocation Corridor and the scope of work tasks set out by the RPC. The objective of the PI-ESA is to identify whether any recognized environmental conditions (REC), as defined in ASTM Standard E 1527-13, are observed or suspected on or adjacent to the Relocation Corridor. A “recognized environmental condition” is defined as 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. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include “de minimus” conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The scope of work for this PI-ESA consisted of records review, site reconnaissance, and report.³⁶ The PI-ESA included the following tasks: 1) Gather and review data for the Relocation Corridor from regulatory databases and records; 2) Review historic information sources for the Relocation Corridor; 3) Perform a field reconnaissance of the Relocation Corridor; and 4) Prepare a report with findings, opinions, and conclusions regarding impacts on the Relocation Corridor and how hazardous materials sites identified may impact the corridor alternatives.

The standard environmental databases and records review consisted of a search for regulated facilities within the ASTM defined search distances from the Relocation Corridor. The search indicated the presence of 404 regulated facility sites within the Relocation Corridor. Sites which could potentially impact the future location of the railway were reviewed on the Louisiana Department of Environmental Quality (LDEQ) Electronic Data Management System (EDMS). Out of the sites reviewed, a total of 10 sites were evaluated as potential RECs with regards to the future location of the railway.

The well data indicated that there were three oil and gas wells within approximately 100 feet or less of the Preferred Alternative. It is possible that these wells will be encountered during the development and construction of the Preferred Alternative; therefore, the oil and gas wells nearest to the Preferred Alternative are considered potential RECs.

A review of the historic topographic maps and aerial photographs indicated that the historic uses of properties within the Relocation Corridor and surrounding areas vary, including: undeveloped vacant land, developed areas for industrial/commercial facilities, developed areas for residential neighborhoods, canals, and major roads/highways.

The site reconnaissance visit was conducted on February 12, 2016 and indicated the following potential RECs within the Relocation Corridor: aboveground storage tanks and fuel dispensers, industrial facilities (potential to use/treat/store/generate hazardous substances and/or petroleum products), drums and containers, and solid waste (landfill, junk automobiles, tires, and illegal dumping).

For the sake of this investigation, any RECs identified within the Relocation Corridor were also evaluated based on their potential impact to the future location of the railway, i.e. the Preferred Alternative. Based on the findings of this report, the following RECs were identified and are shown on **Figure 3-17**:

- Former Greif/Evans Cooperage – 1255 Peters Road, Harvey LA

This adjoining site is likely to moderately impact the Preferred Alternative. This location has been in operation as an industrial facility since 1948 but has been closed and inactive since 2009. Portions of this location are currently in use as a storage yard. This facility primarily operated as a drum reconditioning plant that handled acid, poison, paint, flammables, and caustic materials on site. This facility underwent extensive

³⁶ Phase I Environmental Site Assessment report available at www.norpc.org/railroad.html or from RPC upon request.

remediation efforts in 2012 for contamination on site. A No Further Action determination for the contamination on site is currently pending LDEQ approval, and a conveyance notice will likely be filed. There will likely be environmental costs associated with any soil disposal from this location, given the extensive historic contamination on site.

- Nabors East Property – 3645 Peters Road, Harvey LA

This site is likely to minimally impact the Preferred Alternative. This location is currently unoccupied, but formerly operated as a sandblasting/painting facility and equipment laydown yard. This facility underwent remediation efforts for soil and groundwater contamination on site. A conveyance notice was filed for the area of interest on site as part of LDEQ's requirements for a No Further Action determination. Soil within the area of interest will need to be managed in accordance with LDEQ restrictions or remediated. There will likely be environmental costs associated with any soil disposal from this location due to the conveyance notice filed for this location.

- Goldin Industries – 4400 Peters Road, Harvey LA (Former Amsted-Plexco Lay-down Yard)

This site is likely to significantly impact the Preferred Alternative. Asbestos contaminated soil is likely present throughout the site, and it is unknown whether portions of the site were formerly a Jefferson Parish sanitary landfill. Given the promiscuous dumping observed along the perimeter of the property, solid waste is likely present on site. Records indicate that this site was also used as a lay-down yard for oil well pipe; however, it is unknown whether the pipe was newly manufactured or used pipe for recycling. The use of a property as a laydown yard for drilling stem could cause the soil to be impacted with Naturally Occurring Radioactive Materials (NORM), petroleum, or heavy metals. There will likely be environmental costs associated with any soil disposal from this location, and any asbestos contaminated soil encountered will require special handling and disposal procedures.

- Promiscuous Dumping along Bayou Road, Harvey LA

This site is likely to minimally impact the Preferred Alternative. Promiscuous dumping was observed along Bayou Road during the site reconnaissance. Materials included construction and demolition waste, junk automobiles, and tires. The area is heavily wooded; therefore, it is unknown if there are any releases of petroleum or hazardous substances. Depending on the materials encountered, there will likely be environmental costs associated with any soil and solid waste disposal from this location due to the promiscuous dumping observed in this location.

- Oil/Gas Wells – Various Locations, Harvey LA

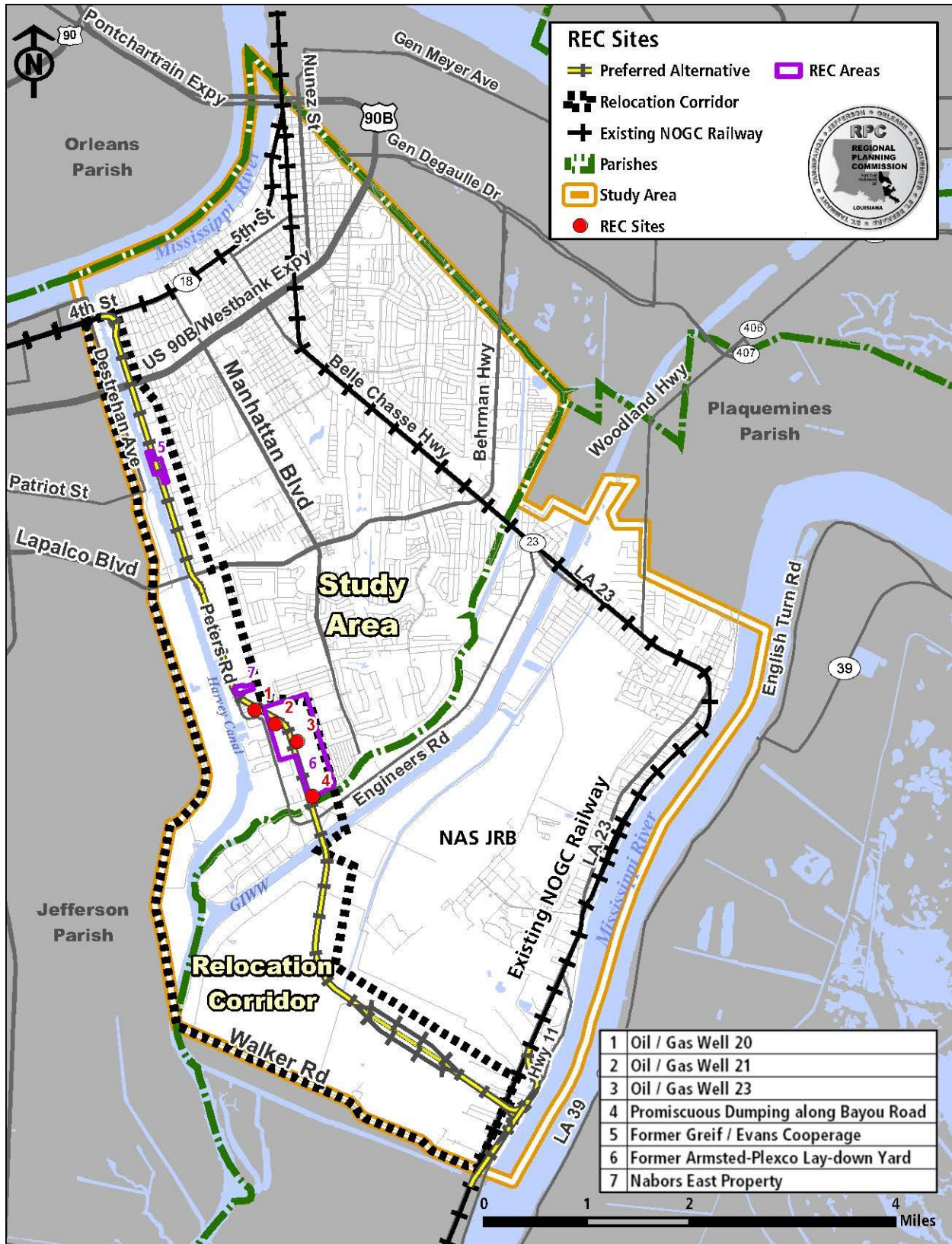
These wells are likely to moderately impact the Preferred Alternative if they are encountered during development of the railway. These wells are registered as plugged and abandoned with the Louisiana Department of Natural Resources. There will likely be

environmental costs associated with any soil disposal from these locations if a well or reserve pit (used to temporarily store drilling fluids or dispose of wastes) is encountered.

No-Build Alternative – The No-Build Alternative represents the continued existence of the current RECs within the Relocation Corridor. The No-Build Alternative does nothing to improve existing environmental conditions. Under the No-Build Alternative, the existing RECs identified in the PI-ESA would likely continue to have a negative effect on the Relocation Corridor and the potential for future development.

Build Alternative – The impacts of the Preferred Alternative would be positive as RECs would be addressed and remediated by the track improvements. A Phase II Investigation is recommended to satisfy continuing obligations associated with the RECs identified in the PI-ESA. The majority of the RECs identified (Former Greif/Evans Cooperage, Nabors East Property, Promiscuous Dumping along Bayou Road) do not require a Phase II, but will have costs associated with disposal of contaminated soil and solid waste. The Former Amsted-Plexco Lay-down Yard and Oil/Gas Wells RECs require a Phase II Investigation based on the likely presence of asbestos contaminated soil, NORM, petroleum, heavy metals, and reserve pit contaminants. The Phase II investigation would be required prior to ROW acquisition. By remediating the RECs, the Build Alternative would have a positive effect on the Relocation Corridor and the potential for future development. The significant impacts of the Build Alternative would be to mitigate RECs and bring previously contaminated areas back into commerce.

Figure 3-17. Location of REC Sites



3.20 Cultural Resources

A Phase I survey of the Preferred Alternative was performed in an effort to satisfy 36 CFR §800.4 (Section 106 of the National Historic Preservation Act of 1966 as Amended 2000) requirements to identify historic properties that may be impacted by the Preferred Alternative. The survey followed the guidelines established by the Louisiana Division of Archaeology. Prior to the initiation of fieldwork, comprehensive background research was completed. This research revealed that portions of the Preferred Alternative had been surveyed during previous investigations. New investigations were concentrated on those portions of the Preferred Alternative that had not been surveyed previously; no resurvey was performed. Approximately 4.69 miles, or 65.78 acres, of the Preferred Alternative required Phase I survey. For the purposes of the archaeological survey, the direct Area of Potential Effect (APE) was the same as the proposed right-of-way (ROW) of the Preferred Alternative. For the purposes of the architectural survey, an indirect APE was established. This indirect APE consisted of a 250-foot radius buffer of the direct APE. This is a standard indirect APE that is sufficient to address issues of proximity impacts and property view sheds.

3.20.1 Archaeological Survey Methods

Archaeological investigations consisted of pedestrian transects with shovel tests at standardized intervals. In areas that were considered high probability for archaeological sites, transects and shovel tests were spaced at 30 m (98.4 ft) intervals. In areas of low probability for sites, the intervals between transects and shovel tests was increased to 50 m (164.0 ft). In areas that contained numerous buried utilities, partially inundated areas, and areas of dense commercial and residential properties, investigations consisted of an intensive pedestrian survey with judgmental shovel testing. All shovel tests minimally measured 30 cm (11.8 in) in diameter and 50 cm (19.7 in) in depth. All excavated soils were screened through 0.25 in (0.64 cm) mesh hardware cloth. The soil characteristics and stratigraphic associations of all shovel tests were recorded. All tests were backfilled upon completion. Excavated soils were characterized utilizing the Munsell soil color system.

Site delineation was undertaken at one previously recorded site. A site datum was established and additional shovel tests were excavated at 10 m (32.8 ft) gridded intervals. Site boundaries were defined by the excavation of two consecutive negative shovel tests along each line. Photographs were taken utilizing a high-resolution digital camera. A georeferenced site map was drafted. The site maps included the locations of all shovel tests, the extent of surface scatter, site limits, and any topographic features or landmarks visible. GPS data were collected with a Trimble GeoExplorer XT Series hand-held unit. A Louisiana Site Update Form was completed for the site, and the locations of the site was marked on the appropriate USGS 7.5' quadrangle. The site was evaluated utilizing National Register of Historic Places (NRHP) criteria (36 CFR 60.4 [a-d]).

3.20.2 Architectural Survey Methods

As noted above, the indirect APE for fieldwork consisted of 76 m (250 ft) buffer on either side of the defined direct APE. This indirect APE provides sufficient distance to address direct impacts from construction and indirect impacts, such as adverse effects to the view sheds of historic properties. For the survey, GIS technicians produced field maps of the area showing the direct and indirect APEs. These maps, along with the USGS 1951 and 1966 Betrandville and New Orleans, Louisiana 7.5' quads were used to facilitate fieldwork. An architectural historian and assistant surveyed the entire direct and indirect APE by car, and on foot when necessary, and evaluated all structures to determine if they were of the appropriate age for recordation. Then, these structures were recorded with Louisiana Historic Resource Inventory forms and evaluated using NRHP criteria to determine potential eligibility for nomination to the NRHP (36 CFR 60.4 [a-d]).

An estimated construction date of 1969 or earlier was utilized during the evaluation of the standing structures. This adjustment provides an additional three years so that buildings that are approaching 50 years of age, and those that will be 50 years of age at the likely time of construction, are identified, and assessed. This limits the amount of additional survey work that could be required if the Project's schedule is delayed. Thus, all structures considered to be at least 47 years of age were recorded and evaluated using NRHP criteria (36 CFR 60.4 [a-d]). Each structure was photo documented in the field using a Nikon D3000 SLR digital camera and a GPS point was taken using a Garmin with an accuracy of +/-8 m. All construction dates were estimated based on architectural styles, methods of construction, materials, and historic quad maps. All standing structures of sufficient age were recorded in the direct APE and the indirect APE.

3.20.3 Archaeological Survey Results

No new archaeological sites were recorded as a result of the survey. One previously recorded site, 16PL249, was revisited and delineated in terms of the proposed ROW of the Preferred Alternative. The site was recorded originally in 2012 during a survey by R. Christopher Goodwin & Associates, Inc. (Hale et al. 2012:93); however, the 2012 investigation recommended that the site was not eligible for listing in the NRHP. The current investigation did not resurvey the 2012 site area and was concentrated on delineating the portion of the site that is crossed by the proposed ROW of the Preferred Alternative. All delineation shovel tests were negative. There is no evidence of intact archaeological deposits within the proposed ROW.

Twenty large live oak trees were noted at 16PL249; eight of the oak trees are within the APE. Based on their size these oaks likely date to a colonial or antebellum plantation. Additional research found that by 1913 the property, including the oak trees, was part of Hero Park, an important early-twentieth-century recreational venue.

There are buildings on the property, but most of these lie outside of the proposed ROW of the Preferred Alternative. The proposed ROW does cross the rear portion of one building. The structures are part of the River Oaks Academy, established by Judge Leander Perez in 1966.

Based on the combined results of the archaeological survey and the architectural survey (see below), it was recommended that the boundaries of site 16PL249 be expanded to encompass the River Oaks campus and in the process subsume Hero Park. It is important to note that although the site size has increased, the presence or absence of archaeological deposits outside of the areas that have been shovel tested cannot be determined and have not been evaluated. It is clear that those portions of 16PL249 that have been shovel tested contain no intact archaeological deposits, such as midden or features. Therefore, the section of 16PL249 that was tested within the proposed ROW of the Preferred Alternative exhibits no research potential and can provide no additional data to address questions related to the history of the property as a plantation, a park, or a school campus.

3.20.4 Architectural Survey Results

During the survey, a total of 23 structures that are at least 47 years of age were evaluated and recorded. There was only one structure recorded in the direct APE, the former River Oaks Academy at 10911 LA 23. The remaining buildings are in the indirect APE. The 23 structures documented during fieldwork consist of nine residential use buildings, 13 commercial use buildings, and one former school (River Oaks Academy). The area is heavily industrial and the commercial buildings are scattered along LA 23 while the residential structures are grouped in a small subdivision in the northern portion of the Study Area. The residential structures consist of seven bungalows and two minimal traditional cottages. The commercial buildings are mostly large metal industrial buildings with smaller offices attached. The architectural pattern reflects the commercial and industrial use of the portion of the Study Area closest to Harvey Canal and LA 23. This area is lined with commercial buildings offering services such as diesel and gas services, mechanical supply for shipping, tug boat repair, and body shops. The former River Oaks Academy property exhibits qualities indicating it is eligible for listing in the NRHP under criteria A and B (36 CFR 60.4). The 20 live oak trees that were recorded at site 16PL249 are also contributing elements to the River Oaks Academy property. The remaining buildings are typical of their period and region and are not recommended eligible for listing in the NRHP.

3.20.5 Conclusions and Recommendations

No-Build Alternative – If the rail corridor is not relocated, there will be no effect on cultural resources in the Study Area.

Build Alternative – Based on the results of the archaeological survey, the Project would have no effect on buried historic resources in the tested portion of the Preferred Alternative. Site 16PL249, which is crossed by the Preferred Alternative, exhibits no intact deposits within the surveyed ROW. It is unknown if archaeological deposits associated with the site are extant outside of the tested ROW. This includes the possibility that there are deposits preserved beneath the school buildings and various concrete slabs and foundations at the site. The SHPO recommends archaeological monitoring during any ground disturbing activities at the remainder of the site, including the demolition of all or part of the former River Oaks Academy building that is crossed by the Preferred Alternative (see SHPO letter dated May 24, 2017 in **Appendix F**).

It was determined that the River Oaks Academy property exhibits associative significance under NRHP criteria A and B (36 CFR 60.4). Criterion A is applicable due to the academy's association with the Civil Rights Act of 1964 and the local impact of Federal mandated desegregation in Plaquemines Parish, Louisiana. Criterion B is applicable due to the property's association with Judge Leander Perez, Sr. Leander Perez, Sr. was an 'ultra-segregationist' and Plaquemines Parish's political boss for almost four decades until his death in 1969. Although corrupt, Judge Leander Perez, Sr. was an incredibly important political figure in not only Plaquemines Parish history but also in local, state, and, quite probably, US history. His refusal to acknowledge the Federal decision to desegregate was reported nationally, and he was among the South's leading segregationists. River Oaks Academy and five other schools constructed in 1966 were a deliberate attempt by Perez, Sr., to circumvent *Brown v. Board of Education* (1954) and subsequent rulings by the US Court of Appeals Fifth District (1966-1969), bringing the local and state politics of Plaquemines Parish and Louisiana into the national arena. The buildings that were part of River Oaks Academy are the only ones extant at any of the segregation schools established by Perez.

Also, there are 20 large live oak trees remaining on what was the academy campus (8 within the APE). The oaks are also part of the former Hero Park site, on which the academy was constructed. The Hero Park portion of the property is significant to the local history as an early-twentieth-century park (is considered NRHP criteria A) (36 CFR 60.4). The property is no longer used as a park, but the trees contribute to the historic landscape.

Demolition of one of the former River Oaks Academy buildings and the removal of five large oak trees located within the proposed ROW of the Preferred Alternative would have an adverse effect on the historic property. SHPO concurred with this determination on July 12, 2017 (see **Appendix F**). Appropriate mitigation measures and a guiding Memorandum of Agreement (**Appendix G**) were developed through consultation among the FRA, SHPO, and the impacted property owner. Mitigation measures include documenting the historic property in accordance with Historic American Building Survey (HABS) standards and installation of a historical marker.

3.21 Recreational Resources

Section 4(f) of the Department of Transportation Act of 1966 (39 U.S.C. 303(c), Section 4(f)), declares that it is the policy of the United States Government that special effort be made to preserve the natural beauty of the countryside and public park and recreational lands, wildlife and waterfowl refuges. Several existing parks, playgrounds, and recreational facilities are located in the Study Area, but there are none located within the Relocation Corridor (Table 3-26 and Figure 3-18).

Table 3-26. Parks and Recreational Resources

Parks and Recreational Resources	Located in Study Area	Located in Relocation Corridor
Bellevue Park*	Yes	No
Blackie Buras Park	Yes	No
Gretna Park	Yes	No
Harvey Park	Yes	No
Huey P Long Park	Yes	No
Martin Luther King Junior Park	Yes	No
Medal of Honor Park	Yes	No
Mel Ott Park	Yes	No
McDonoghville/Knights Corner Park	Yes	No
Oakdale Park*	Yes	No
Plaquemines Off Road Park	Yes	Yes
Richard Street Park*	Yes	No
JB Spencer Park	Yes	No
Terrytown Playground*	Yes	No
Woodlawn West Park*	Yes	No

Parks marked with an asterisk (*) locations where LWCF funding has been used, according to the US Department of Interior National Park Service Land and Water Conservation Fund (LWCF) Listings by County, 3/13/2017, <http://waso-lwcf.nrcs.nps.gov/public/index.cfm>.
 Source: Jefferson Parish GIS, Plaquemines Parish Comprehensive Plan and USGS GNIS Database, 2016.

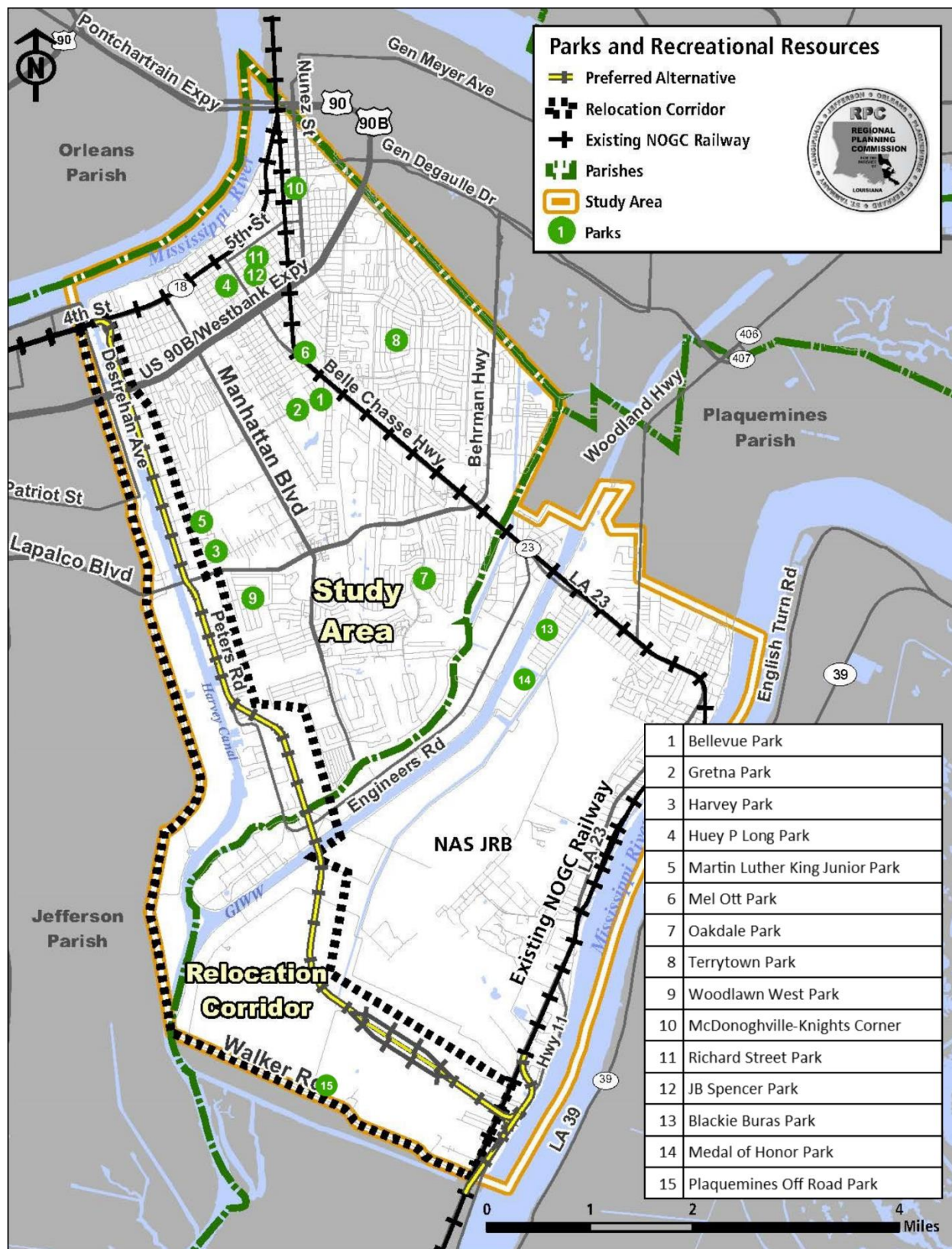
Section 6(f) of the Land and Water Conservation Act (CFR Title 36, Chapter 1, Part 59) addresses recreational resources that are acquired or developed with Land and Water Conservation Funds (LWCF), such as parks, recreation areas, swimming pools, and public restrooms. Although several parks in the Study Area include facilities improved with LWCF funds, there are no 6(f) properties located within the Relocation Corridor.

No-Build Alternative – The No-Build Alternative would maintain service in the current corridor. Impacts would remain on those facilities adjacent to the corridor. This includes the park and recreation facilities located adjacent to the railroad line imbedded in Madison Street at the McDonoghville/Knights Corner Park (700 Monroe St) and adjacent to the rail line parallel to LA 23 at Mel Ott Park (2301 Belle Chasse Highway) in the City of Gretna.

Build Alternative – If the Preferred Alternative is constructed, the new NOGC alignment would not physically impact any known parks, recreational facilities, or wildlife sanctuary. Additionally, no existing parks or recreational facilities would have any visual impacts from the Preferred Alternative. Martin Luther King Junior Park and Harvey Park are the closest parks in the Study Area to the preferred alignment, but are still respectively 1,200 and 1,500 feet away. The only park located within the Relocation Corridor is the Plaquemines Off Road Park, but it is located approximately three-quarters of a mile from the Project and would not be impacted.

Parks and recreational activities would benefit from the Preferred Alternative through the removal of many of the existing at-grade crossings within Harvey, Gretna, unincorporated Jefferson Parish and Plaquemines Parish. In general, the Preferred Alternative would improve access to the parks and recreational facilities currently available in the Study Area. In particular, a portion of the proposed remnant parcel right-of-way at the northern edge of the Project is proposed to be developed as a neighborhood park/green space. This proposed recreational feature would be located south of 4th Street in the block bounded by Peters Road, Gold Street, and St. Joseph Lane. The neighborhood park would represent a context sensitive solution intended to minimize impacts to the adjacent neighborhood while providing benefits to its residents. RGPC commits to constructing the neighborhood park while Jefferson Parish would be responsible for maintaining the park (e.g., mowing and pruning).

Figure 3-18. Location of Parks and Recreational Resources



3.22 Energy Resources

This section discusses potential effects of the alternatives on energy resources, specifically fuel consumption for both trains and vehicles.

The current NOGC route on the Westwego Subdivision up to Algiers and then back down the Belle Chasse Subdivision along the Belle Chasse Highway is approximately 16 miles. Traffic delays and slowdowns in downtown Gretna, at numerous at-grade public road crossings, and during switching operations at Gouldsboro Yard, contribute to high fuel consumption for both the railway and motor vehicles.

No-Build Alternative – The current route is 6 miles longer than the Preferred Alternative and has significantly more public at-grade road crossings, which results in higher vehicle delays and fuel consumption than the Preferred Alternative. Under the No-Build Alternative, the NOGC would remain in its current location and no improvements to energy consumption would occur.

Build Alternative – The Preferred Alternative shortens the NOGC route by approximately 6 miles, which results in fuel savings from mileage and idling reductions. The Preferred Alternative also significantly reduces the number of public at-grade crossings, which results in fewer vehicle delays and lower fuel consumption due to decreased idling.

3.23 Visual Resources

Visual resources relate to the aesthetics of the Study Area. This section includes how views in the Study Area could change after construction of new railroad and abandonment of the old route.

Residents of Gretna, Terrytown, Harvey, and Belle Chasse who live or work near LA 18/4th Street, in downtown Gretna, and near LA 23/Belle Chasse Highway regularly view railroad tracks and passing trains within the existing NOGC Railway (refer to **Figure 1-2**, Study Area Overview Map).

In the northern portion of the Relocation Corridor, north of the GIWW, the Peters Road corridor is primarily an industrial area. Residences located in the first few blocks south of 4th Street near St. Joseph Lane view the backs of businesses located along LA 18/4th Street and Peters Road and passing trains along the existing NOGC railway along LA 18/4th Street (refer to plan view shown on Sheet A-1 in **Appendix B**). Some of the out-of-service track from the Hooper Spur can currently be seen along Peters Road as shown in **Figure 3-19**. The existing view along Peters Road includes restaurant/bars, warehouses, gas stations, automobile and truck repair supplies and shops, vacant sites, floodwalls, bridges, shipyards, waste management facilities, cranes and other heavy machinery along the Harvey Canal, utility infrastructure, and few trees. The industrial nature of the Peters Road corridor is not expected to change either with or without the Project.

Figure 3-19. View of Hooper Spur Track on Peters Road (view facing south)



In the central section of the Relocation Corridor, a residential area is located on Peters Road at the Hassel's RV and Trailer Park adjacent to the FMT Shipyard (refer to plan view shown on Sheet A-6 in **Appendix B**).

In the southern portion of the Relocation Corridor, south of the GIWW near the NAS JRB property, the area is mostly undeveloped but is expected to become developed in the future with the construction of the Peters Road Extension project. As these vacant, vegetated areas are developed, the landscape will likely include more urban features such as driveways, buildings, signs, and billboards. The density and type of development will depend on Plaquemines Parish zoning and permitting decisions.

No-Build Alternative – If the railway is not relocated from the current railway route, views from downtown Gretna and Belle Chasse Highway would continue to include the railroad tracks and passing trains. Opportunities for improving the aesthetics of the streetscape (e.g. planting trees, improving sidewalks, adding bike lanes) along the existing rail corridors would be limited.

The industrial nature of the Peters Road corridor is not expected to change. The Peters Road Extension project will shift Peters Road away from Hassel's RV and Trailer Park and the old Peters Road will become a service road. South of the GIWW near the NAS JRB property, the area is expected to become developed in the future with the construction of the Peters Road Extension project.

Build Alternative – If the railway is relocated, views from downtown Gretna and Belle Chasse Highway would include fewer or no passing trains, depending on location. At some point in the future, railroad tracks could be removed in areas where the train would no longer be operating, and roadways, such as in downtown Gretna, could be made safer and more visually appealing to pedestrians and bicyclists.

With the Preferred Alternative, the views in the Relocation Corridor would include new tracks and passing trains. Since Peters Road is primarily an industrial area, the rebuilt train tracks would not be a significant change to existing aesthetics.

To improve the views for the residential area in the first few blocks south of 4th Street on St. Joseph Lane, the Build Alternative includes a proposed neighborhood park that would be located just south of 4th Street to the east of the proposed curve in the rail alignment. Depending on cost effectiveness to be determined in the design phase, a 10-foot noise wall may be built to separate the neighborhood from the track, which would block views of the passing trains. If the noise wall is not cost effective, the park could still have a decorative wall or landscape screening to dampen the visual and audible effect of passing trains.

3.24 Construction Impacts

3.24.1 Construction Impacts

Construction activities associated with the installation of the new railroad line, at-grade crossings, associated rail bridges and rail yard construction along with the relocation of the Peters Road corridor within the Preferred Alternative would create environmental impacts. These are generally short-term in nature and controlled, minimized or mitigated using established construction methods or staging of improvements in order to maintain site access during construction. Temporary impacts associated with driveway closures at individual businesses along Peters Road may include disruption to property access for employees, customers and deliveries. Other impacts generally include traffic disruption, an increase in noise, vibration and dust, opportunities for erosion and sedimentation into adjacent canals and waterbodies.

All construction activities would occur in a manner consistent with applicable Federal, state and local laws governing safety, health, sanitation, erosion control, and site security. These activities would include measures which are reasonably necessary to protect workers and the general public from harm during the process of project construction. Staging of all materials required for the Project would occur in secure locations which assure easy access to the construction site.

3.24.2 Traffic

Construction activities would accommodate all local and through traffic along Peters Road and Engineers Road, Peters Road Extension, Belle Chasse Highway, and 4th Street as well as to address marine traffic needs on the GIWW and Harvey Canal. Opportunities to utilize and schedule construction during periods without heavy or peak traffic will occur in order to minimize delay for traffic during peak commute periods. Coordination with the US Army Corps of Engineers (as operators of the GIWW locks at Algiers and the Harvey Canal) along with local officials and maritime interests will help establish guides for use in establishing the construction

schedules associated with bridge construction and channel modifications, as well as to provide notification of upcoming activities which might limit traffic operations on these waterways.

Plans to maintain traffic operations during construction would be developed as part of final design plans for the Project. These maintenance of traffic plans will be presented to LADOTD and receive input from appropriate personnel in Jefferson and Plaquemines parishes. It is anticipated that the maintenance of traffic plans would include measures such as temporary road or lane closures, detours and phasing/staging of construction where necessary to minimize potential short-term access inconveniences associated with the Project. Information on local schedule of improvements shared with local officials will go to the media and regional traffic operations personnel. This coordination will allow the general public to have the opportunity receive word of pending closures or detours prior to their installation.

3.24.3 Noise and Vibration

Noise and vibration generated by the process of construction from trucks, pile drivers and other equipment used to build or resurface roadways, demolish adjacent structures, install railway components and crossings remains anticipated. The area is within an established industrial zone. Noise and vibration emanating from this area is not uncommon. However, the introduction of the additional construction noise and vibration possible from the Project may create some impact on the adjacent sensitive receivers, including the various residential homes located east of the Preferred Alternative alignment. The presence of noise will depend of the types of activities occurring in the Relocation Corridor associated with the Project, along with the distance of these noise origin points from the sensitive receptors. The range and duration of noise and vibration depends on the characteristics of the construction equipment, schedule, season, weather and types of activities occurring in the Relocation Corridor. Expected phases of construction include clearing, excavation, demolition, utility relocation, drainage construction, bridge construction and embankment development. Noise and vibration impacts, including pile driving and compaction of embankments during construction would be temporary, with control measures employed to reduce these impacts.

3.24.4 Water Quality

Construction impacts to water quality would be temporary and would be minimized by using Best Management Practices (BMPs), consistent with state and local standards. Water quality degradation as a result of stormwater runoff is expected to be minimal since stormwater management rules are strict and mitigation for this type of impact would be provided. Water quality impacts resulting from erosion and sedimentation would be controlled in accordance with standard construction practices and through the use of BMPs. During project construction, potential short-term increases in sedimentation, water turbidity, and chemical pollutants due to unexpected spills or discharges could occur, but are expected to have insignificant impacts on wetlands and water quality.

3.24.5 Air Quality

Air quality impacts would be short-term and would primarily be in the form of exhaust emissions from trucks and construction equipment as well as from fugitive dust from construction sites. Most of the trucks and other equipment involved in construction activities would be diesel-powered. Construction vehicle emissions would not be significant compared with the emissions from other truck and automobile traffic in the area. Detours and other delays in traffic during construction typically result in local increases in vehicle emissions. These impacts would be minimized by following standard construction practices as well as state and local regulations.

3.24.6 Construction Waste

Removal of wastes from the site of construction will occur on a regular basis. This includes, but is not restricted to, materials and wastes generated during clearing, grubbing, milling and other activities. Disposal of these materials will occur at designated facilities and in a manner approved by state and local regulations. Litter and general trash would be collected and disposed of at landfill locations. Sanitary waste generated at the site removed by approved third party vendors will be disposed of in a manner approved by state and local regulations.

3.24.7 Utility Service

Construction of the Preferred Alternative would require some adjustment, relocation or modification of existing public utilities along Peters Road as well as within the vicinity of at-grade rail and road crossings at 4th Street and at Belle Chasse Highway. Utility coordination for the Project will employ methods including phased relocation or modification to minimize interruptions in utility service. All modifications, relocations or adjustments would remain subject to coordination with the affected utilities.

3.24.8 Borrow Pits and Spoil Sites

Only approved borrow materials would be utilized within the Project. Borrow activities providing fill for the development of the proposed rail embankment will only occur as allowed under permit in conformance with Federal, state or local regulations. Evaluation of sites for borrow activities will incorporate input of Federal and state agencies as necessary. Early coordination and consultation will allow for evaluation of potential borrow sites to determine if they are satisfactory for use. Prior to the start of borrow activities, all required permits for this activity, including evidence of mitigation or control plans for potential adverse environmental impacts.

Any excavated materials deemed to be unnecessary or above what is required for the specific task will be disposed of in a manner consistent with Federal, state and local regulations. There is no allowance for disposal of excavated materials into wetlands and waterways. After the completion of borrow pit operations, water would not be allowed to pond or gather.

3.25 Secondary and Cumulative Impacts

3.25.1 Secondary or Indirect Effects

Secondary or indirect effects are defined by the Council on Environmental Quality Regulations for Implementing the National Environmental Policy Act, 40 CFR Part 1500 as:

“...caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems” (40 CFR Section 1508.8)”

In the case of the Build Alternative, the Preferred Alternative results in the construction of a new rail line within the Relocation Corridor adjacent to the Harvey Canal and Peters Road.

Table 3-27 provides a summary of secondary impacts associated with the Build Alternative for the elements of the human and natural environment. Following the summary table is a general overview of the context associated with the secondary or indirect effects expected with this alternative.

Table 3-27. Summary of Direct and Secondary Impacts – Build Alternative

Evaluation Criteria	Units	Direct Impacts	Secondary Impacts
Human Environment Considerations			
Future (2040) Train Volumes in the Study Area	Description	Up to 13 trains per day in the Relocation Corridor; year 2040 projection	Improved access to regional rail gateway, port and market facilities
Navigation Impacts	Description	New swing span bridge on the GIWW (new crossing location)	Requires commitment to ongoing operations and maintenance of new bridge over the GIWW
Flood Control Project Impacts	Description	Impacts to the Boomtown Floodwall and Mississippi River levee avoided because the relocated rail ROW >15 feet from the floodwall/levees	Maintains flood control benefits enjoyed by the Study Area
Public Health and Safety	Description	Number of new highway-rail public at-grade crossings reduced significantly (6 total); traffic control devices proposed to improve visibility and safety at new crossings	Potential reduction in vehicle, pedestrian and rail crashes/incidents associated with rail operations
Highway-Rail Public At-grade Crossings	Number	6 new; 2 relocated	Spot congestion possible in corridor when trains pass through at-grade crossings
At-grade Private Crossings	Number	90	Diminished access to private property as a result of passing trains. Time of access limitation would depend on train length and speed.
Total At-grade Crossings	Number	98 along Preferred Alt alignment; 97 eliminated along existing alignment	Introduction of rail-created delay or impedance to business access along the eastbank of the Harvey Canal from Peters Road

Evaluation Criteria	Units	Direct Impacts	Secondary Impacts
Parking and Access	Description	Undesignated parking within the Hooper Spur ROW would no longer be available	Potential inconvenience to businesses due to reduction of available undesignated parking within the rail ROW
Residential Relocations	Number	2	None anticipated
Business/Industrial Relocations	Number	10	Reduction of employment and potential work sites in area
Socioeconomic Conditions	Description	Introduction of rail service increases access, leading to economic development and growth	Improved access, growth in employment and need for public services
Air Quality Impacts	Description	Reduced traffic delay and idling would decrease criteria pollutant motor vehicle related emissions	Improvement in overall emissions associated with traffic operations in the Study Area and Relocation Corridor
Noise Impacts (without noise walls)	Description	Noise impacts on north, center, and southern segments of alignment	The addition of rail noise in area already receiving noise from industrial, maritime and military operations in the area
	Number of Residential Units Impacted	107 (Moderate Noise Impacts) 0 (Severe Noise Impacts)	
Vibration Impacts	Yes/No	No Impacts	None anticipated
Land Use and Zoning	Description	Consistent with existing land use and zoning along Peters Road, Consistent with future land use in Plaquemines	Consistent with vision for future land use identified by local government
Environmental Justice	Yes/No	No Impacts	None anticipated
Recreational Resources: 4(f) and 6(f) Properties	Number	One 4(f) property requiring mitigation; No 6(f) properties	None anticipated
Community Facilities	Description	Fewer community facilities are located along the more industrial Relocation Corridor	None anticipated
Cultural Resources	Description	Adverse effect on the former Hero Park/River Oaks Academy site	None anticipated
Visual Resources	Description	Rail relocation would not significantly change the aesthetics of the industrial Relocation Corridor	None anticipated
Natural Environment Considerations			
Floodplains	Description	Project includes filling, grading, new bridges and culverts, and other activities within the floodplain. Impacts would be minimized and mitigated during the permitting, design and construction phase.	None anticipated

Evaluation Criteria	Units	Direct Impacts	Secondary Impacts
Wetlands and Waters of the US within the Coastal Zone	Acres	53.2 acres	Loss of potential habitat to support species development
Prime Farmland	Yes/No	No Impacts	None anticipated
Threatened and Endangered Species	Description	No Adverse Impacts anticipated	Loss of potential habitat to support species in area
Energy Resources	Description	Lower NOGC freight rail fuel consumption due to 6-mile shorter route; lower motor vehicle fuel consumption due to reduced idling at fewer at-grade public road crossings	None anticipated
Water Quality	Description	No Impacts	None anticipated – addressed as part of the project permits, mitigation and commitments.
Water Bodies and Waterways	Description	Includes bridge crossings to avoid impacts to waterways	None anticipated – new bridges over existing waterways not expected to impede water flow
Contaminated Sites	Description	Recognized environmental conditions (primarily contaminated soil) would be addressed and remediated	None anticipated Remediation employed as applicable during corridor development activities

Historically, the area containing the Relocation Corridor has been a heavy industrial zone for both Jefferson Parish and a portion of Plaquemines Parish. Institution of rail service in this area returns service which remained active in the area during its period of initial development during the mid 20th Century as part of the post-World War II industrial boom. In 2005 following Hurricane Katrina, rail service along the UPRR Hooper Spur ceased. Constructing a new rail will improve service efficiency for the NOGC Railway as well as minimize opportunities for conflict created by rail traffic in the Belle Chasse Subdivision within the City of Gretna and along Belle Chasse Highway.

The secondary or indirect effect of the Build Alternative in Jefferson Parish includes the re-introduction of direct rail service within the industrial area along Peters Road as part of the Build Alternative. Effects of this decision to offer rail services with the Preferred Alternative could include an increase in property acquisition along the Peters Road corridor to support the growth in industrial activities allowed in the area within Jefferson Parish’s current land use plan and zoning ordinance. The effect of increased land occupancy and industrial development in the corridor would be a change in the density of employment in the area, along with an associated increase or change in vehicle traffic associated with the movement of employees, goods and services. Introduction of the railroad may mitigate any of the future increase in truck-based freight movement associated with increased land occupancy and industrial

development by providing an efficient alternative for the movement of raw materials and finished products between industrial and business sites along the Harvey Canal and customers in the region or nationally (via continued rail transport or by barge or ship from the Port of New Orleans).

An increase in employment and business activities on the Harvey Canal is likely to be incremental in nature, driven by demands associated with the private market. However, this activity may be facilitated through ongoing regional economic development initiatives, as well as the general improvement or change in economic fortunes occurring in Southeast Louisiana.

An indirect effect of increased employment along the Harvey Canal and Peters Road would be an increased demand for municipal services and facilities which cater to the general community. In addition, some change in residential population may occur as workers in the area choose to settle in adjacent neighborhoods to remain close to their jobs. Again, this would be an incremental change which would be largely determined by market or individual decisions.

An indirect effect of the introduction of rail service might be a higher frequency of blocked driveways for industrial sites along the west side of Peters Road during periods when trains travel along the corridor. The majority of businesses along the western edge of Peters Road between 4th Street (LA 18) and Murphy Canal remain engaged in maritime or marine fabrications/coatings businesses, which are typically shift-based with defined periods for employee arrival and departure. Although these sites do not typically generate an ongoing stream of traffic movements related to employee arrival and departure, random movements to facilitate product and material deliveries do occur. Interruptions in deliveries might require businesses in this area to adopt a standard delivery schedule in consultation with the NOGC in order to minimize access interruptions.

The secondary or indirect effects of the Build Alternative in Plaquemines Parish would likewise include a change in land use to include a higher number of acres developed to support business and industrial uses. The impact of the adjacent NAS/JRB operation would be to maintain a character of development which decreases opportunities for high-rise or residential development in the areas west of the rail corridor and adjacent to the base. Given the vast number of acres and their location in reference to the region, the rate of land absorption could be much lower than along the Harvey Canal, but could get a jumpstart as a result of regional efforts to market the lower portions of the Mississippi River corridor for a variety of regional industrial and port development activities.

The indirect effect of increased employment along the Peters Road corridor in Plaquemines Parish would be an increase demand for municipal services and facilities which cater to the general community. In addition, some change in residential population may occur as workers in the area choose to settle in the Belle Chasse area to remain close to their jobs. Again, this would be an incremental change which would be largely determined by market or individual decisions.

3.25.2 Cumulative Impacts

The definition of cumulative impacts defined by the Council on Environmental Quality 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 minor by collectively significant actions taking place over a long period of time” (40 CFR Section 1508.7).

Cumulative impacts associated with the Project come as a result of the combination of direct and indirect/induced effects resulting from the Project as well as the combined effect from other projects (past, present and future) occurring (but not related) to the Project. The development of this analysis followed an eight-step evaluation process intended to provide a logical method for evaluating cumulative effects of the Project. The evaluation looks at the health of the resource, defined in terms of its health, which refers to the general overall condition, stability or vitality of the resource, given the information obtained at the time of study as documented in this EA.

The eight steps used in the evaluation process include:

Step 1: Identify Resources to Consider

The first step in the cumulative effects analysis is to identify which resources to consider in the analysis. If a project will not cause direct or indirect impacts on a resource, it will not contribute to a cumulative impact on that resource. The cumulative impact analysis should focus only on those resources most impacted by the project or resources currently in poor or declining health or at risk even if project impacts are relatively small. Given the results shown in **Table 3-27**, a cumulative effects evaluation was completed for cultural resources, noise/vibration, wetlands, and floodplains for the following reasons:

- Cultural Resources – The consideration of indirect and cumulative impacts is required when applying the criteria of adverse effect on historic properties (36 CFR §800.5(a)(1).
- Noise/Vibration – The potential for moderate noise impacts to 107 residences.
- Wetlands – The potential to impact up to 53.2 acres of wetlands.
- Floodplains – The Preferred Alternative alignment would be constructed and operated within the 100-year floodplain.

Although there are some direct and/or indirect impacts associated with Parking and Access, Residential and Commercial Relocations, and At-Grade Crossings, these topics were not part of the cumulative effects analysis for the following reasons:

- Parking and Access – Impacts to parking and access are not expected to result in significant community disruption or displacement.
- Residential and Commercial Relocations – The number of residential (2) and business/industrial relocations (10) is not expected to result in significant community disruption or displacement.

- At-Grade Crossings – Overall, the Project is expected to have a net positive benefit to public safety and energy resources associated with changes in locations to at-grade crossings.

Step 2: Define Study Area for Each Resource

The review of cumulative impacts considered both geography and time. A defined area for the review appears in the discussion of each resource. The Study Area helps to characterize each resource, and to determine the potential cumulative impact on the health of the resource. The temporal limits used for assessment of past, present and future actions extends from 2010 to 2040 (which corresponds to the start of the rail service).

Step 3: Describe the Current Status/Viability and Historical Context for Each Resource

The historical context and health of each resource appears within the discussion of each individual resource. The information establishes the baseline condition and trends or activities which the resource is experiencing in order to estimate the magnitude of resource effect.

Step 4: Identify the Direct and Indirect Impacts of the Project

This step identifies the direct and indirect effects resulting from the proposed project that might contribute to the cumulative impact, when added to non-project related effects. Direct and indirect impacts (evaluated based upon guidance found in 40 CFR 1508.8) also appear for each resource in **Table 3-27**.

Step 5: Identify Other Reasonably Foreseeable Effects

A review of past, present and reasonably foreseeable future actions appears in **Table 3-28**. This provides a context for the types of development projects that helped to create the current health of the resource, or might play a role in influencing the trends which lead to an effect.

Table 3-28. Summary of Past, Present and Future Actions

Past (2010-2014)	Present (2015-2017)	Future (2017-2040)
<p>Widening of the Huey P. Long Bridge over the Mississippi River (2013)</p> <p>USACE Hurricane and Storm Damage Risk Reduction System, West Bank and Vicinity Projects:</p> <ul style="list-style-type: none"> • Construction of Harvey Canal Floodwall (2012-14) • Construction of the West Closure Complex (2012) • Completion of levee lifts in Belle Chasse along Hero Canal (2013-14) 	<p>USACE Hurricane and Storm Damage Risk Reduction System, West Bank and Vicinity Projects:</p> <ul style="list-style-type: none"> • Levee lift along the GIWW and Mississippi River (2015->) • Levee lift along the GIWW between Belle Chasse and Jefferson Parish (parallel to Engineers Rd) (2016->) <p>Construction of Peters Road Bridge and Road Phase I (State Project H.008244.6, 2016)</p> <p>Acquisition of right-of-way for Peters Road Bridge (State Project H.08068, 2016)</p> <p>Construction of the ramps between Peters Road and Westbank Expressway (State Project H.009933.6, 2016)</p>	<p>Periodic levee lifts along the GIWW, Mississippi River and other canals in area in accordance with USACE schedule (as determined based upon evaluation of protection given the rates of subsidence)</p> <p>Completion of Peters Road Bridge and Road Project (Bridge over GIWW) (State Project H.008244.6)</p> <p>Construction of Harvey Boulevard Extension (Peters Rd to Manhattan Blvd) (State Project H.007208)</p> <p>Widening of Harvey Boulevard (Manhattan Blvd to Wall Blvd) (State Project H.007223)</p> <p>LA 23 Belle Chasse Tunnel and Bridge Project (State Project H.004791)</p> <p>Plaquemines Parish Port, Harbor and Terminal District and American Patriot Holdings, LLC announce agreement (on 5/22/17) to develop container port on the lower Mississippi River</p>

Sources: US Army Corps of Engineers (USACE), New Orleans Division: <http://www.mvn.usace.army.mil/Missions/HSDRRS.aspx>; Section 3.1.4. Flood Control Projects and Figure 3-7; New Orleans Public Belt Railroad: <http://www.nopb.com/>; Louisiana DOTD: <http://www.sp.dotd.la.gov>; New Orleans Regional Planning Commission (MPO): <http://norpc.org>; Plaquemines Port, Harbor and Terminal District <http://www.portofplaquemines.com/announcements/APH-Announcement-2>; August 2017.

Step 6: Identify and Assess Cumulative Impacts

The analysis considered the direct and indirect effects of the Project, together with the past, present and future actions shown in **Table 3-28**.

Step 7: Report the Results

Summarized results appear within the review of individual resource evaluations.

Step 8: Assess the Need for Mitigation

Opportunities for mitigation of adverse effects, where applicable, are discussed for each resource. This would disclose steps or actions that could be undertaken by local, state and Federal agencies and organizations to minimize potential cumulative effect on each resource health and trend.

3.24.2.1. Cultural Resources

Resource Study Area: For the purposes of this analysis, the resource Study Area includes the Relocation Corridor as defined on **Figure 1-2**.

Historic Context and Current Health: As noted previously in Section 3.19, Cultural Resources, a Phase I survey of the Preferred Alternative was performed in an effort to satisfy 36 CFR § 800.5 (a)(1) (Section 106 of the National Historic Preservation Act of 1966 as Amended 2000) requirements to identify and mitigate the effects that the Project may have on potential cultural resources. The survey followed the guidelines established by the Louisiana Division of Archaeology. Comprehensive background research revealed portions of the Preferred Alternative had been surveyed during previous investigations, with new investigations concentrated on those portions of the Preferred Alternative that had not been surveyed previously.

The archaeological survey concluded the Project would have no effect on buried historic resources within the tested ROW and no additional archaeological investigations are recommended within the tested ROW. Archaeological monitoring is required for subsurface disturbance, including building demolition, outside of the tested ROW.

The architectural survey determined that the proposed wye intersection passes through property once home to Hero Park and the River Oaks Academy that exhibits associative significance under NRHP criteria A and B (36 CFR 60.4) (Section 3.19, Cultural Resources). Currently, a millwork business occupies two of the Academy's original buildings.

Generally, the condition of the site is good, given that the pace and depth of residential and commercial development in Belle Chasse has not reached this area. Other than the millwork business, the remaining grounds appear in use as an outdoor storage area complete with piles of lumber and overgrown vegetation.

Direct and Indirect Effects: Construction of the Project will have a direct effect on site, as it would require one existing building and vegetation be cleared, and ground disturbed in order to allow for rail bed construction.

Effects of Other Reasonably Foreseeable Future Actions: The area subject to this review within the wye intersection is adjacent to the Mississippi River levee system. This may require regular access across the property (with the owner's permissions) to allow for completion of levee inspections and maintenance activities. These type of activities would not result in excavation at the site, as fill for levees comes from areas away from the River identified and managed by the USACE for such purposes.

Results: Based on the level of analysis completed, certain aspects of the Preferred Alternative would result in impacts to a resource protected by Section 4(f): the Hero Park/River Oaks Academy site. Completion of additional investigation at the site, as reviewed and confirmed with the SHPO, indicate that

the River Oaks Academy is eligible for nomination to the NRHP under Criterion A and Criterion B while Hero Park is eligible for nomination to the NRHP under Criterion A (36 CFR §60.4). This impact is unavoidable due to the location of the Preferred Alternative and requirement to connect the relocated line to the existing railway which extends north and south along LA 23.

Mitigation: Mitigation is required for the site, subject to the terms agreed to with input from the SHPO (see Memorandum of Agreement in **Appendix G**).

3.24.2.2. Noise and Vibration

Resource Study Area: For the purposes of the analysis, the noise and vibration resource Study Area is the same as that of the Cultural Resources, the Relocation Corridor.

Historic Context and Current Health: As the land areas around the Preferred Alternative develop, this is likely to contribute to a higher ambient noise level in the Project vicinity. These levels would be consistent with that attributed to the types of development found in industrial areas. Exceptions would be found during periods when trains pass, which would include noise from train horns at the at-grade crossings as well as the vibration generated by passing locomotives and rail cars.

Direct and Indirect Effects: Direct effects of the Build Alternative would include moderate noise impacts at 107 receivers. Additional noise could occur in the area as a result of future development. In these instances, the creation of noise by these associated developments would potentially be an indirect effect of the proposed Project, as it could be one of many reasons for the development. Additional vibration, particularly from construction period foundation/piling work in the area of the Relocation Corridor would also be possible because of the Preferred Alternative. However, like associated noise impacts, the conditions that create the need for this activity are not directly or indirectly attributable to the Preferred Alternative.

Effects of Other Reasonably Foreseeable Future Actions: It remains reasonable that as land areas develop in the Relocation Corridor adjacent to the Build Alternative that associated noise and vibration levels would continue to grow.

Results: The cumulative effect of the Build Alternative would include moderate noise impacts at 107 receivers. There are no vibration impacts associated with the Preferred Alternative.

Mitigation: Mitigation for noise effects will be determined in final design and will be based on cost effectiveness, given FTA/FRA policies and guidelines.

3.24.2.3. Wetlands and Waters of the US

Resource Study Area: For the purposes of this analysis, the resource Study Area includes the Relocation Corridor as defined on **Figure 1-2**.

Historic Context and Current Health: The Build Alternative crosses the following waterways: Bayou Barataria, the Gulf Intracoastal Waterway (GIWW) and Bayou Barriere. The GIWW is a 3,000-mile commercial waterway along the Atlantic Coast and Gulf Coast and is not a designated historic river or scenic stream. Bayou Barataria forms part of the common drainage canal network serving areas of Jefferson and Plaquemines Parishes on the north side of the GIWW. Bayou Barriere forms part of the drainage canal network service the Belle Chasse Area of Plaquemines Parish. Both of these bayous connect through drainage pump stations. Neither of these waterways are a designated historic river or scenic stream.

According to NWI data, the Build Alternative would impact 53.2 acres of potential wetlands. Wetlands identified include areas around streams and at water crossings as well as larger areas of contiguous wetlands on private property.

Direct and Indirect Effects: The Build Alternative would bridge two waterways used for drainage and the GIWW. Bridges constructed as part of the Build Alternative would have no effect on the accompanying waterway. The bridge over the GIWW would be subject to approval and permit by the US Coast Guard with no indirect impacts expected.

The Build Alternative would have a direct effect on potentially 53.2 acres of wetlands. The proposed project will enhance opportunities for development, which would be also be potentially subject to Sections 404 and 401 of the CWA in areas where wetlands are present. As a result, indirect impacts to wetland areas are not expected.

Effects of Other Reasonably Foreseeable Future Actions: As areas in the Relocation Corridor develop to accommodate new buildings or improved highway connectivity, potential wetland areas could be encountered. Roadways developed through a joint Federal/State process, managed by the Louisiana Department of Transportation or the New Orleans Regional Planning Commission (as the Metropolitan Planning Organization, or MPO) would be required to identify potential wetland impacts, permit requirements and potential mitigation measures to address project impacts. Where applicable, these areas would be also subject to Sections 404 and 401 of the CWA in areas where wetlands are determined to be present by the USACE.

Results: The Build Alternative has the potential to impact 53.2 acres, based upon the review of NWI data used, but the final number of acres impacted requires completion, submittal and approval of jurisdictional determination through the USACE.

Mitigation: Impacts to wetland areas will be determined in final design, subject to the outcome of the jurisdictional determination process based upon the USACE guidelines. If federally funded, the Project will comply with Executive Order 11988, Floodplain Management and Executive Order 11990, Protection of Wetlands, both dated May 24, 1977.

3.24.2.4. Floodplains

Resource Study Area: For the purposes of this analysis, the resource Study Area includes the Relocation Corridor as defined on **Figure 1-2**.

Historic Context and Current Health: As shown on **Figure 3-1**, the Preferred Alternative would be constructed and operated within the 100-year floodplain having flood zone risk levels ranging from low to high. These areas are also behind levees and subject to drainage conditions including pumping of ground water runoff from the drainage canals into the Harvey Canal and GIWW.

Direct and Indirect Effects: Potential impacts to floodplains based on the Preferred Alternative alignment include filling, grading, new bridges and culverts, and other activities. The exact impact from this activity remains unknown until the development of Project design. Coordination and review with local floodplain administrators (as requested by FEMA) would help to address potential effects of the project. The Project would be subject to local ordinances regarding development in floodplain areas.

Effects of Other Reasonably Foreseeable Future Actions: All new development in the area would be subject to the same coordination steps identified for this Project. This would include coordination with local authorities and obligation to follow local ordinances when proposing new development. Investments made in the levee and drainage system as well as those proposed for the future will be part of the evaluation of floodplain locations, base flood elevations and potential mitigation.

Results: Adverse cumulative effects from development of this Project to floodways and floodplains are not anticipated. This Project, as well as other developments which would occur in the future in this area, would be subject to local ordinance regarding development in the floodplain and coordination with floodplain managers during project design.

Mitigation: At the present, mitigation would be determined in final design, subject to the coordination request made by the Federal Emergency Management Agency (FEMA) during initial Project SOV (FEMA SOV response, May 12, 2015). If federally funded, the Project will comply with Executive Order 11988, Floodplain Management and Executive Order 11990, Protection of Wetlands, both dated May 24, 1977.

3.26 Summary of Permits, Mitigation, and Commitments

This section describes the permits, mitigation, and commitments associated with the implementation of the Preferred Alternative for the Project, which were based on responses to the Solicitation of Views (SOV) requests and other sources as noted. A summary of the SOV package and responses are included in the *Agency Scoping Meeting Memorandum*.³⁷ The future project sponsor would be required to obtain all necessary approvals and environmental permits for the Project before construction during the final design phase. Additional Federal, state, and/or local permitting requirements and commitments may be identified during future phases of the Project.

3.26.1 Permits Not Required

Farmland Protection Policy Act. The US Department of Agriculture (USDA) indicated that proposed construction areas are within urban areas and therefore exempt from the rules and regulations of the Farmland Protection Policy Act (USDA SOV response, May 12, 2015).

Sole Source Aquifer Program. The US Environmental Protection Agency (USEPA) indicated that the Project does not lie within the boundaries of a designated sole source aquifer and is not eligible for review under the Safe Drinking Water Act, Section 1424 Sole Source Aquifer Program (USEPA SOV response, May 14, 2015).

Air Quality. Jefferson and Plaquemines Parishes are classified as attainment with the National Ambient Air Quality Standards (NAAQS) and have no general conformity determination obligations (LDEQ SOV response, June 9, 2015).

3.26.2 Required Permits

The future project sponsor would be required to obtain the following permits prior to construction:

Stormwater Permit (Section 402). Under Section 402 of the Clean Water Act, the purpose of the National Pollutant Discharge Elimination System Program is to control pollution generated from runoff associated with industrial activity, including construction. The Louisiana Department of Environmental Quality (LDEQ) requires stormwater general permits for

³⁷ Report available at www.norpc.org/railroad.html or from RPC upon request.

construction areas equal to, or greater than, one acre (LDEQ SOV response, June 9, 2015). Prior to construction, the Project permittee will be required to submit an application for a general permit for construction activities to LDEQ.

Coastal Use Permit. Since the Project would be located within the Louisiana Coastal Zone, a Coastal Use Permit (CUP) would be required from the Louisiana Department of Natural Resources (LDNR) Office of Coastal Management (OCM). The US Army Corps of Engineers (USACE) Section 404 permit application also serves as a Joint Permit Application for the CUP.

Water Quality Certification (Section 401). Section 401 requires a state certification that a discharge to waters of the United States complies with other provisions of the Clean Water Act. The Project permitting will be required to obtain a Section 401 Permit (Water Quality Certification) from the LDEQ's Office of Environmental Services (LDEQ SOV response, June 9, 2015). The USACE Section 404 permit application also serves as an application for water quality certification.

Wetlands/Waters of the United States (Section 404). The Project permittee will be required to obtain a permit for Section 404 of the Clean Water Act from the USACE New Orleans District. The Section 404 permit will establish the conditions of mitigation of impacts to jurisdictional wetlands within the Study Area.

Section 10 Permit. The USACE administers Section 10 of the River and Harbors Act of 1899, which regulates dredging and filling in "Navigable Waters." A USACE Section 10 permit will be required prior to any work in the Gulf Intracoastal Waterway (GIWW) and if the Project proposes to deposit any dredged or fill material into canals or other waterways.

Section 408 Request. Given the Project's proximity to Federal levees, the USACE has indicated that the Project would require a Section 408 (alteration of USACE civil works projects) review by the USACE. The Regulatory Branch cannot issue a Section 404/Section 10 permit until the Section 408 Request has been approved.

Levee Permit. The Southeast Louisiana Flood Protection Authority-West (SLFPA-W) requires a levee permit for any construction involving major excavation within 1,500 feet of any levee within SLFPA-West's jurisdiction.

Section 9 Coast Guard Bridge Permit. The US Coast Guard (USCG) administers Section 9 of the Rivers and Harbors Act of 1899 and issues bridge permits over navigable waters. The Project would include a navigable waterway crossing that requires a moveable bridge over the GIWW. Based on coordination with the USCG, the GIWW crossing would require a USCG permit. A USCG permit would not be required for waterways that are not being used for navigation and have no potential for navigation such as Murphy Canal, Bayou Baratavia, and Bayou Baratavia; however, a formal determination of non-navigability from the USCG would be obtained for these waterways at the time of the permit application.

Endangered Species Act and Migratory Bird Treaty Act Project Review. On October 19, 2016, the USFWS Louisiana Field Office concurred with FRA’s determination of “is not likely to adversely affect” for the Atlantic sturgeon and pallid sturgeon. Additional consultation with resource agencies during the permitting phase prior to construction may be needed to confirm that there would be no impacts, since changes to habitat and listed species could occur prior to construction. If nesting bald eagles are discovered, federal and state guidelines for avoidance and minimization will be followed. If Project activities will occur within a 660-foot radius of a nest site, coordination with the Louisiana Department of Wildlife and Fisheries will be required.

Floodplains. The Federal Emergency Management Agency (FEMA) requested that the communities’ floodplain administrators be contacted for the review and possible permit requirements for the Project (FEMA SOV response, May 12, 2015). If federally funded, the Project will comply with Executive Order 11988, Floodplain Management and Executive Order 11990, Protection of Wetlands, both dated May 24, 1977.

Pipelines and Other Underground Hazards. The Louisiana Department of Natural Resources (LDNR) Office of Conservation indicated that oil, gas, and/or injection wells are located in the vicinity of the Project. The LDNR water well database indicates that there are registered water wells (and possible unregistered wells) in the vicinity of the Project. For pipelines and other underground hazards, Louisiana One Call must be contacted prior to commencing construction operations (LDNR SOV response, May 22, 2015).

Utilities and Drainage. During preliminary and final design, representatives of Jefferson Parish and Plaquemines Parish will be consulted relative to coordination between the Project and each jurisdiction’s master plan for utilities and drainage.

Louisiana Sanitary Code. The Louisiana Department of Health and Hospitals (DHH) Office of Public Health indicated that the Project must comply with applicable Louisiana Sanitary Code regulations (DHH SOV response, May 13, 2015).

3.26.3 Commitments and Mitigation Measures

The following commitment and mitigation measures would be implemented during future implementation phases of the Project including permitting, design, construction, and post-construction phases. If FRA funding is used to construct the Project, FRA would require the future project sponsor to comply with these commitments and mitigation measures.

Visual Resources. As part of the Project, NOGC Railway would develop a neighborhood park that would be located just south of 4th Street on the east side of Peters Road. The neighborhood park is proposed as a context sensitive solution. Jefferson Parish would be responsible for maintaining the park (e.g., mowing and pruning).

Noise and Vibration. FTA/FRA guidance does not require noise mitigation for moderate noise impacts; however, strategies for reduction of noise impacts (e.g. noise walls, wheel truing, etc.) may be implemented during final design if determined to be cost effective.

In order to minimize the potential for impacts of construction noise on local residents, all construction equipment used in the construction phase of the Project will be properly muffled and all motor panels shut during operation. Whenever possible, the contractor will operate during regular daytime working hours. To minimize vibration impacts, peak particle velocities due to pile driving operations will be monitored with a seismograph at critical structures, pavements and utilities during all pile driving operations.

Cultural Resources. FRA determined that the Hero Park/River Oaks Academy site is eligible for listing in the National Register of Historic Places (NRHP), and SHPO concurred with FRA's determination on July 12, 2017 (see **Appendix F**). FRA determined the Project, if constructed with financial assistance from FRA, will have an adverse effect on the Hero Park/River Oaks Academy site due to the destruction of five oak trees associated with Hero Park and a former plantation and demolition of one of the two River Oaks Academy buildings. Appropriate mitigation measures and a guiding Memorandum of Agreement (**Appendix G**) were developed through consultation among the FRA, SHPO, and the impacted property owner. Mitigation measures include documenting the historic property in accordance with Historic American Building Survey standards and installation of a historical marker.

Wetland Mitigation. Prior to permitting and design activities, the future project sponsor would be required to conduct an on-site field investigation to delineate the full extent of waters of the United States within the Project's right-of-way in the southern portion of the Study Area generally between the GIWW and the Mississippi River Levee/Highway 11 and to make a proposed jurisdictional determination. The USACE would make the final jurisdictional determination for waters of the United States and define the appropriate mitigation requirements for the Project.

Plant and Wildlife Habitats. During the permitting phase, regulatory agencies would be consulted to determine whether monitoring and/or site specific measures to protect sensitive species or habitat during construction are warranted (such as protective fencing). Locations of any sensitive plant and wildlife species would be mapped on construction drawings. Areas where vegetation would need to be temporarily removed or disturbed for construction would be re-vegetated as quickly as possible with native vegetation.

Stormwater. As noted by LDEQ in its response to the Solicitation of Views (SOV), all precautions to control nonpoint source pollution from construction activities and to protect the groundwater of the region would be observed (LDEQ SOV response, June 9, 2015). Best management practices would be implemented to control soil erosion.

Contaminated Sites. If any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the Project, notification to LDEQ's Single-Point-of-Contact is required. Additionally, precautions would be taken to protect workers from these hazardous constituents during construction (LDEQ SOV response, June 9, 2015). The Project's right-of-way includes a vacant wooded parcel that was once used as a lay-

down yard for a former asbestos pipe coating facility that included an asbestos disposal site. Asbestos contaminated soil was abated in 1986; however, it is likely that there is residual asbestos contaminated soil that would require special handling and disposal procedures.

Air Quality. To minimize potential air quality impacts, particularly related to control of particulate matter, the construction contractor shall comply with all relevant Federal, state, and local laws and regulations.

Traffic and Public Safety. Traffic management plans would be developed during the final design phase of the Project to address and minimize public safety risks and potential traffic delays. Temporary traffic control zones and devices would be implemented in accordance with FHWA's *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways*³⁸ to adequately and safely accommodate all local and through traffic. Construction operations would be scheduled and sequenced to minimize traffic and rail delays. Prior to construction, information on construction schedules throughout the Study Area would be provided to local emergency response organizations.

Relocations. Business/industrial and residential relocations will be addressed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

³⁸ <http://mutcd.fhwa.dot.gov/>

4.0 Section 4(f) and Section 6(f) Evaluation

4.1 Introduction

This chapter describes the existing Section 4(f) (49 U.S.C. §303) and Section 6(f) (36 CFR §59) resources within the Study Area as well as the potential impacts on these resources resulting from the Preferred Alternative (defined in Section 2.0 Alternatives along with the No-Build Alternative).

Data reviewed for this chapter came from the previous chapters/sections of this environmental assessment (as referenced in parenthesis), as well as the *Tier I Alternatives Analysis Screening Evaluation*, *Tier II Alternatives Analysis Screening Evaluation* and the *Phase I Cultural Resources Survey* and *NRHP Research for the LA 23 New Orleans Gulf Coast Railway Relocation PE/NEPA Document*.

4.2 Section 4(f) Regulatory Context³⁹

Under the policy established in the US Department of Transportation Act, 49 U.S.C. § 303 (c), the Secretary of Transportation may approve a transportation program or project (other than any project for a park road or parkway under 23 U.S.C. §204) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if

1. There is no feasible or prudent alternative to such use and the project includes all possible planning to minimize harm to the resource resulting from such use; or
2. A finding can be made that the project as a whole has a *de minimis*, or minimal, impact on the Section 4(f) resource. This provision allows avoidance, minimization, mitigation and enhancement measures to be considered in making a *de minimis* determination, which is defined in 23 CFR §774.17 as:
 - a. For parks, recreation areas, and wildlife and waterfowl refuges, a *de minimis* impact is one that would not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f)
 - b. For historic sites, *de minimis* impact means that the FRA has determined, in accordance with 36 CFR 800 that no historic property is affected by the project or the project would have “no adverse effect” on the property in question⁴⁰

A Section 4(f) use is defined and addressed in 23 CFR § 774.17. A use of Section 4(f) property occurs:

- When land is permanently incorporated into a transportation facility;

³⁹ Definitions in Section from Section 4(f) Tutorial, US Department of Transportation, Federal Highway Administration, https://www.environment.fhwa.dot.gov/section4f/use_types.aspx#2

⁴⁰ Section 303, Policy on lands, wildlife and waterfowl refuges, and historic sites, 49 U.S.C. §303 (c) (Subtitle I – Department of Transportation, Chapter 3 – General Duties and Powers, Subchapter I – Duties of the Secretary of Transportation).

- When there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose as determined by the criteria in §774.13(d); or
- When there is a constructive use of a Section 4(f) property as determined by the criteria in §774.15

4.2.1 Permanent Use

With this type of use, the Section 4(f) property is permanently incorporated into the proposed transportation facility. This use could occur as a result of full or partial acquisition or through easements for transportation-related purposes. Although within the easement the underlying ownership of the land may remain with the original owner, the transportation owner or operator acquires a permanent interest in the use or maintenance of some portion of the property that disrupts its Section 4(f) function.

4.2.2 Temporary Use

During the construction of a transportation project, a temporary occupancy of a Section 4(f) property may be necessary for activities such as regrading slopes or to provide staging or access areas. Depending upon conditions, such activities, even though temporary in nature, may be considered adverse in terms of the Section 4(f) statute's preservation purpose, and therefore would be considered a Section 4(f) use. Examples of temporary uses include contour alterations, removal of mature trees and other vegetation, or disruption of facilities or activities on the property. Once the easement is no longer needed, the Section 4(f) property must be restored to the condition in which it was originally found. This restoration may involve re-grading or re-vegetating the area.

4.2.3 Constructive Use

Constructive use involves an indirect impact to the Section 4(f) property of such magnitude as to effectively act as a permanent incorporation. The project does not physically incorporate the resource but is close enough to it to severely impact important features, activities or attributes associated with it, and to substantially impair it. Constructive uses include impacts such as noise, access restrictions, vibration, ecological intrusions and visual impacts.

4.2.4 Section 4(f) Applicability

A historic site on, or eligible for the NRHP, qualifies for protection under Section 4(f) and a use may occur if land from the site is permanently or temporarily incorporated into the project. If a project does not physically take (i.e. permanently incorporate) historic property but causes an adverse effect, FRA must evaluate the proximity impacts if they will substantially impair the features or attributes that contribute to the NRHP eligibility of the historic site.

4.3 Section 6(f) of the Land and Water Conservation Fund⁴¹

Section 6(f)(3) of the Land and Water Conservation Fund (LWCF) Act contains provisions to protect Federal investments and the quality of assisted resources. The law recognizes the likelihood that changes in land use or development may make some assisted areas obsolete over time, particularly in rapidly changing urban areas. At the same time, the law discourages casual "discards" of park and recreation facilities by ensuring that changes or "conversions from recreation use" will bear a cost—a cost that assures taxpayers that investments in the "national recreation estate" will not be squandered. The LWCF Act contains a clear and common sense provision to protect grant-assisted areas from conversions.⁴² Conversion of park and recreation facilities purchased using LWCF funds to non-recreation uses must include coordination with the National Park Service (NPS) and mitigation that includes replacement of the quantity and quality of lands used.

4.4 Purpose and Need

Vehicular and train traffic is projected to increase within the Study Area due to normal growth in population and NOGC-projected increases in level of industry.⁴³ Highway-rail traffic conflicts have an adverse impact on the Westbank community including both residential and employment populations. These impacts include safety, congestion, mobility, and quality of life issues. A full description of the purpose and need is presented in Section 1.0 Purpose and Need.

The Project's purpose and need is to:

- Improve safety
- Relieve congestion
- Improve emergency access and evacuation
- Enhance quality of life
- Improve efficiency of rail operations

4.5 Definition of Alternatives

4.5.1 No-Build Alternative

The No-Build Alternative includes all existing rail facilities utilized by the NOGC, without any rail improvements. This includes the existing Gouldsboro Yard in Gretna and the existing NOGC Maintenance Yard in Belle Chasse, connected with existing track within the Westwego Subdivision, parallel to 4th Street (LA 18) and the Belle Chasse Subdivision, parallel to Belle Chasse Highway (LA 23), with its 119 at-grade rail crossings (See Section 2.2 and **Figure 2-4**).

⁴¹ Title 36, Chapter 1, Part 59, US Code of Federal Regulations, Land and Water Conservation Fund Program of Assistance to States

⁴² <https://www.nps.gov/ncrc/programs/lwcf/protect.html>

⁴³ Vehicular traffic projections based on LADOTD Historic Traffic Count Data and RPC Travel Demand Model 2040 and 2044 Network. Refer to the *Traffic Analysis Report – Existing Conditions*, July 2015 and *Traffic Analysis Report – No-Build Conditions (2040)*, December 2015 (available from the RPC upon request). Train traffic projections based on NOGC railway estimates.

Under the No-Build Alternative, construction of a new rail line would not occur and all existing facilities would remain in-use.

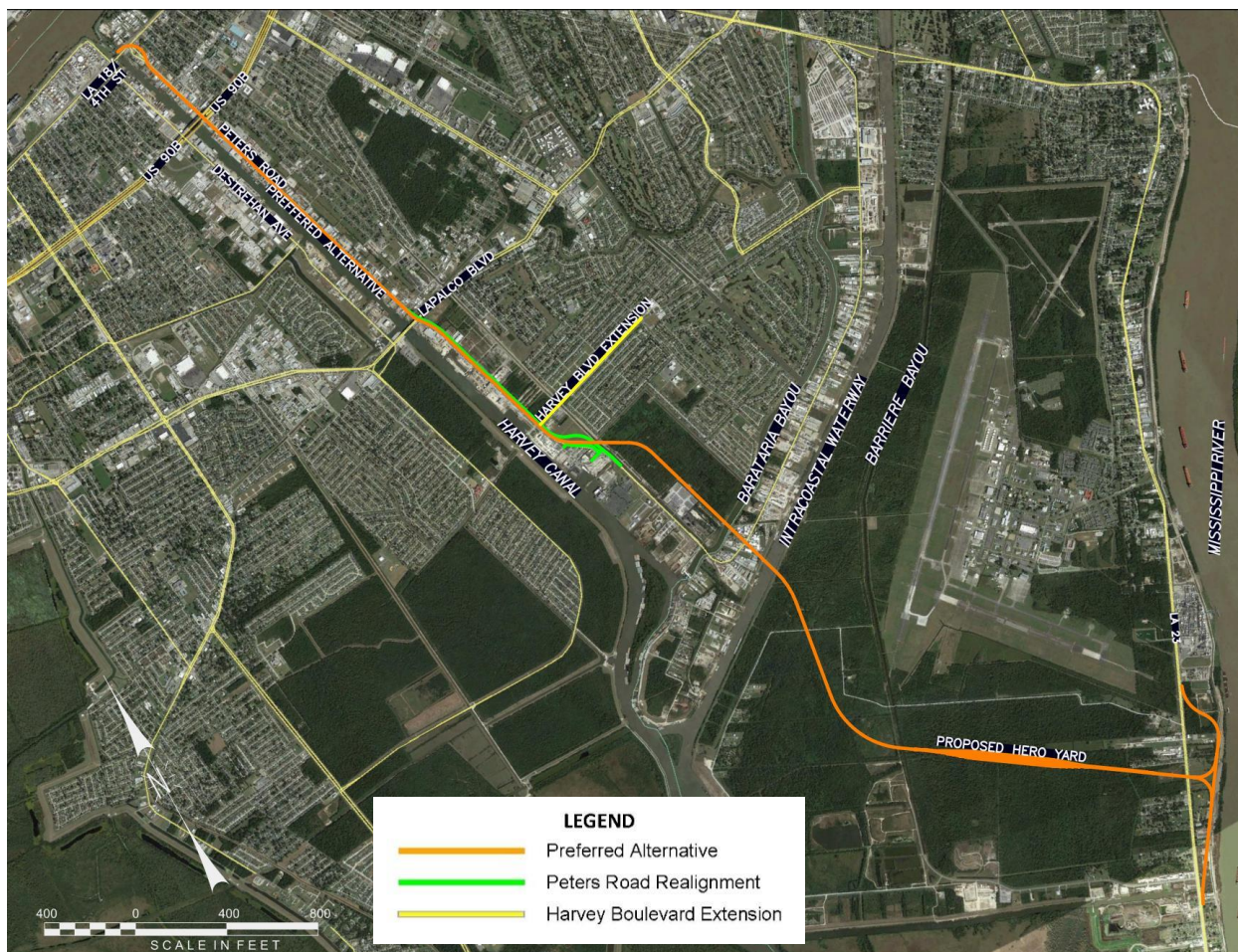
4.5.2 Preferred Alternative

The Preferred Alternative extends from 4th Street (LA 18) to LA 23 for approximately 9.3 miles. From north to south, the Preferred Alternative generally follows a southeastern route along and parallel to existing Peters Road and the proposed Peters Road extension. After crossing the GIWW, the route curves around the southern end of the NAS JRB and then crosses LA 23 to meet up with the existing NOGC track (**Figure 4-1**). Connection to the Belle Chasse Subdivision would occur on the east side of LA 23 with a wye⁴⁴ connection. Benefits associated with the Preferred Alternative include potentially eliminating 97 at-grade crossings on the existing NOGC route and reducing the number of public at-grade crossings from 73 to 6.

The Preferred Alternative alignment would require the reconstruction of a 1.65-mile section of Peters Road between Lapalco Boulevard and Murphy Canal. A 6,000-foot (1.14-mile) segment of Peters Road would be reconstructed from Lapalco Boulevard to the south side of the proposed Harvey Boulevard Extension. A shorter segment of Peters Road would be constructed on new alignment. The limits of new construction extend from just south of the proposed Harvey Boulevard Extension to just south of the Murphy Canal crossing; a distance of approximately 2,700 feet or 0.51 mile (See Section 2.7).

⁴⁴ Railway tracks arranged in the form of a “Y” that are used for turning locomotives and rail cars in the opposite direction.

Figure 4-1. Preferred Alternative



4.5.3 Overview of Preliminary Alternatives

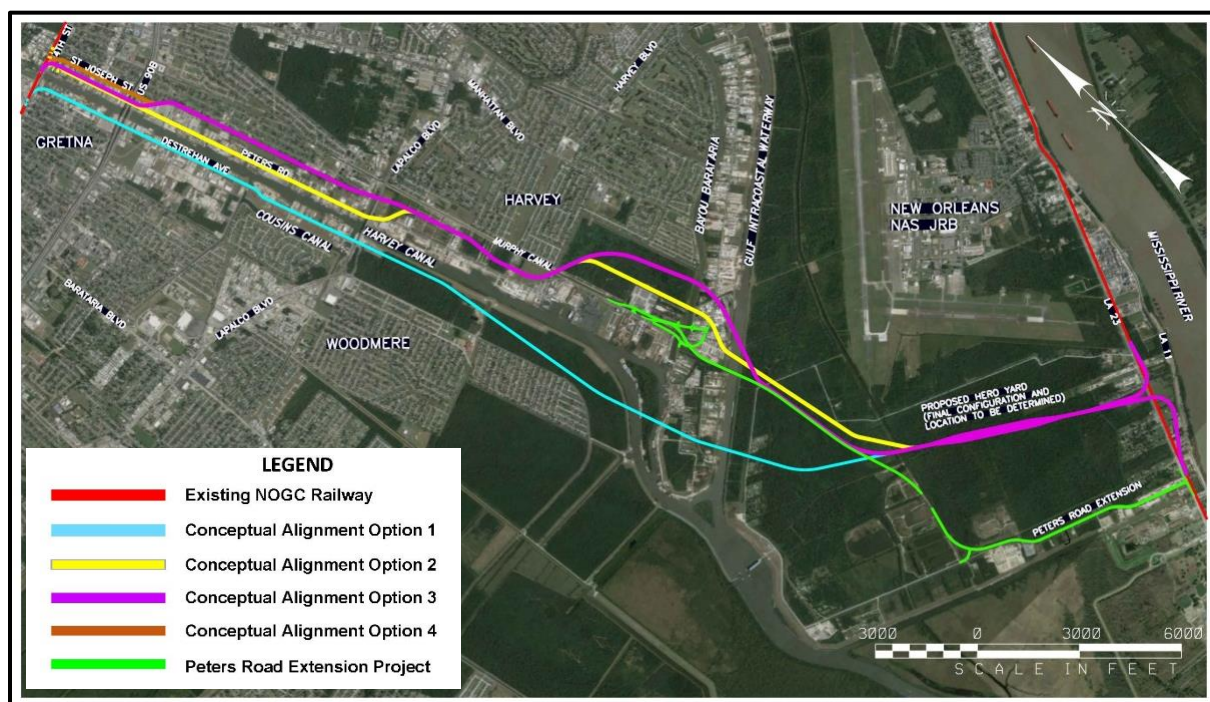
As outlined in the *Tier I and Tier II Alternatives Analyses*, the project started with a wye connection to maintain connection with the existing NOGC Railway parallel to LA 23. The wye included a single track extending north to the Belle Chasse Yard, and a single track extending south to tie into the existing NOGC railway continuing south to Myrtle Grove, LA.

Options identified in the Tier I and Tier II analyses focused on defining locations for the rail corridor which would minimize impacts across the Relocation Corridor.

As shown on **Figure 4-2**, the *Tier I Alternatives Analysis* identified four conceptual alignment options. The Tier I analysis resulted in the elimination of Options 1 and 4, and the portion of Option 3 from 4th Street south of Lapalco Boulevard where it connects to Option 2, for the following reasons:

- High cost is the primary fatal flaw associated with Option 1. The high cost is a result of the three required movable bridges on the GIWW, Harvey Canal, and Bayou Barataria. Option 1 also has the highest number of potential total impacted or intersected properties and business/industrial relocations.
- The impact to the residential area along St. Joseph Lane is the primary fatal flaw associated with Option 4. The Option 4 alignment traverses St. Joseph Lane for approximately 2,200 feet or 0.4 miles.
- A portion of Option 3 from 4th Street to south of Lapalco Boulevard, where it connects to Option 2, was eliminated because it traverses near a residential area from US 90B to Lester Street and then requires extensive grade separation and a bridge structure starting near St. Joseph Lane extending to south of the West Bank Animal Shelter tract.

Figure 4-2. Conceptual Alignment Options

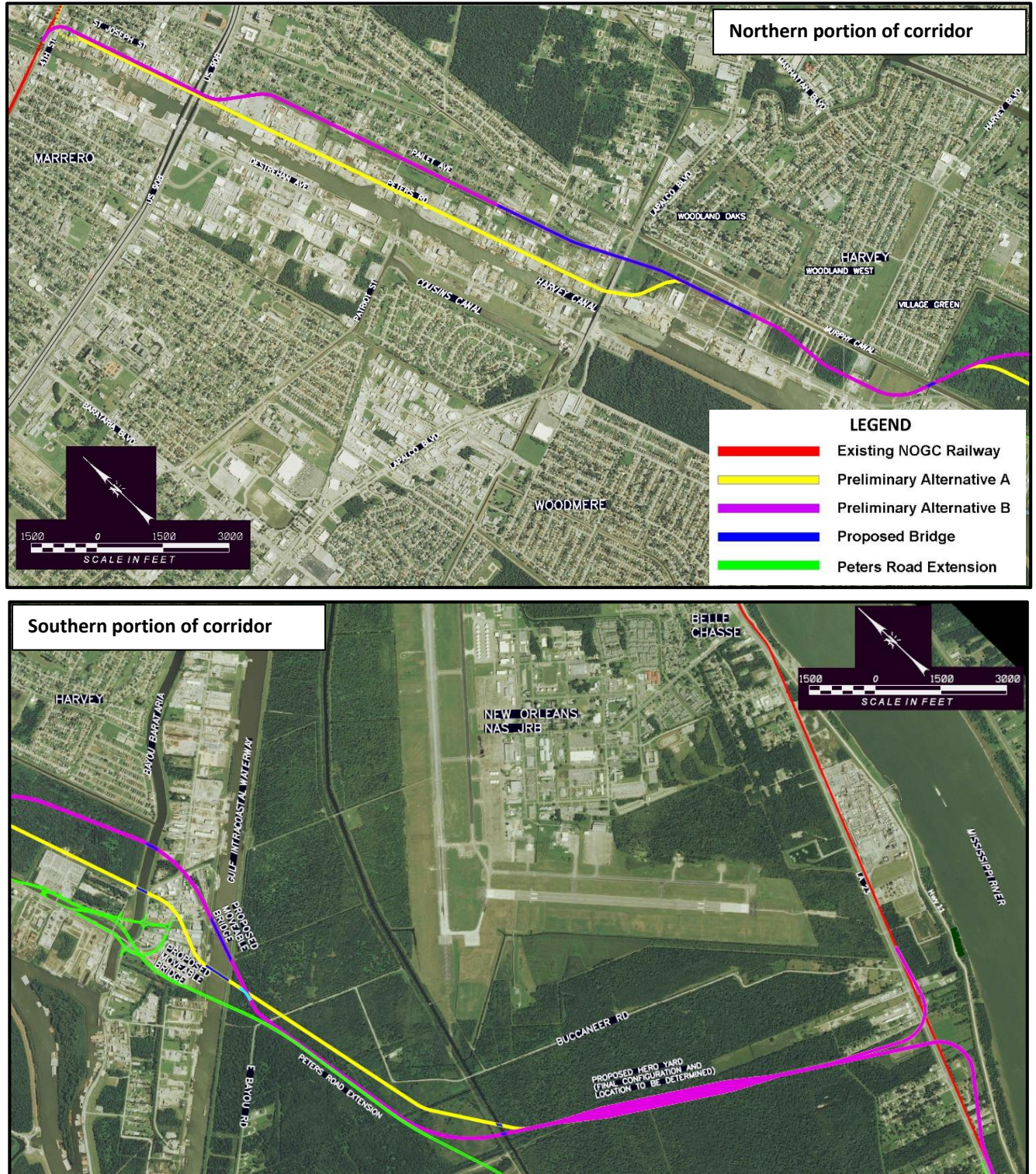


Eliminating these options left Option 2 in its entirety and the southern portion of Option 3 starting near the Peters Road and Murphy Canal crossing. The commonality between Options 2 and 3 allowed them to be recombined and refined into two preliminary alternatives in the *Tier II Alternatives Analysis*.

As outlined in the *Tier II Alternatives Analysis*, two preliminary alternatives, shown in **Figure 4-3**, were evaluated. The alignment associated with Preliminary Alternative A is depicted in yellow, while Preliminary Alternative B is shown in magenta. Both contain the wye rail intersection

introduced in the *Tier I Alternatives Analysis* options, with an acknowledgement that a decision to grade-separate LA 23 at the rail line intersection might occur in the future.

Figure 4-3. Preliminary Alternatives A and B (North and South)



A brief description of each of the preliminary alternatives follows:

Preliminary Alternative A:

- Located on the west side of Peters Road following the abandoned Union Pacific Railroad (UPRR) Hooper Spur track until Lapalco Boulevard.
- Crossing Peters Road immediately south of Lapalco Boulevard and continuing south through undeveloped parcels of land adjacent to Murphy Canal.
- Crossing the GIWW and continuing to LA 23 south of the NAS JRB.

Preliminary Alternative B:

- Located on the east side of Peters Road on new alignment southward to US 90B.
- Crossing into an undeveloped, utility corridor parallel to Paillet Avenue extending south to Lapalco Boulevard.
- Continuing south through undeveloped parcels of land adjacent to Murphy Canal.
- Crossing the GIWW on a different alignment compared to Alternative A and continuing to LA 23 south of the NAS JRB.

An initial assessment of the preliminary alternatives, presented to the public on September 22, 2015 included the identification of the following general analysis outcomes that led to identification of Alternative A as the corridor with potentially less impacts and the basis for the Preferred Alternative.

- Potential impacts on residential areas – Alternative B would have a greater impact on residential homes near Paillet Avenue between US 90B and Lapalco Boulevard, as well as on several subdivisions located between Murphy Canal and Bayou Barataria. At-grade crossings – Alternative B would create 21 new highway-rail at-grade crossings at public streets compared to 5 for Alternative A.
- Crossing US 90B – Alternative A would cross under US 90B within the existing UPRR Hooper Spur ROW, while Alternative B would result in a three-level crossing. Depending on the horizontal location and length of the Harvey Canal Tunnel crossing, the structural integrity of the Harvey Canal Tunnel may need to be evaluated.
- Crossing Lapalco Boulevard – Alternative A would cross under the Lapalco Boulevard bridge within the existing UPRR Hooper Spur ROW, while Alternative B would require an extensive embankment section/bridge structure (approximately 6,000 feet long) to cross over Lapalco Boulevard and the Westbank Animal Shelter property.

4.6 Section 4(f) Properties

This section identifies the Section 4(f) resources present within the Study Area. It includes a discussion of the potential impacts to these resources as a result of the Preferred Alternative. The discussion of potential impacts remains a preliminary assessment with the expectation that further design will work to minimize impacts to these sites.

4.6.1 Parks and Recreation Sites

As shown in **Table 4-1** and **Figure 4-4** (See Section 3.20 Recreational Resources), the Study Area contains 15 parks and recreation facilities. Only one of these (Plaquemines Off-Road Park) is in the Relocation Corridor. It is approximately 2,100 feet south of the Preferred Alternative. There would be no apparent impact to the use of and access to this facility created by the Project.

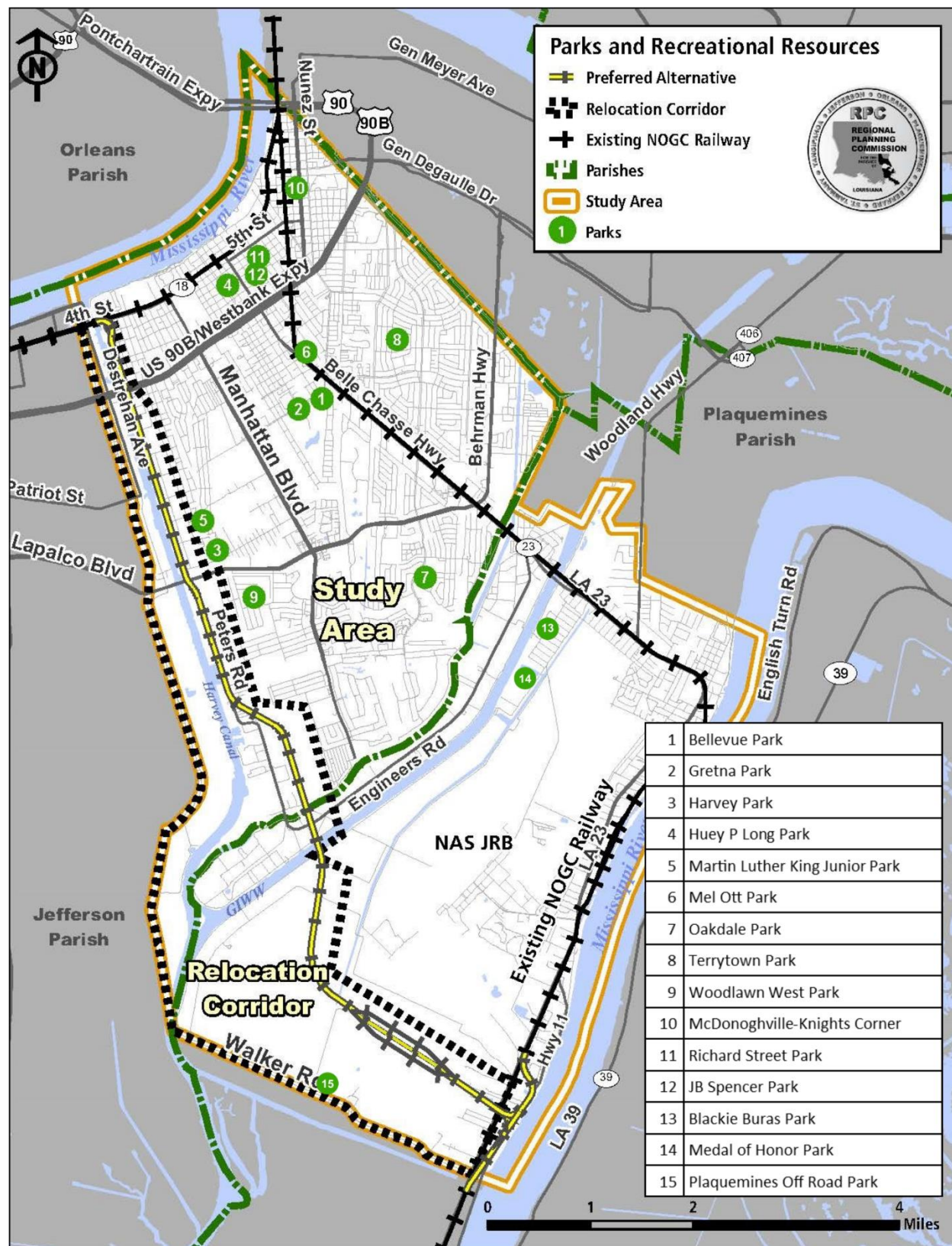
Table 4-1. Parks and Recreational Resources

Parks and Recreational Resources	Located in Study Area	Located in Relocation Corridor
Bellevue Park*	Yes	No
Blackie Buras Park	Yes	No
Gretna Park	Yes	No
Harvey Park	Yes	No
Huey P Long Park	Yes	No
Martin Luther King Junior Park	Yes	No
Medal of Honor Park	Yes	No
Mel Ott Park	Yes	No
McDonoghville/Knights Corner Park	Yes	No
Oakdale Park*	Yes	No
Plaquemines Off Road Park	Yes	Yes
Richard Street Park*	Yes	No
JB Spencer Park	Yes	No
Terrytown Playground*	Yes	No
Woodlawn West Park*	Yes	No

Parks marked with an asterisk (*) locations where LWCF funding has been used, according to the US Department of Interior National Park Service Land and Water Conservation Fund (LWCF) Listings by County, 3/13/2017, <http://waso-lwcf.nrc.nps.gov/public/index.cfm>.

Source: Jefferson Parish GIS, Plaquemines Parish Comprehensive Plan and USGS GNIS Database, 2016.

Figure 4-4. Location of Parks and Recreational Resources



4.6.2 Open Space

The Study Area contains one designated open space, 400 acres of land in Plaquemines Parish east of the NAS-JRB base in Belle Chasse. This property, purchased through cooperative endeavor of the Trust for Public Land and the US Navy, while in the Study Area, is outside of the Relocation Corridor.

4.6.3 Wildlife and Waterfowl Refuges

Both of the wildlife conservation areas located in Plaquemines Parish are outside levee-protected areas east of the Mississippi River and remain inaccessible except by boat. Both sites are outside of the Study Area and Relocation Corridor.

4.6.4 Cultural Resources

Archaeological Sites

As noted in Section 3.19, a Phase I survey of the Preferred Alternative⁴⁵ was performed in an effort to satisfy 36 CFR § 800.5 (a)(1) (Section 106 of the National Historic Preservation Act of 1966 as Amended 2000) requirements to identify and mitigate the effects that the Project may have on potential cultural resources. Prior to the initiation of fieldwork, comprehensive background research revealed that portions of the Preferred Alternative had been surveyed during previous investigations. Based on the results of the archaeological survey, the Project would have no effect on buried historic resources. One site, crossed by the Preferred Alternative, has been determined by the SHPO as eligible for the NRHP given the association with the eligible property on which it sits (Hero Park/River Oaks Academy site). Archaeological sites are not protected under Section 4(f) unless they warrant preservation in place (23 CFR §774.13(b)(1)).

Historic Resources

As noted in Section 3.19.4, during the survey of cultural resources, one of the historic properties identified consists of two buildings older than 47 years that were part of the former River Oaks Academy (10911 LA 23) (Site 26-01501, shown in **Figure 4-5**). One building has a concrete masonry/sheet metal exterior and the other building has a solely sheet metal exterior. Both buildings are in poor condition. Part of the structure is within the ROW of the Preferred Alternative. In addition, the ROW passes through a grove of large live oak trees, which is part of Hero Park, a former private park site, on the property where the River Oaks Academy was constructed. The buildings and site are no longer open to use either as a school or as a private park. The buildings are currently occupied by Southern Arch, a local historic wood salvage and refinishing company. Some portions of the site are overgrown with vegetation. Refer to photos in **Figures 4-6 through 4-8**. Based on data collected during NRHP research, the Hero Park/River Oaks Academy site (i.e. the site within the 2016 revised boundary as shown in Figure 4-5) is

⁴⁵ See *Phase I Cultural Resources Survey and NRHP Research for the LA 23 New Orleans Gulf Coast Railway Relocation PE/NEPA Project, Jefferson and Plaquemines Parishes, Louisiana*. Draft Report, prepared by Earth Search, Inc. for HDR, Inc., for submittal to the Regional Planning Commission and Federal Railroad Administration, March 2017.

eligible for nomination to the National Register. As such, the Project would result in an adverse effect to this historic resource, and a use of the resource under Section 4(f).

Figure 4-5. Plan View of Hero Park/River Oaks Academy Site

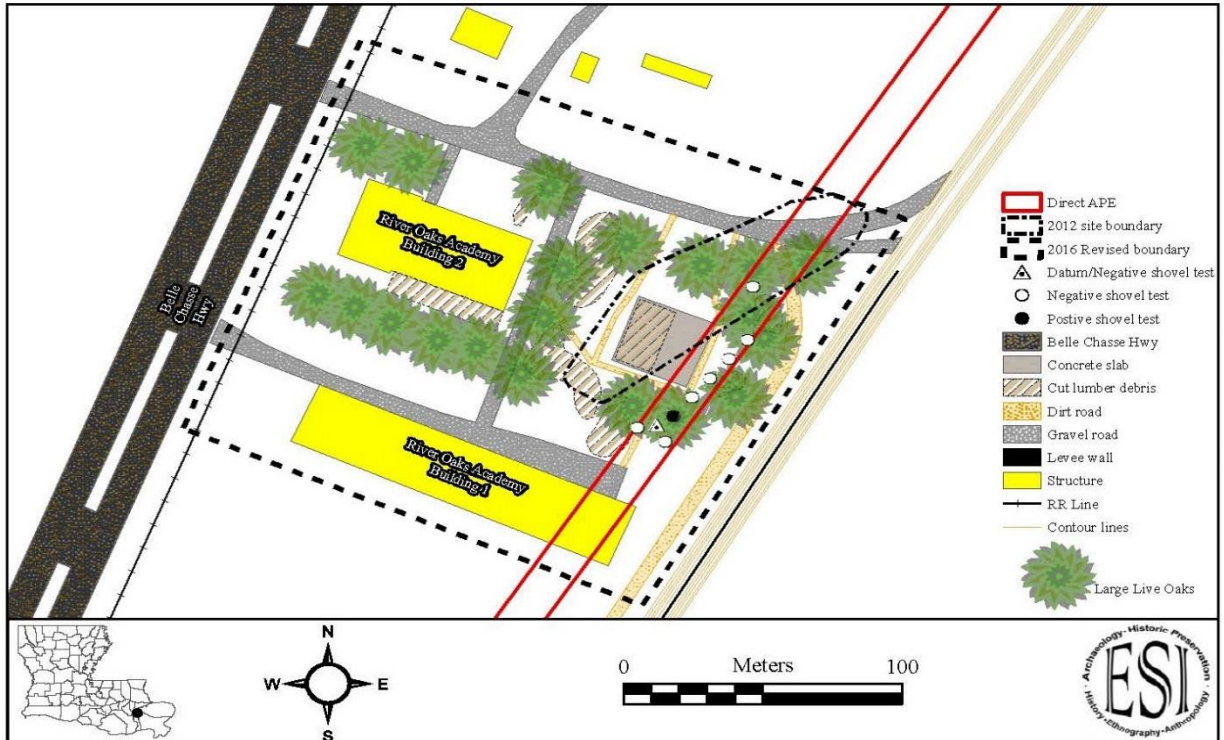


Figure 4-6. Former River Oaks Academy Building (now Southern Arch)



Figure 4-7. Large Piles of Lumber on Hero Park/River Oaks Academy Site



Figure 4-8. Several Large Historic Live Oaks on Hero Park/River Oaks Academy Site



4.7 Section 6(f) Resources

Section 6(f) resources are recreational lands purchased or improved with LWCF funds. As previously shown in **Table 4-1**, a full review of the available database at the National Park Service (NPS) website for projects in Louisiana indicates there are no recreation areas funded with LWCF in the Relocation Corridor. There are five park sites in the Study Area in Jefferson Parish with LWCF funding. None of these appear in the Relocation Corridor. Therefore, there would be no impact to Section 6(f) resources as a result of the Preferred Alternative.

4.8 Preliminary Section 4(f) Use Assessment

The estimated acreages shown for the potential impacts to Section 4(f) resources come from a review of aerial photography, combined with site plans and property layouts developed as part of sites in connection with the Preferred Alternative. These potential acreages, which remain subject to further refinement based upon the outcome of Project design, are considered in the text evaluations below. The definitions of permanent and temporary use applied in this discussion come from Section 4.2.1 and 4.2.2.

4.8.1 Archaeological Resource Impacts

The Preferred Alternative would have no effect on buried historic resources. One site identified during the archaeological survey (16PL249), crossed by the Preferred Alternative, exhibits no intact deposits within the ROW. In addition, intact deposits may exist beneath the River Oaks Academy site that would be discoverable during site prep or demolition activities at this location. These impacts would be created as part the permanent use of the area for the Preferred Alternative. It is possible that additional site preparation activities associated with the Project (i.e. grading, excavation, etc.) could lead to discovery of additional sites and create additional impacts to buried historic resources. Archaeological sites are not protected under Section 4(f) unless they warrant preservation in place (23 CFR §774.13(b)(1)).

4.8.2 Historic Resource Impacts

As noted in Section 3.19.4 and Section 4.6.4, the Preferred Alternative extends through the Hero Park/River Oaks Academy site. The rear portion of one of the former River Oaks Academy buildings at 10911 LA 23 (26-01501) is in the direct APE in the southernmost portion of the Project ROW on LA 23. The remainder of this building and a second academy building are in the indirect APE. Extension of the ROW for the Build Alternative would require demolition of the former River Oaks Academy building (26-01501) shown in **Figure 4-6** and five oak trees, which adversely affects the features of the property that make it eligible for protection under Section 4(f).

Given the proposed rail replaces an existing active rail corridor on the east side of the site, there is a minimal potential for additional noise impacts associated with the rail operation. However, this would not impact the business on-site, given that it is light industrial in nature (i.e. wood salvage, millwork, interior design and lumber storage) and is not of a type that would be sensitive to noise impacts.

4.9 Avoidance Alternatives

FRA may not approve a use of a Section 4(f) property unless there is no feasible and prudent alternative that avoids the use of the resource (23 U.S.C. §138(a)). Under Section 4(f), an alternative is deemed feasible if it can be constructed as a matter of sound engineering. Typically, alternatives studied in an environmental assessment are feasible; otherwise they would not have been carried forward for detailed study. An alternative is prudent if it meets the test of 23 CFR §774.17 which includes the following factors:

- Assessing safety or operational problems;
- How well the alternative meets the project purpose and need;
- The severity of social, economic or environmental impacts;
- The severity of impacts to environmental resources protected under other Federal statutes.

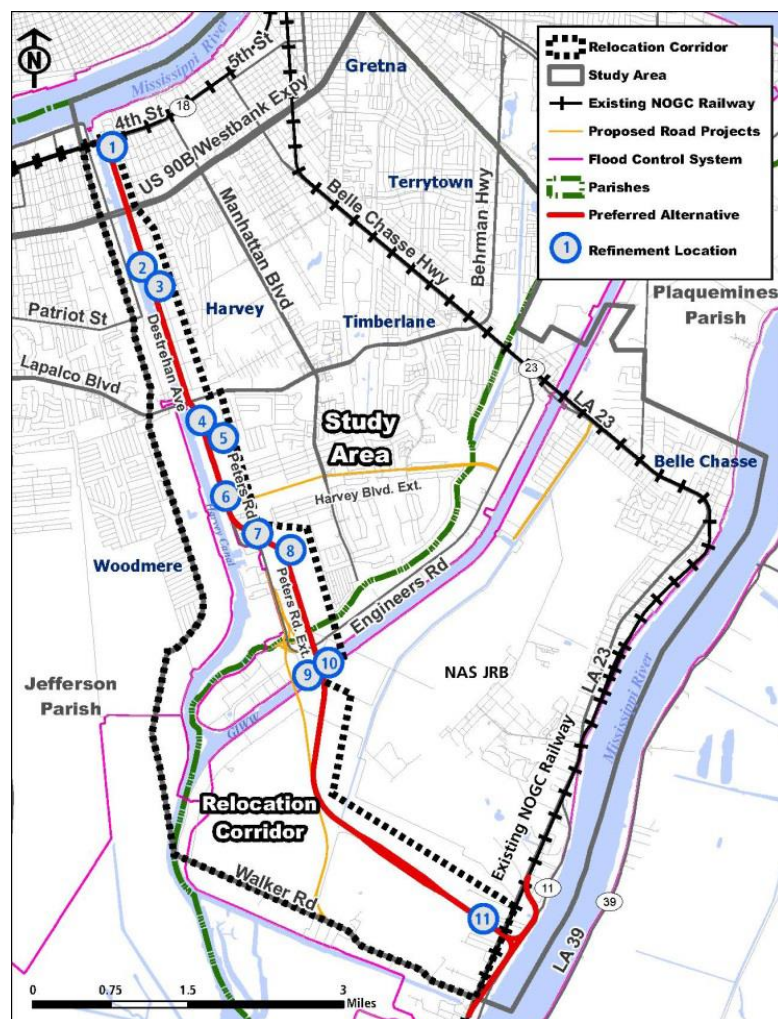
The Preferred Alternative has been identified as a result of technical review that included an evaluation of conceptual alternatives through a Tier I and Tier II analysis, using a documented series of evaluation factors that included review by the Project Management Committee (PMC) (See Section 5.1 Agency Coordination, and Section 5.1.4 Project Management Committee Meetings) and the public (See Section 5.2 Public Involvement). An initial set of four conceptual alignment options for the Project were analyzed for potential impacts to the physical, human and natural environment. The analysis, documented within the Tier I analysis, included opportunities for input from the PMC and public in order to refine the alternatives or identify potential impacts. The result of this analysis was the definition of two preliminary alternatives modified and examined in more detail within a Tier II analysis (See Section 2.4 Conceptual Alignment Options and Section 2.5 Preliminary Alternatives for more detail). Refinements occurred during the Tier II analysis based on commentary from the PMC and community. A summary of these adjustments, presented north to south, follow in **Table 4-2** with their corresponding location shown in **Figure 4-9**.

Table 4-2. Summary of Rail Alignment Refinements Preferred Alternative

Refinement Location	Description of Rail Alignment Refinements
No. 1	Curve from double track mainline along 4th Street to Peters Road.
No. 2	Rail alignment along the west side of Peters Road – 4th Street to south of Lapalco Boulevard.
No. 3	Rail alignment along the east side of Peters Road – 4th Street to south of Lapalco Boulevard.
No. 4	Rail alignment along Peters Road south of Lapalco Boulevard.
No. 5	Rail alignment within undeveloped parcels south of Lapalco Boulevard.
No. 6	Rail alignment along the west side of Peters Road parallel to USACE floodwall including Peters Road reconstruction.

Refinement Location	Description of Rail Alignment Refinements
No. 7	Rail alignment crossing the Murphy Canal.
No. 8	Rail alignment within undeveloped parcels between Murphy Canal crossing and GIWW.
No. 9	Rail alignment crossing the GIWW.
No. 10	Movable bridge type crossing the GIWW and proximity to NAS JRB.
No. 11	Rail alignment crossing LA 23 and connection to existing track at LA 23.

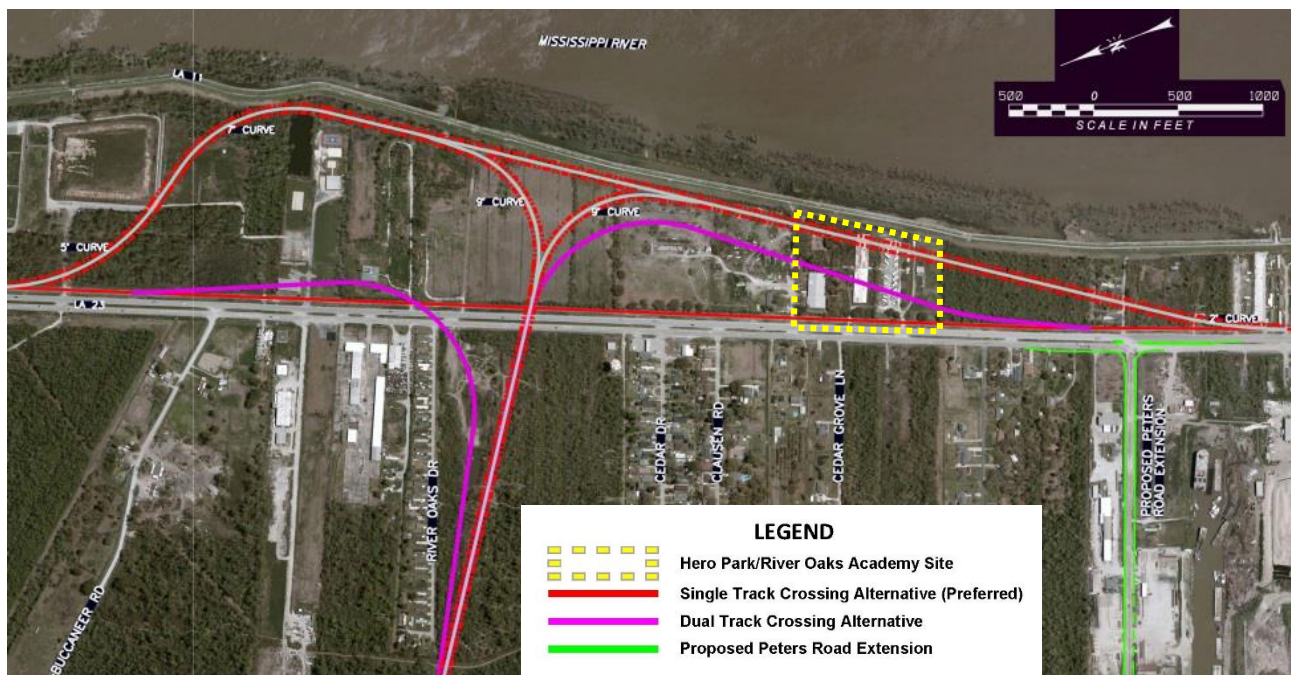
Figure 4-9. Refinement Locations Preferred Alternative



It is within the Tier II analysis that refinements in the alternatives resulted in an evaluation of the potential rail crossing options at LA 23, southwest of the Belle Chasse community (Refinement Location 11 in **Figure 4-9**). Initially, Project concepts consisted of a dual crossing of

LA 23 in order to minimize both track length and property impacts (See Tier II Alternatives Analysis, Section 3.4.11). However, this created two at-grade crossings of LA 23, which did not have the support of PMC members from the local jurisdiction (Plaquemines Parish), LADOTD and the NOGC. The proposal, while functionally sufficient, did not allow for smoother transitions across LA 23 seen as critical by LADOTD and local officials to minimizing potential delays encountered by motorists on the corridor during train crossing periods. The decision to replace a dual track crossing (magenta lines on **Figure 4-10**) with a single track crossing alternative (double red lines on **Figure 4-10**) comes as a benefit to long range plans to elevate a short segment of LA 23 over the rail crossing in a manner that does not significantly disrupt adjacent property access. Such a crossing, which has not been funded, remains a local priority for implementation of the Project as funding becomes available.

Figure 4-10. Rail Alignment Crossing LA 23 through the Hero Park/River Oaks Academy Site



Incorporating a portion of the 4(f) site into the Project ROW is unavoidable due to the location of the Preferred Alternative and requirement to connect the relocated line to the existing railway that extends south. As shown in **Figure 4-10**, the River Oaks 4(f) site extends from the Mississippi River levee to LA 23 leaving no room to fit the southern portion of the wye east of LA 23 without impacting the 4(f) site. Given this action is unavoidable, minimization of impacts would be a logical course of action. The creation of the wye intersection using a single crossing of LA 23 offers an opportunity to provide minimal impacts to the Hero Park/River Oaks Academy site, as well as to provide an option that is both feasible and prudent from a rail engineering perspective (See Section 2.0, Tier II Alternatives Analysis and Section 3.4.11, Rail Alignment Crossing LA 23 and Connection to Existing Track at LA 23, Tier II Alternatives Analysis).

Creating a single track crossing of LA 23 as part of the proposed wye intersection pushes the rail line from its current position along the LA 23 corridor closer to the Mississippi River levee. In doing so, approximately 6,700 feet (+/- 1.2 miles) of the current NOGC railway track along LA 23 would need to be curved east and then west back to the existing rail corridor parallel to LA 23 (see **Figure 4-11**) as part of the wye. At its closest point to the levee, the relocated track would maintain a 15 foot clearance of the Mississippi River levee to meet USACE requirements.

The dual crossing option as shown with the magenta lines in **Figure 4-10** would bisect the Hero Park/River Oaks Academy site, impact two structures from the former River Oaks Academy, impact additional live oak trees, and likely require acquisition of the entire site since portion of the site may be undevelopable in the future. The two crossing solution was discussed and deemed not feasible with technical analysis including the input from key agencies and other stakeholders (see Section 3.4.11, Tier II Analysis) including representatives of RPC, NOGC, LADOTD, Plaquemines Parish and USACE participating in the PMC process.

Finally, the single track wye provides a more generous turning radius helping reduce travel time through the LA 23 crossing. In addition, it supports stated local objectives to elevate LA 23 in the future over the rail crossing as funds become available.

In summary, there are no feasible or prudent alternatives to crossing the 4(f) site, so there is no other course of action other than mitigation.

4.10 Preliminary Section 4(f) Finding

Based on the level of analysis completed, the Preferred Alternative would result in the use of one resource protected by Section 4(f): the Hero Park/River Oaks Academy site. Completion of this additional investigation at the site, as reviewed and confirmed with the SHPO, indicate that the River Oaks Academy is eligible for listing on the NRHP under Criterion A due to the academy's association with the Civil Rights Act of 1964 and the local impact of Federal mandated desegregation in Plaquemines Parish, Louisiana and Criterion B due to the property's association with Leander Perez, Sr. while Hero Park would be eligible for listing on the NRHP under Criterion A due to its contribution to the local history (36 CFR §60.4).

4.11 Measures to Minimize Harm

The Preferred Alternative would create an adverse effect on the Hero Park/River Oaks Academy site. As required through the general consultation process, appropriate mitigation measures were determined including documenting the historic property in accordance with Historic American Building Survey standards and installation of a historical marker (see Memorandum of Agreement in **Appendix G**).

In the future, design and construction phases of the Project would include coordination with the SHPO and Louisiana Division of Archaeology in case of unanticipated discovery of intact cultural deposits.

4.12 Preliminary Section 6(f) Finding

There are no locations developed with Section 6(f) resources in the Relocation Corridor or Preferred Alternative. Therefore, there would be no impact to Section 6(f) resources as a result of the Preferred Alternative.

4.13 Agency Coordination

49 U.S.C. §303(b) requires consultation with the Secretary of the Interior and the State of Louisiana (State Historic Preservation Officer with the State of Louisiana, Office of Cultural Development, Division of Historic Preservation) in the development of this Project. **Table 4-3** provides coordination to date taken with this agency.

Table 4-3. Summary of Agency Coordination

Date	Form	Participants	General Topics
May 4, 2015	Letter – Solicitation of Views	<ul style="list-style-type: none"> • State of Louisiana, State Historic Preservation Officer • RPC 	Opening of coordination and opportunity for agency commentary on the Project as presented with purpose and need and initial Study Area definition
May 7, 2015	Letter – Solicitation of Views Response	<ul style="list-style-type: none"> • State of Louisiana, State Historic Preservation Officer • RPC 	Notation that Section 106 review could not occur due to submittal of insufficient information. Request for additional information made as part of this letter
April 19, 2017	Letter with Cultural Resources Report (<i>Draft</i>)	<ul style="list-style-type: none"> • FRA • Plaquemines Parish • Allen Hero (property owner) • RPC 	Transmittal of draft Cultural Resources Report to consulting parties
May 12, 2017	Letter with Cultural Resources Report (<i>Draft</i>)	<ul style="list-style-type: none"> • FRA • State of Louisiana, State Historic Preservation Officer • RPC 	Transmittal of draft Cultural Resources Report to the State Historic Preservation Officer
May 24, 2017	Letter	<ul style="list-style-type: none"> • State of Louisiana, State Historic Preservation Officer • RPC • FRA • Earth Search, Inc. (Cultural Historian) 	Confirmation of draft Cultural Resources Report receipt, along with outline of comments on draft report
May 26, 2017	Email	<ul style="list-style-type: none"> • State of Louisiana, State Historic Preservation Officer 	Confirmation of potential mitigation strategy for impact to River Oaks Academy structure in ROW

Date	Form	Participants	General Topics
		<ul style="list-style-type: none"> • Earth Search, Inc. (Cultural Historian) 	
June 20, 2017 (July 12, 2017 Approval)	Letter and SHPO Response	<ul style="list-style-type: none"> • State of Louisiana, State Historic Preservation Officer • FRA 	SHPO accepted the Final Cultural Resources Report on July 12, 2017. By accepting the Final Report, they also accepted any decisions made in the report which would include eligibility determinations.
July 18, 2017	Conference Call	<ul style="list-style-type: none"> • State of Louisiana, State Historic Preservation Officer • RPC • FRA • Earth Search, Inc. (Cultural Historian) • Hero Lands Company 	Section 106 Consulting Party consultation discussion about mitigation measures and the Draft Memorandum of Agreement between FRA and SHPO

5.0 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

Coordination and consultation with agencies, stakeholder groups and the public was initiated early in the EA process to incorporate agency and public comments and concerns into the development and analysis of the Project's purpose and need, alternatives, and potential environmental impacts. Representatives from the RPC, RGPC, NOGC, LADOTD and the FRA coordinated closely on the EA.

5.1 Agency Coordination

5.1.1 Solicitation of Views

Early in the planning stages of the EA, views from Federal, state, local agencies, organizations, and individuals were solicited. On May 4, 2015, a letter was sent to all applicable agencies/organizations/individuals requesting comments on the Project. The special expertise of these groups assisted with input on the purpose and need statement, as well as the early identification of possible adverse economic, social, or environmental effects or concerns related to the Project. A summary of the solicitation of views process including the letter, mailing list, and responses is included in the *Agency Scoping Meeting Memorandum*.⁴⁶

5.1.2 Agency Scoping Meeting

The agency scoping meeting was held on June 5, 2015 with resource agencies. Key topics discussed were the NEPA process, Study Area environmental resources, conceptual alignment options, and permitting and agency requirements. See **Table 5-1** for a summary of the agency scoping meeting topics/agendas and outcomes.

5.1.3 Agency Coordination Meetings

Several meetings were conducted to provide applicable Federal and state agencies with an overview of the Project and address topics specific to their special expertise. The first of three agency coordination meetings was held on July 23, 2015 with the US Coast Guard. Key topics discussed were GIWW Bridge crossing types and design permitting. The second Agency Coordination meeting was held August 18, 2015 with the Port of New Orleans and City of Gretna. Key topics discussed were the NEPA process, Study Area environmental resources, alternatives considered, and rail access to Port of New Orleans property. The final agency coordination meeting was held January 18, 2016 with the US Army Corp of Engineers. Key topics discussed were the NEPA process, Study Area features, alternatives, and ROW and easements along Peters Road. See **Table 5-1** for a summary of agency coordination meeting topics/agendas and outcomes.

⁴⁶ Report available at www.norpc.org/railroad.html or from RPC upon request.

Table 5-1. Summary of Agency Meetings

Meeting Type	Date	Attendees	Topic/Agenda	Outcomes
Agency Scoping	June 5, 2015	Resource Agencies	<ul style="list-style-type: none"> Project overview NEPA process Study Area environmental resources Conceptual alignment options Permitting and agency coordination 	<ul style="list-style-type: none"> Permitting requirements Design requirements Identification of environmental resources to be considered in the NEPA document
For meeting record see <i>Agency Scoping Meeting Summary Memorandum; September 2015</i>				
Agency Coordination	July 23, 2015	US Coast Guard	<ul style="list-style-type: none"> Project overview GIWW bridge crossing types Design and permitting 	<ul style="list-style-type: none"> USCG design and permitting requirements USCG preference for Alternative A alignment crossing the GIWW
For meeting record see <i>Public and Agency Outreach Summary Memorandum; May 2016</i>				
Agency Coordination	August 18, 2015	Port of New Orleans and City of Gretna	<ul style="list-style-type: none"> Project overview NEPA process Study Area environmental resources Alternatives considered Rail access to Port of New Orleans property 	<ul style="list-style-type: none"> Port of New Orleans – rail access to Perry Street Wharf Disposition of track through Gretna
For meeting record see <i>Public and Agency Outreach Summary Memorandum; May 2016</i>				
Agency Coordination	January 28, 2016	US Army Corps of Engineers	<ul style="list-style-type: none"> Project overview NEPA process Study Area features Alternatives Rail alignment along the west side of Peters Road adjacent to floodwall 	<ul style="list-style-type: none"> Permitting requirements within proximity to USACE infrastructure including floodwalls and levees Rail design requirements and clearances adjacent to the floodwall and Mississippi River levees
For meeting record see <i>Public and Agency Outreach Summary Memorandum, May 2016</i>				
Agency Coordination	July 18, 2017	SHPO, RPC, FRA, Earth Search, Inc., and Hero Lands Company	<ul style="list-style-type: none"> Section 106 Consulting Party consultation discussion 	<ul style="list-style-type: none"> Mitigation measures for impacts to the Hero Park/River Oaks Academy site Draft Memorandum of Agreement between FRA and SHPO

5.1.4 Project Management Committee Meetings

A series of seven Project Management Committee (PMC) meetings were held to formulate and refine the build alternatives throughout the Alternatives Analysis. The seven meetings consisted of three general meetings (**Table 5-2**) followed by three technical committee meetings and one design coordination meeting (**Table 5-3**). A summary of the PMC meetings, including presentations and tiered Alternatives Analysis plans is included in the *Public and Agency Outreach Summary Memorandum*.⁴⁷

The initial general PMC meeting (PMC Meeting No. 1) was held on March 17, 2015 to provide an overview of the EA and the PMC's role. PMC Meeting No. 2 was held on July 22, 2015 to review and gather feedback on information in the following four draft documents: *Purpose and Need*, *Traffic Analysis Report – Existing Conditions*, *Gulf Intracoastal Waterway (GIWW) Marine Vessel Traffic Analysis*, and *Tier I Alternatives Analysis – Screening Evaluation*. PMC Meeting No. 3 was held on October 8, 2015 and included a review of public meeting comments and discussion on preliminary alternatives.

The fourth PMC meeting (PMC Technical Meeting No. 1) was held on November 3, 2015 to discuss tradeoffs between preliminary alternatives in more depth. PMC Technical Meeting No. 2 was held on January 5, 2016 to present refinements to the preliminary alternatives and to initially obtain consensus on the Preferred Alternative. The final technical meeting (PMC Technical Meeting No. 3) was held on March 17, 2016 to finalize consensus on the Preferred Alternative. A design coordination meeting was held with NOGC Railway on October 22, 2015 to obtain consensus on the overall Preferred Alternative alignment. Final approval of the recommended Preferred Alternative was reached via email on March 30, 2016.

⁴⁷ Report available at www.norpc.org/railroad.html or from RPC upon request.

Table 5-2. Summary of Project Management Committee Meetings

Meeting Type	Date	PMC Members	Topic/Agenda	Outcomes
PMC Meeting No. 1	March 17, 2015	Full PMC	<ul style="list-style-type: none"> Project overview Existing NOGC Railway operations NEPA process Study Area features At-grade highway rail crossings Alternatives Analysis Traffic evaluation methodology concurrence 	<ul style="list-style-type: none"> Understanding of FRA NEPA requirements Understanding of purpose and need, and Study Area resources Concurrence on study methodology PMC role and PMC member responsibilities
For meeting record see Public and Agency Outreach Summary Memorandum; May 2016				
PMC Meeting No. 2	July 22, 2015	Full PMC	<ul style="list-style-type: none"> PMC approval of the following documents: <ul style="list-style-type: none"> Purpose and Need Existing traffic report Marine vessel study Tier I AA report Existing NOGC Railway operations Tier I AA – Overview and screening of 4 conceptual alignment options 	<ul style="list-style-type: none"> PMC to provide comments on project deliverables Understanding of project screening methodology Concurrence on study methodology PMC recommendation to eliminate 2 of 4 conceptual alignment options PMC recommendation to further evaluate preliminary alternatives
For meeting record see Public and Agency Outreach Summary Memorandum; May 2016 Note: AA = Alternatives Analysis				
PMC Meeting No. 3 (Follow-up to September 22, 2015 Public Meeting)	October 8, 2015	Full PMC	<ul style="list-style-type: none"> Public Meeting recap Existing NOGC Railway operations within Gretna Commodities transported GIWW Crossing NOGC Railway operations – customers/businesses served 	<ul style="list-style-type: none"> Disposition of NOGC rail service through Gretna and tracks along 4th Street NAS JRB airspace restrictions – path location and height Project Team to further evaluate rail crossing location south of Lapalco Blvd. and alignment on the east side of Peters Road adjacent to the floodwall
For meeting record see Public and Agency Outreach Summary Memorandum; May 2016				
PMC Design Coordination Meeting	October 22, 2015	PMC Member NOGC/RGPC	<ul style="list-style-type: none"> Alignment preferences throughout the corridor and other rail operational requirements 	<ul style="list-style-type: none"> Consensus on alignment preferences to comprise the preferred alternative
For meeting record see Public and Agency Outreach Summary Memorandum; May 2016				

Table 5-3. Summary of Project Management Committee Technical Meetings

Meeting Type	Date	PMC Members	Topic/Agenda	Outcomes
PMC Technical Meeting No. 1 Follow-up to October 8, 2015 PMC Meeting	Nov 3, 2015	PMC Technical Committee	<ul style="list-style-type: none"> 4th Street curves Peters Road alignment- west side versus east side Overview of ROW, servitudes and easements Potential impacts Mitigation and Context Sensitive Solutions (CSS) 	<ul style="list-style-type: none"> Begin additional evaluation of rail alignment on the east side of Peters Road adjacent to the floodwall Potential Mitigation and CSS: Identification of neighborhood improvements - noise wall and community park
For meeting record see Public and Agency Outreach Summary Memorandum; May 2016				
PMC Technical Meeting No. 2 Follow-up to November 3, 2015 PMC Meeting	January 5, 2016	PMC Technical Committee	<ul style="list-style-type: none"> 4th Street curves Alignment south of Lapalco Blvd. Peters Road alignment- west side versus east side LA 23 crossing in Belle Chasse Potential impacts Mitigation and CSS 	<ul style="list-style-type: none"> 4th Street curve - final approval by PMC to provide a 10 degree 30 minute (10.5°) curve for rail operations LA 23 crossing in Belle Chasse - final approval by PMC to provide an at-grade highway rail crossing initially; followed by grade-separation if funding is available
For meeting record see Public and Agency Outreach Summary Memorandum; May 2016				
PMC Technical Meeting No. 3 Follow-up to January 5, 2016 PMC Meeting	March 17, 2016	PMC Technical Committee	<ul style="list-style-type: none"> Alignment south of Lapalco Blvd. Peters Road alignment- west side versus east side Layout of ROW associated with Peters Road reconstruction LA 23 crossing in Belle Chasse Potential impacts 	<ul style="list-style-type: none"> Peters Road alignment- adjacent to floodwall - final approval by PMC Peters Road Reconstruction includes ROW purchase for relocated Peters Road and reconstruction of Peters Road PMC requests modification to the rail alignment crossing Murphy Canal
For meeting record see Public and Agency Outreach Summary Memorandum; May 2016				
Follow-up to March 17, 2016 PMC Meeting	March 30, 2016	PMC Technical Committee	<ul style="list-style-type: none"> Modification to the alignment crossing Murphy Canal 	<ul style="list-style-type: none"> Email sent to PMC technical committee - modification to the alignment crossing Murphy Canal - final approval by PMC

5.2 Public Involvement

5.2.1 Public Meeting

A public meeting was held on September 22, 2015, from 4 to 7 pm at the Mel Ott Park Multi-Purpose Center, 2301 Belle Chasse Highway in Gretna, Louisiana to share the EA scope and solicit stakeholder and public input on the Project's purpose and need, range of alternatives under study, and key information to be considered by the Project Team in the Alternatives Analysis process. The public meeting venue was a well-known, centralized location within the Study Area that met the Americans with Disabilities Act accessibility requirements and was centrally located for easy transit access. The format of the public meeting was an open house with stations set up throughout the meeting venue to present project information. A summary of the public meeting is included in the *Public Meeting Summary* report⁴⁸.

5.2.2 Informational Meetings

A series of small, informational meetings were conducted with the following stakeholders to discuss specific topics such as rail operations, Study Area environmental resources, conceptual alignments and alternatives considered:

- Harvey Canal Industrial Association on July 23, 2015
- Public, elected officials, and agencies on September 22, 2015
- Harvey Canal Industrial Association on October 1, 2015
- City of Gretna Council on October 14, 2015
- Jefferson Parish Elected Officials on April 14, 2016

See **Table 5-4**, Summary of Stakeholder and Public Meetings, for details on meeting topics/agendas and outcomes. A summary of these informational meetings is included in the *Public and Agency Outreach Summary Memorandum*.

⁴⁸ Report available at www.norpc.org/railroad.html or from RPC upon request.

Table 5-4. Summary of Stakeholder and Public Meetings

Meeting Type	Date	Attendees	Topic/Agenda	Outcomes
Informational Meeting; Introductory Meeting to HCIA Leadership	July 23, 2015	Harvey Canal Industrial Association (HCIA) Management Team	<ul style="list-style-type: none"> Project overview NEPA process Rail operations Study Area environmental resources Conceptual alignment options 	<ul style="list-style-type: none"> Concurrence to evaluate conceptual alignment options further South of Lapalco Blvd., consider an alignment on the west side of Peters Road parallel to the floodwall Concerns regarding business access along Peters Road
For meeting record see Public and Agency Outreach Summary Memorandum; May 2016				
Public Meeting	September 22, 2015	Public, Elected Officials, and Agencies	<ul style="list-style-type: none"> Project overview NEPA process Study Area environmental resources Presentation on alternatives considered including conceptual alignment options and preliminary alternatives 	Public Comments included: <ul style="list-style-type: none"> Commodities transported Traffic impacts within Gretna Neighborhood impacts – noise, vibration, environmental justice Eliminate Preliminary Alternative B South of Lapalco Blvd., consider an alignment on the west side of Peters Road parallel to the floodwall
For meeting record see Public Meeting Summary Report; October 2015				
Informational Meeting	October 1, 2015	HCIA Members	<ul style="list-style-type: none"> Project overview NEPA process Study Area environmental resources Alternatives considered 	<ul style="list-style-type: none"> The public comment period was extended to October 13, 2015 to allow for the receipt of comments from HCIA members
For meeting record see Public and Agency Outreach Summary Memorandum; May 2016				
Informational Meeting	October 14, 2015	City of Gretna Council Meeting	<ul style="list-style-type: none"> Project overview NEPA process Study Area environmental resources Alternatives considered 	<ul style="list-style-type: none"> No public comments received at the Council meeting
For meeting record see Public and Agency Outreach Summary Memorandum; May 2016				
Informational Meeting	October 14, 2015	City of Gretna Council Meeting	<ul style="list-style-type: none"> Project overview NEPA process Study Area environmental resources Alternatives considered 	<ul style="list-style-type: none"> No public comments received at the Council meeting

6.0 FUNDING ALTERNATIVES

Currently, there is no identified funding for the Preferred Alternative. This section provides a brief summary of past and current legislation as well as the identification of available potential options for funding and financing future phases for the implementation of the Preferred Alternative. There are several finance mechanisms for investing in freight rail improvement projects. The most common are appropriations from Congress or state agencies, where the project is specifically funded through a legislative or departmental program and authorized by the legislature. There are also other methods of funding capital projects at both the state and Federal level. These other funding sources can be categorized as grants, loans, and tax-expenditure finance programs. The primary source of the information contained herein is extracted from FRA's website under their "Legislation and Regulations" page and the "Grants and Loans" page (www.fra.dot.gov/Page/P0020 & [/P0021](http://www.fra.dot.gov/Page/P0021) accessed on July 8, 2016).

6.1 Federal Legislation

Federal funding for freight rail projects in the past have largely been limited to highway grade crossing safety enhancements and projects that benefit air quality. Recently, however, the US Department of Transportation (USDOT) has developed financing programs for transportation infrastructure improvements resulting from the prior and current Federal legislation including: the Passenger Rail Investment and Improvement Act of 2008 (PRIIA); the Railroad Safety Improvement Act of 2008 (RSIA); the American Recovery and Reinvestment Act of 2009 (ARRA); and most recently, the Fixing America's Surface Transportation Act, or FAST Act.

6.1.1 FAST Act Overview

On December 4, 2015, President Obama signed into law the Fixing America's Surface Transportation Act, or FAST Act (P.L. 114-94), the first long-term Federal transportation bill in more than 10 years. The FAST Act authorizes \$305 billion over fiscal years 2016 through 2020 for the USDOT's rail, highway, motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, research, technology and statistics programs. The FAST Act also marks the first time intercity passenger rail programs have been included in a comprehensive, multimodal surface transportation authorization bill, authorizing more than \$10 billion for intercity passenger and freight rail grants (www.fra.dot.gov/Page/P0919 accessed on July 8, 2016). Excerpted from FRA's website, applicable provisions of the Fast Act by primary topic area include the following:

- Safety;
- Rail Development Grants and Policy;
- Financing Programs; and
- Project Delivery.

6.1.2 FAST Act Safety Provision

Three new competitive grant programs are included within the safety provision of the FAST Act.

Highway-Rail Grade Crossing Requirements

The FAST Act includes several provisions to improve the safety of highway-rail grade crossings. For example, the FAST Act:

- Requires DOT to develop and distribute a model state highway-rail grade crossing safety action plan for States;
- Requires states to submit (and update) state action plans;
- Requires a study on data availability and engineering practices for private highway-rail grade crossings;
- Requires a study on the effectiveness of PTC at highway-rail grade crossings; and
- Requires the Comptroller General to evaluate on the use of locomotive horns at highway-rail grade crossings.

Safe Transportation of Energy Products (STEP)

The FAST Act focuses on the safe transportation of energy products. For example, the statute:

- Requires new tank cars to be equipped with “insulating blankets;”
- Mandates all legacy DOT-111 tank cars in flammable liquids service to be upgraded to new retrofit standards regardless of the product shipped;
- Sets minimum requirements for the protection of certain top-fitting tank car valves;
- Requires reporting on the industry-wide progress and capacity to modify DOT-111 tank cars;
- Requires a derailment test and an independent evaluation to investigate braking technology requirements for the movement of trains carrying certain hazardous materials; and
- Requires Class I railroads to generate accurate, real-time, and electronic train consist information (e.g., the location of hazardous materials on a train). Railroads must provide that information to first responders on the scene of an accident and provide information about certain flammable liquid shipments to State Emergency Response Commissions.

Other Key Rail Safety Provisions

The FAST Act has several additional provisions to improve rail safety. For example, the FAST Act:

- Requires DOT to provide a state or political subdivision of a state with a public version of a railroad’s bridge inspection report, upon request;
- Requires redundant signal protection for maintenance-of-way workers;
- Requires DOT to amend railroad police training provisions; and

- Requires DOT to report to Congress on research conducted to develop a system to measure vertical track deflection from a moving rail car.

6.1.3 FAST Act Rail Development Grants and Policy Provision

The FAST Act authorizes \$2.2 billion over five years for three new competitive rail development grant programs that build off of the Administration's previous \$10 billion investment through the High-Speed Intercity Passenger Rail Program:

- **Consolidated Rail Infrastructure and Safety Improvements (Sec. 11301):** Purpose is to improve the safety, efficiency, and reliability of passenger and freight rail systems. Eligible activities include a wide range of capital, regional and corridor planning, environmental analyses, research, workforce development, and training projects.
- **Federal-State Partnership for State of Good Repair (Sec. 11302):** Purpose is to reduce the state of good repair backlog on publically-owned or Amtrak-owned infrastructure, equipment, and facilities. Eligible activities include capital projects to (1) replace existing assets in-kind or with assets that increase capacity or service levels, (2) ensure that service can be maintained while existing assets are brought into a state of good repair, (3) bring existing assets into a state of good repair.
- **Restoration and Enhancement Grants (Sec. 11303):** Purpose is to provide operating assistance to initiate, restore, or enhance intercity passenger rail transportation. Grants are limited to three years of operating assistance per route and may not be renewed.

6.1.4 FAST Act Financing Program Provision

The Railroad Rehabilitation and Improvement Financing (RRIF) Program provides direct Federal loans and loan guarantees to finance the development of railroad infrastructure. The FAST Act contains several provisions intended to streamline the loan approval process, increase access to the program, and fund a wider array of projects by:

- Requiring the Secretary to implement procedures and measures to economize the time and cost involved in obtaining an approval or a disapproval of an application for a direct loan or loan guarantee;
- Expanding applicant eligibility to allow for joint ventures that include at least one otherwise eligible applicant;
- Authorizing financing for transit-oriented development (this authority expires 4 years from enactment);
- Clarifying that pre-construction activities, such as planning and design, may be financed;
- Authorizing DOT to enter into Master Credit Agreements (an agreement to make one or more loans at future dates for a program of related projects on terms acceptable to the Secretary).

6.2 Grants for Freight Rail Investment

Grant programs are a viable funding sources for rail investments to improve safety, relieve congestion, and expand and upgrade passenger and freight rail infrastructure and services. This includes competitive discretionary grants and dedicated grants. Grants give States and the Federal government the best control over the use of funds. Funds can be targeted to specific projects that solve freight and passenger rail needs. At the Federal level, the longstanding FHWA Section 130 Rail-Highway Grade Crossing Program provides dedicated funding to improve safety at rail grade crossings. There are also Federal grant programs such as the Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant program that target freight rail projects. Summarized below are the current competitive discretionary grant programs that may be applicable to project funding; as excerpted from FRA's website (www.fra.dot.gov/Page/P0021 accessed on July 8, 2016).

6.2.1 Railroad Safety Infrastructure Improvement Grants

Funding under this competitive discretionary grant program is available to projects that make safety improvements to railroad infrastructure including the acquisition, improvement or rehabilitation of intermodal or rail equipment, such as rolling stock, locomotives, and passenger cars; or rail facilities, including track, bridges, tunnel, yards, buildings, passenger stations, and maintenance and repair shops. Projects that make improvements to highway-rail at-grade crossings, including grade separations and grade crossing closures, are also eligible, as are improvements necessary to establish a quiet zone. The focus of a project must be safety improvements, and not other potential benefits, such as increased operational efficiencies or economic opportunities. States, local governments, and passenger and freight railroad carriers are all eligible applicants for all project types permitted under this grant program.

6.2.2 Railroad Safety Technology for Positive Train Control (PTC)

Funding under this competitive discretionary grant program is limited to eligible projects that implement a positive train control system or will otherwise benefit from overall PTC system implementation of freight, intercity passenger and commuter railroads. Eligible applicants for PTC implementation projects include passenger and freight railroad carriers, railroad suppliers, and states and local governments that have a public benefit of improved safety and network efficiency. To be eligible for assistance, the above entities must have submitted a Positive Train Control Implementation Plan as required by 49 UCS 20157(a).

6.2.3 Railroad Safety Grants for the Safe Transportation of Energy Products by Rail Program

Funding under this competitive discretionary grant program is available to states for public and private railroad grade crossings enhancement and track improvement projects that improve safety on rail routes that transport flammable energy products. According to the Notice of Funding Availability for this grant program, discretionary funding is available for public and private railroad grade crossing enhancement and track improvement projects that improve safety on rail routes that transport flammable energy products, which are defined as crude oil,

ethanol, and natural gas. Eligible applicants include states, groups of states, and interstate compacts.

6.3 Loan Programs for Freight Rail Investment

Loan programs are also a viable funding sources for rail investments. Loan programs such as the Railroad Rehabilitation and Improvement Financing, and Transportation Infrastructure Finance and Innovation Act are existing loan programs specific to railroad and other transportation infrastructure projects. The funding programs are described below.

6.3.1 Railroad Rehabilitation and Improvement Financing (RRIF)

The Railroad Rehabilitation and Improvement Financing (RRIF) program was originally established by the Transportation Equity Act for the 21st Century (TEA-21) and amended by the Safe Accountable, Flexible and Efficient Transportation Equity Act: a Legacy for Users (SAFETEA-LU). The RRIF provides direct loans and credit assistance to public and private sponsors of intermodal and rail projects, including Class I and short-line railroads.

This program enables USDOT to make direct loans and loan guarantees to State and local governments, government sponsored authorities and corporations, and railroads and joint ventures that include at least one railroad. Funding may be used for:

- Acquisition, improvement or rehabilitation of intermodal or rail equipment or facilities including tracks, components of tracks, bridges, yards, buildings and shops;
- Refinance outstanding debt incurred for the purposes listed above; or
- Development or establishment of new intermodal or railroad facilities.

The FRA can authorize direct loans and loan guarantees up to \$35 billion and up to \$7 billion for projects benefiting non-Class I carrier freight railroads. The loans can fund up to one hundred percent of a railroad project with a repayment period of up to 35 years and interest rates equal to the cost of borrowing from the government. Eligible borrowers include railroads, state and local governments, government-sponsored authorities and corporations, joint ventures with at least one railroad, and limited option freight shippers who intend to construct a new rail connection.

6.3.2 Transportation Infrastructure Finance and Innovation Act (TIFIA)

Transportation Infrastructure Finance and Innovation Act (TIFIA) authorizes credit assistance on flexible terms directly to public-private sponsors of major surface transportation projects of national significance to assist in gaining access to private capital markets. It can provide direct loans, loan guarantees, and lines of credit to support up to one third of a project's cost. TIFIA is restricted to projects costing at least \$50 million, with the exception of projects for Intelligent Transportation System (ITS) projects, which must cost at least \$15 million.

TIFIA provides loans, loan guarantees, and lines of credit for large capital improvement projects. To qualify for assistance under TIFIA, a project needs a source of revenue to cover debt service costs; the total project must be valued at more than \$100 million or 50 percent of the State's annual Federal-aid highway apportionments, whichever is less; the Federal TIFIA loan cannot exceed one-third of the total project cost; and the project's senior debt obligations must receive an investment-grade rating from at least one of the major credit rating agencies. These factors limit its applicability, and private rail projects are not eligible today (although eligibility is proposed for reauthorization); but TIFIA is an important tool that can be used for financing joint highway and rail projects that meet the program guidelines.

6.4 State Programs

In addition to Federal funding, many States provide funding for freight rail projects. In most cases, State programs were initiated by the Federal rail service assistance program established by the Railroad Revitalization and Regulatory Reform Act of 1976 (4R Act), and amended by the Local Rail Service Assistance Act of 1978 (LRSA). The LRSA program provided funding on a Federal/local matching share basis for four types of projects: rehabilitation, new construction, substitute service, and acquisition. The LRSA program permitted States to provide funds on a grant or loan basis. LRSA was updated in 1990 to the Local Rail Freight Assistance program (LRFA) and the criteria for lines eligible to receive assistance were revised. Funds for the program were dramatically reduced in the 1990s, and congressional appropriations ceased in 1995. Despite the lack of Federal funds, many States have continued their freight rail assistance programs through remaining LRFA funds (repaid loans) or through apportionment of State funds. The objectives of most of these programs have been job retention, economic development, and safety. More recently, benefits accrued to highway congestion mitigation and avoided highway costs are being considered.

6.4.1 Louisiana Capital Outlay Program

The information contained in this section is extracted from LADOTD's website under their "Water Resources" pages (wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Public_Works/Water_Resources/Pages/CapitalOutlayProgram.aspx accessed on July 8, 2016).

The State of Louisiana Capital Outlay Program (Bond Program) provides a source of funding for public improvement type projects not eligible for funding through any of the dedicated funding programs. The funds are provided through the sale of State General Obligation Bonds and can be used for acquiring lands, buildings, equipment or other properties, or for their preservation or development of permanent improvements. Items which qualify as capital outlay expenditures include acquisition of land; site development and improvement; construction of buildings and other structures; additions, major improvement, and alterations to an existing facility that will extend its life or increase its usefulness; installation, extension, or replacement of utility systems, fire protection, and other major facilities; initial equipment and furnishings for new buildings; and major equipment and furnishings for existing buildings.

The program requires that projects be submitted by the head of each budget unit (i.e., Department Secretary). However, local officials of political subdivisions may also make requests, but only through the senator and representative in whose district the proposed project will be located. Each legislator forwards such requests to the Facility Planning and Control Section of the Division of Administration.

Projects then compete through the legislative process, and successful ones are grouped into various funding priorities and included in the approved Capital Outlay Bill. Funding for a specific project does not become available until such time as the bonds for that project are sold, or an advance cash line-of-credit is approved by the State Bond Commission.

6.5 Other Funding and Financing Options

6.5.1 Industrial Rail Access Program (IRAP)

An Industrial Rail Access Program (IRAP) is created to provide financial assistance to improve industrial access to rail. These programs aim to preserve freight rail service, stimulate economic development through new or expanded freight rail service, and increase the use of rail transportation. An IRAP program would provide funding assistance for the construction or improvement of railroad tracks and facilities to serve industrial or commercial sites where freight rail service is currently needed, anticipated in the future, or in need of an upgrade. The funding program can allow financial assistance to localities, businesses and/or industries seeking to provide freight rail service between the site of an existing or proposed commercial facility and common carrier railroad tracks. It typically entails a partnership among the public sector, business owner, and railroad, which can all realized benefits from new or improved rail access.

IRAP programs are well-established in a number of states, including New York, North Carolina, and Virginia. Each State's IRAP program varies in terms of budget and the percent of local and private funds that are required. Louisiana does not have an IRAP program.

6.5.2 Public-Private Partnerships

Several states have instituted policies and programs that encourage public-private partnerships (PPP) to help leverage private investment into transportation infrastructure. There are two distinct forms of PPP arrangements: one where private entities lease public infrastructure and one where investment in infrastructure is shared by public and private entities, regardless of ownership.

There are a number of State and Federal programs that have been created to make public funds available to private railroads. Although public funds will benefit the private sector, public investment comes with restrictions and eligibility requirements. Projects generally have to provide measurable economic benefits, require matching funds, and in the case of rail may

require accommodation of additional passenger service. The following are examples of existing PPP arrangements:

- Alameda Corridor – This is a \$2 billion 20-mile rail expressway connecting the Ports of Los Angeles and Long Beach to rail yards near Los Angeles. The project will provide faster, more efficient freight flows.
- Chicago Region Environmental and Transportation Efficiency Program (CREATE) – This program is a partnership between the State of Illinois, City of Chicago, and the freight and passenger railroads. The program included upgrade of track connections and expanded routes, meaning faster connections and operations. This program also received TIGER funds.
- Heartland Corridor – This project was a partnership between the Federal Highway Administration and a private railroad that would raise bridge and tunnel heights to allow double stacking between the East Coast and Chicago.
- CSX Boston/Worcester Line – The MBTA acquired the property rights of the Boston to Worcester rail line from CSX Corporation, increasing the potential for additional commuter service. As part of this transaction, the Commonwealth and CSX will increase the vertical clearances of bridges along the railroad main line between I-495 and the New York State line to accommodate double-stack freight trains. The Commonwealth will assume responsibility for raising highway bridges, while CSX will be responsible for lowering tracks.

6.5.3 Tax-Expenditure Finance Programs

Tax-expenditure finance programs include accelerated depreciation, tax-exempt bond financing, and tax-credit bond financing. Expansion of tax-exempt private activity bonds for surface transportation could potentially be beneficial for rail investment. Tax-credit bond financing is a new form of federally subsidized debt financing, where the investor receives a Federal tax credit in lieu of interest payments on the bonds. From the borrower's perspective, it provides a zero-interest-cost loan. These programs can be used to provide targeted, income-tax benefits for investments made to improve the efficiency or increase the capacity of the freight rail system. They have the potential to elevate the rail system's rate of return and simultaneously reduce its cost of capital. States and local agencies will likely want to explore all of these tools including new or expanded ones that may be included in the surface transportation reauthorization legislation, tailoring them to projects that produce public and system-wide benefits.

7.0 LIST OF PREPARERS/CONTRIBUTORS

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8.0 NOTIFICATION LIST

The same Federal, state, and local agencies and entities who were sent the Solicitation of Views package in May 2015 will be notified of a 30-day comment period for the EA once it is posted on the RPC website. Letters will be sent to the following agencies, organizations, and elected officials and the Project Management Committee will be asked to notify their constituents:

FEDERAL

Federal Emergency Management Administration (FEMA), Region VI
Federal Railroad Administration
Federal Transit Administration, Region 6
US Department of the Interior
US Army Corps of Engineers, New Orleans District Regulatory Branch
US Coast Guard, Marine Safety and 8th Coast Guard District
US Environmental Protection Agency
US Fish and Wildlife Service, Louisiana Ecological Services
US Geological Survey
National Marine Fish Service, Habitat Conservation Division
National Park Service, Southeast Region
National Resources Conservation Service
Naval Air Station Joint Reserve Base

STATE

Louisiana Department of Agriculture and Forestry, Offices of Forestry and Soil/Water Conservation
Louisiana Department of Culture Recreation and Tourism, Division of Archaeology and Office of State Parks
Louisiana Department of Economic Development, Office of Business Development
Louisiana Department of Environmental Quality
Louisiana Department of Health and Hospitals, Division of Environmental Health
Louisiana Department of Natural Resources, Offices of Mineral Resources and Conservation
Louisiana Department of Public Safety, Highway Safety Commission
Louisiana Department of Transportation and Development, Headquarters and District 02
Louisiana Department of Wildlife and Fisheries, Louisiana Natural Heritage Program
Louisiana Division of Administration, Office of State Lands and Facility Planning and Control
Louisiana State University, Sea Grant Legal Advisory Service

LOCAL

City of Gretna
City of Westwego
Jefferson Parish Government (various departments)

Plaquemines Parish Government (various departments)
Plaquemines Port Harbor and Terminal District

ELECTED OFFICIALS

Louisiana House of Representatives, Districts 103 and 105
Louisiana State Senate, Districts 1, 7, and 8
United States House of Representatives, Districts 1 through 8
United States Senate

RAILROADS

Rio Grande Pacific Corporation
New Orleans and Gulf Coast Railway Company

NON-GOVERNMENTAL ORGANIZATIONS

Westbank Business & Industry Association (formerly HCIA)
Coalition to Restore Coastal Louisiana
Gulf Restoration Network
Louisiana Environmental Action Network
Louisiana Good Roads Association
Louisiana Forestry Association
Lower Mississippi Riverkeeper
Mississippi River Trail, Inc.
Sierra Club, New Orleans and Lafayette

9.0 REFERENCES

9.1 Reports Incorporated by Reference

The following are stand-alone documents that were prepared as part of this EA and are considered part of this EA. These documents are available at www.norpc.org/railroad.html or from RPC upon request (except for the *Phase I Cultural Resources Survey* report).

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9.3 GIS Layer Data Sources

GIS Layer Name	Source: Data Steward	Publish Date	Notes
NAS JRB: New Orleans	NAS JRB, GCR, Inc., JLUS Plan	2015	
Relocation Corridor	GCR, Inc.	2015	
Study Area	GCR, Inc.	2015	
Study Area Mask	GCR, Inc.	2015	
Alternative Routes	HDR Engineering, Inc./GCR, Inc.	2013	
Places	2013 TIGER files, US Census	2013	
Cities and Towns	2013 TIGER files, US Census	2013	
Rail Road Cad Files	HDR Engineering, Inc./GCR, Inc.	2015	
Existing NOGC Railway	GCR, Inc.	2015	
Roads	2013 TIGER files, US Census	2013	
Recent Projects	GCR, Inc.	2015	
Proposed Road Projects	GCR, Inc.	2015	
Flood Control System	2015 National Levee Database: USACE	2015	
Water	2013 TIGER files, US Census	2013	
Zoning	City of Gretna, Plaquemines Parish, Jefferson Parish	2016	
Land Use	City of Gretna, Plaquemines Parish, Jefferson Parish	2016	
Basemap	ESRI	2016	
ESRI World Imagery	Source: ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community	2010	World Imagery provides one meter or better satellite and aerial imagery in many parts of the world and lower resolution satellite imagery worldwide. The map includes 15m TerraColor imagery at small and mid-scales (591M down to 72k) and 2.5m SPOT Imagery (288k to 72k) for the world, and USGS 15m Landsat imagery for Antarctica. The map features 0.3m resolution imagery in the continental United States and 0.6m resolution imagery in parts of Western Europe from Digital Globe. Recent 1m USDA NAIP imagery is available in select states of the US. In other parts of the world, 1 meter resolution imagery is available from GeoEye IKONOS, Getmapping, AeroGRID, IGN Spain, and IGP Portugal. Additionally, imagery at different resolutions has been contributed by the GIS User Community. For more information on this map, including the terms of use, visit us online.

GIS Layer Name	Source: Data Steward	Publish Date	Notes
Community Facilities GNIS Features	GNIS USGS	2013	The Geographic Names Information System (GNIS) is the Federal and national standard for geographic nomenclature. The US Geological Survey developed the GNIS in support of the US Board on Geographic Names as the official repository of domestic geographic names data, the official vehicle for geographic names use by all departments of the Federal Government, and the source for applying geographic names to Federal electronic and printed products. The database assigns a unique, permanent feature identifier, the Feature ID, as the only standard Federal key for accessing, integrating, or reconciling feature data from multiple data sets. The GNIS collects data from a broad program of partnerships with Federal, state, and local government agencies and other authorized contributors, and provides data to all levels of government, to the public, and to numerous applications through a web query site, web map and feature services, file download services, and customized files upon request
Census Blocks		2010	Decennial Census. The US Constitution mandates that a census be taken in the United State every 10 years. This is required in order to determine the number of seats each state is to receive in the US House of Representatives
Census Block Groups		2010	Decennial Census. The US Constitution mandates that a census be taken in the United States every 10 years. This is required in order to determine the number of seats each state is to receive in the US House of Representatives
Census Tracts		2010	Decennial Census. The US Constitution mandates that a census be taken in the United States every 10 years. This is required in order to determine the number of seats each state is to receive in the US House of Representatives
Demographics: Population	US Census SF1 Tables	2010	Decennial Census. The US Constitution mandates that a census be taken in the United States every 10 years. This is required in order to determine the number of seats each state is to receive in the US House of Representatives
Demographics: Race	US Census SF1 Tables	2010	Decennial Census. The US Constitution mandates that a census be taken in the United States every 10 years. This is required in order to determine the number of seats each state is to receive in the US House of Representatives

10.0 GLOSSARY

The following terms are specifically defined as they are used in this study and document.

Adverse (impacts). Negative or detrimental impacts or effects.

Affected Environment. The physical, biological, social, and economic setting potentially affected by one or more of the alternatives being considered.

Air Quality. A measure of the concentrations of pollutants in the air.

Alignment. The general horizontal and vertical location of the centerline of the proposed railroad tracks.

Alignment Alternatives. The general location for tracks, structures and systems for the system between logical points within the *Relocation Corridor*.

Alternative. A variation of a rail corridor segment to mitigate a potential adverse environmental or engineering factor.

American Railway Engineering and Maintenance Association (AREMA). North American body for determination of railway engineering standards.

At-Grade. At ground surface level; a term used to describe roadways, river crossings, and track alignments.

Attainment. When an air basin meets the Federal or state standards set for a particular pollutant. See also *Nonattainment*.

A-Weighted Noise Level. A measure of sound intensity that is weighted to approximate the response of the human ear, so it describes the way sound will affect people in the vicinity of a noise source.

Borrow. Material, such as sand and gravel, which is extracted from an excavation or pit area that can be used to fill another site.

Clearance Limits. The dimensions beyond which the size of, or projections of a shipment may not extend in order to clear such things as switch stands, platforms, tunnels, and low bridges.

Context Sensitive Solution. A collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility (*FHWA*).

Construction. Any activity related to building projects, including highways or rail infrastructure (e.g., track, yards, bridges) that directly alters the environment.

Crossing (Track). A structure, used where one track crosses another at grade, and consisting of four connected frogs.

Cultural Resources. Resources related to the tangible and intangible aspects of cultural systems, living and dead, that are valued by a given culture or contain information about the culture. These include, but are not limited to sites, structures, buildings, districts, and objects associated with or representative of people, cultures, and human activities and events.

Cumulative Impact. As defined by NEPA, and impact on the environment that results from the incremental impact of the action when added to other past, present, reasonably foreseeable future actions.

Curved Track. Curved track is measured by degrees, with most main track curves falling between 1 and 5 degrees. The degree of curvature is the angle subtended at the center of a simple curve by a 100-foot chord. Curves require more power from locomotives, and the forces present while a train negotiates a curve increases rail and car wear. Stronger track, ties and additional spikes are used in curves in order to take the added loads.

Decibels (dB). A logarithmic measurement of noise intensity.

Endangered Species. A species that is in danger of extinction throughout all or a significant part of its range, and has a formal listing of the US Fish and Wildlife Service under the Endangered Species Act. See also *Threatened Species*.

Environment. Includes water, air and land and all plants and humans and other animals living therein, and the interrelationship existing among these.

Environmental Assessment (EA). A detailed information document that analyzes a project's potential effects and identifies mitigation measures and reasonable alternatives to reduce the significant effects. This document is part of the NEPA environmental review process.

Environmental Justice. Identifying and addressing the potential for disproportionately high and adverse effects of programs, policies, and activities on minority populations and low-income populations.

Erosion. Process by which earth materials are worn down by the action of flowing water, ice, or wind.

Federal Railroad Administration (FRA). A Federal agency that serves as the principal organization for assistance to the Secretary of Transportation on all matters relating to rail transport and safety.

Floodplain. The lowlands adjoining inland and coastal waters and relatively flat areas and floodprone areas of offshore islands including, at a minimum, that area inundated by a 1 percent or greater chance flood in any given year. The base floodplain is defined as the 100-year (1 percent) floodplain. The critical action floodplain is defined as the 500-year (0.2 percent) floodplain.

Geographic Information Systems (GIS). An information management system designed to store and analyze data referenced by spatial or geographic coordinates.

Grade Crossing. The intersection of a railroad and a highway at the same elevation (grade); an intersection of two or more highways; an intersection of two railroads.

Grade Separated. At different elevations; on separate levels.

Groundwater. Water contained and transmitted through open spaces in rock and sediment below the ground surface.

Habitat. An environment where plants or animals naturally occur; an ecological setting used by animals for a particular purpose, such as roosting or breeding.

Hazardous Materials. Cargo that poses a risk to individuals and/or the environment, the movement of which is governed by the Department of Transportation and other regulations. Hazardous Materials (hazmat) include corrosive materials, poisons and explosives among other substances.

Impact. For an EA, the positive or negative effect of an action (past, present, or future) on the natural environment (land use, air quality, water resources, geological resources, ecological resources, aesthetic and scenic resources) and the human environment (infrastructure, economics, social, and cultural).

Invasive Species. An alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Lead Agency. The public agency that has the principal responsibility for carrying out or approving a project or action and is thus responsible for preparing environmental review documents in compliance with NEPA. FRA is the lead agency for this EA.

Level of Service (LOS). A qualitative measure used to relate the quality of traffic service. LOS is used to analyze highways by categorizing traffic flow and assigning quality levels of traffic based on performance measure like speed, density, etc.

Minority Population. A community, census block, or block group in which the portion of the population of a racial or ethnic minority is 50 percent or greater.

Mitigation. Action or measure undertaken to minimize, reduce, eliminate, or rectify the adverse impacts of a project, practice, action or activity.

National Ambient Air Quality Standards (NAAQS). Federal standards stipulating the allowable ambient concentrations of specific criteria pollutants.

National Environmental Policy Act of 1969 (NEPA). Federal legislation requiring Federal agencies to consider the environmental impacts of major Federal projects or decisions, to share information with the public, to identify and assess reasonable alternatives, and to coordinate efforts with other planning and environmental reviews taking place.

No Action. Under NEPA, refers to an alternative under which no action would be taken (no infrastructure would be built and no new management or operational practices would be instituted).

No-Build Alternative. Represents the rail system in the Study Area as it is today and how it would develop in the future without the proposed rail relocation project.

Noise. Any sound that is undesirable because it interferes with speech and hearing; if intense enough, it can damage hearing.

Nonattainment. When an air basin does not meet the Federal or state standards set for a particular pollutant. See also *Attainment*.

Preferred Alternative. The alternative identified as preferred by the lead agency.

Prime Farmland. Land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion.

Purpose and Need. The reason(s) why a project or action is undertaken and the need(s) it is intended to meet or fulfill.

Rail. A rolled steel shape, commonly a T-section, designed to be laid end to end in two parallel lines on crossties or other suitable supports to form a track for railway rolling stock. It has three main parts:

1. The head that comes into contact with car wheels;

2. The web, which is the thinner, middle part of the rail; and
3. The base.

Relocation Corridor. The geographic area that follows the general route of the proposed rail relocation project.

Remnant Parcel. Locations along the corridor where the required right-of-way for the project would leave parcels isolated. Damages to the remaining portions of these parcels would likely occur. Therefore, in certain locations, it is recommended that these remnant parcels are purchased as part of the overall ROW acquisition for the project.

Right-of-Way (ROW). The property owned by a railway company on which tracks have been laid, including the track and land surrounding that track.

Scoping. A process used under NEPA to determine the scope of issues to be addressed and to identify the significant issues related to the proposed action or project to be addressed in an EA.

Section 4(f). Provisions originally enacted as Section 4(f) of the US Department of Transportation Act of 1966 (23 CFR 771.135) and subsequently codified in 49 U.S.C., Subtitle I, Section 303(c). The Section 4(f) provisions address the potential for conflicts between transportation needs and the protection of lands for recreational use and resource conservation by regulating the use of publicly-owned parkland, recreation areas, and historic sites. Specifically, they prohibit the Secretary of Transportation from approving any program or project that would require the use of any publicly owned land from a public park, recreation area, wildlife or waterfowl refuge, or land of an historic site of national significance as determined by the officials having jurisdiction over these lands, unless there are no feasible and prudent alternatives to the use of these lands. In addition, a proposed program or project must include all possible planning to minimize harm resulting from the proposed use.

Signal. Visual indication passed to the locomotive engineer to advise the speed, direction or route of the train. Some signals are: engine whistle signals, display of headlights, markers, blue signal protection, signals imperfectly displayed, and emergency protection signals.

Stakeholder. A person or organization with an interest in or affected by FRA actions (representatives from Federal, state, tribal, or local agencies; members of Congress or state legislatures; unions; educational groups; environmental groups; industrial groups, etc.; and members of the general public).

Station. A horizontal measurement on engineering drawings designating locations along a transportation system, such as a road or rail alignment. The distance between stations is 100 feet, which is related to the 100-foot chains that surveyors formerly used to mark distances.

Study Area. The geographical area that includes both the existing NOGC Railway and the proposed *Relocation Corridor* within portions of Jefferson and Plaquemines Parish.

Subballast. Rock, gravel or other granular material placed on a road bed to support cross ties and rails and to aid in holding the desired track geometry.

Subdivision. A portion of the railroad designated by time table. See also *Time Table*.

Threatened Species. A species that is likely to become an endangered species within the foreseeable future throughout all or a significant part of its range. See also *Endangered Species*.

Time Table. The document that contains subdivision information footnotes and special instructions relating to movements of trains, engines and track units. See also *Subdivision*.

Track. An assembly of rails, ties, and fastenings over which cars, locomotives, and trains are moved.

Train. An engine or more than one engine coupled, with or without cars, or a track unit(s) so designated by its operating authority, displaying a marker(s).

Vibration. The rapid linear motion of a compression wave in the ground caused by a single or repeated force or impact to the ground as in the action of a pile driver or a tire hitting a bump or pothole in a road.

Vibration Decibels (VdB). Indicates decibels relative to a reference quantity of one microinch per second (10^{-6} in/s). See also *Decibels*.

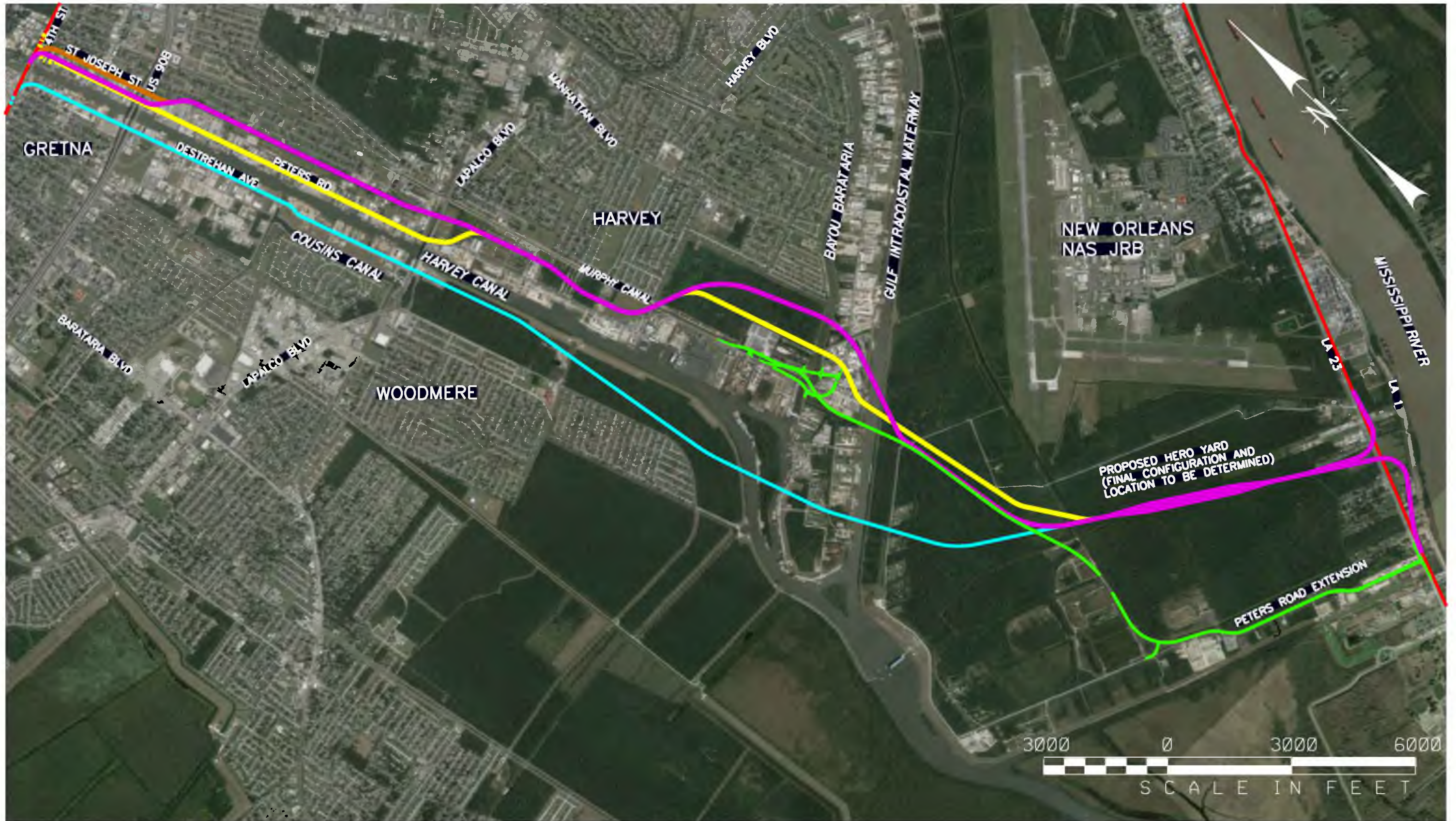
Wetland. An area of ground that is saturated with water either permanently or seasonally. A community composed of hydric soil and hydrophytes.

Wye. Railway tracks arranged in the form of a “Y” which are used for turning locomotives and rail cars in the opposite direction.

Yard. A system of tracks within defined limits provided for making up trains, storing cars, and other purposes, over which movements not authorized by time table or by train-order may be made, subject to prescribed signals and rules, or special instructions.

Appendix A
Alternatives Analysis Maps

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LEGEND

- EXISTING NOGC RAILWAY
- CONCEPTUAL ALIGNMENT OPTION 1
- CONCEPTUAL ALIGNMENT OPTION 2
- CONCEPTUAL ALIGNMENT OPTION 3
- CONCEPTUAL ALIGNMENT OPTION 4



PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED BY:
TBS
CHECKED BY:
LAB
DATE:
JUL 17 2015
SHEET NO.
EXHIBIT

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

FIGURE 2
CONCEPTUAL ALIGNMENT OPTIONS
OVERVIEW MAP

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\$\$\$PRINT/ISS\$\$\$
\$\$\$DATE\$\$\$

\$\$\$FILES\$\$\$



\$\$\$FILES\$\$\$
\$\$\$PLTDRVSS\$\$\$
\$\$\$PENTLSS\$\$\$
\$\$\$DATES\$\$\$

LEGEND	
	EXISTING NOGC RAILWAY
	PRELIMINARY ALTERNATIVE B
	HYBRID ALTERNATIVE A/B
	PRELIMINARY ALTERNATIVE A
	PROPOSED PETERS ROAD EXTENSION
	PROPOSED BRIDGE



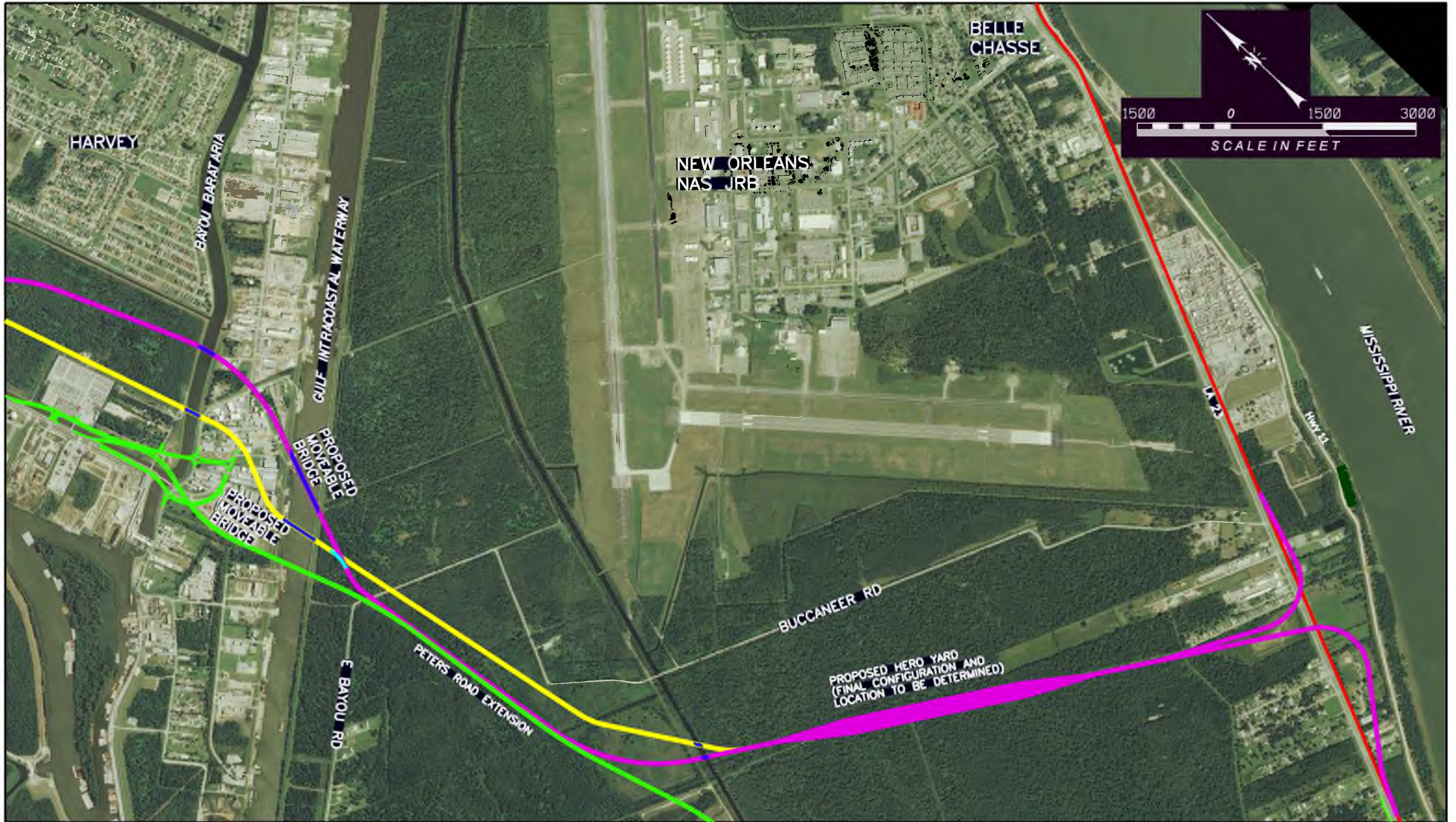
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DATE: SEP 30 2015
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EXHIBIT

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JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

PRELIMINARY ALTERNATIVES
A AND B

\$\$\$FILES\$\$\$



\$\$\$FILES\$\$\$
 \$\$\$PLOT/VSS\$\$\$
 \$\$\$PENTL/SS\$\$\$
 \$\$\$DATE/SS\$\$\$

LEGEND

- EXISTING NOGC RAILWAY
- PRELIMINARY ALTERNATIVE B
- HYBRID ALTERNATIVE A/B
- PRELIMINARY ALTERNATIVE A
- PROPOSED PETERS ROAD EXTENSION
- PROPOSED BRIDGE



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PRELIMINARY ALTERNATIVES
 A AND B

\$\$\$FILES\$\$\$



SSPILLESS
SSPILTOBASS
SSPENLBS55
SSDATISS

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE
	PROPOSED TRACK ROW
	PROPOSED PETERS ROAD RELOCATION
	PROPOSED ROADWAY ROW
	REMOVE EXISTING TRACK
	USACE FLOODWALL
	PROPOSED BRIDGE



PRELIMINARY
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RPC/FRA GRANT # FRR-RLD-0032-14-01-00

PREFERRED ALTERNATIVE

SSPILLESS



\$\$\$FILESS
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 \$\$\$DATESS

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE
	PROPOSED TRACK ROW
	PROPOSED PETERS ROAD RELOCATION
	PROPOSED ROADWAY ROW
	REMOVE EXISTING TRACK
	USACE FLOODWALL
	PROPOSED BRIDGE



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: NAIP 2013

DESIGNED BY: MHL
 CHECKED BY: LAB
 DATE: APR 29 2016
 SHEET NO.
 EXHIBIT

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
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 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

PREFERRED ALTERNATIVE

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Appendix B
Preferred Alternative Conceptual Plans

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\$\$\$FILES
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 \$\$\$DATERS

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (C)
	PROPOSED PETERS ROAD RELOCATION (C)
	REMOVE EXISTING TRACK
	PETERS ROAD EXTENSION
	PROPOSED BRIDGE
	HARVEY BLVD EXTENSION

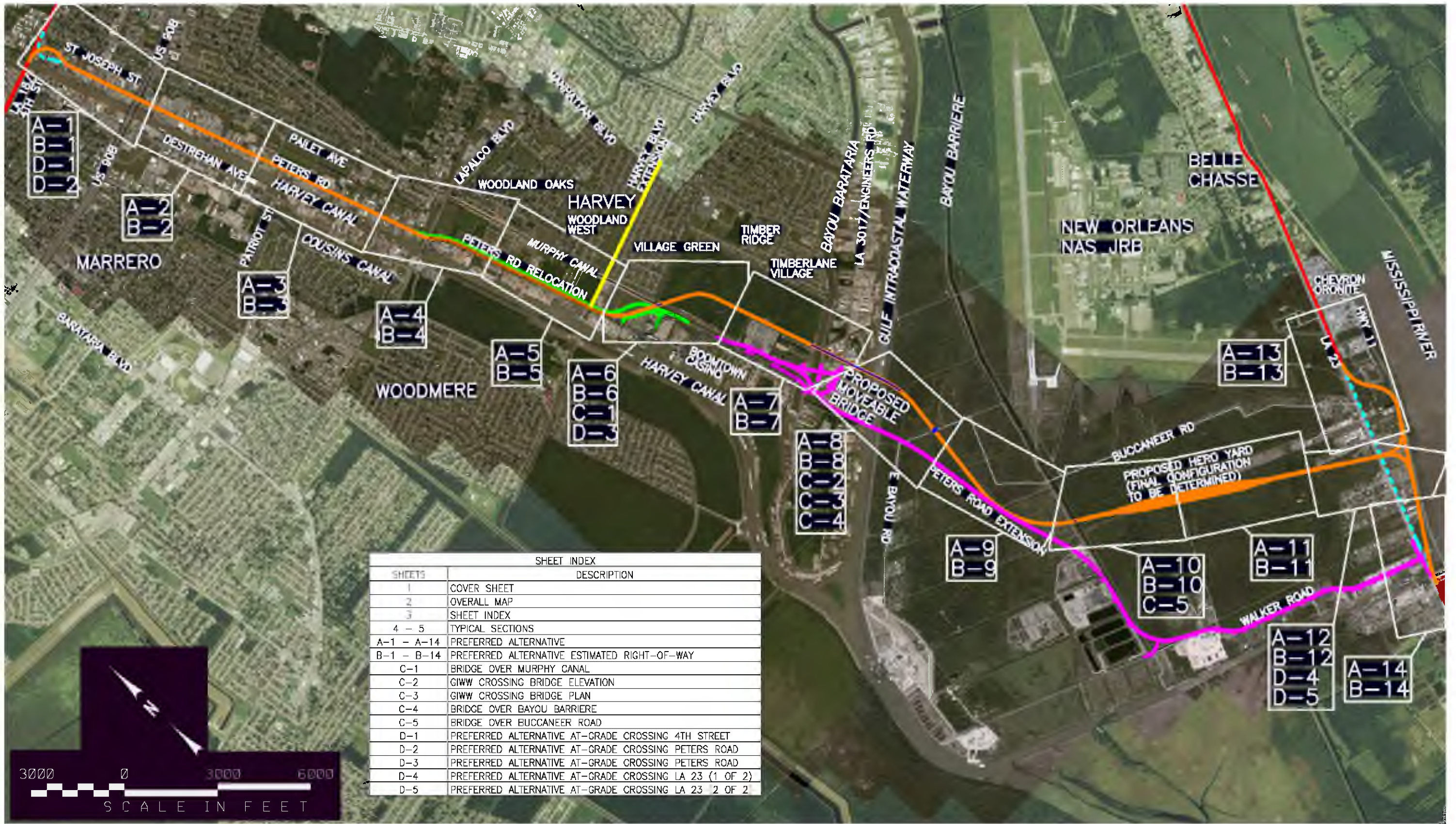


PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: USDA NAIP

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 DATE: JAN 27 2016
 SHEET NO: 2

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET 2
 OVERALL MAP



SHEET INDEX	
SHEETS	DESCRIPTION
1	COVER SHEET
2	OVERALL MAP
3	SHEET INDEX
4 - 5	TYPICAL SECTIONS
A-1 - A-14	PREFERRED ALTERNATIVE
B-1 - B-14	PREFERRED ALTERNATIVE ESTIMATED RIGHT-OF-WAY
C-1	BRIDGE OVER MURPHY CANAL
C-2	GIWW CROSSING BRIDGE ELEVATION
C-3	GIWW CROSSING BRIDGE PLAN
C-4	BRIDGE OVER BAYOU BARRIERE
C-5	BRIDGE OVER BUCCANEER ROAD
D-1	PREFERRED ALTERNATIVE AT-GRADE CROSSING 4TH STREET
D-2	PREFERRED ALTERNATIVE AT-GRADE CROSSING PETERS ROAD
D-3	PREFERRED ALTERNATIVE AT-GRADE CROSSING PETERS ROAD
D-4	PREFERRED ALTERNATIVE AT-GRADE CROSSING LA 23 (1 OF 2)
D-5	PREFERRED ALTERNATIVE AT-GRADE CROSSING LA 23 (2 OF 2)

— EXISTING NOGC RAILWAY
— PREFERRED ALTERNATIVE (C)
— PROPOSED PETERS ROAD RELOCATION (C)
- - - REMOVE EXISTING TRACK
— PETERS ROAD EXTENSION
— PROPOSED BRIDGE
— HARVEY BLVD EXTENSION



PRELIMINARY
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 IMAGERY SOURCE: USDA NAIP

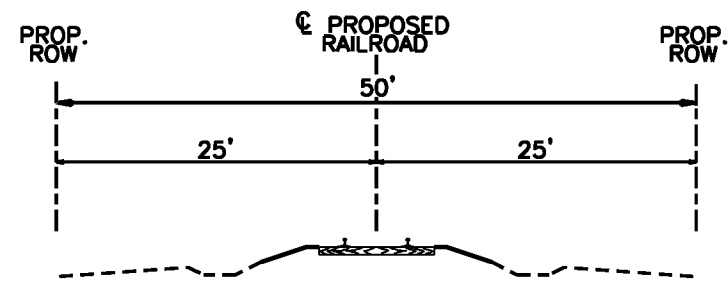
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 DATE: JAN 27 2016
 SHEET NO. 3

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

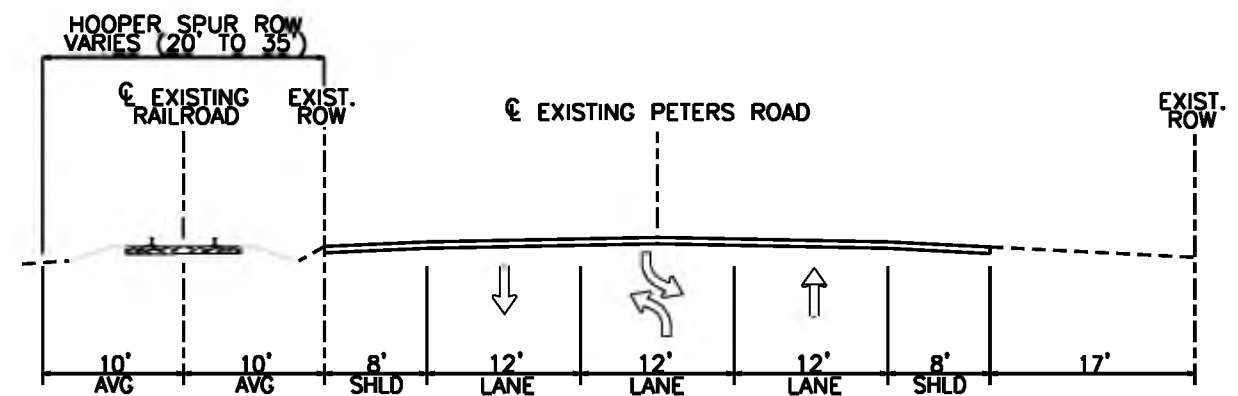
SHEET 3
 SHEET INDEX

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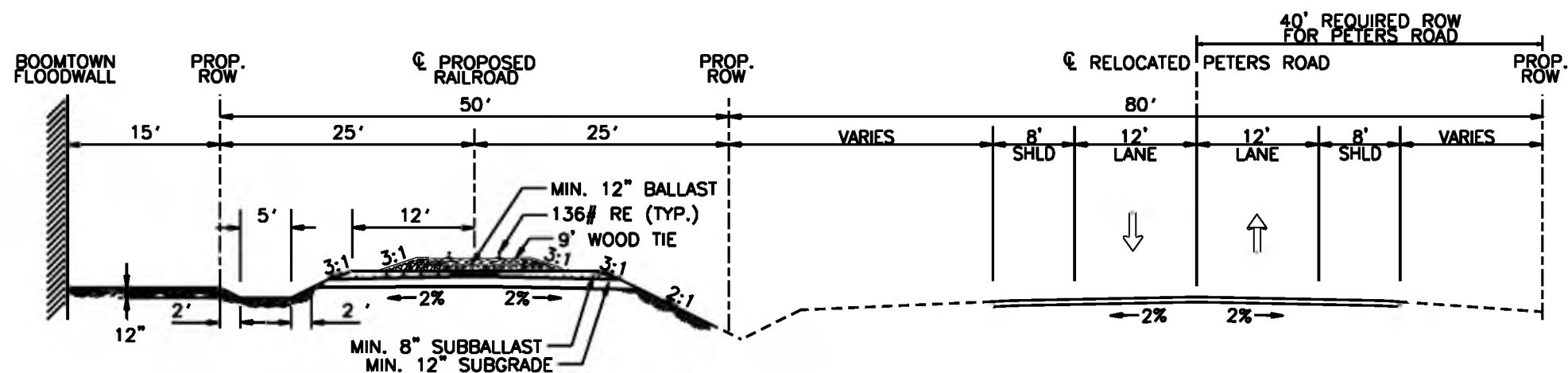
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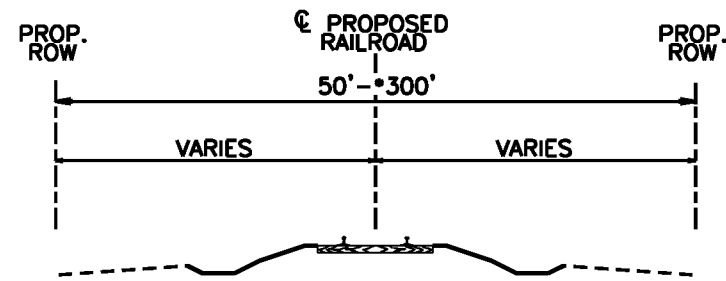
PROPOSED SECTION (4TH ST TO EX. HOOPER SPUR)
N.T.S.



EXISTING SECTION @ PETERS RD. (EX. HOOPER SPUR TO LAPALCO BLVD)
N.T.S.



PROPOSED SECTION (LAPALCO BLVD TO HARVEY BLVD EXTENSION)
N.T.S.



PROPOSED SECTION (HARVEY BLVD EXTENSION TO SIDING)
N.T.S.

*NOTE: ROW WIDTH AT THE NORTH AND SOUTH ENDS OF THE GIWW BRIDGE IS GREATER DUE TO INCREASED RAILROAD ELEVATION AND WIDER EMBANKMENT FILLS.

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\$\$\$PLTDRV\$\$\$
\$\$\$PENTL\$\$\$
\$\$\$DATE\$\$\$



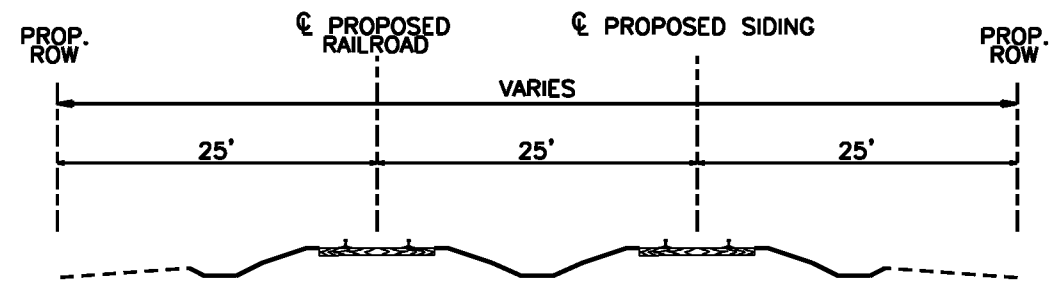
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NOT FOR CONSTRUCTION

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DATE: MAY 27 2016
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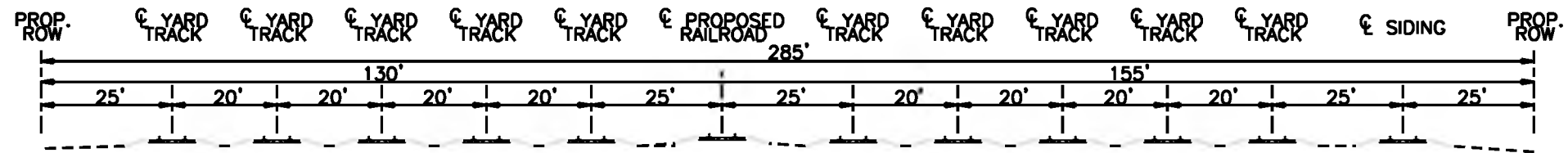
LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET 4
TYPICAL SECTIONS

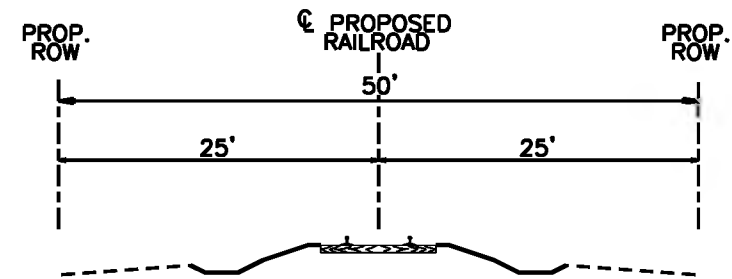
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PROPOSED SIDING (TO HERO YARD)
N.T.S.



PROPOSED SECTION @ HERO YARD
N.T.S.



PROPOSED SECTION (SOUTH OF HERO YARD)
N.T.S.

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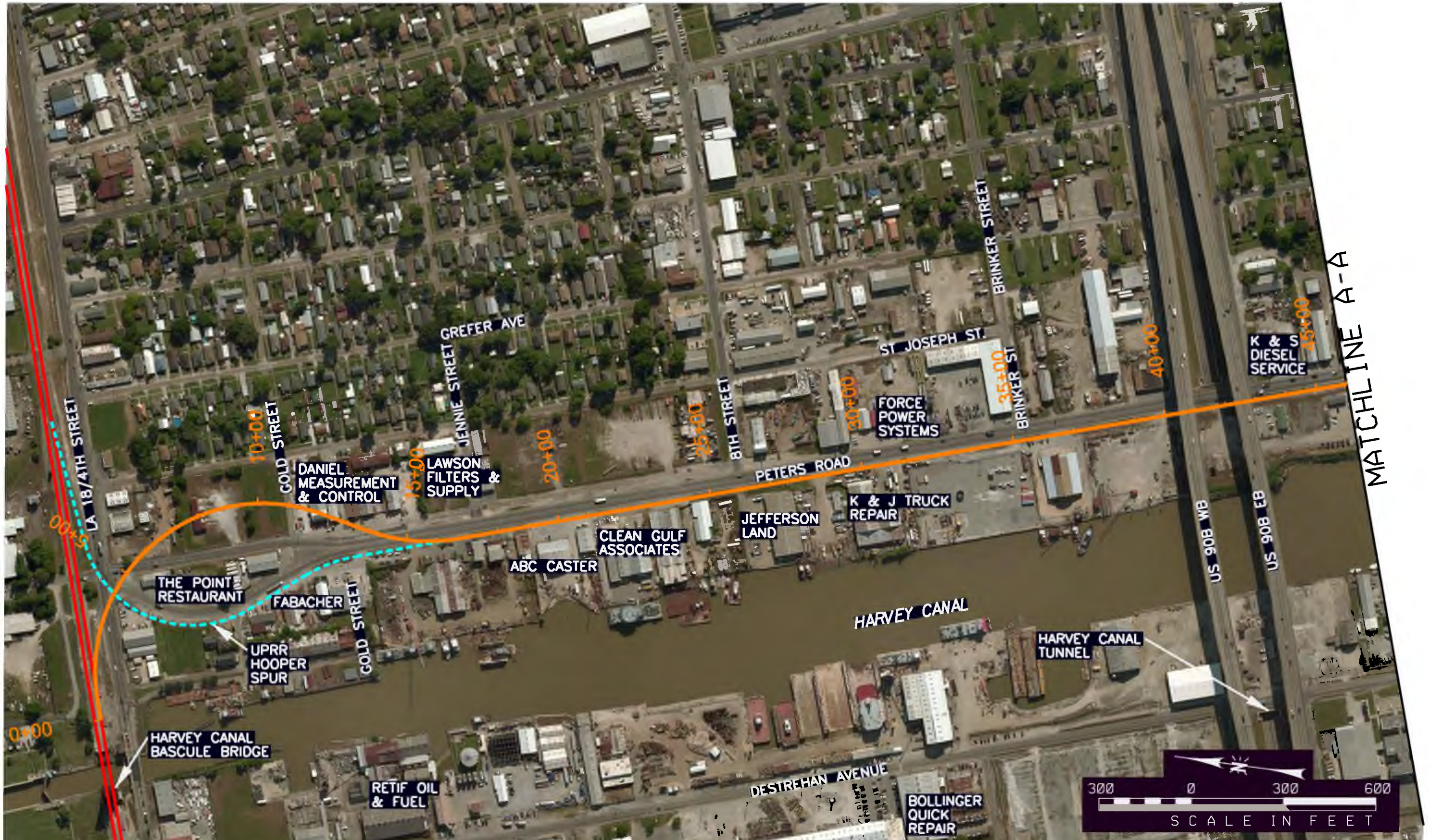
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DATE: MAY 27 2016
SHEET NO. 5

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET 5
TYPICAL SECTIONS

\$\$\$FILES\$\$\$



MATCHLINE A-A

\$\$\$FILES\$\$\$
 \$\$\$PLOTS/VSS\$\$\$
 \$\$\$PRINT/LS\$\$\$
 \$\$\$DATE/SS\$\$\$

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (C)
	PROPOSED PETERS ROAD RELOCATION (C)
	REMOVE EXISTING TRACK
	PETERS ROAD EXTENSION
	PROPOSED BRIDGE



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DATE: JUNE 17 2016
 SHEET NO. A-1

TRAIN BY: MHL CHECKED BY: LAB	LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT JEFFERSON AND PLAQUEMINES PARISHES, LA RPC TASK LA23RR1 RPC/FRA GRANT # FRR-RLD-0032-14-01-00
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SHEET A-1
 PREFERRED ALTERNATIVE

MATCHLINE A-A

MATCHLINE B-B



\$\$\$FILES\$\$\$
\$\$\$PLOT/VSS\$\$\$
\$\$\$RENTAL\$\$\$
\$\$\$DATE\$\$\$

LEGEND

- EXISTING NOGC RAILWAY
- PREFERRED ALTERNATIVE (C)
- PROPOSED PETERS ROAD RELOCATION (C)
- - - REMOVE EXISTING TRACK
- PETERS ROAD EXTENSION
- PROPOSED BRIDGE



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DATE: JUNE 17 2016
SHEET NO. A-2

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-2
PREFERRED ALTERNATIVE

\$\$\$FILES\$\$\$

MATCHLINE B-B

MATCHLINE C-C



\$\$\$FILES\$\$\$
\$\$\$PLOTARVSS\$\$\$
\$\$\$PENTL\$\$\$
\$\$\$DATES\$\$\$

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (C)
	PROPOSED PETERS ROAD RELOCATION (C)
	REMOVE EXISTING TRACK
	PETERS ROAD EXTENSION
	PROPOSED BRIDGE



PRELIMINARY
NOT FOR CONSTRUCTION
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DATE: JUNE 17 2016
SHEET NO. A-3

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-3
PREFERRED ALTERNATIVE

\$\$\$FILES\$\$\$



\$\$\$FILES\$\$\$
 \$\$\$PLTDRVSS\$\$\$
 \$\$\$PENTLSS\$\$\$
 \$\$\$DATES\$\$\$

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (C)
	PROPOSED PETERS ROAD RELOCATION (C)
	REMOVE EXISTING TRACK
	PETERS ROAD EXTENSION
	PROPOSED BRIDGE

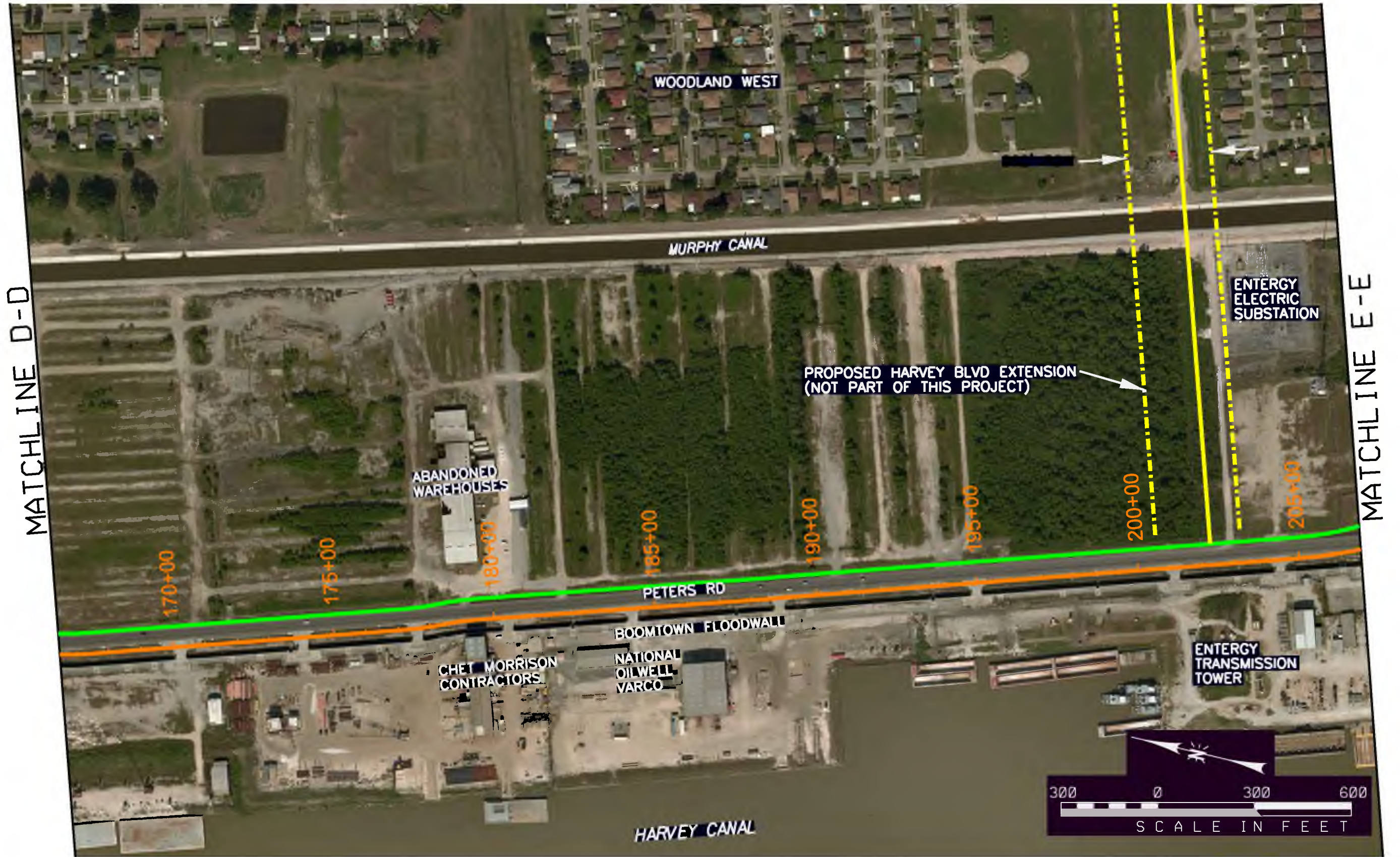


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 DATE: JUNE 17 2016
 SHEET NO. A-4

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-4
 PREFERRED ALTERNATIVE



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 \$\$\$PENTLSS\$\$\$
 \$\$\$DATES\$\$\$

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (C)
	PROPOSED PETERS ROAD RELOCATION (C)
	REMOVE EXISTING TRACK
	HARVEY BLVD EXTENSION
	PROPOSED BRIDGE
	HARVEY BLVD EXTENSION ROW



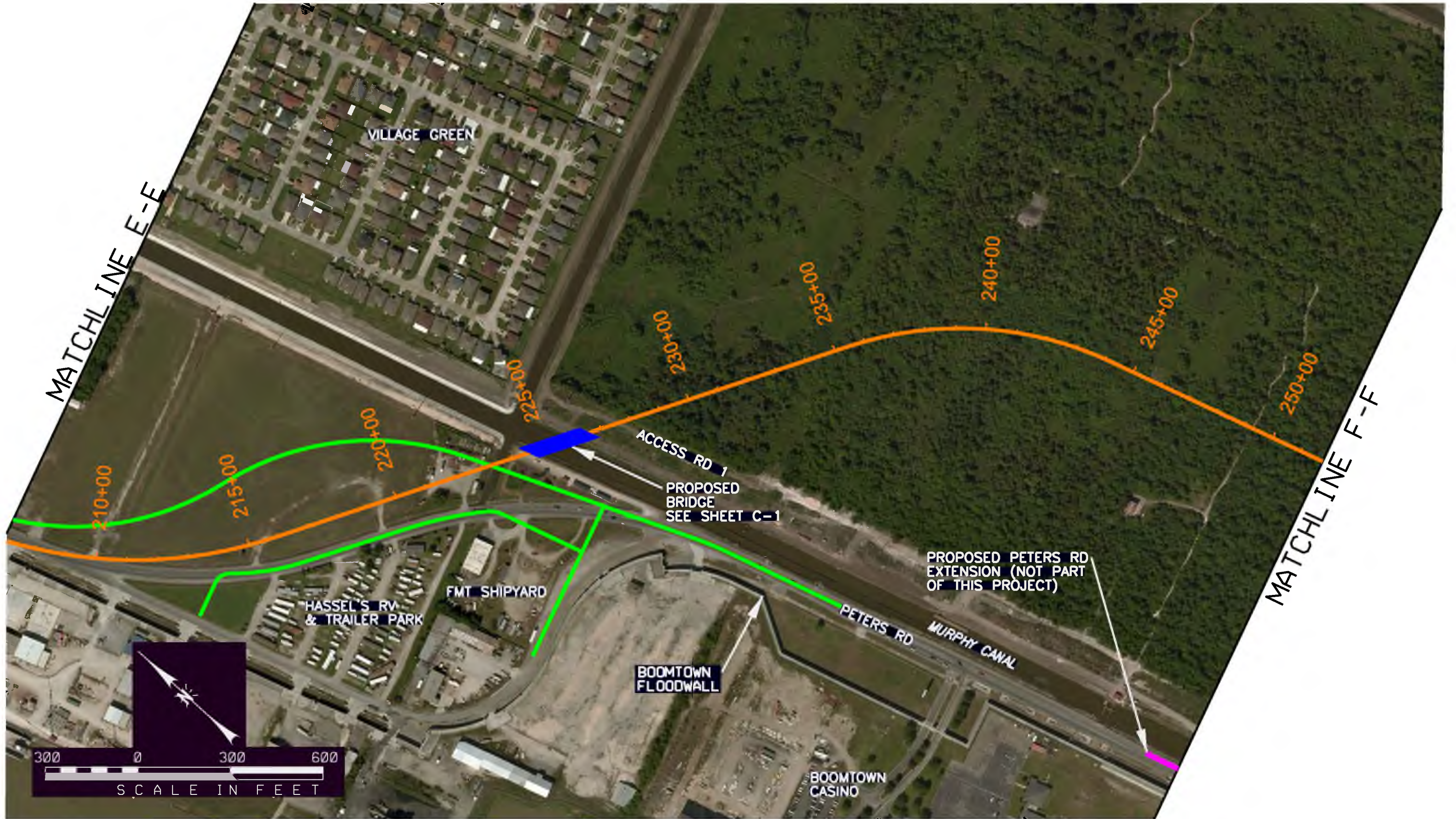
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LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-5
 PREFERRED ALTERNATIVE

\$\$\$FILES\$\$\$



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 \$\$\$DATES\$\$\$

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (C)
	PROPOSED PETERS ROAD RELOCATION (C)
	REMOVE EXISTING TRACK
	PETERS ROAD EXTENSION
	PROPOSED BRIDGE



PRELIMINARY
 NOT FOR CONSTRUCTION
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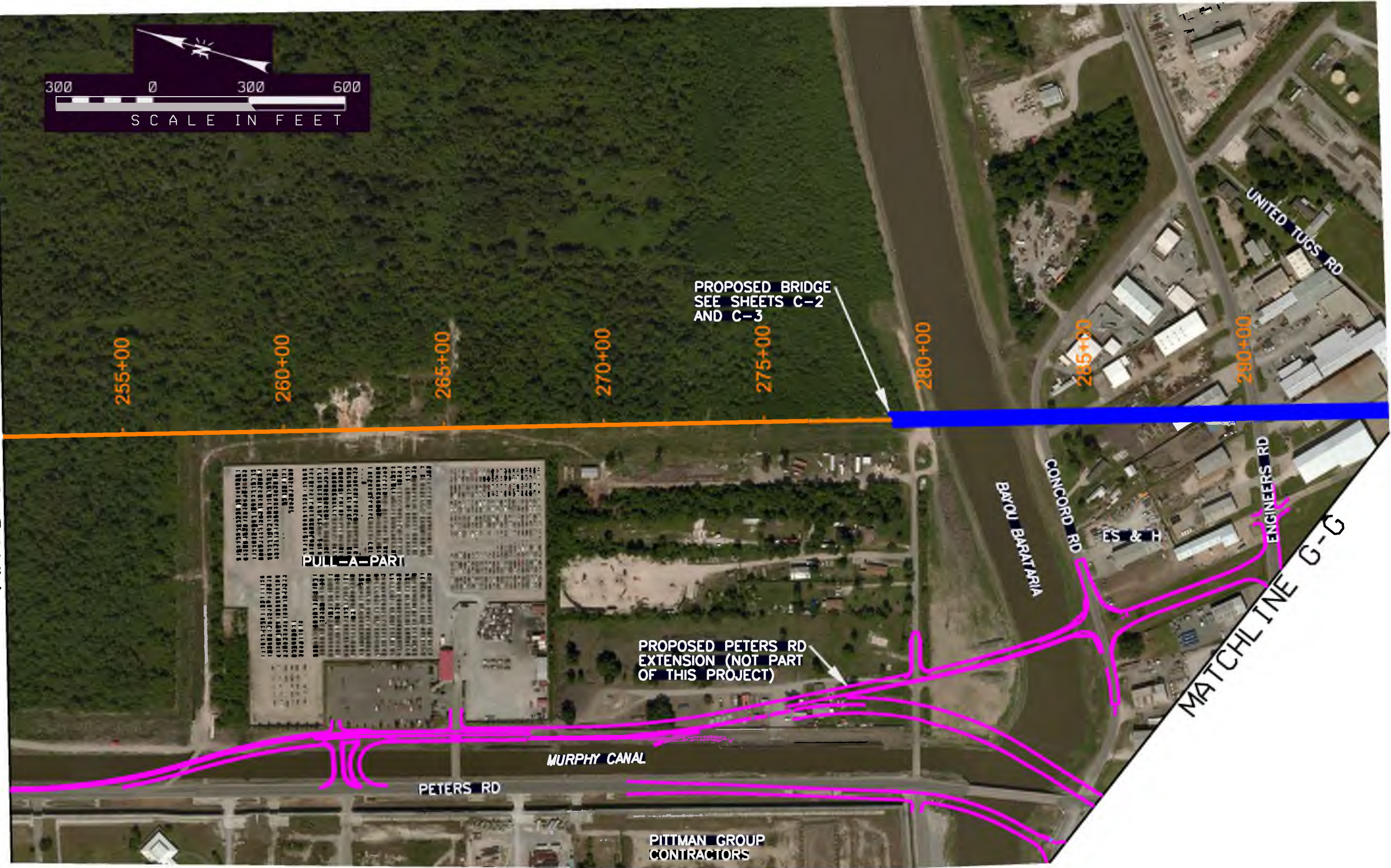
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 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. A-6

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-6
 PREFERRED ALTERNATIVE

\$\$\$FILES\$\$\$

MATCHLINE F-F



LEGEND

- EXISTING NOGC RAILWAY
- PREFERRED ALTERNATIVE (C)
- PROPOSED PETERS ROAD RELOCATION (C)
- REMOVE EXISTING TRACK
- PETERS ROAD EXTENSION
- PROPOSED BRIDGE



PRELIMINARY
NOT FOR CONSTRUCTION
IMAGERY SOURCE: BING

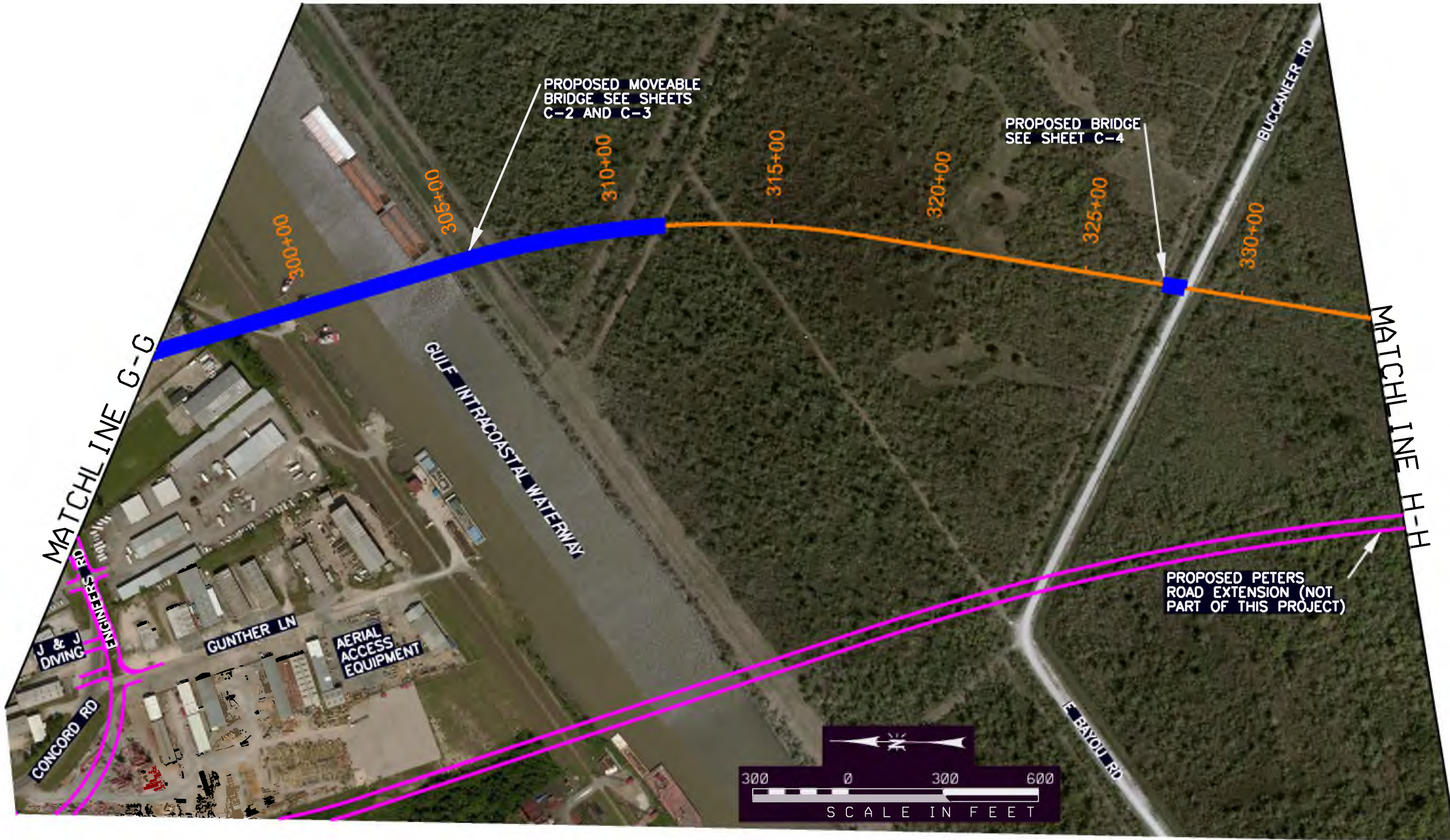
DRAWN BY: MHL
CHECKED BY: LAB
DATE: JUNE 17 2016
SHEET NO. A-7

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-7
PREFERRED ALTERNATIVE

\$\$\$FILES\$\$\$
\$\$\$PLOT/VSS\$\$\$
\$\$\$RENTAL\$\$\$
\$\$\$DATE\$\$\$

\$\$\$FILES\$\$\$



PROPOSED MOVEABLE
BRIDGE SEE SHEETS
C-2 AND C-3

PROPOSED BRIDGE
SEE SHEET C-4

PROPOSED PETERS
ROAD EXTENSION (NOT
PART OF THIS PROJECT)



LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (Q)
	PROPOSED PETERS ROAD RELOCATION (Q)
	REMOVE EXISTING TRACK
	PETERS ROAD EXTENSION
	PROPOSED BRIDGE



PRELIMINARY
NOT FOR CONSTRUCTION
IMAGERY SOURCE: BING

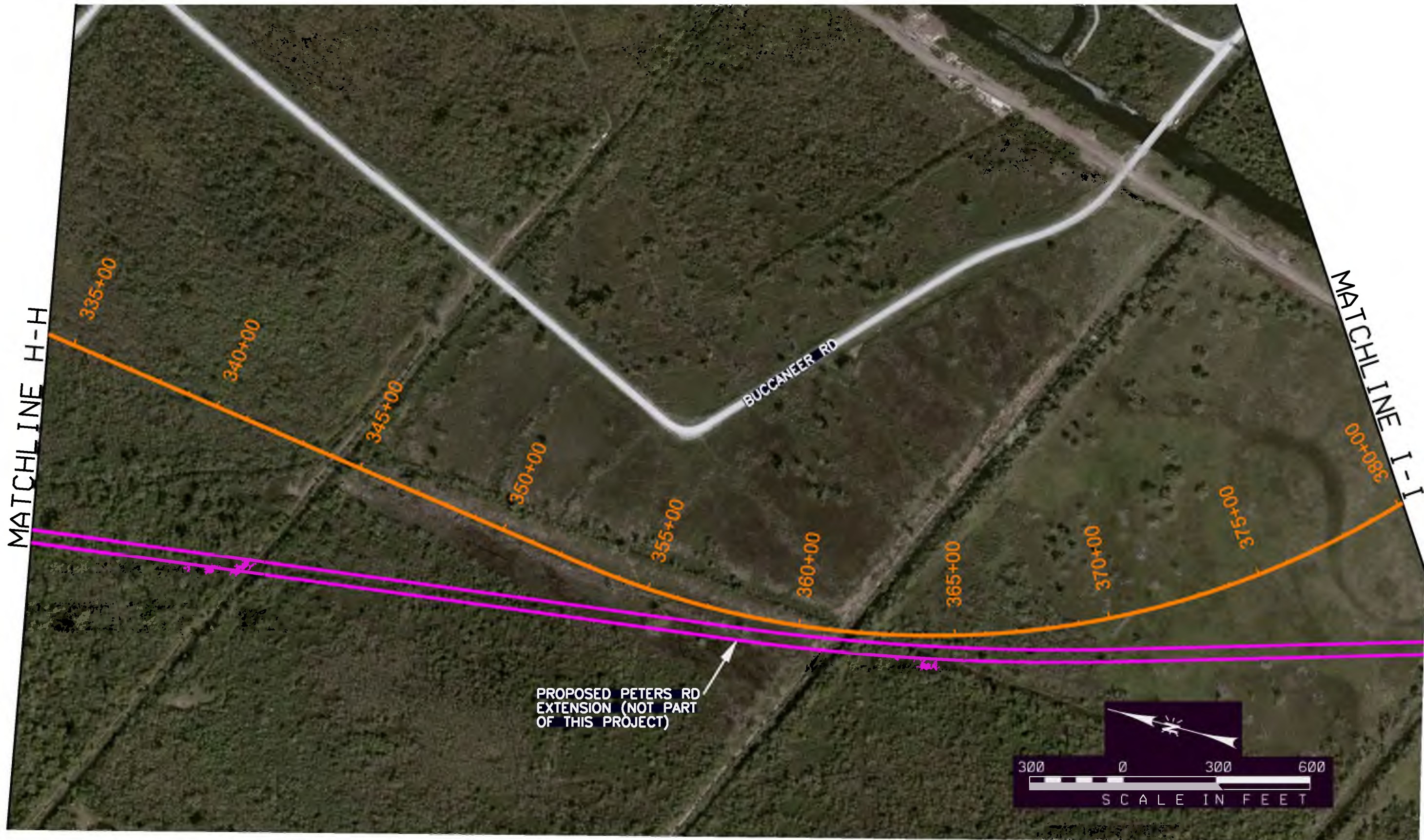
DRAWN BY: MHL
CHECKED BY: LAB
DATE: JUNE 17 2016
SHEET NO. A-8

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-8
PREFERRED ALTERNATIVE

\$\$\$FILES\$\$\$
\$\$\$PLOTARVSS\$\$\$
\$\$\$PRINTLSS\$\$\$
\$\$\$DATE\$\$\$

\$\$\$FILES\$\$\$



PROPOSED PETERS RD
EXTENSION (NOT PART
OF THIS PROJECT)



LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (Q)
	PROPOSED PETERS ROAD RELOCATION (Q)
	REMOVE EXISTING TRACK
	PETERS ROAD EXTENSION
	PROPOSED BRIDGE



PRELIMINARY
NOT FOR CONSTRUCTION
IMAGERY SOURCE: BING

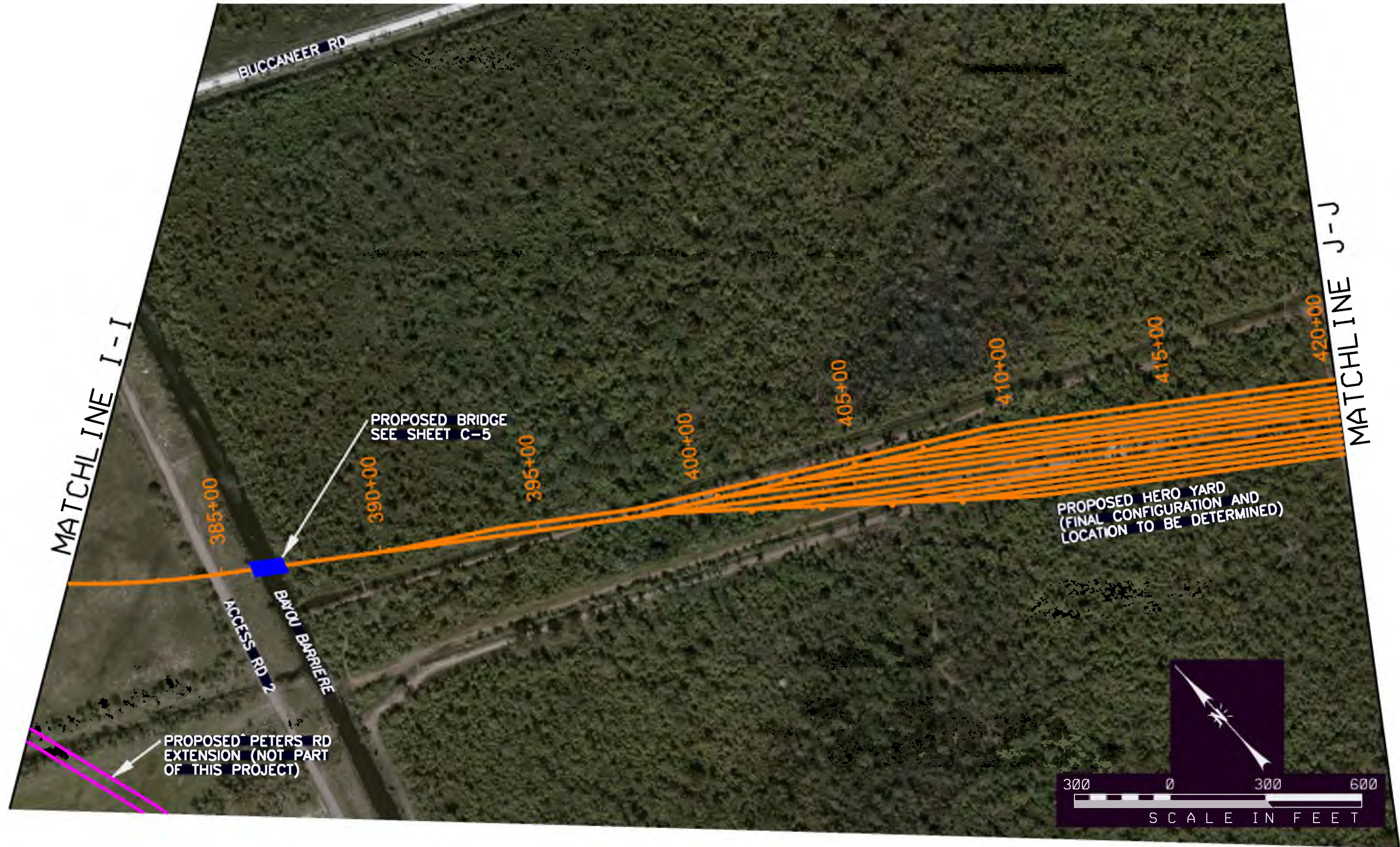
PREPARED BY: MHL
CHECKED BY: LAB
DATE: JUNE 17 2016
SHEET NO. A-9

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-9
PREFERRED ALTERNATIVE

\$\$\$FILES\$\$
\$\$\$PLTDRVSS\$\$
\$\$\$PENTLSS\$\$
\$\$\$DATES\$\$

\$\$\$FILES\$\$



\$\$\$FILES\$\$\$
 \$\$\$PLTDIRVSS\$\$\$
 \$\$\$PENTL\$\$\$
 \$\$\$DATES\$\$\$

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (C)
	PROPOSED PETERS ROAD RELOCATION (C)
	REMOVE EXISTING TRACK
	PETERS ROAD EXTENSION
	PROPOSED BRIDGE



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DATE: JUNE 17 2016
 SHEET NO. A-10

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-10
 PREFERRED ALTERNATIVE

\$\$\$FILES\$\$\$

MATCHLINE J-J

MATCHLINE K-K

425+00

430+00

435+00

440+00

445+00

450+00

455+00

460+00

PROPOSED HERO YARD
(FINAL CONFIGURATION AND
LOCATION TO BE DETERMINED)



55110155
55110155
55110155
55110155

- LEGEND**
- EXISTING NOGC RAILWAY
 - PREFERRED ALTERNATIVE (C)
 - PROPOSED PETERS ROAD RELOCATION (C)
 - - - REMOVE EXISTING TRACK
 - PETERS ROAD EXTENSION
 - PROPOSED BRIDGE



PRELIMINARY
NOT FOR CONSTRUCTION
IMAGERY SOURCE: BING

DRAWN BY: MHL
CHECKED BY: LAB
DATE: JUNE 17 2016
SHEET NO. A-11

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-11
PREFERRED ALTERNATIVE



\$\$\$FILES\$\$\$
 \$\$\$PLOT/VSS\$\$\$
 \$\$\$PENTL/SS\$\$\$
 \$\$\$DATE/SS\$\$\$

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (Q)
	PROPOSED PETERS ROAD RELOCATION (Q)
	REMOVE EXISTING TRACK
	PETERS ROAD EXTENSION
	PROPOSED BRIDGE



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. A-12

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-12
 PREFERRED ALTERNATIVE



\$\$\$FILES\$\$\$
 \$\$\$PLOTARVSS\$\$\$
 \$\$\$PENTLSS\$\$\$
 \$\$\$DATES\$\$\$

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (Q)
	PROPOSED PETERS ROAD RELOCATION (Q)
	REMOVE EXISTING TRACK
	PETERS ROAD EXTENSION
	PROPOSED BRIDGE



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

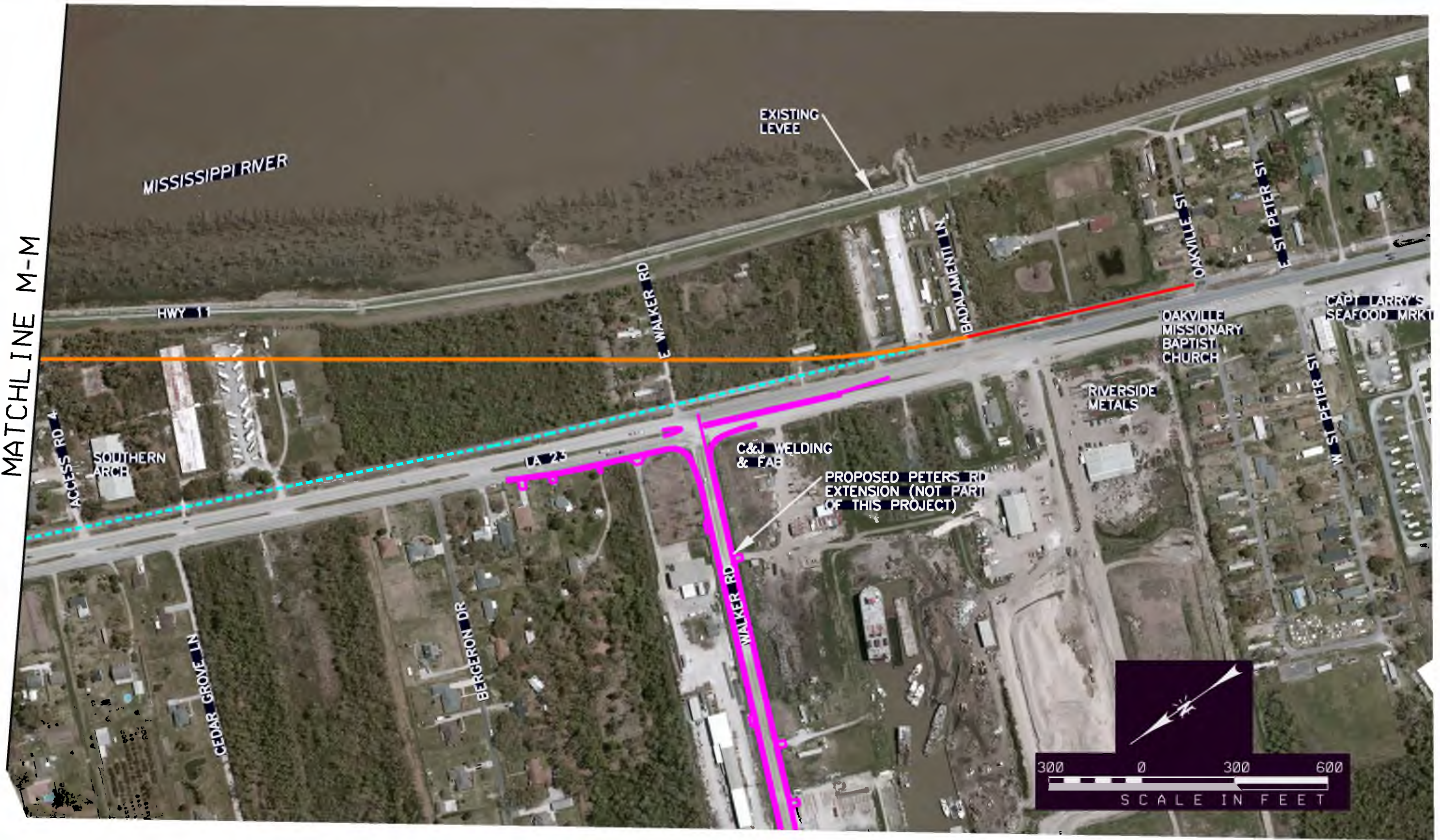
DRAWN BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. A-13

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-13
 PREFERRED ALTERNATIVE

\$\$\$FILES\$\$\$

MATCHLINE M-M



\$\$\$FILES\$\$\$
 \$\$\$PLTDRVSS\$\$\$
 \$\$\$PENTLSS\$\$\$
 \$\$\$DATES\$\$\$

LEGEND	
	EXISTING NOGC RAILWAY
	PREFERRED ALTERNATIVE (C)
	PROPOSED PETERS ROAD RELOCATION (C)
	REMOVE EXISTING TRACK
	PETERS ROAD EXTENSION
	PROPOSED BRIDGE



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. A-14

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET A-14
 PREFERRED ALTERNATIVE



\$\$\$FILES\$\$\$
 \$\$\$PLOTS\$\$\$
 \$\$\$PRINTS\$\$\$
 \$\$\$DATES\$\$\$

LEGEND

	PROPOSED TRACK ROW
	PROPOSED ROADWAY ROW
	PETERS ROAD EXTENSION ROW
	ESTIMATED PROPERTY ACQUISITION RAILROAD
	ESTIMATED PROPERTY ACQUISITION ROADWAY



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

PREPARED BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. B-1

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-1
 PREFERRED ALTERNATIVE
 ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$\$\$



MATCHLINE A-A

MATCHLINE B-B

\$\$\$FILES\$\$\$
 \$\$\$PLOTARVSS\$\$\$
 \$\$\$PENTL\$\$\$
 \$\$\$DATES\$\$\$

LEGEND

	PROPOSED TRACK ROW
	PROPOSED ROADWAY ROW
	PETERS ROAD EXTENSION ROW
	ESTIMATED PROPERTY ACQUISITION RAILROAD
	ESTIMATED PROPERTY ACQUISITION ROADWAY



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. B-2

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-2
 PREFERRED ALTERNATIVE
 ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$\$\$

MATCHLINE B-B

MATCHLINE C-C



EXISTING UPRR HOOPER SPUR ROW (VARIES)

PETERS ROAD

CRANE & TEMPLETT
FERRELLGAS

RESOURCE
POWER
GROUP

L & L
MARINE

SALATHE OIL

HARVEY CANAL

DESTREHAN AVE

ALUMA MARINE
& FABRICATION



LEGEND

- PROPOSED TRACK ROW
- PROPOSED ROADWAY ROW
- PETERS ROAD EXTENSION ROW
- ESTIMATED PROPERTY ACQUISITION RAILROAD
- ESTIMATED PROPERTY ACQUISITION ROADWAY

\$\$\$FILES\$\$\$
\$\$\$PLOTS\$\$\$
\$\$\$RENTALS\$\$\$
\$\$\$DATES\$\$\$



PRELIMINARY
NOT FOR CONSTRUCTION
IMAGERY SOURCE: BING

DRAWN BY: MHL
CHECKED BY: LAB
DATE: JUNE 17 2016
SHEET NO. B-3

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-3
PREFERRED ALTERNATIVE
ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$\$\$



\$\$\$FILES\$\$\$
 \$\$\$PLOTARVSS\$\$\$
 \$\$\$PENTLSS\$\$\$
 \$\$\$DATES\$\$\$

LEGEND

	PROPOSED TRACK ROW
	PROPOSED ROADWAY ROW
	PETERS ROAD EXTENSION ROW
	ESTIMATED PROPERTY ACQUISITION RAILROAD
	ESTIMATED PROPERTY ACQUISITION ROADWAY



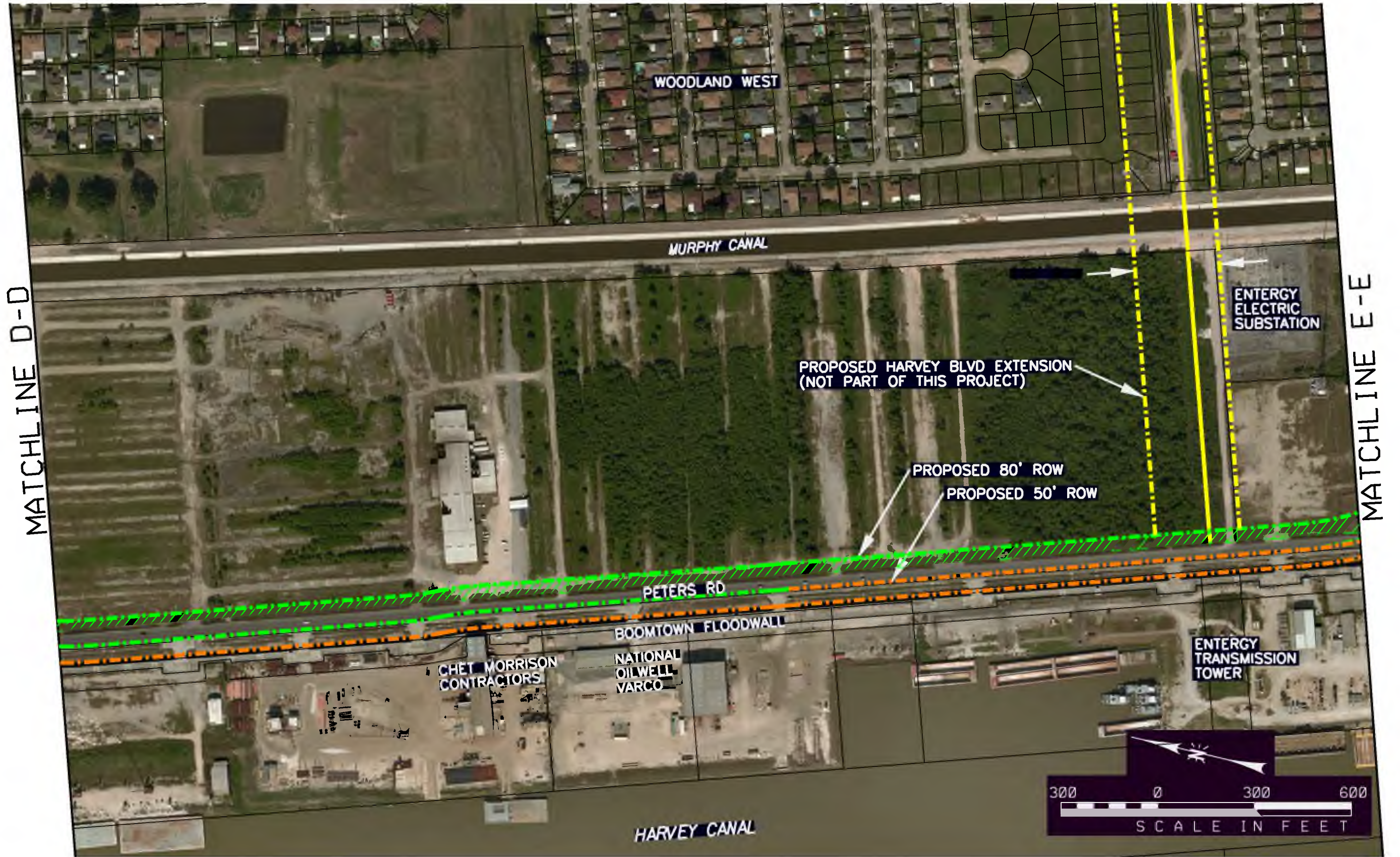
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 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. B-4

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-4
 PREFERRED ALTERNATIVE
 ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$\$\$



\$\$\$FILES\$\$\$
 \$\$\$PLTDRVSS\$\$\$
 \$\$\$PENTLSS\$\$\$
 \$\$\$DATES\$\$\$

LEGEND	
	PROPOSED TRACK ROW
	PROPOSED ROADWAY ROW
	HARVEY BLVD EXTENSION ROW
	ESTIMATED PROPERTY ACQUISITION RAILROAD
	ESTIMATED PROPERTY ACQUISITION ROADWAY
	HARVEY BLVD EXTENSION



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. B-5

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-5
 PREFERRED ALTERNATIVE
 ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$\$\$



\$\$\$FILES\$\$\$
 \$\$\$PLTDRVSS\$\$\$
 \$\$\$PENTLSS\$\$\$
 \$\$\$DATES\$\$\$

LEGEND

	PROPOSED TRACK ROW
	PROPOSED ROADWAY ROW
	PETERS ROAD EXTENSION ROW
	ESTIMATED PROPERTY ACQUISITION RAILROAD
	ESTIMATED PROPERTY ACQUISITION ROADWAY



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. B-6

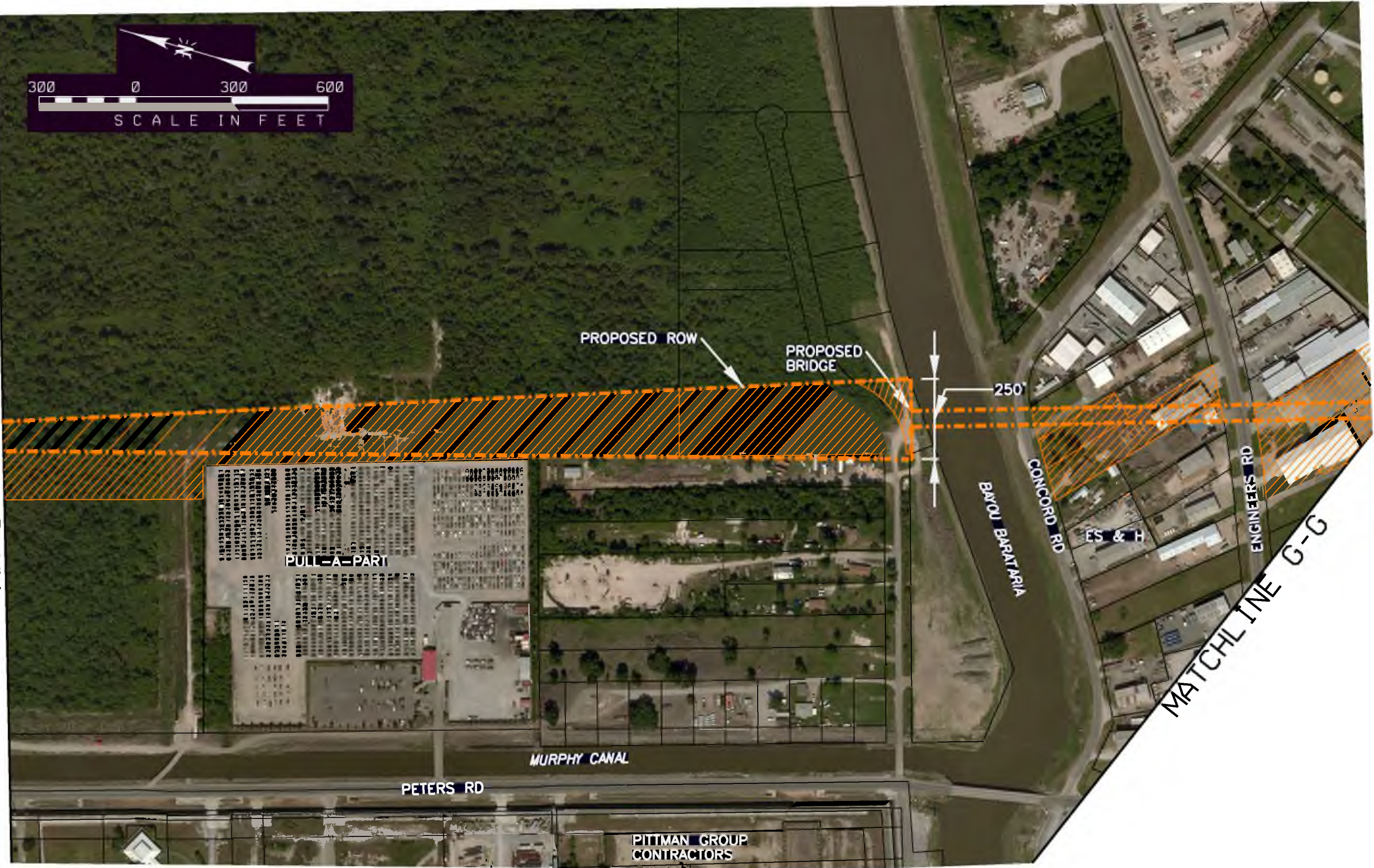
LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-6
 PREFERRED ALTERNATIVE
 ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$\$\$



MATCHLINE F-F



MATCHLINE G-G

\$\$\$FILES\$\$\$
\$\$\$PLOTS\$\$\$
\$\$\$RENTALS\$\$\$
\$\$\$DATES\$\$\$

LEGEND

	PROPOSED TRACK ROW
	PROPOSED ROADWAY ROW
	PETERS ROAD EXTENSION ROW
	ESTIMATED PROPERTY ACQUISITION RAILROAD
	ESTIMATED PROPERTY ACQUISITION ROADWAY



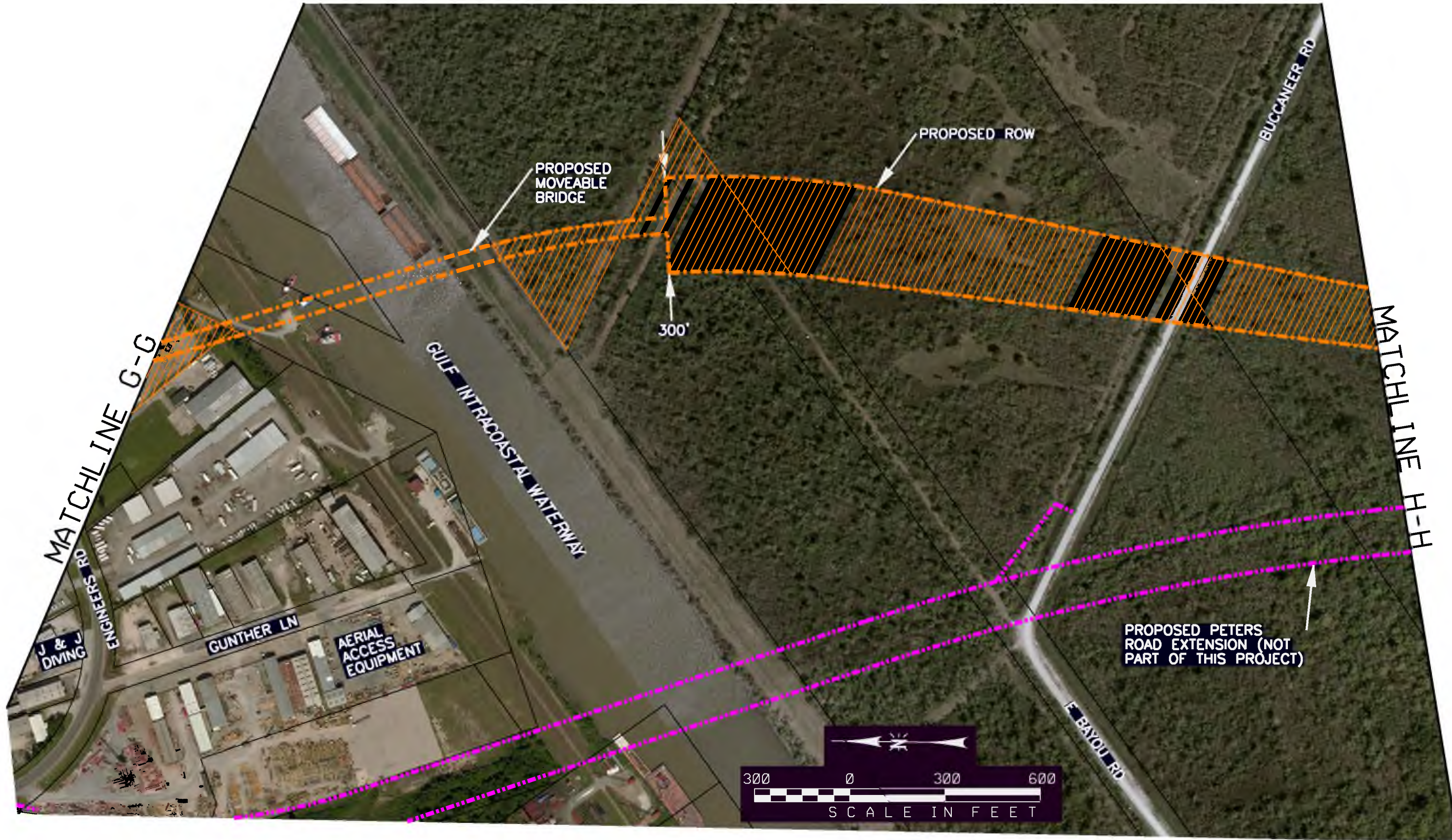
PRELIMINARY
NOT FOR CONSTRUCTION
IMAGERY SOURCE: BING

DRAWN BY: MHL
CHECKED BY: LAB
DATE: JUNE 17 2016
SHEET NO. B-7

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-7
PREFERRED ALTERNATIVE
ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$\$\$



\$\$\$FILES\$\$\$
 \$\$\$PLOTARVSS\$\$\$
 \$\$\$PENTL\$\$\$
 \$\$\$DATE\$\$\$

LEGEND

	PROPOSED TRACK ROW
	PROPOSED ROADWAY ROW
	PETERS ROAD EXTENSION ROW
	ESTIMATED PROPERTY ACQUISITION RAILROAD
	ESTIMATED PROPERTY ACQUISITION ROADWAY



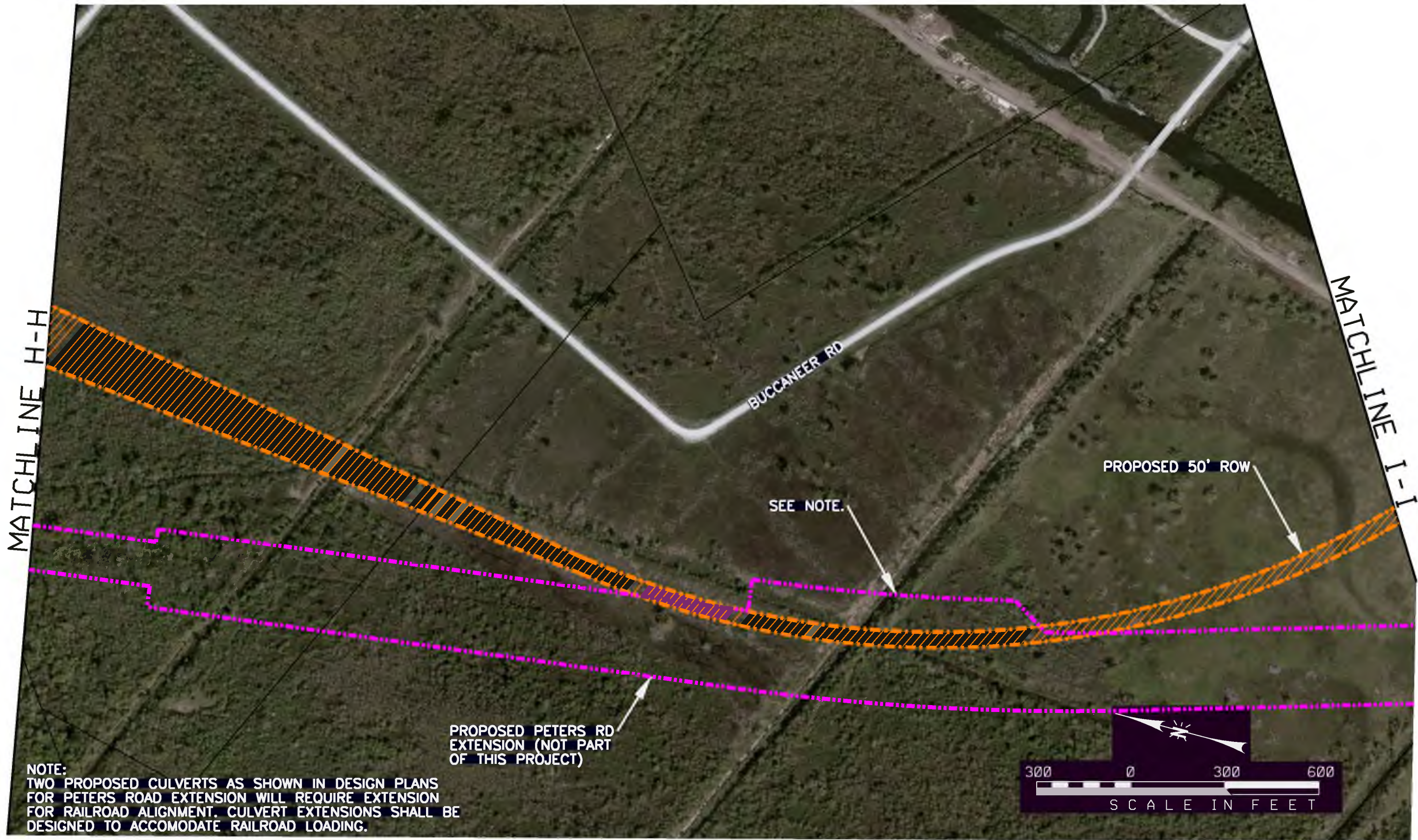
PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. B-8

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-8
 PREFERRED ALTERNATIVE
 ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$\$\$



NOTE:
 TWO PROPOSED CULVERTS AS SHOWN IN DESIGN PLANS FOR PETERS ROAD EXTENSION WILL REQUIRE EXTENSION FOR RAILROAD ALIGNMENT. CULVERT EXTENSIONS SHALL BE DESIGNED TO ACCOMODATE RAILROAD LOADING.

\$\$\$FILES\$
 \$\$\$PLOT\$VSS\$
 \$\$\$PENTL\$SS\$
 \$\$\$DATE\$S\$

LEGEND

	PROPOSED TRACK ROW
	PROPOSED ROADWAY ROW
	PETERS ROAD EXTENSION ROW
	ESTIMATED PROPERTY ACQUISITION RAILROAD
	ESTIMATED PROPERTY ACQUISITION ROADWAY



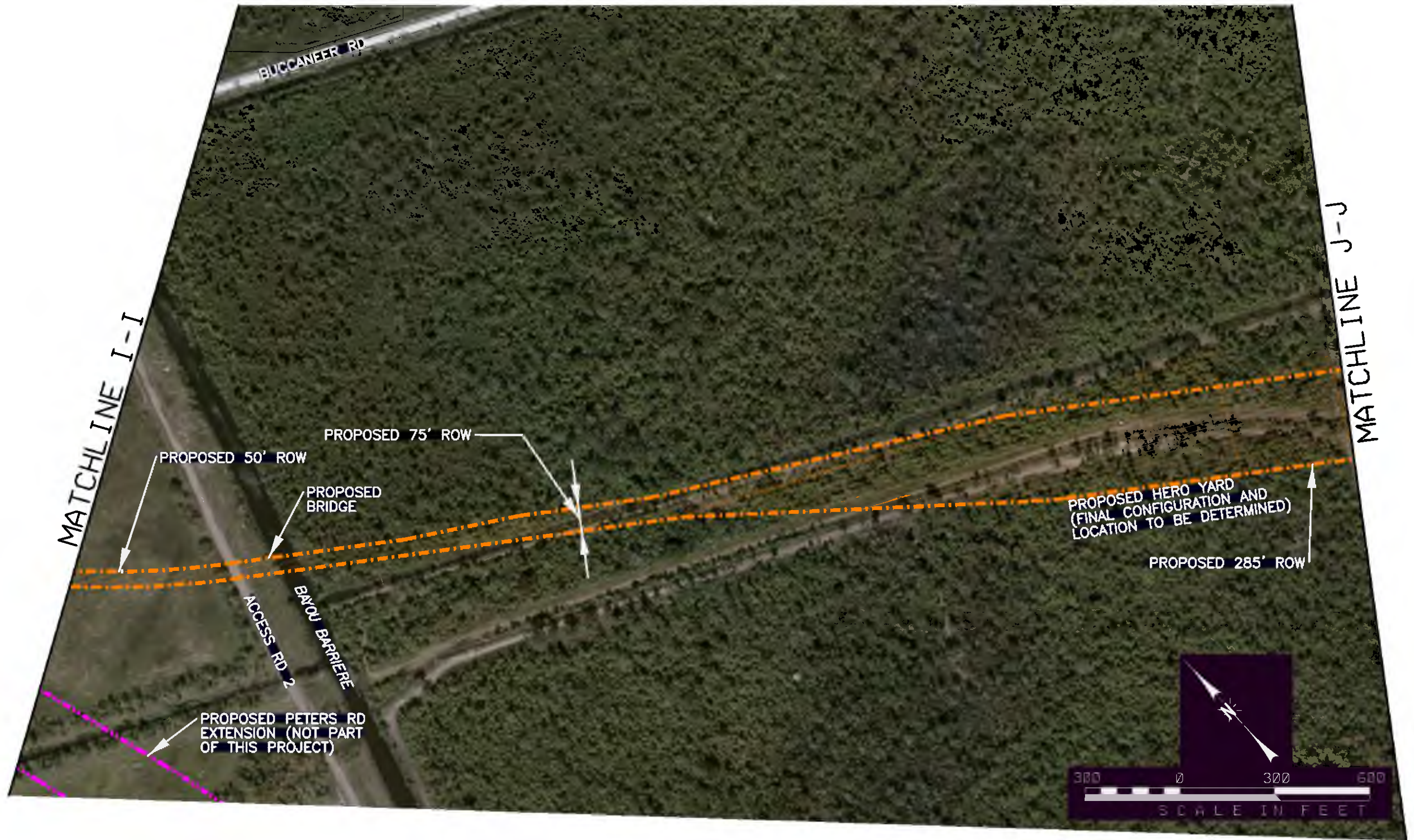
PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DESIGNED BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. B-9

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-9
 PREFERRED ALTERNATIVE
 ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$



\$\$\$FILES\$\$\$
 \$\$\$PLOT/AVSS\$\$\$
 \$\$\$PEN/BLSS\$\$\$
 \$\$\$DATE\$\$\$

LEGEND

	PROPOSED TRACK ROW
	PROPOSED ROADWAY ROW
	PETERS ROAD EXTENSION ROW
	ESTIMATED PROPERTY ACQUISITION RAILROAD
	ESTIMATED PROPERTY ACQUISITION ROADWAY



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. B-10

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-10
 PREFERRED ALTERNATIVE
 ESTIMATED RIGHT-OF-WAY

MATCHLINE J-J

MATCHLINE K-K

PROPOSED HERO YARD
(FINAL CONFIGURATION AND
LOCATION TO BE DETERMINED)

PROPOSED 285' ROW

PROPOSED 75' ROW



LEGEND

- PROPOSED TRACK ROW
- PROPOSED ROADWAY ROW
- PETERS ROAD EXTENSION ROW
- ESTIMATED PROPERTY ACQUISITION RAILROAD
- ESTIMATED PROPERTY ACQUISITION ROADWAY



PRELIMINARY
NOT FOR CONSTRUCTION
IMAGERY SOURCE: BING

DRAWN BY: MHL
CHECKED BY: LAB
DATE: JUNE 17 2016
SHEET NO. B-11

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-11
PREFERRED ALTERNATIVE
ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$\$
\$\$\$PLTDRVSS\$\$
\$\$\$PENTLSS\$\$
\$\$\$DATES\$\$

\$\$\$FILES\$\$



\$\$\$FILES\$\$\$
 \$\$\$PLOT/VSS\$\$\$
 \$\$\$PENTL/SS\$\$\$
 \$\$\$DATE/SS\$\$\$

LEGEND

	PROPOSED TRACK ROW
	PROPOSED ROADWAY ROW
	PETERS ROAD EXTENSION ROW
	ESTIMATED PROPERTY ACQUISITION RAILROAD
	ESTIMATED PROPERTY ACQUISITION ROADWAY



PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: MHL
 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. B-12

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-12
 PREFERRED ALTERNATIVE
 ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$\$\$



MATCHLINE L-L

LEGEND

- PROPOSED TRACK ROW
- PROPOSED ROADWAY ROW
- PETERS ROAD EXTENSION ROW
- ESTIMATED PROPERTY ACQUISITION RAILROAD
- ESTIMATED PROPERTY ACQUISITION ROADWAY



PRELIMINARY
NOT FOR CONSTRUCTION
IMAGERY SOURCE: BING

DRAWN BY: MHL
CHECKED BY: LAB
DATE: JUNE 17 2016
SHEET NO. B-13

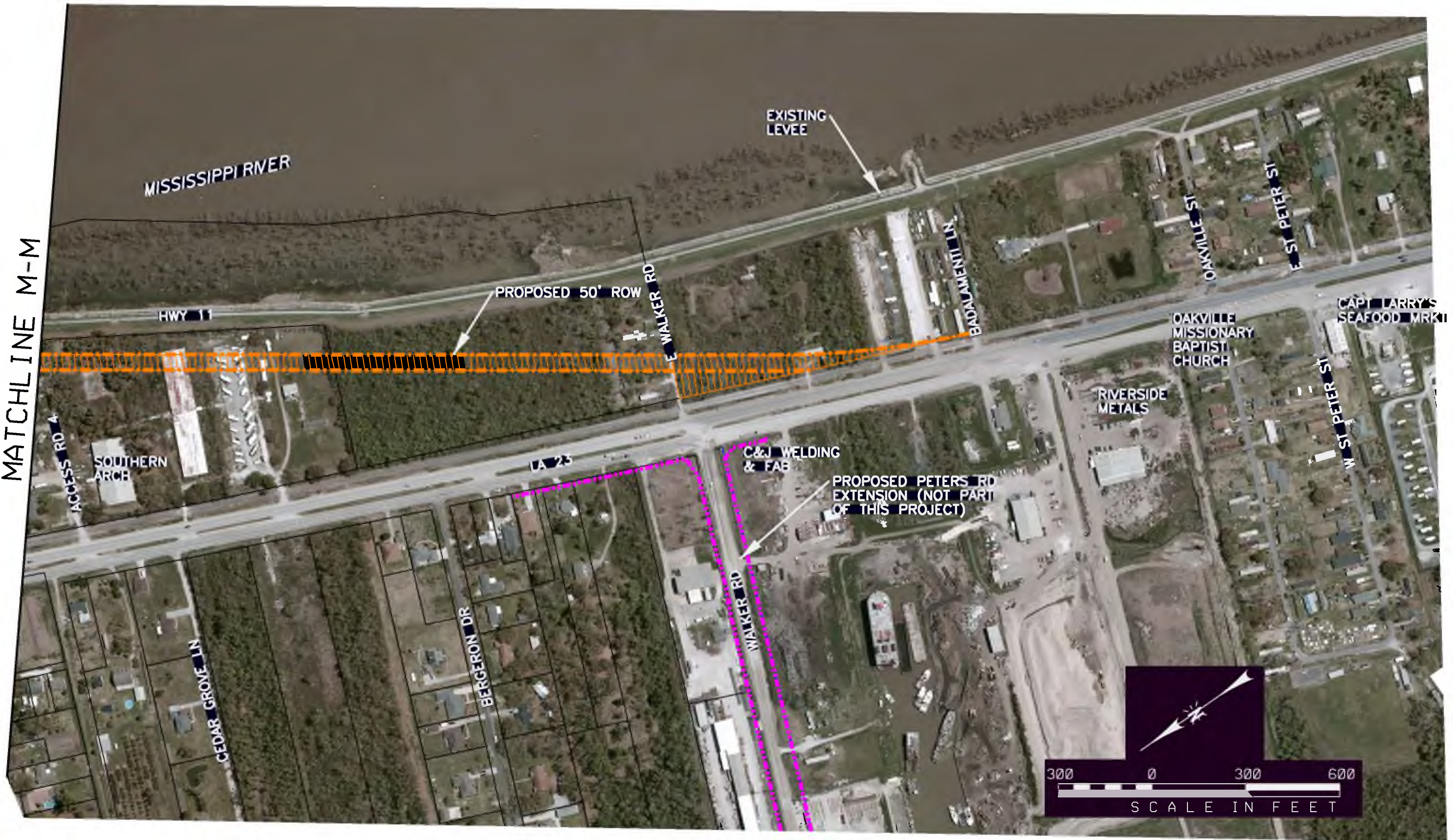
LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET B-13
PREFERRED ALTERNATIVE
ESTIMATED RIGHT-OF-WAY

\$\$\$FILES\$\$\$
\$\$\$PLOTS\$\$\$
\$\$\$RENTALS\$\$\$
\$\$\$DATES\$\$\$

\$\$\$FILES\$\$\$

MATCHLINE M-M



\$\$\$FILES\$\$\$
 \$\$\$PLTDRVSS\$\$\$
 \$\$\$PENTLSS\$\$\$
 \$\$\$DATES\$\$\$

LEGEND

- PROPOSED TRACK ROW
- PROPOSED ROADWAY ROW
- PETERS ROAD EXTENSION ROW
- ESTIMATED PROPERTY ACQUISITION RAILROAD
- ESTIMATED PROPERTY ACQUISITION ROADWAY

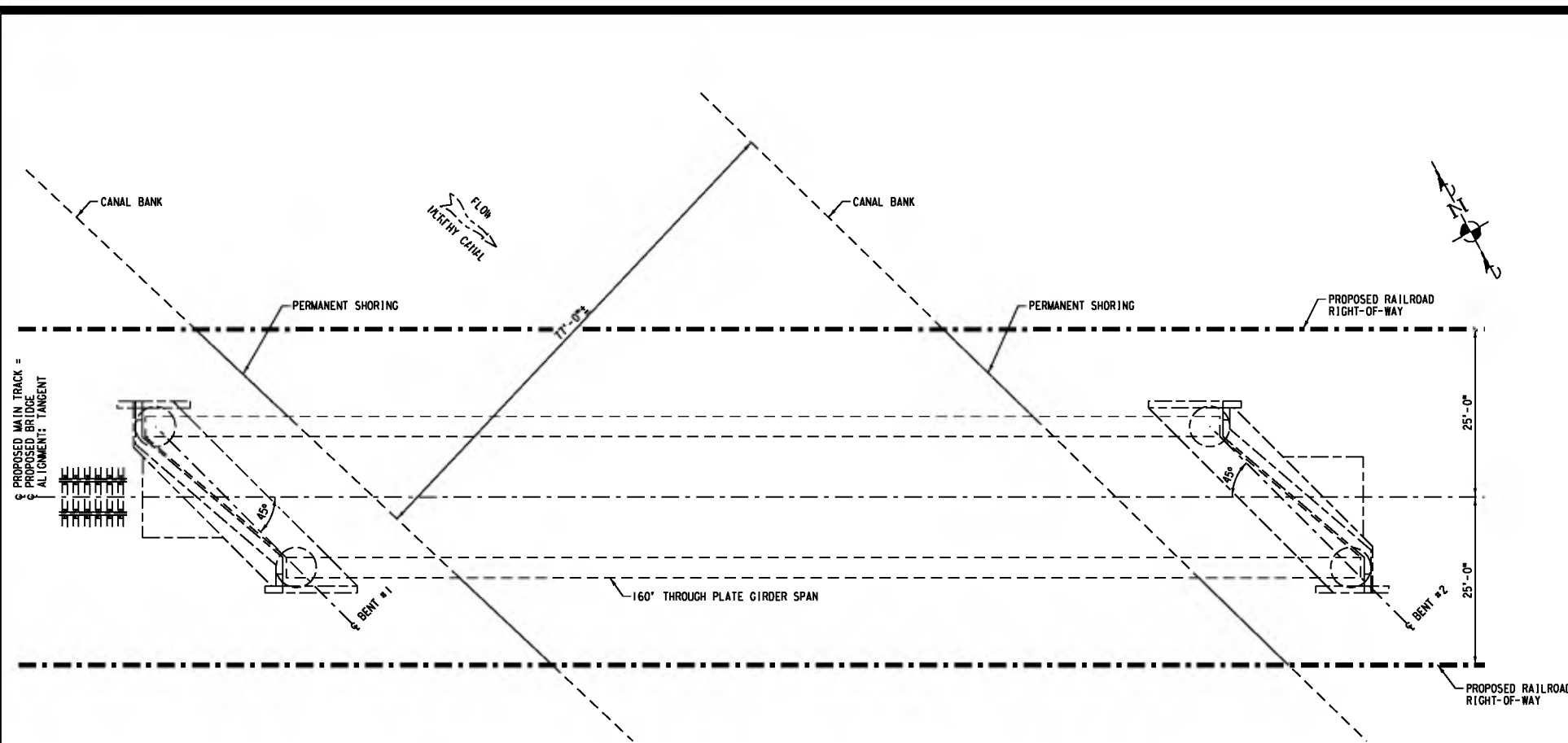


PRELIMINARY
 NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

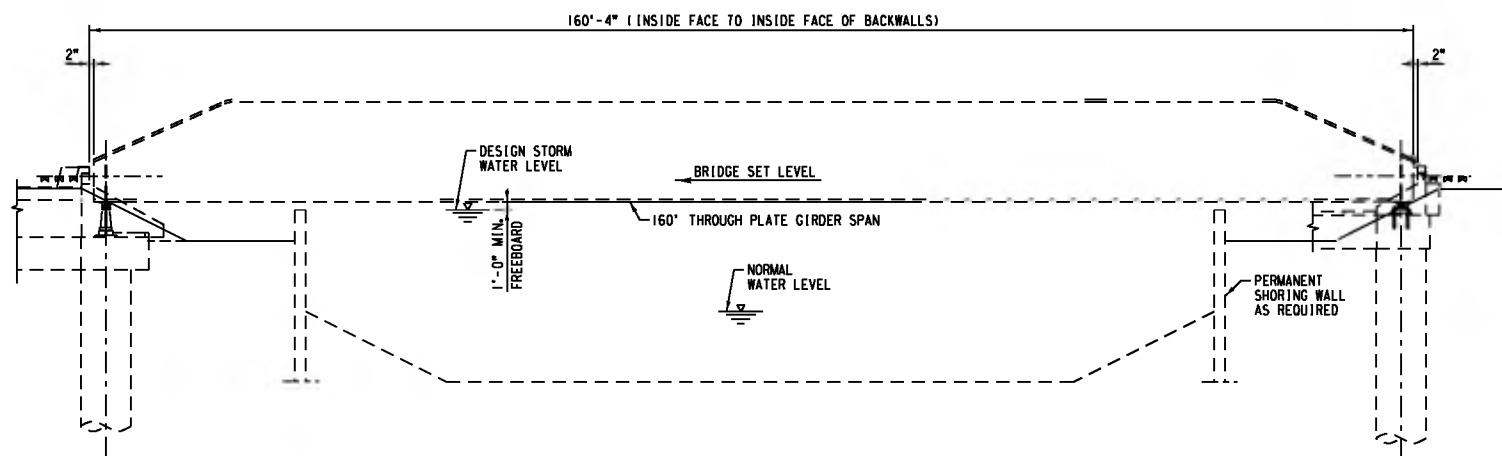
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 CHECKED BY: LAB
 DATE: JUNE 17 2016
 SHEET NO. B-14

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

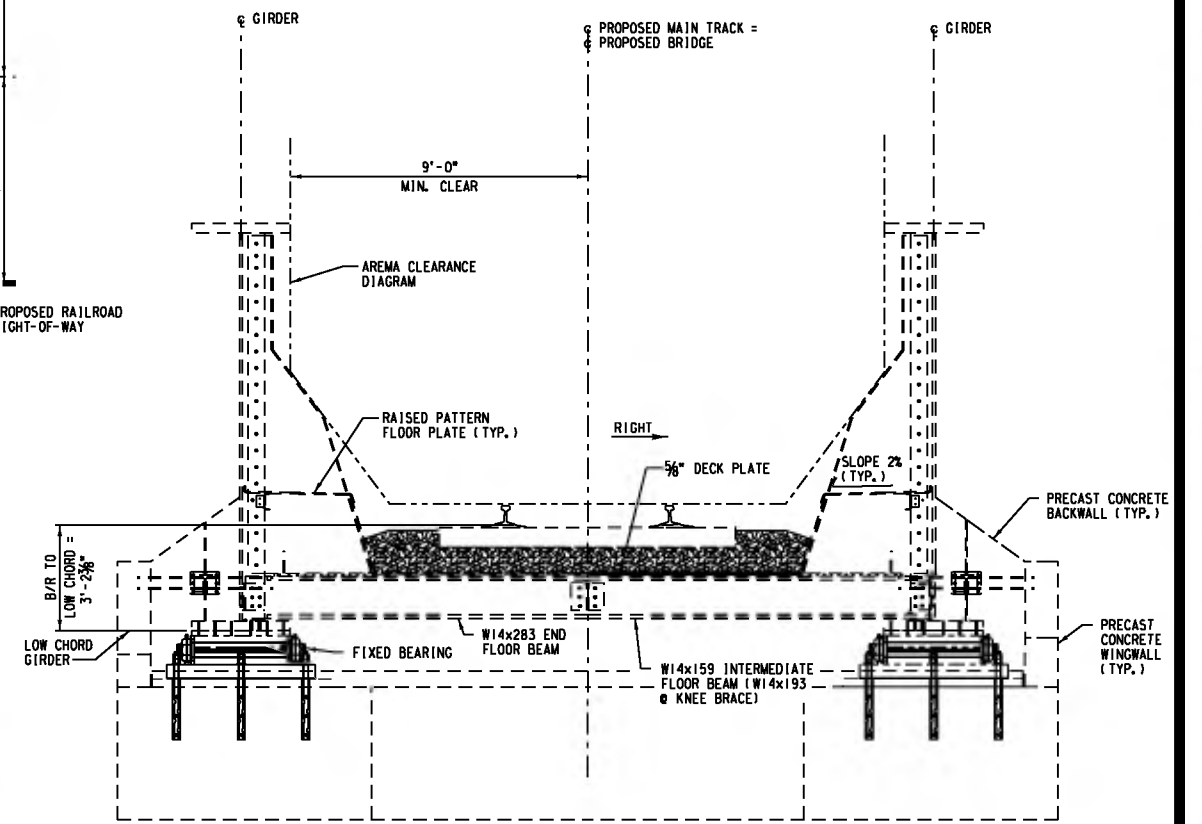
SHEET B-14
 PREFERRED ALTERNATIVE
 ESTIMATED RIGHT-OF-WAY





PLAN
SCALE: 1/2" = 1'-0"

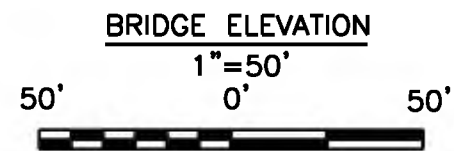
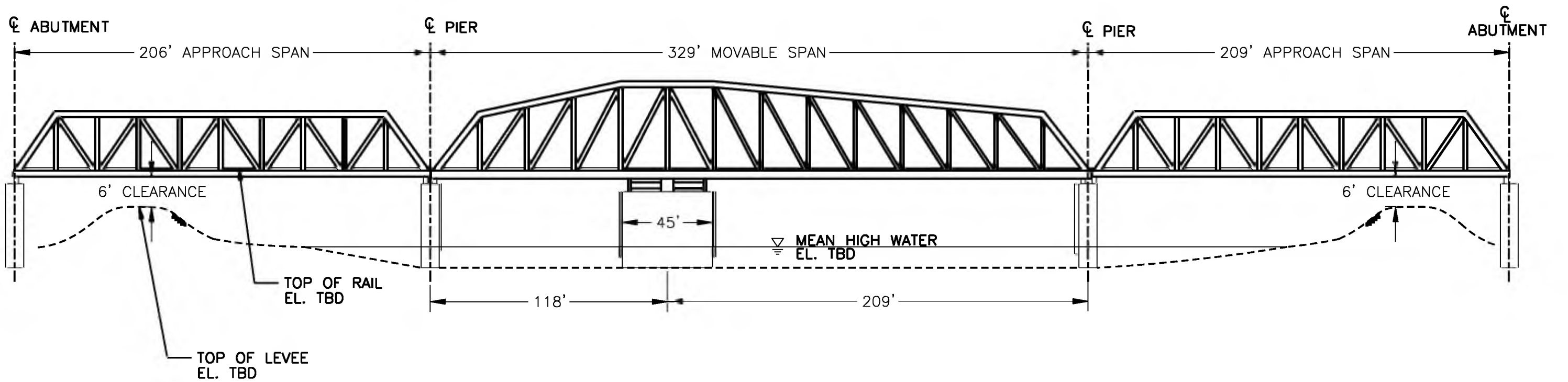


ELEVATION
SCALE: 1/2" = 1'-0"



SECTION
SCALE: 3/8" = 1'-0"

 	PRELIMINARY		DRAWN BY: SSS CHECKED BY: RJB DATE: JUNE 6 2016 SHEET NO. C-1	LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT		SHEET C-1 BRIDGE OVER MURPHY CANAL
	NOT FOR CONSTRUCTION			JEFFERSON AND PLAQUEMINES PARISHES, LA		
				RPC TASK LA23RR1		
				RPC/FRA GRANT # FRR-RLD-0032-14-01-00		



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 \$\$\$PLOT/VIS\$\$\$
 \$\$\$PRINT/PL\$\$\$
 \$\$\$DATE\$\$\$



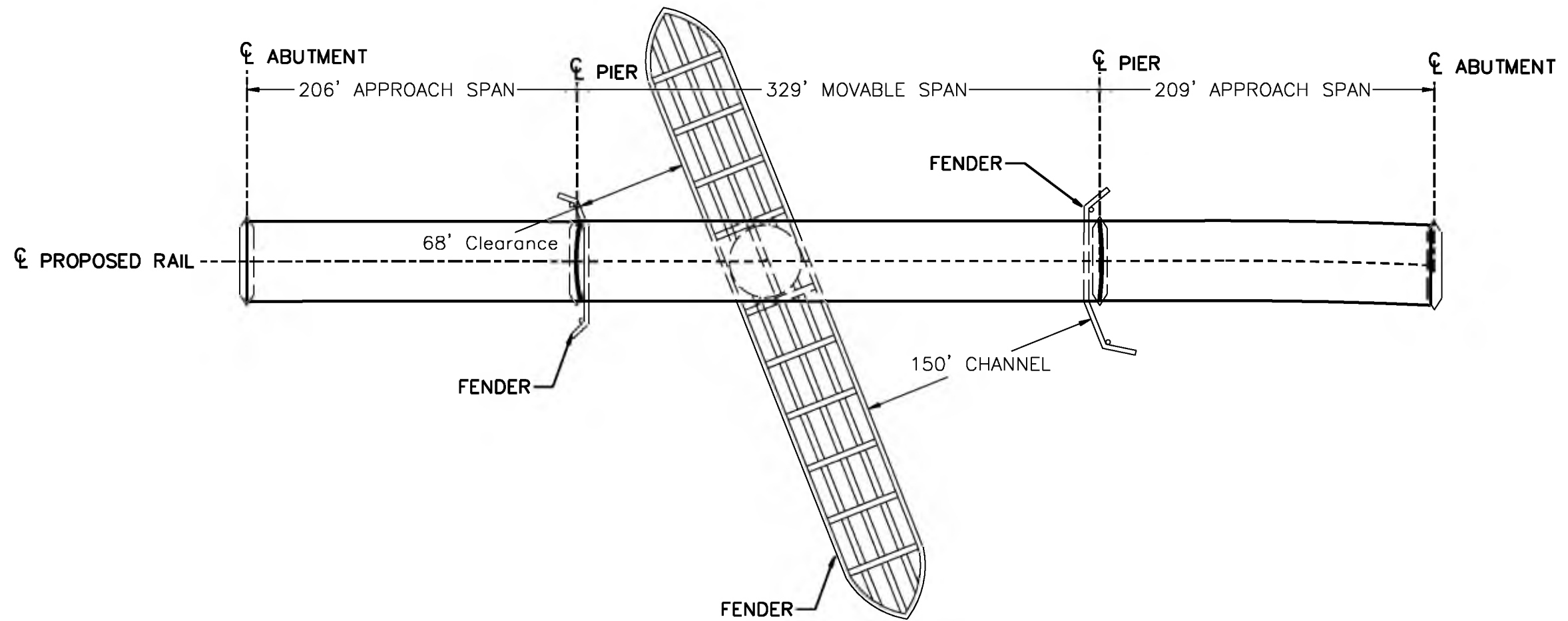
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NOT FOR CONSTRUCTION

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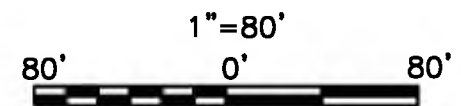
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 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET C-2
 GIWW CROSSING BRIDGE ELEVATION

\$\$\$FILE\$\$\$



BRIDGE PLAN



\$\$\$FILE\$\$\$
 \$\$\$PLTDIR\$\$\$
 \$\$\$PENTL\$\$\$
 \$\$\$DATE\$\$\$



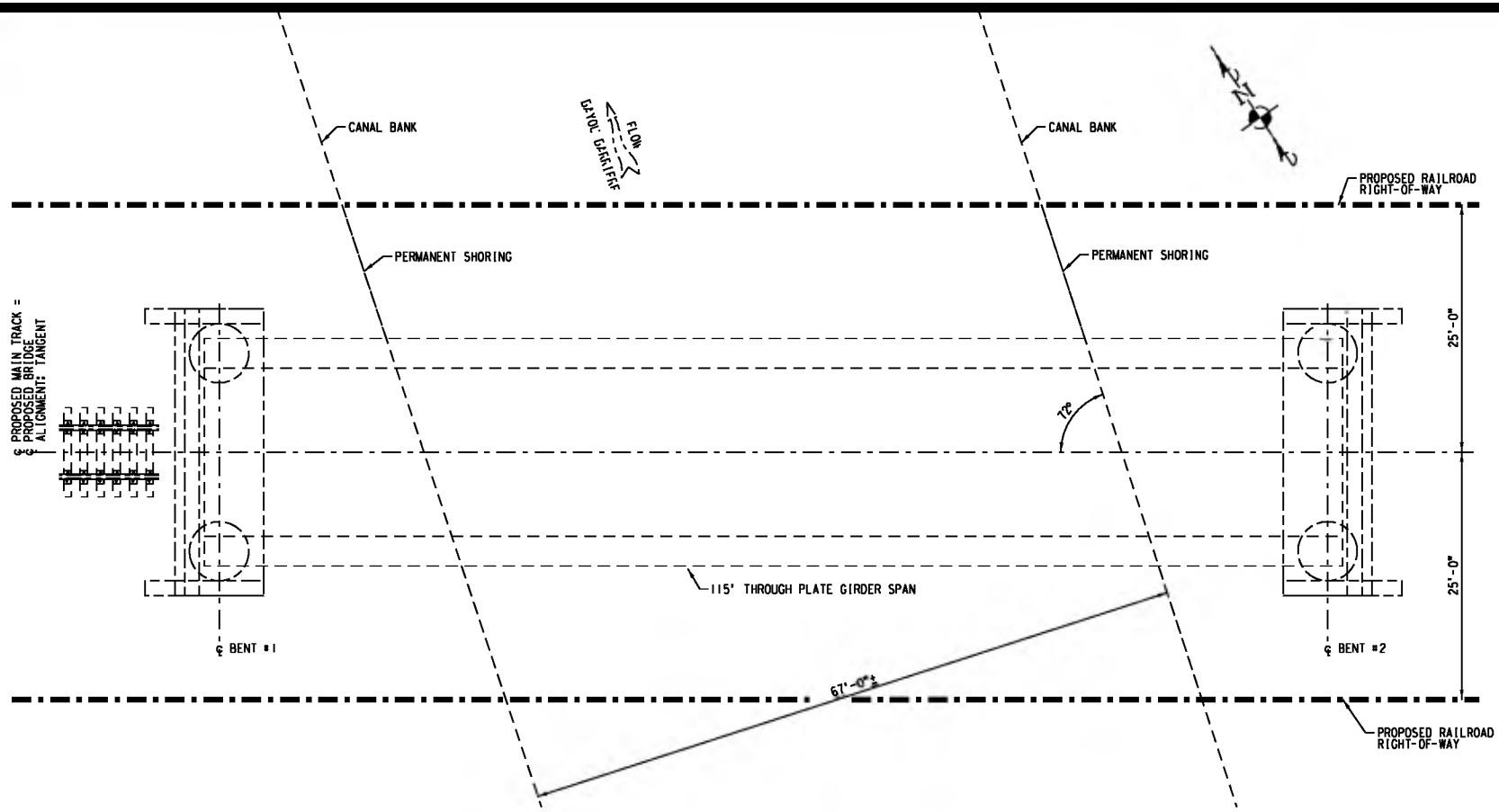
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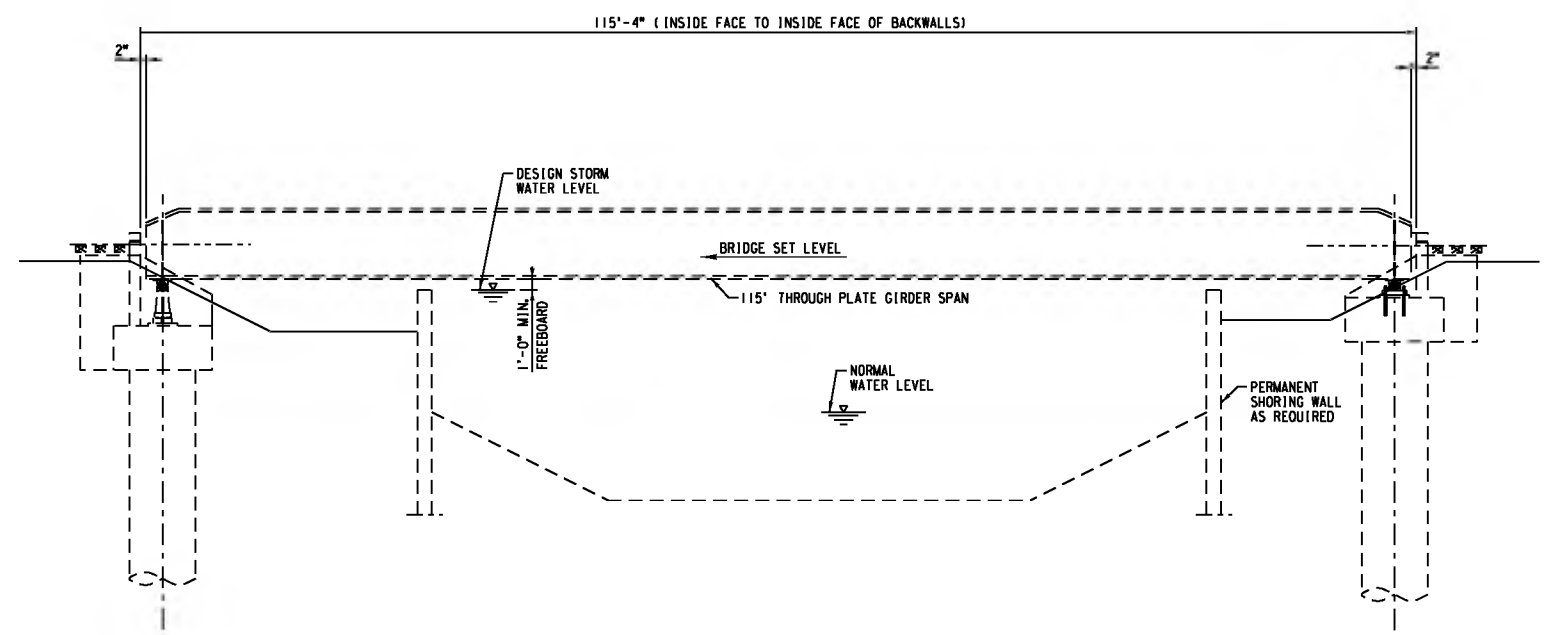
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 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET C-3
 GIWW CROSSING BRIDGE PLAN

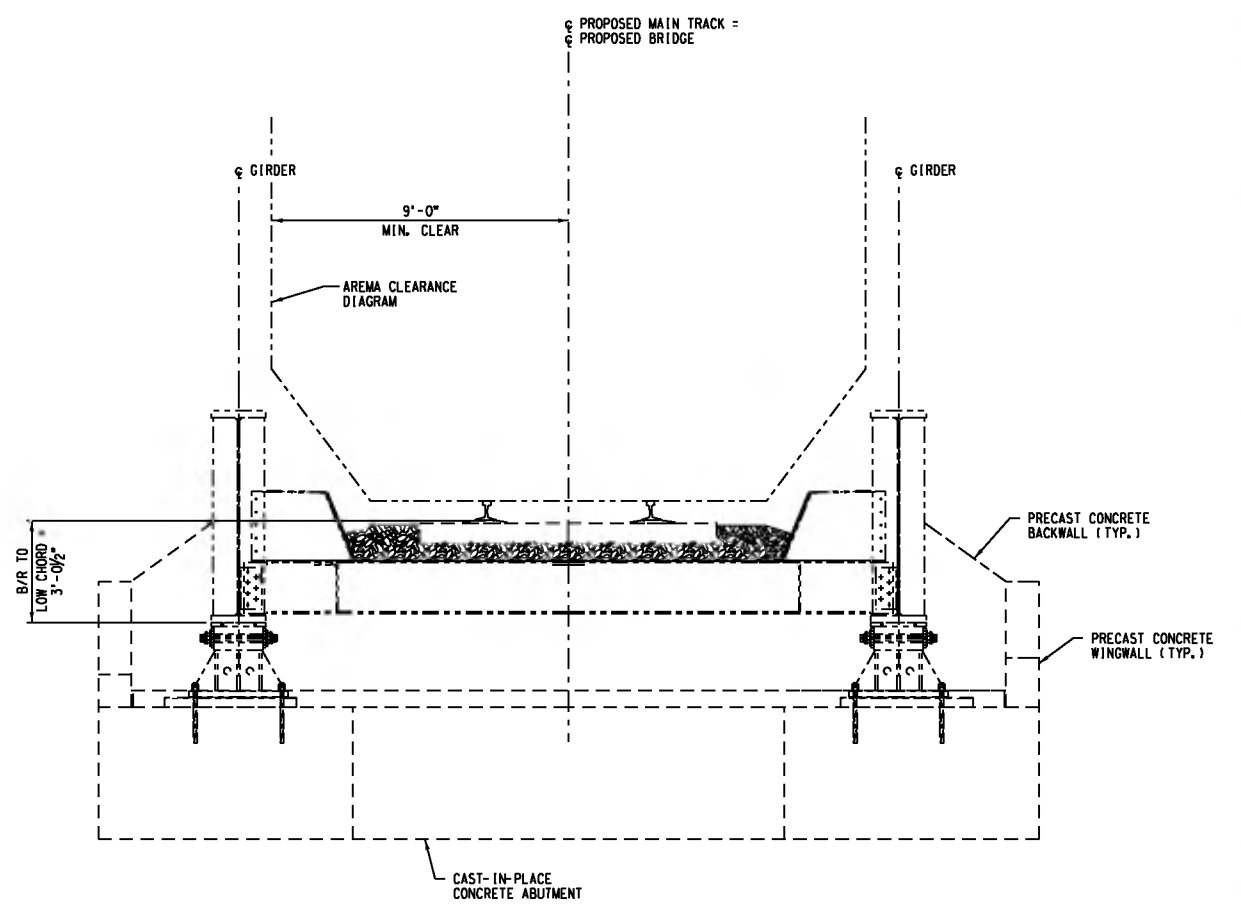
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PLAN
SCALE: 1/8" = 1'-0"



ELEVATION
SCALE: 1/8" = 1'-0"



SECTION
SCALE: 3/8" = 1'-0"

\$\$\$FILE\$\$\$
\$\$\$PLTDRY\$\$\$
\$\$\$PENTBL\$\$\$
\$\$\$DATE\$\$\$

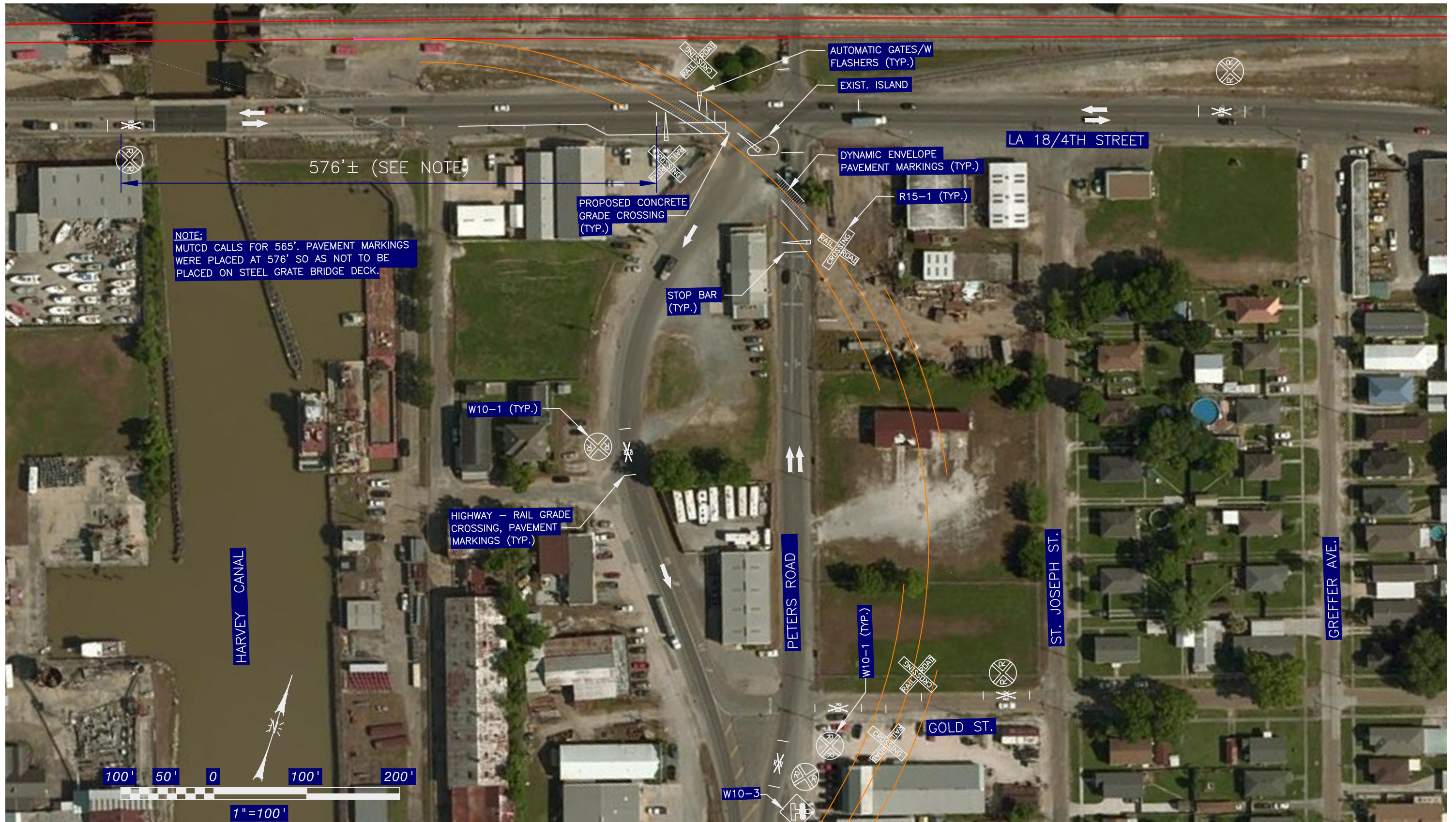


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NOT FOR CONSTRUCTION

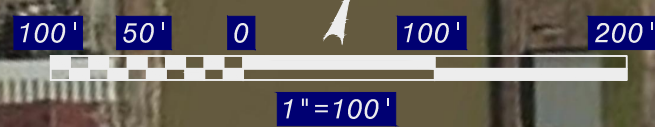
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SSS
CHECKED BY:
RJB
DATE:
JUNE 6 2016
SHEET NO.
C-5

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET C-5
BRIDGE OVER BAYOU BARRIERE



NOTE:
MUTCD CALLS FOR 565'. PAVEMENT MARKINGS WERE PLACED AT 576' SO AS NOT TO BE PLACED ON STEEL GRATE BRIDGE DECK.



LEGEND

- EXISTING NOGC RAILWAY
- PROPOSED ALIGNMENT

BKI



NOT FOR CONSTRUCTION
IMAGERY SOURCE: BING

DRAWN BY: GAD
CHECKED BY: TJK
DATE: JUN. 2016
SHEET NO.

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
JEFFERSON AND PLAQUEMINES PARISHES, LA
RPC TASK LA23RR1
RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET D-1
PREFERRED ALTERNATIVE
AT-GRADE CROSSING
4TH STREET

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\$\$\$DATE/SS\$\$

\$\$\$FILES\$\$

SEE SHEET D-4



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 \$\$\$PENTLSS\$\$
 \$\$\$DATESS\$\$

LEGEND

- EXISTING NOGC RAILWAY
- PROPOSED RAIL ALIGNMENT

BKI



NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: GAD
 CHECKED BY: TJK
 DATE: JUN. 2016
 SHEET NO.

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET D-5
 PREFERRED ALTERNATIVE
 AT-GRADE CROSSING
 LA 23 (2 OF 2)

\$\$\$FILES\$\$



SEE SHEET D-5

\$\$\$FILES\$\$
 \$\$\$PLOT/VSS\$\$
 \$\$\$PENTL/SS\$\$
 \$\$\$DATESS\$\$

LEGEND

- EXISTING NOGC RAILWAY
- PROPOSED RAIL ALIGNMENT

BKI



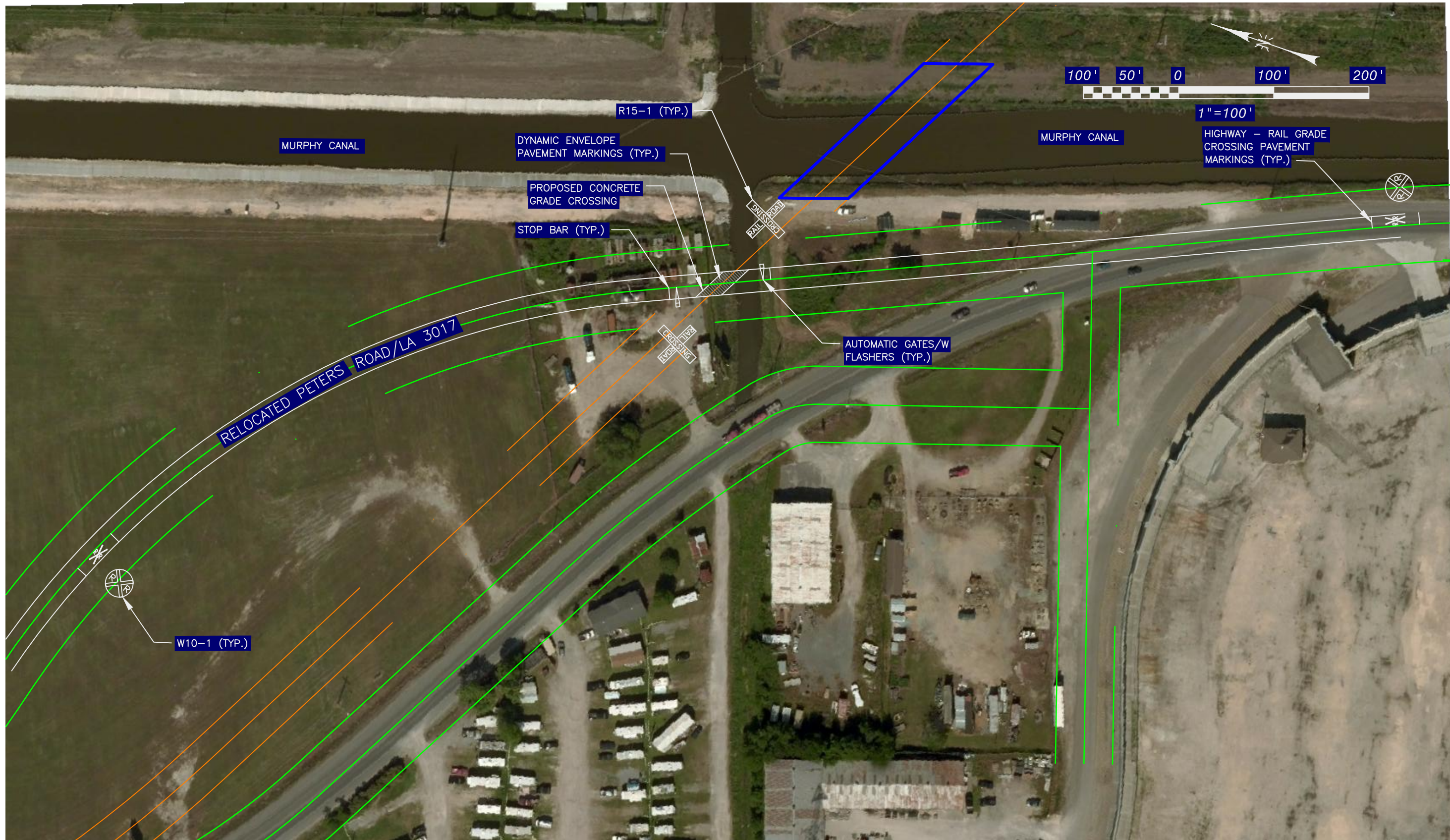
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DRAWN BY: GAD
 CHECKED BY: TJK
 DATE: JUN. 2016
 SHEET NO.

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET D-4
 PREFERRED ALTERNATIVE
 AT-GRADE CROSSING
 LA 23 (1 OF 2)

\$\$\$FILES\$\$



\$\$\$FILES\$\$
 \$\$\$PLTDRVSS\$\$
 \$\$\$PENTLSS\$\$
 \$\$\$DATESS\$\$

LEGEND

- PROPOSED ALIGNMENT
- PROPOSED ROADWAY RELOCATION
- PROPOSED BRIDGE

BKI



NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: GAD
 CHECKED BY: TJK
 DATE: JUN. 2016
 SHEET NO.

LA 23 NOGC RAILWAY RELOCATION PE/NEPA PROJECT
 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET D-3
 PREFERRED ALTERNATIVE
 AT-GRADE CROSSING
 PETERS ROAD

\$\$\$FILES\$\$



\$\$\$FILES\$\$
 \$\$\$PLTDIRVSS\$\$
 \$\$\$PENLSS\$\$
 \$\$\$DATESS\$\$

LEGEND

— PROPOSED ALIGNMENT

BKI



NOT FOR CONSTRUCTION
 IMAGERY SOURCE: BING

DRAWN BY: GAD
 CHECKED BY: TJK
 DATE: JUN. 2016
 SHEET NO.

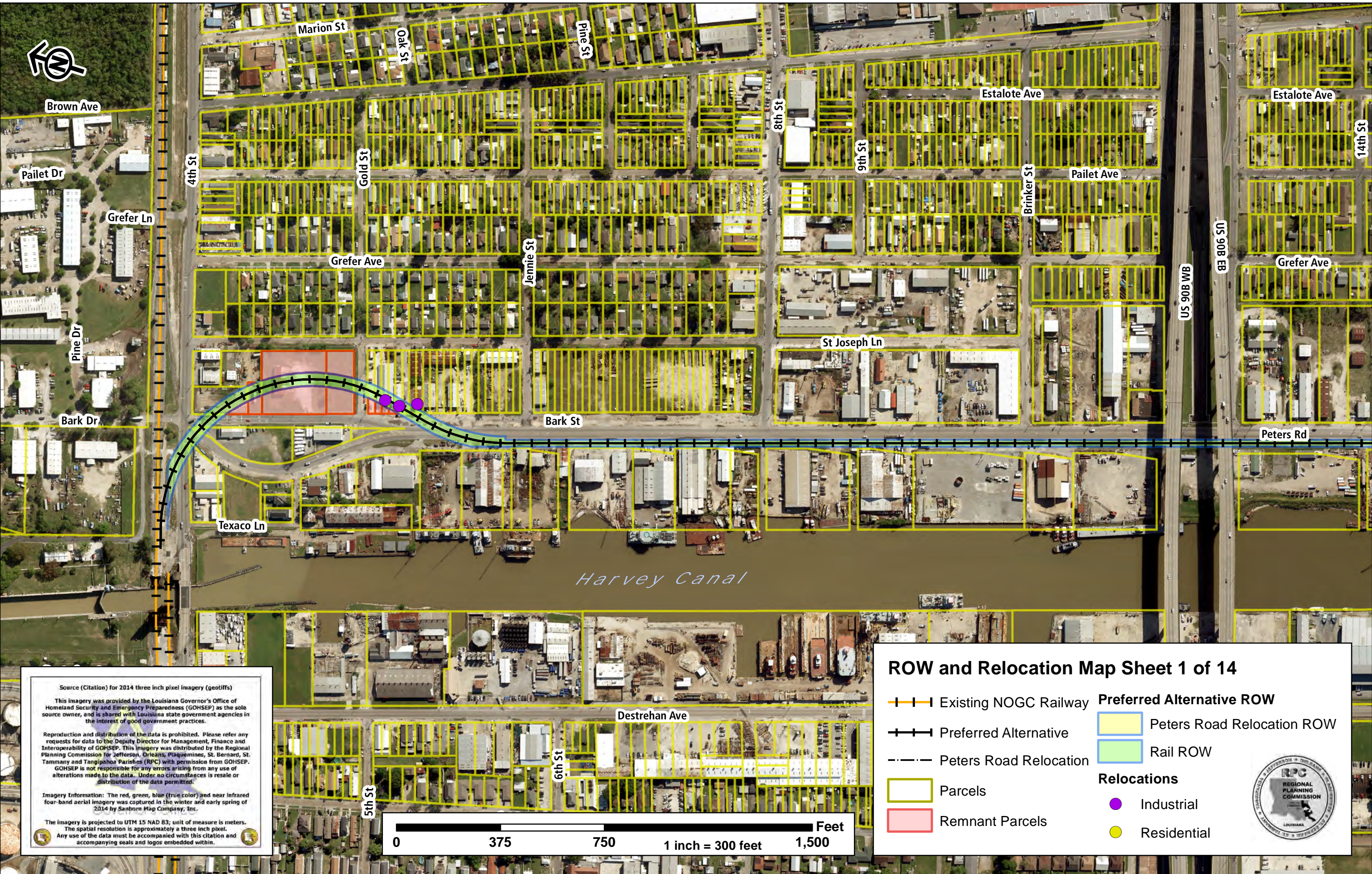
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 JEFFERSON AND PLAQUEMINES PARISHES, LA
 RPC TASK LA23RR1
 RPC/FRA GRANT # FRR-RLD-0032-14-01-00

SHEET D-2
 PREFERRED ALTERNATIVE
 AT-GRADE CROSSING
 PETERS RD.

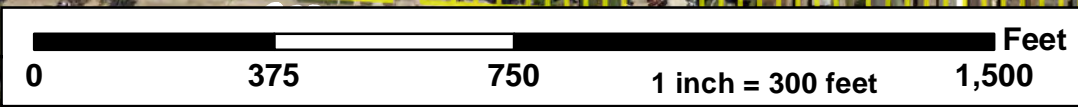
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Appendix C
Right-of-Way and Relocation Map Set

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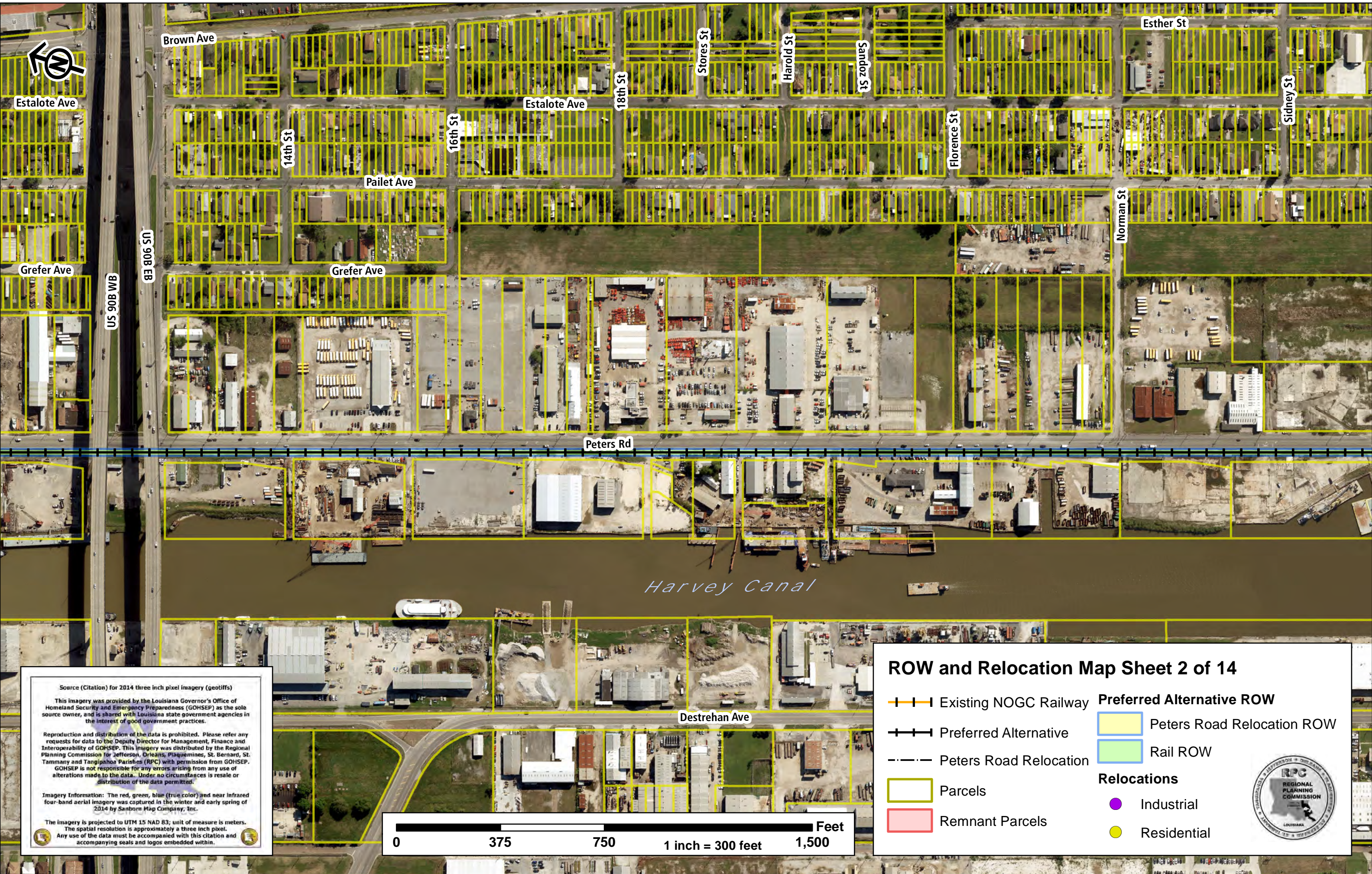
Source (Citation) for 2014 three inch pixel imagery (geotiffs)
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 Imagery Information: The red, green, blue (true color) and near infrared four-band aerial imagery was captured in the winter and early spring of 2014 by Sanborn Map Company, Inc.
 The imagery is projected to UTM 15 NAD 83; unit of measure is meters. The spatial resolution is approximately a three inch pixel. Any use of the data must be accompanied with this citation and accompanying seals and logos embedded within.



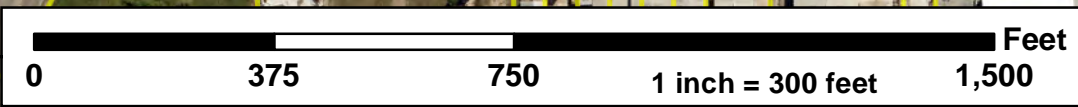
ROW and Relocation Map Sheet 1 of 14

- Existing NOGC Railway
- Preferred Alternative
- Peters Road Relocation
- Parcels
- Remnant Parcels
- Preferred Alternative ROW
- Peters Road Relocation ROW
- Rail ROW
- Relocations**
- Industrial
- Residential






Source (Citation) for 2014 three inch pixel imagery (geotiffs)
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ROW and Relocation Map Sheet 2 of 14

	Existing NOGC Railway		Preferred Alternative ROW
	Preferred Alternative		Peters Road Relocation ROW
	Peters Road Relocation		Rail ROW
	Parcels	Relocations	
	Remnant Parcels		Industrial
			Residential





Sidney St

Estalote Ave

38th St

Shirley St

41st St

Paillet Ave

Aimee St

Lester St

Joseph St

St Joseph Ln

Aimee St

36th St

Peters Rd

Harvey Canal

Destrehan Ave

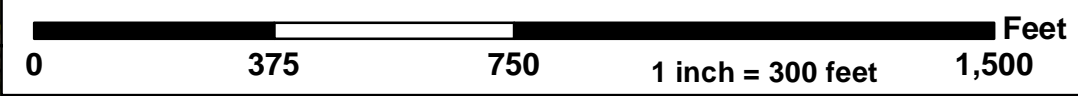
1st Ave

Source (Citation) for 2014 three inch pixel imagery (geotiffs)
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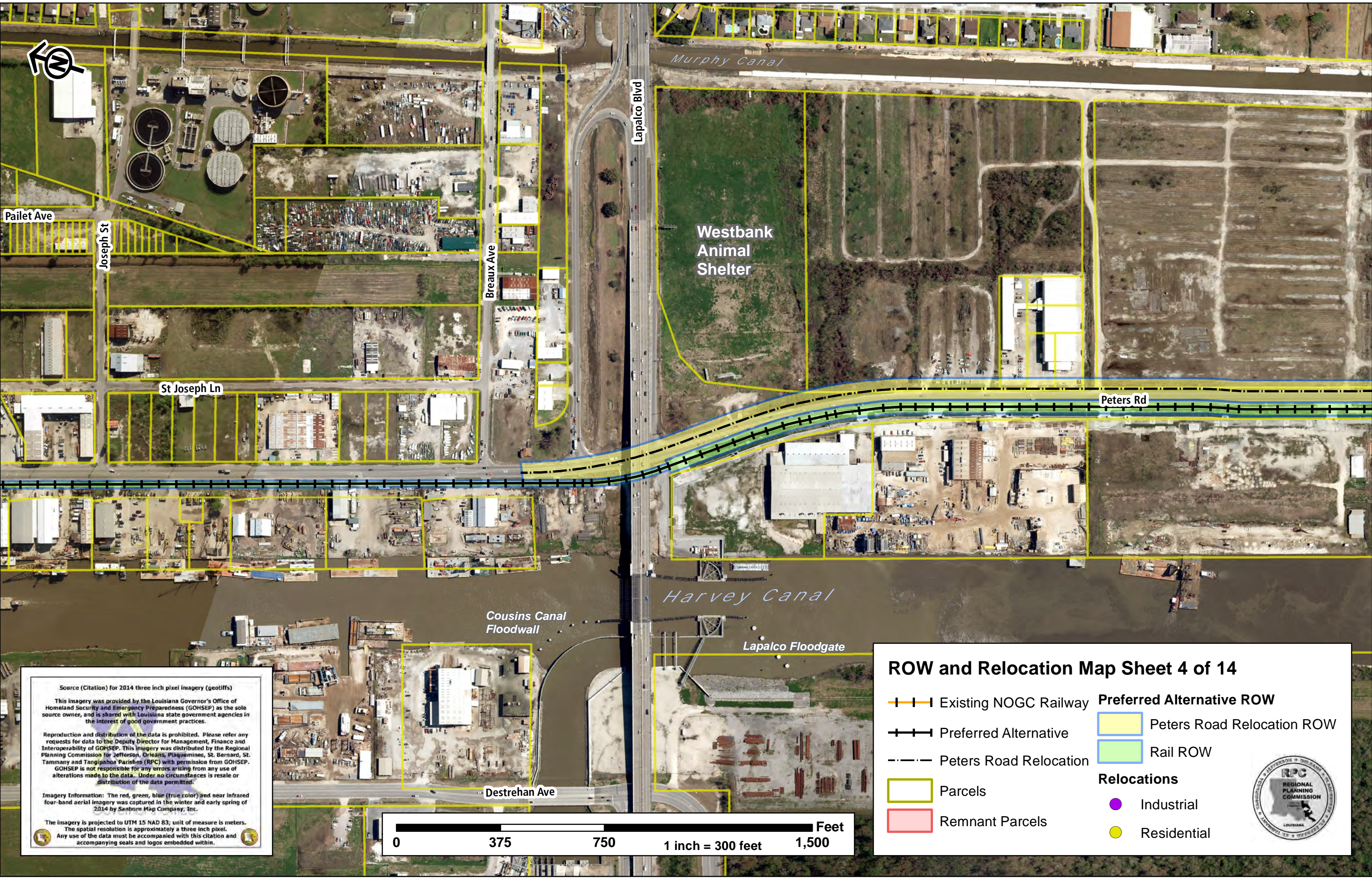
The imagery is projected to UTM 15 NAD 83; unit of measure is meters. The spatial resolution is approximately a three inch pixel. Any use of the data must be accompanied with this citation and accompanying seals and logos embedded within.



ROW and Relocation Map Sheet 3 of 14

- Existing NOGC Railway
- Preferred Alternative
- Peters Road Relocation
- Parcels
- Remnant Parcels
- Preferred Alternative ROW
- Peters Road Relocation ROW
- Rail ROW
- Relocations**
- Industrial
- Residential





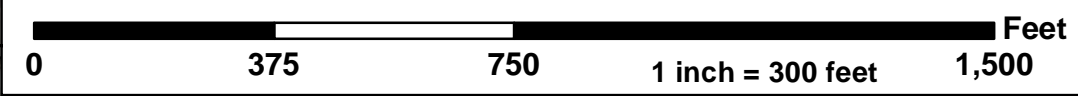
Source (Citation) for 2014 three inch pixel imagery (geotiffs)

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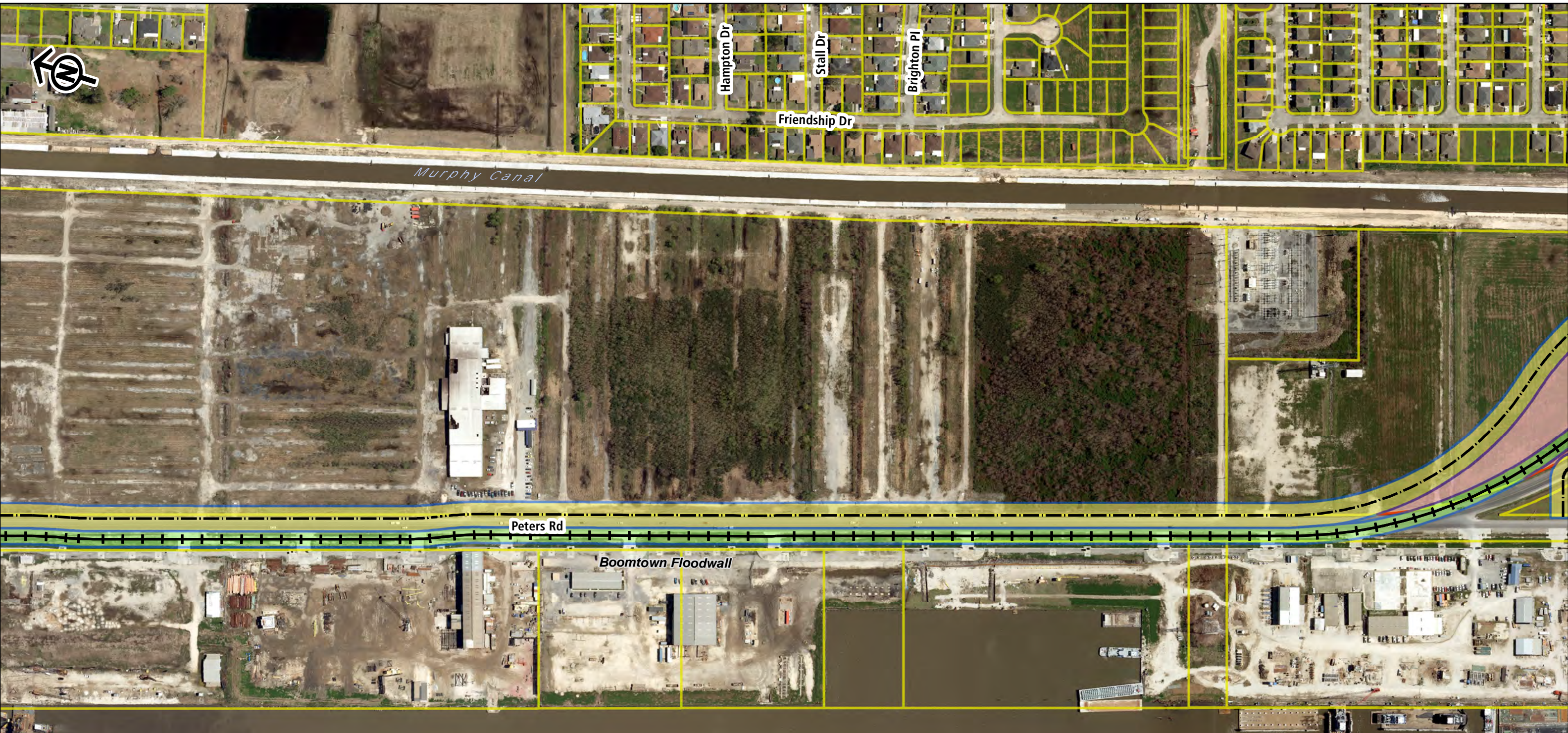
The imagery is projected to UTM 15 NAD 83; unit of measure is meters. The spatial resolution is approximately a three inch pixel. Any use of the data must be accompanied with this citation and accompanying seals and logos embedded within.



ROW and Relocation Map Sheet 4 of 14

- Existing NOGC Railway
 - Preferred Alternative
 - Peters Road Relocation
 - Parcels
 - Remnant Parcels
- Preferred Alternative ROW**
 - Peters Road Relocation ROW
 - Rail ROW
- Relocations**
 - Industrial
 - Residential





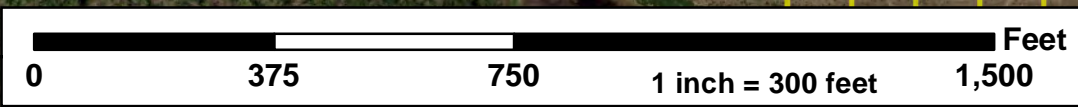
Source (Citation) for 2014 three inch pixel imagery (geotiffs)

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Imagery Information: The red, green, blue (true color) and near infrared four-band aerial imagery was captured in the winter and early spring of 2014 by Sanborn Map Company, Inc.

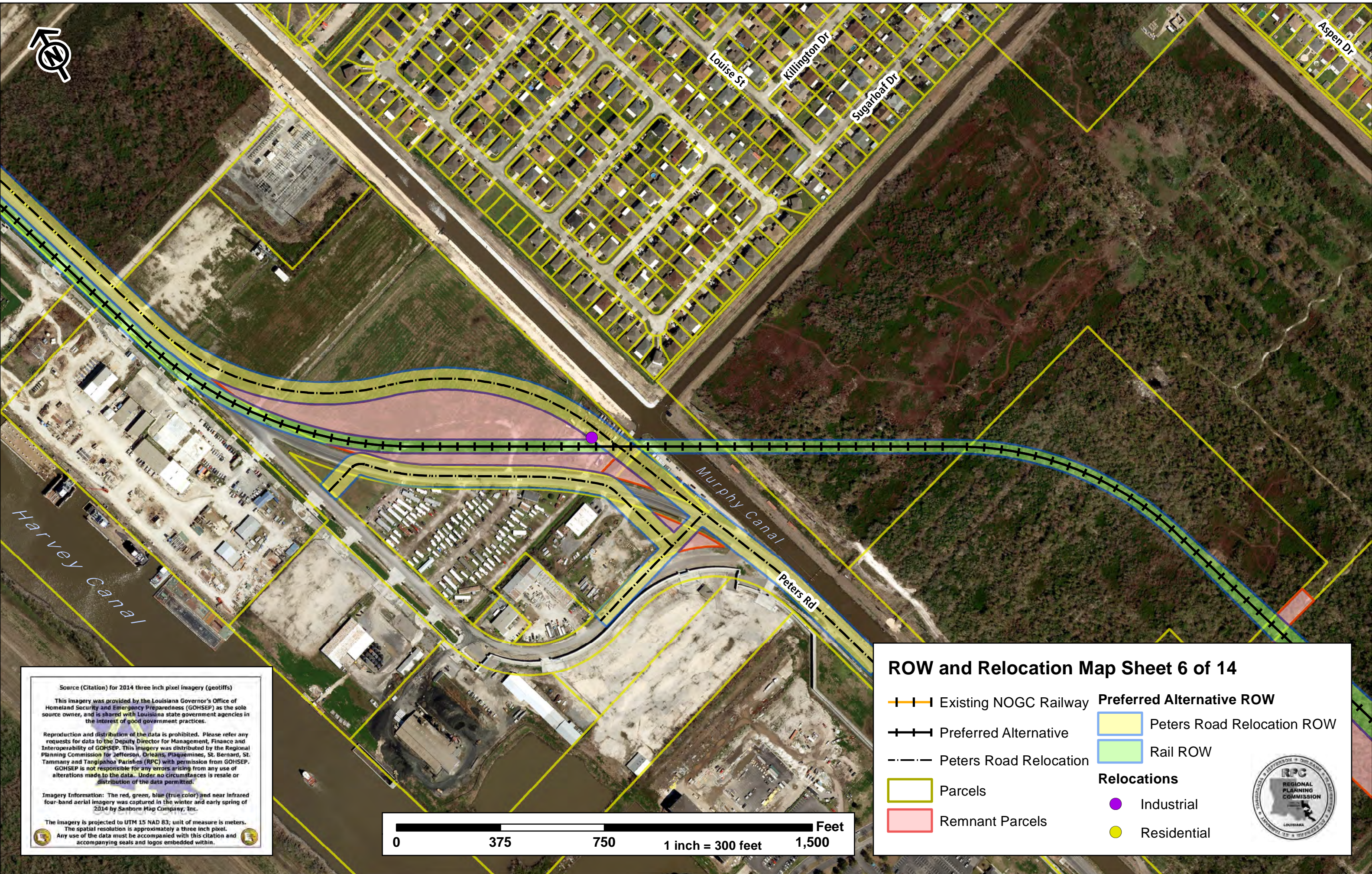
The imagery is projected to UTM 15 NAD 83; unit of measure is meters. The spatial resolution is approximately a three inch pixel. Any use of the data must be accompanied with this citation and accompanying seals and logos embedded within.



ROW and Relocation Map Sheet 5 of 14

- Existing NOGC Railway
- Preferred Alternative
- Peters Road Relocation
- Parcels
- Remnant Parcels
- Preferred Alternative ROW
- Peters Road Relocation ROW
- Rail ROW
- Relocations**
- Industrial
- Residential





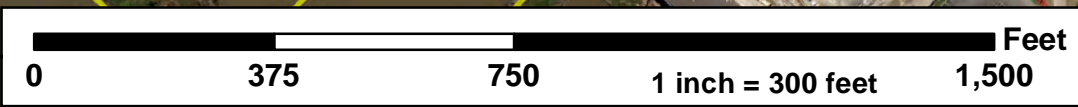
Source (Citation) for 2014 three inch pixel imagery (geotiffs)

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ROW and Relocation Map Sheet 6 of 14

	Existing NOGC Railway		Preferred Alternative ROW
	Preferred Alternative		Peters Road Relocation ROW
	Peters Road Relocation		Rail ROW
	Parcels	Relocations	
	Remnant Parcels		Industrial
			Residential



Lac la Belle Dr

Barataria Bayou

Engineers Rd

Concord Rd

United Tugs Rd

Murphy Canal

Peters Rd

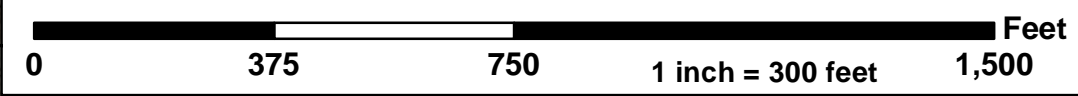
Source (Citation) for 2014 three inch pixel imagery (geotiffs)

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Imagery Information: The red, green, blue (true color) and near infrared four-band aerial imagery was captured in the winter and early spring of 2014 by Sanborn Map Company, Inc.

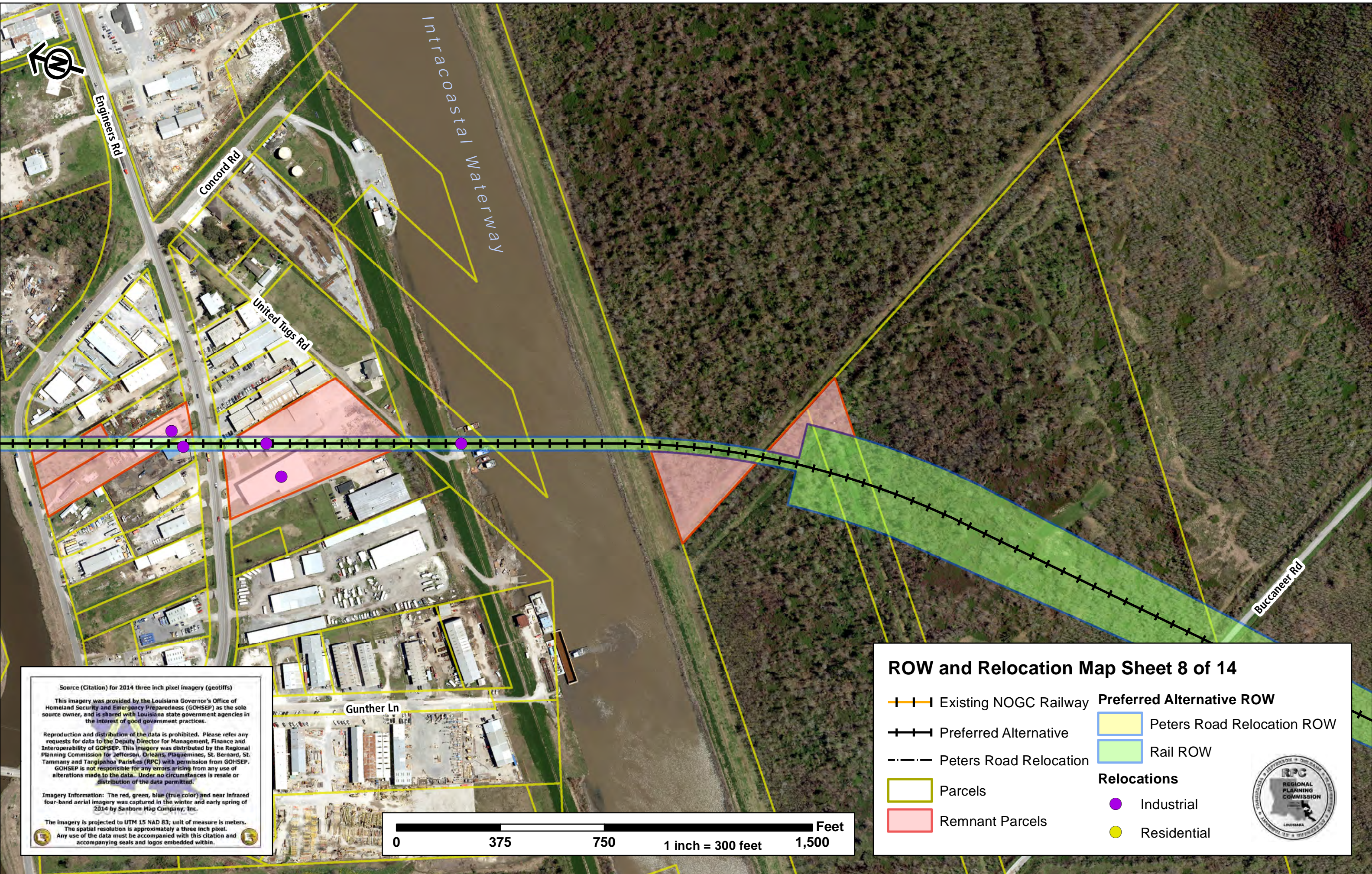
The imagery is projected to UTM 15 NAD 83; unit of measure is meters. The spatial resolution is approximately a three inch pixel. Any use of the data must be accompanied with this citation and accompanying seals and logos embedded within.



ROW and Relocation Map Sheet 7 of 14

- Existing NOGC Railway
- Preferred Alternative
- Peters Road Relocation
- Parcels
- Remnant Parcels
- Preferred Alternative ROW
- Rail ROW
- Peters Road Relocation ROW
- Industrial
- Residential



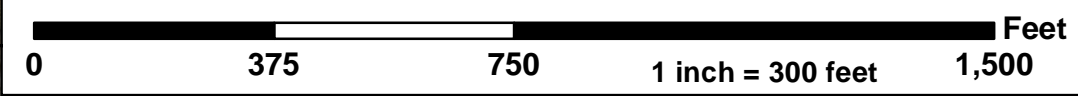


Source (Citation) for 2014 three inch pixel imagery (geotiffs)
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The imagery is projected to UTM 15 NAD 83; unit of measure is meters. The spatial resolution is approximately a three inch pixel. Any use of the data must be accompanied with this citation and accompanying seals and logos embedded within.



ROW and Relocation Map Sheet 8 of 14

- Existing NOGC Railway
- Preferred Alternative
- Peters Road Relocation
- Parcels
- Remnant Parcels
- Peters Road Relocation ROW
- Rail ROW
- Industrial
- Residential





Bayou Barriere

Buccaneer Rd

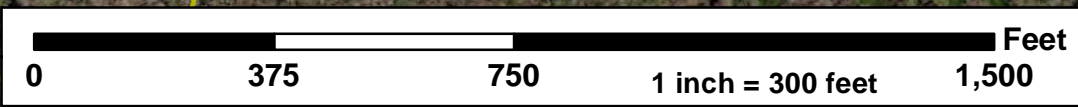
Source (Citation) for 2014 three inch pixel imagery (geotiffs)

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ROW and Relocation Map Sheet 9 of 14

- Existing NOGC Railway
- Preferred Alternative
- Peters Road Relocation
- Parcels
- Remnant Parcels
- Peters Road Relocation ROW
- Rail ROW
- Relocations**
- Industrial
- Residential





Buccaneer Rd

Bayou Barriere

Proposed Hero Yard

Mississippi River

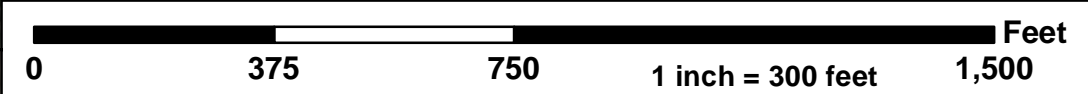
Source (Citation) for 2014 three inch pixel imagery (geotiffs)

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ROW and Relocation Map Sheet 10 of 14

- Existing NOGC Railway
- Preferred Alternative
- Peters Road Relocation
- Parcels
- Remnant Parcels
- Preferred Alternative ROW
- Peters Road Relocation ROW
- Rail ROW
- Relocations**
- Industrial
- Residential





Proposed Hero Yard

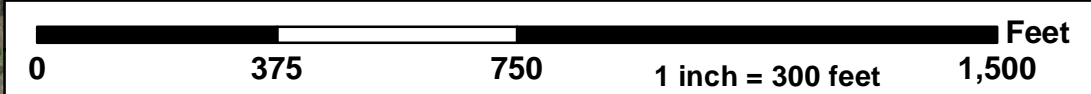
Source (Citation) for 2014 three inch pixel imagery (geotiffs)

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Imagery Information: The red, green, blue (true color) and near infrared four-band aerial imagery was captured in the winter and early spring of 2014 by Sanborn Map Company, Inc.

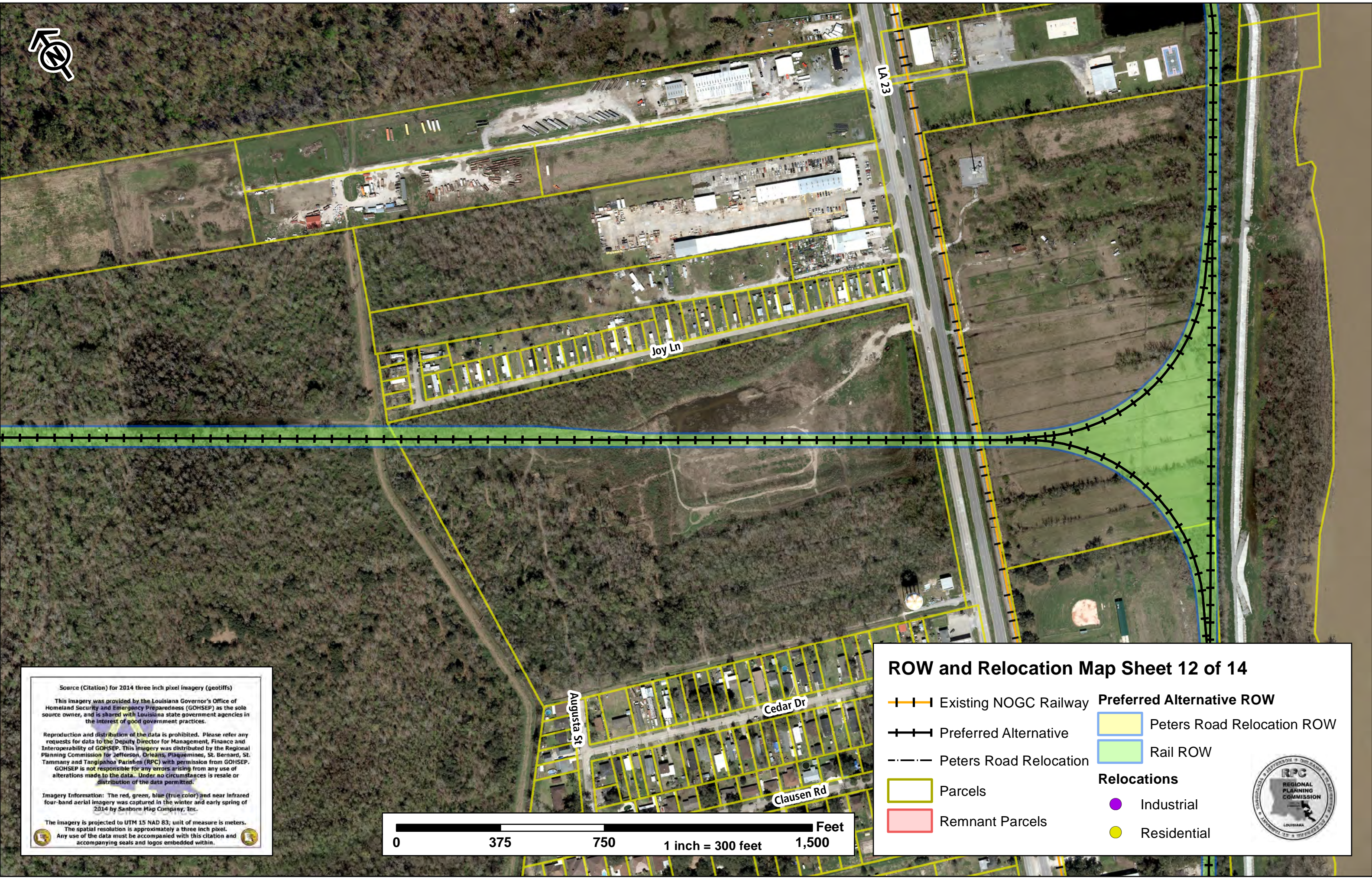
The imagery is projected to UTM 15 NAD 83; unit of measure is meters. The spatial resolution is approximately a three inch pixel. Any use of the data must be accompanied with this citation and accompanying seals and logos embedded within.



ROW and Relocation Map Sheet 11 of 14

- Existing NOGC Railway
- Preferred Alternative
- Peters Road Relocation
- Parcels
- Remnant Parcels
- Preferred Alternative ROW
- Peters Road Relocation ROW
- Rail ROW
- Relocations**
- Industrial
- Residential





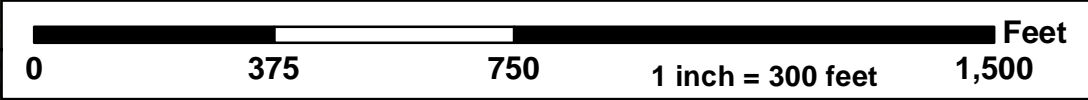
Source (Citation) for 2014 three inch pixel imagery (geotiffs)

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ROW and Relocation Map Sheet 12 of 14

- Existing NOGC Railway
- Preferred Alternative
- Peters Road Relocation
- Parcels
- Remnant Parcels
- Preferred Alternative ROW
- Rail ROW
- Relocations**
- Industrial
- Residential





Sewer Plant Rd

Mississippi River

Hwy 11

LA 23

Joy Ln

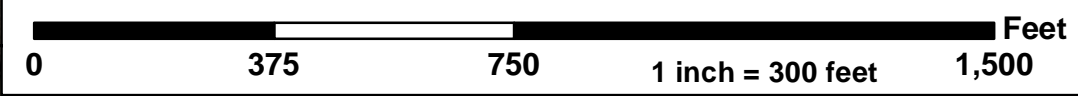
Source (Citation) for 2014 three inch pixel imagery (geotiffs)

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ROW and Relocation Map Sheet 13 of 14

- Existing NOGC Railway
- Preferred Alternative
- Peters Road Relocation
- Parcels
- Remnant Parcels
- Preferred Alternative ROW
- Peters Road Relocation ROW
- Rail ROW
- Relocations**
- Industrial
- Residential





Mississippi River



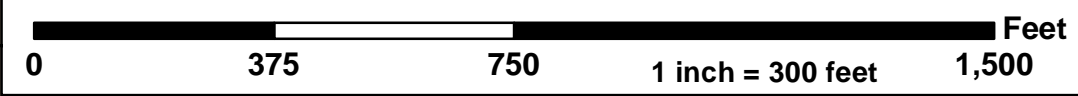
Source (Citation) for 2014 three inch pixel imagery (geotiffs)

This imagery was provided by the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) as the sole source owner, and is shared with Louisiana state government agencies in the interest of good government practices.

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ROW and Relocation Map Sheet 14 of 14

- Existing NOGC Railway
- Preferred Alternative
- Peters Road Relocation
- Parcels
- Remnant Parcels
- Preferred Alternative ROW
- Rail ROW
- Industrial
- Residential



Appendix D

Preferred Alternative Estimate of Probable Cost

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Estimate of Probable Cost

Description	Total
Preferred Alternative - Railroad Only (see Note 1)	\$ 245,106,349
Subtotal	\$ 245,106,349
Environmental Mitigation (1%)	\$ 2,451,063
Final Design (3%)	\$ 7,353,190
Construction Management (2%)	\$ 4,902,127
Subtotal	\$ 14,706,381
TOTAL - Engineering, Environmental and Construction	\$ 259,812,730
TOTAL - Engineering, Environmental and Construction (Rounded)	\$ 260,000,000

Note 1: Includes Road Crossings, Track and Signals, Right-of-way, Earthwork, Subballast, Structures and Bridges as shown below.

Road Crossings						
Description	Quantity	Unit	Cost/Unit	Total Cost	Comments	
Preferred Alternative						
4th Street (Concrete)	130	LF	\$ 1,200	\$ 156,000	Public	
Peters Road (Concrete)	140	LF	\$ 1,200	\$ 168,000	Public NB; 2-lane	
Gold Street (Concrete)	45	LF	\$ 1,200	\$ 54,000	Public	
Peters Road (Concrete)	250	LF	\$ 1,200	\$ 300,000	Public NB & SB; 4-lane	
Relocated Peters Road (Concrete)	150	LF	\$ 1,200	\$ 180,000	Public	
Access Road 1 (Wood)	45	LF	\$ 800	\$ 36,000	Private	
Access Road 2 (Wood)	45	LF	\$ 800	\$ 36,000	Private	
Access Road 3 (Wood)	45	LF	\$ 800	\$ 36,000	Private	
LA 23 (Concrete)	125	LF	\$ 1,200	\$ 150,000	Public	
Access Road 4 (Wood)	45	LF	\$ 800	\$ 36,000	Private	
Industry Access Crossings (88, Wood)	3520	LF	\$ 800	\$ 2,816,000	Average length of 40 feet all Private	
Road Crossing Approaches (Concrete/Asphalt)	21	EA	\$ 18,000	\$ 378,000		
Road Crossing Approaches (Rock)	77	EA	\$ 8,000	\$ 616,000		
Signals, Gates and Lights (Set of 2)	6	EA	\$ 350,000	\$ 2,100,000	4th St, Peters Road (2), Gold St., Relocated Peters Road, LA 23	
Advance Warning Signs/Pavement Markings	6	EA	\$ 12,000	\$ 72,000		
Warning Signs (Industry/Access)	77	EA	\$ 4,000	\$ 308,000		
Total w/ Contingency	20%			\$ 8,930,400		

Track and Signals						
Description	Quantity	Unit	Cost/Unit	Total Cost	Comments	
Preferred Alternative						
Track 136# CWR w/ Wood Ties	113,449	TF	\$ 195	\$ 22,122,555		
Turnout #9 RBM Manual	22	EA	\$ 75,000	\$ 1,650,000		
Turnout #11 RBM Power	6	EA	\$ 125,000	\$ 750,000		
Signal / CTC	12.9	MI	\$ 1,500,000	\$ 19,383,523	Harvey Canal to Belle Chasse	
Total w/ Contingency	20%			\$ 52,687,293		

Right-of-Way						
Description	Quantity	Unit	Cost/Unit	Total Cost	Comments	
Preferred Alternative						
Right-of-way Area	118.00	AC	\$ 108,900	\$ 12,850,200	Includes Preferred Alternative, Peters Road Reconstruction, and remnant parcels	
No of Parcels	60	0	\$ -	\$ -		
Survey, Appraisal, Negotiations, Closing	60	EA	\$ 23,000	\$ 1,380,000		
Relocations	12	EA	\$ 200,000	\$ 2,400,000		
Total w/ Contingency	20%			\$ 19,956,240		

Earthwork						
Description	Quantity	Unit	Cost/Unit	Total Cost	Comments	
Preferred Alternative						
Clear and Grub	118,000	AC	\$ 5,000	\$ 590,000	Assume no clearing	
Embankment	475,237	CY	\$ 8	\$ 3,801,899	Assume 1 foot new subgrade over entire length (less Hooper Spur); include 3200' long embankment (30') on both sides of GIWW	
Excavation	57,570	CY	\$ 5	\$ 287,850	Assume 1.5 feet excavation over entire length (less Hooper Spur)	
Stabilization	287,850	SY	\$ 5	\$ 1,439,250	Assume 25 feet wide swath to be stabilized (entire length less Hooper Spur)	
Total w/ Contingency	20%			\$ 7,342,799		

Subballast						
Description	Quantity	Unit	Cost/Unit	Total Cost	Comments	
Preferred Alternative						
Subballast (12": 3:1 Side Slopes)	64,764	CY	\$ 60	\$ 3,885,833	Assume 15 feet wide, 12" thick subballast section	
Total w/ Contingency	10%			\$ 4,274,417		

Structures / Bridges						
Description	Quantity	Unit	Cost/Unit	Total Cost	Comments	
Preferred Alternative						
Murphy Canal Bridge	160	TF	\$ 17,000	\$ 2,720,000		
GIWW Approach (North)/Bayou Barataria Bridge	2000	TF	\$ 10,000	\$ 20,000,000		
GIWW Swing Span Bridge	1	EA	\$ 96,821,000	\$ 96,821,000	Reference NOGC Bridge Report 8/28/2015	
GIWW Approach (South) Bridge	400	TF	\$ 10,000	\$ 4,000,000		
Buccaneer Road Bridge	110	TF	\$ 10,000	\$ 1,100,000		
Bayou Barriere Bridge	115	TF	\$ 17,000	\$ 1,955,000		
Total w/ Contingency	20%			\$ 151,915,200		

Peters Road Reconstruction						
Description	Quantity	Unit	Cost/Unit	Total Cost	Comments	
Reconstruction plus New Alignment						
Peters Road Reconstruction - rural 2-lane	1.65	Mile	\$ 3,500,000	\$ 5,775,000	Unit Cost per LADOTD Bridge Design and Evaluation Manual, 2014	
Total w/ Contingency	20%			\$ 6,930,000		

Total Estimate of Probable Cost	
Description	Total
Preferred Alternative	\$ 260,000,000
Peters Road Reconstruction	\$ 6,930,000
Total Estimate of Probable Cost	\$ 266,930,000

Appendix E
Noise Models

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Project:	NOLA RR
----------	---------

Receiver Parameters	
Receiver:	Receiver 1
Land Use Category:	2. Residential
Existing Noise (Measured or Generic Value):	50 dBA

Noise Source Parameters	
Number of Noise Sources:	2

Noise Source Parameters		Source 1
	Source Type:	Fixed Guideway
	Specific Source:	Diesel Electric Locomotive
Daytime hrs	Avg. Number of Locos/train	2
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Nighttime hrs	Avg. Number of Locos/train	2
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Distance	Distance from Source to Receiver (ft)	100
	Number of Intervening Rows of Buildings	0
Adjustments		

Noise Source Parameters		Source 2
	Source Type:	Fixed Guideway
	Specific Source:	Rail Car
Daytime hrs	Avg. Number of Rail Cars/train	110
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Nighttime hrs	Avg. Number of Rail Cars/train	110
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Distance	Distance from Source to Receiver (ft)	100
	Number of Intervening Rows of Buildings	
Adjustments	Noise Barrier?	No
	Jointed Track?	No
	Embedded Track?	No
	Aerial Structure?	No

Project Results Summary

Existing Ldn:	50 dBA
Total Project Ldn:	64 dBA
Total Noise Exposure:	64 dBA
Increase:	14 dB
Impact?:	Severe

Distance to Impact Contours

Dist to Mod. Impact Contour (Sources 1+2):	508 ft
Dist to Sev. Impact Contour (Sources 1+2):	195 ft

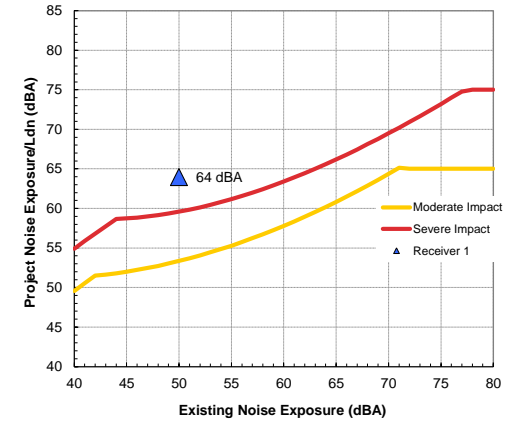
Source 1 Results

Leq(day):	56.2 dBA
Leq(night):	56.2 dBA
Ldn:	62.6 dBA

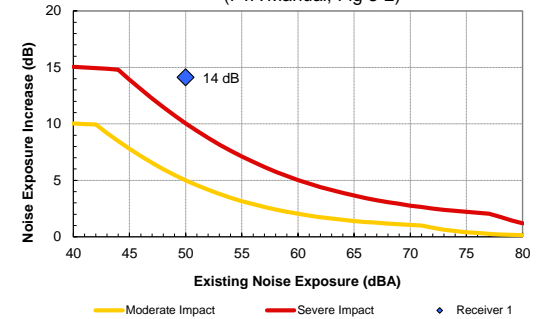
Source 2 Results

Leq(day):	51.7 dBA
Leq(night):	51.7 dBA
Ldn:	58.1 dBA
Incremental Ldn (Src 1-2):	63.9 dBA

Noise Impact Criteria
(FTA Manual, Fig 3-1)



Increase in Cumulative Noise Levels Allowed
(FTA Manual, Fig 3-2)



Project:	NOLA RR
----------	---------

Receiver Parameters	
Receiver:	Receiver 1
Land Use Category:	2. Residential
Existing Noise (Measured or Generic Value):	55 dBA

Noise Source Parameters	
Number of Noise Sources:	2

Noise Source Parameters		Source 1
	Source Type:	Fixed Guideway
	Specific Source:	Diesel Electric Locomotive
Daytime hrs	Avg. Number of Locos/train	2
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Nighttime hrs	Avg. Number of Locos/train	2
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Distance	Distance from Source to Receiver (ft)	100
	Number of Intervening Rows of Buildings	0
Adjustments		

Noise Source Parameters		Source 2
	Source Type:	Fixed Guideway
	Specific Source:	Rail Car
Daytime hrs	Avg. Number of Rail Cars/train	110
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Nighttime hrs	Avg. Number of Rail Cars/train	110
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Distance	Distance from Source to Receiver (ft)	100
	Number of Intervening Rows of Buildings	
Adjustments	Noise Barrier?	No
	Jointed Track?	No
	Embedded Track?	No
	Aerial Structure?	No

Project Results Summary

Existing Ldn:	55 dBA
Total Project Ldn:	64 dBA
Total Noise Exposure:	64 dBA
Increase:	9 dB
Impact?:	Severe

Distance to Impact Contours

Dist to Mod. Impact Contour (Sources 1+2):	377 ft
Dist to Sev. Impact Contour (Sources 1+2):	153 ft

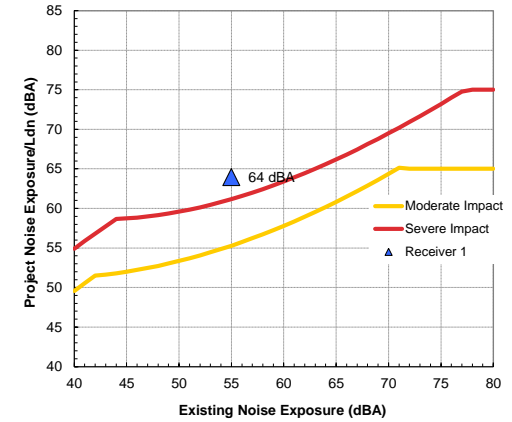
Source 1 Results

Leq(day):	56.2 dBA
Leq(night):	56.2 dBA
Ldn:	62.6 dBA

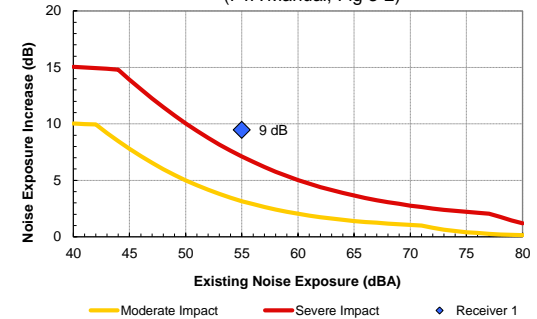
Source 2 Results

Leq(day):	51.7 dBA
Leq(night):	51.7 dBA
Ldn:	58.1 dBA
Incremental Ldn (Src 1-2):	63.9 dBA

Noise Impact Criteria
(FTA Manual, Fig 3-1)



Increase in Cumulative Noise Levels Allowed
(FTA Manual, Fig 3-2)



Project:	NOLA RR
----------	---------

Receiver Parameters	
Receiver:	Receiver 1
Land Use Category:	2. Residential
Existing Noise (Measured or Generic Value):	60 dBA

Noise Source Parameters	
Number of Noise Sources:	2

Noise Source Parameters		Source 1
	Source Type:	Fixed Guideway
	Specific Source:	Diesel Electric Locomotive
Daytime hrs	Avg. Number of Locos/train	2
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Nighttime hrs	Avg. Number of Locos/train	2
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Distance	Distance from Source to Receiver (ft)	100
	Number of Intervening Rows of Buildings	0
Adjustments		

Noise Source Parameters		Source 2
	Source Type:	Fixed Guideway
	Specific Source:	Rail Car
Daytime hrs	Avg. Number of Rail Cars/train	110
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Nighttime hrs	Avg. Number of Rail Cars/train	110
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Distance	Distance from Source to Receiver (ft)	100
	Number of Intervening Rows of Buildings	
Adjustments	Noise Barrier?	No
	Jointed Track?	No
	Embedded Track?	No
	Aerial Structure?	No

Project Results Summary

Existing Ldn:	60 dBA
Total Project Ldn:	64 dBA
Total Noise Exposure:	65 dBA
Increase:	5 dB
Impact?:	Severe

Distance to Impact Contours

Dist to Mod. Impact Contour (Sources 1+2):	257 ft
Dist to Sev. Impact Contour (Sources 1+2):	109 ft

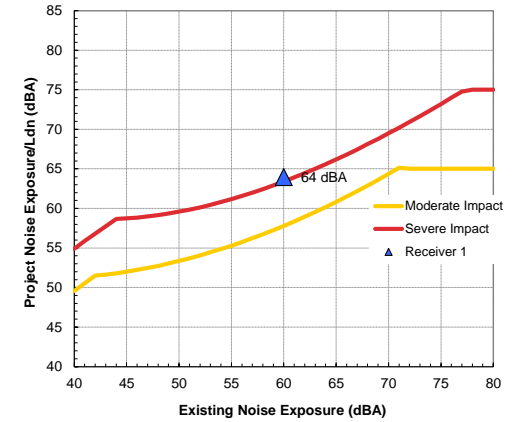
Source 1 Results

Leq(day):	56.2 dBA
Leq(night):	56.2 dBA
Ldn:	62.6 dBA

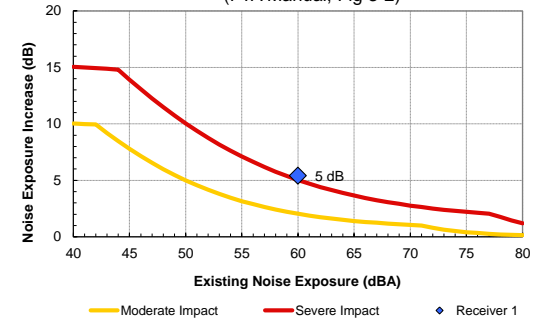
Source 2 Results

Leq(day):	51.7 dBA
Leq(night):	51.7 dBA
Ldn:	58.1 dBA
Incremental Ldn (Src 1-2):	63.9 dBA

Noise Impact Criteria
(FTA Manual, Fig 3-1)



Increase in Cumulative Noise Levels Allowed
(FTA Manual, Fig 3-2)



Project:	NOLA RR
----------	---------

Receiver Parameters	
Receiver:	Receiver 1
Land Use Category:	2. Residential
Existing Noise (Measured or Generic Value):	65 dBA

Noise Source Parameters	
Number of Noise Sources:	2

Noise Source Parameters		Source 1
	Source Type:	Fixed Guideway
	Specific Source:	Diesel Electric Locomotive
Daytime hrs	Avg. Number of Locos/train	2
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Nighttime hrs	Avg. Number of Locos/train	2
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Distance	Distance from Source to Receiver (ft)	100
	Number of Intervening Rows of Buildings	0
Adjustments		

Noise Source Parameters		Source 2
	Source Type:	Fixed Guideway
	Specific Source:	Rail Car
Daytime hrs	Avg. Number of Rail Cars/train	110
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Nighttime hrs	Avg. Number of Rail Cars/train	110
	Speed (mph)	20
	Avg. Number of Events/hr	0.542
Distance	Distance from Source to Receiver (ft)	100
	Number of Intervening Rows of Buildings	
Adjustments	Noise Barrier?	No
	Jointed Track?	No
	Embedded Track?	No
	Aerial Structure?	No

Project Results Summary

Existing Ldn:	65 dBA
Total Project Ldn:	64 dBA
Total Noise Exposure:	68 dBA
Increase:	3 dB
Impact?:	Moderate

Distance to Impact Contours

Dist to Mod. Impact Contour (Sources 1+2):	161 ft
Dist to Sev. Impact Contour (Sources 1+2):	71 ft

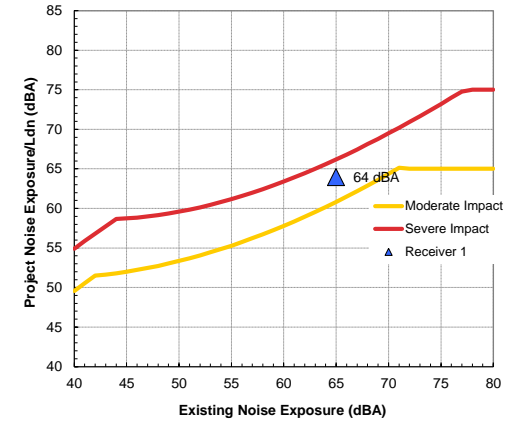
Source 1 Results

Leq(day):	56.2 dBA
Leq(night):	56.2 dBA
Ldn:	62.6 dBA

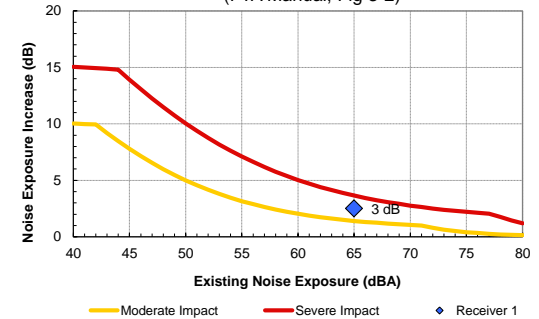
Source 2 Results

Leq(day):	51.7 dBA
Leq(night):	51.7 dBA
Ldn:	58.1 dBA
Incremental Ldn (Src 1-2):	63.9 dBA

Noise Impact Criteria
(FTA Manual, Fig 3-1)



Increase in Cumulative Noise Levels Allowed
(FTA Manual, Fig 3-2)



Appendix F

Additional Agency Coordination (USFWS, NMFS, and SHPO)

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Trahan, Amy <amy_trahan@fws.gov>

Informal Consultation - LA 23 Railway Relocation Project

1 message

Wright, Kevin (FRA) <kevin.wright@dot.gov>

Mon, Sep 26, 2016 at 1:17 PM

To: "amy_trahan@fws.gov" <amy_trahan@fws.gov>

Cc: "kparsons norpc.org" <kparsons@norpc.org>, "doree.magiera hdrinc.com" <doree.magiera@hdrinc.com>

Hi Amy,

I am submitting the attached letter to open up informal ESA consultation on the LA 23 Railway Relocation Project in Jefferson and Plaquemines Parishes. Please let me know if you would like me to mail the hard copy as well.

Thanks,

Kevin

Kevin A. Wright
Environmental Protection Specialist
Federal Railroad Administration
1200 New Jersey Ave SE
Washington, D.C. 20590
Kevin.wright@dot.gov
202-493-0845

This project has been reviewed for effects to Federal trust resources under our jurisdiction and currently protected by the Endangered Species Act of 1973 (Act). The project, as proposed,
() Will have no effect on those resources
() Is not likely to adversely affect those resources. **AS, PS**
This finding fulfills the requirements under Section 7(b)(3) of the Act.

Karin Boswell 10/19/16
Acting Supervisor Date
Louisiana Field Office
U.S. Fish and Wildlife Service

LA 23 SIGNED Informal Consultation Letter - USFWS.pdf
5362K

From: Richard Hartman - NOAA Federal [mailto:richard.hartman@noaa.gov]

Sent: Friday, October 13, 2017 1:13 PM

To: Wright, Kevin (FRA) <kevin.wright@dot.gov>

Subject: Re: LA 23 Railway Relocation - EFH Consultation

Kevin - EFH coordination will not be necessary for this project. Looking at the figures, the project will not impact tidally influenced wetlands. As such, there is no potential impact to habitat supportive of federally managed marine fishery species. Such tidally influenced habitats are designated as essential fish habitat. Since no impacts, coordination is not necessary.

Richard Hartman
Fishery Biologist
NOAA/NMFS

On Fri, Oct 13, 2017 at 12:03 PM, Wright, Kevin (FRA) <kevin.wright@dot.gov> wrote:

Hi Richard,

My name is Kevin Wright and I'm with the Federal Railroad Administration. I'm emailing you regarding the LA 23 Railway Relocation project in Jefferson and Plaquemines Parishes, LA. I was hoping to open up the conversation about Essential Fish Habitat and see if there was any mitigation that would be required for this project. I have attached the package that we submitted to USFWS as well as the concurrence we received from them. Please let me know if you need anything else from me. I am fairly new to this process and am not entirely sure how it's supposed to go.

Thanks,

Kevin

Kevin A. Wright

Environmental Protection Specialist

Federal Railroad Administration

1200 New Jersey Ave SE

Washington, D.C. 20590

Kevin.wright@dot.gov

[202-493-0845](tel:202-493-0845)



BILLY NUNGESSER
LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT
DIVISION OF ARCHAEOLOGY

RENNIE S. BURAS, II
DEPUTY SECRETARY

May 24, 2017

Rhonda Smith
Earth Search, Inc.
P.O. Box 770336
New Orleans, LA 70177

Re: Draft Report

La Division of Archaeology Report No. 22-5581

*Phase I Cultural Resources Survey and NRHP Research for the LA 23 New Orleans Gulf Coast
Railway Relocation PE/NEPA Project, Jefferson and Plaquemines Parishes, Louisiana*

Dear Rhonda Smith:

We acknowledge receipt of your letter dated May 15, 2017 and two copies of the above referenced report.

In reference to historic standing structures, we concur with your evaluation that the River Oaks Academy buildings are eligible for listing in the National Register of Historic Places (Register) under Criterion A for its association with the Civil Rights Act of 1964 and the local impact of Federal mandated desegregation in Plaquemines Parish, Louisiana and under Criterion B for its association with Leander Perez, Sr. However, we are of the opinion that Hero Park is eligible for listing in the Register only for its history under Criterion A and not eligible under Criterion B for its association with George Hero, Sr. As such, we concur with your assessment that construction of the Project's preferred alternative would result in an Adverse Effect on the River Oaks Academy/Hero Park site.

Also as prescribed in the Division of Historic Preservation's Historic Standing Structures Guidelines, please submit archival paper and PDF digital copies of the Louisiana Historic Resource Inventory forms and an archival paper map delineating the location of the 23 historic standing structures recorded in the project survey.

We are unable to concur that the portion of archaeological site 16PL249 is ineligible for inclusion in the National Register of Historic Places (NRHP). The phrase on Pg. 6-35 stating that "there is no evidence of intact archaeological deposits" within the right of way is insufficient justification for a "not eligible" determination for a site or a portion of a site. The site should be discussed more explicitly in terms of each the NRHP criteria, particularly given its association with the NRHP-eligible property on which it sits. Given our recommendation that Hero's Park is eligible for NRHP listing under Criterion A for local history, we suggest that 16PL249 should not be uncoupled from the historic properties with which it is associated.

In addition to the above, we are unable to determine if there are intact deposits beneath the River Oaks Academy itself. If this building is demolished as part of this undertaking, we would request additional monitoring.

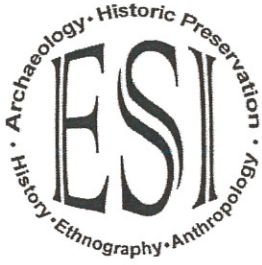
In Chapter 6, Pg. 1, please Provide a definition of high vs. low probability for an area to yield archaeological sites, and include a map of the direct APE with the high and low probability areas indicated.

We look forward to receiving a revised draft of the report addressing our above comments. If shapefiles are available for the survey area, we request those as well. If you have any questions, please contact Emily Dale at the Division of Archaeology by email at edale@crt.la.gov or by phone at 225-342-8166.

Sincerely,

A handwritten signature in blue ink that reads "Kristen P. Sanders". The signature is written in a cursive style.

Kristen Sanders,
Deputy State Historic Preservation Officer



Earth Search, Inc.
PO Box 770336
New Orleans, LA 70177-0336
504-947-0737
504-947-1714 (FAX)
esi@earth-search.com
www.earth-search.com

The Final Report has been reviewed and accepted.

Report # 22-5581

June 20, 2017

Phil Boggan
State Historic Preservation Officer
Office of Cultural Development
P.O. Box 44247
Baton Rouge, LA 70804-4247

Kristin P. Sanders
Deputy State Historic Preservation Officer

Date 7/12/17

Re: *Phase I Cultural Resources Survey, LA 23 New Orleans Gulf Coast Railway Relocation Project, Jefferson and Plaquemines Parishes, Louisiana.* (Report No. 22-5581)

Dear Mr. Boggan:

Please find enclosed two hard copies of the Final Report for the above-cited project. We have also enclosed original LHRI forms, LHRI map, and a CD with a PDF of the report and associated GIS survey data. If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Rhonda L. Smith, M.A., RPA
Vice President and Senior Project Manager
504-947-0737 ext 227 (direct)

RECEIVED

JUN 26 2017

ARCHAEOLOGY

Cc Ms. Karen Parsons, Regional Planning Commission
Ms. Doree Mageria, HDR

Appendix G

Memorandum of Agreement between FRA and SHPO (Draft)

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MEMORANDUM OF AGREEMENT
BETWEEN
THE FEDERAL RAILROAD ADMINISTRATION
AND
THE LOUISIANA STATE HISTORIC PRESERVATION OFFICER
REGARDING
THE DEMOLITION OF A RIVER OAKS ACADEMY BUILDING
PLAQUEMINES PARISH, LOUISIANA

WHEREAS, the Federal Railroad Administration (FRA) is administering Fiscal Year 2009 grant funding (Grant #FR-RLD-0032-14-01-00) for preliminary engineering (PE) and environmental analysis in accordance with the National Environmental Policy Act (NEPA) for the Louisiana Highway (LA) 23 Railway Relocation Project (Project);

WHEREAS, the Regional Planning Commission (RPC) for Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. John the Baptist, St. Tammany and Tangipahoa Parishes in Louisiana is the grant recipient for the PE/NEPA funding because the “Study Area” for the Project is located in two parishes and will have regional impacts and benefits; and

WHEREAS, the purpose of the Project is to relieve automobile traffic congestion, improve safety, improve emergency access and evacuation, enhance quality of life by reducing noise and improving mobility, and improve efficiency of rail operations by removing numerous at-grade crossings; and

WHEREAS, in accordance with NEPA, FRA and RPC prepared an Environmental Assessment (EA) to evaluate alternative alignments for relocating the NOGC rail line, operated by the New Orleans & Gulf Coast Railway Company (NOGC), and the Preferred Alternative evaluated in the EA consists of extending rail track from 4th Street to LA 23 along Peter’s Road in Jefferson and Plaquemines Parishes, approximately 9.3 miles long, and reconstruction of Peters Road between Lapalco Boulevard and Murphy Canal; and

WHEREAS, as of the date of execution of this Memorandum of Agreement (MOA) no federal funding or Construction Project Proponent has been identified to advance the Project through final design and construction; and

WHEREAS, the Project would be an FRA “Undertaking” under Section 106 of the National Historic Preservation Act (NHPA), as amended (54 U.S.C § 306108) (Section 106) in the event FRA provides financial assistance in the future for construction of the Project; and

WHEREAS, FRA would be the federal agency responsible for compliance with Section 106 if the Project becomes an Undertaking; and

WHEREAS, FRA consulted with the Louisiana State Historic Preservation Office (SHPO) pursuant to the Section 106 regulations at 36 CFR Part 800; and

WHEREAS, FRA defined the Project's area of potential effect (APE) described in Attachment A, as defined in 36 CFR 800.16(d); and

WHEREAS, SHPO concurred with the APE on July 12, 2017; and

WHEREAS, FRA determined that the Hero Park/River Oaks Academy site located within the APE is eligible for listing in the National Register of Historic Places (NRHP) and SHPO concurred with FRA's determination in a letter dated July 12, 2017; and

WHEREAS, the Hero Park/River Oaks Academy site located at 10911 LA 23, Plaquemines Parish, Louisiana hereafter is referred to as the "historic property" in this MOA, and consists of two buildings constructed in 1966 as the River Oaks Academy surrounded by large oak trees; and

WHEREAS, FRA determined the Project, if constructed with financial assistance from FRA, will have an adverse effect on the historic property due to the destruction of five (5) oak trees associated with Hero Park and a former plantation and demolition of one (1) of the two (2) River Oaks Academy buildings; and

WHEREAS, FRA, in letters dated June 16, 2017, invited Hero Lands Company and Plaquemines Parish to be Consulting Parties in the Section 106 process and Hero lands Company accepted the invitation and Plaquemines Parish declined to participate; and

WHEREAS, in an email dated August 31, 2017, FRA invited RPC to be an invited signatory to this MOA and RPC declined; and

WHEREAS, in an email dated September 25, 2017, FRA invited Hero Lands Company, as the owner of the historic property that would be adversely affected if the Project were to be constructed, to be an invited signatory to this MOA and Hero Lands Company accepted in a response email dated December 14, 2017; and

WHEREAS, in accordance with 36 C.F.R. § 800.6(a)(1), on October 23, 2017 FRA notified the ACHP of its adverse effect determination with specified documentation via the ACHP's e106 system, and the ACHP responded to FRA in a letter dated November 6, 2017 that it has chosen not to participate in the consultation pursuant to 36 C.F.R. § 800.6(a)(1)(iii); and

NOW, THEREFORE, FRA and SHPO (each a Signatory and together the Signatories) agree that the Project, if it becomes an Undertaking, will be implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties.

STIPULATIONS

FRA will ensure that the following measures are carried out:

I. APPLICABILITY

- A. This MOA would apply to FRA's Undertaking and would only bind FRA if FRA provides financial assistance for construction of the Project.
- B. This MOA may apply should another Federal agency have an Undertaking as part of the Project; that agency may agree to comply with the terms of this MOA and become a Signatory to fulfill its Section 106 responsibilities as provided for in Stipulation VIII.
- C. If the Project becomes an Undertaking, this MOA would be amended in accordance with Stipulation VII to add the Construction Project Proponent (i.e., the recipient of future FRA financial assistance) as a Signatory to this MOA, and the Construction Project Proponent would be responsible for assisting FRA in ensuring the stipulations herein are fulfilled.

II. PERSONNEL QUALIFICATION STANDARDS

- A. FRA will require that all historic preservation and documentation work identified in Stipulation III to be performed by the Construction Project Proponent pursuant to this MOA is carried out by or under the direct supervision of a person or persons meeting at a minimum of a person or persons meeting, at a minimum, the *Secretary of the Interior's Professional Qualification Standards* (48 FR 44738-9) in the disciplines of History or Architectural History.
- B. Prior to the commencement of any historic preservation and documentation work stipulated in this MOA, FRA will determine if the individual(s) selected by the Construction Project Proponent to perform the work meet the qualifications in Stipulation II and provide SHPO with the résumé(s) of the individual or individuals that will perform or supervise the performance of the photographic recordation and the narrative history. If SHPO does not concur that the individuals selected to perform the photographic recordation and narrative history meet the Secretary of the Interior's Professional Qualification Standards, FRA and the Construction Project Proponent will consult with SHPO to resolve the areas of concern. If SHPO does not provide comments to FRA on the qualifications within 15 business days following FRA's e-mail forwarding the résumés and any additional background information, the Construction Project Proponent, under direction of FRA, may proceed with producing the recordation and the narrative history specified in Stipulation III.

III. MITIGATION MEASURES

A. HABS Recordation

FRA will ensure that the Construction Project Proponent records the historic property in accordance with the following:

1. FRA and the Construction Project Proponent will consult with the National Park Service (NPS) Heritage Documentation Programs - Southeast Regional Office to determine the extent of the documentation (e.g., format and length of narrative, quantity of photographs, and extent of documentation using historic or new measured drawings) prior to beginning the work.
2. The Construction Project Proponent will complete the photo-recording described in this Stipulation prior to demolition of the historic property.
3. The Construction Project Proponent will produce Large Format Photographs (see NPS Guidelines for Architecture and Engineering Documentation, Federal Register/Vol. 68, no. 139/Monday, July 21, 2003) of the historic property's exterior elevations and character-defining interior and landscape features.
4. The Construction Project Proponent will record the historic property to Historic American Building Survey (HABS) Documentation Level II standards, as outlined in the publication, *Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation: HABS/HAER Standards*, available at <http://www.nps.gov/hdp/standards/standards.pdf>. Documentation Level II includes a narrative with the history and description of the resource, archival photographs, copies of selected existing historic drawings and/or measured drawings to the extent it is necessary to document the historic property. Research should draw upon information about the historic property in the *Phase I Cultural Resources Survey, LA 23 New Orleans Gulf Coast Railway Relocation Project, Jefferson and Plaquemines Parishes, Louisiana* (June 2017).
5. The Construction Project Proponent will provide the draft documentation to NPS and SHPO, with a copy to FRA, for review and comment as described in Stipulation IV.
6. Following approval of the draft documentation by NPS and SHPO, the Construction Project Proponent will prepare five (5) final archival copies of the recordation materials including: 8x10 black and white copies of the large format photographs, the historic narrative, the original presentation drawings, and six (6) archival CDs with the digital images and narrative. FRA will forward two (2) copies of the recordation materials to SHPO, and SHPO will forward one (1) copy to the State Library and one (1) copy to the State Archives. FRA will transmit one (1) archival copy of the recordation materials to NPS Heritage Documentation Programs for inclusion in the HABS Collection at the Library of Congress.

B. Historical Marker

1. The Construction Project Proponent will develop draft content for a historical marker (marker) to commemorate the historic property. The Construction Project Proponent will submit the draft content of the marker to FRA, SHPO, and Hero Lands Company for review and comment as described in Stipulation IV.
2. Once the content of the marker is agreed upon among the Construction Project Proponent, FRA, SHPO, and Hero Lands Company, the Construction Project Proponent will file an application for a historical marker with the Louisiana Historical Marker Program in accordance with *La. R.S. 48:271(A)*. The Louisiana Historical Marker Program guidelines and application are available at:
https://www.crt.state.la.us/Assets/Tourism/industry-partners/LAHistoricalMarkerGuidelines&Application2017_ext.pdf.
3. If the Louisiana Historical Marker Program approves the application, the Construction Project Proponent will incur all costs for production, installation, maintenance, and repair of the marker.
4. The Construction Project Proponent will coordinate with FRA and Hero Lands Company regarding an appropriate location to install the marker, taking into account such factors as safety and visibility.
5. The property owner, Hero Lands Company, agrees to allow the Construction Project Proponent access to the historic property to install, maintain and/or repair the marker in accordance with the Louisiana Historical Marker Program guidelines.
6. The Construction Project Proponent will coordinate with and receive permission from Hero Lands Company prior to accessing the historic property for any installation, repair and/or maintenance activity.

IV. PREPARATION and REVIEW OF DOCUMENTS

FRA, SHPO, and Hero Lands Company agree to provide comments to the Construction Project Proponent on all studies, reports, and other documentation arising from this MOA within thirty (30) calendar days of receipt of complete information. If the Construction Project Proponent does not receive comments from the other signatories and concurring party within the thirty (30) calendar day review period, the Construction Project Proponent may assume that the non-responding party(ies) has no comments. The Construction Project Proponent will consult with responding parties as appropriate to ensure that all comments received within the thirty (30) calendar-day review period are considered and the documentation revised accordingly before being finalized.

V. EFFECTIVE DATE

This MOA will be effective as of the date of obligation of Federal financial assistance to construct the Project after this MOA has been executed by all Signatories and a copy filed with the ACHP. Within 30 days of the date of obligation of Federal financial assistance, FRA will begin the process of amending this MOA in accordance with Stipulation VII in order to specify the Construction Project Proponent and add that entity as a signatory to the MOA.

VI. DURATION

This MOA will expire if its terms are not carried out within five (5) years from its effective date. Prior to such time, FRA may consult with the other Signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation VII.

VII. AMENDMENTS

- A. In the event that a Construction Project Proponent is identified and FRA is providing financial assistance for construction of the Project, FRA will inform all Signatories and amend this MOA. The Construction Project Proponent will become a Signatory to the MOA.
- B. Any Signatory to this MOA may request that it be amended. The amendment will be effective on the date a copy signed by all of the Signatories is filed with the ACHP.

VIII. ADOPTABILITY

In the event that a Federal agency other than FRA is considering financial assistance, permits, licenses, or approvals for the Project, such Federal agency may become a Signatory to this MOA as a means of complying with Section 106. To become a Signatory to this MOA, the agency official must provide written notice to the Signatories that the agency agrees to the terms of the MOA, specifying the extent of the agency's intent to participate in the MOA, and identifying the lead Federal agency for the Undertaking. The participation of the agency is subject to approval by the Signatories, who must respond to the written notice within 30 days or the approval will be considered implicit. Any other modifications to the MOA will be considered in accordance with Stipulation VII.

IX. POST-REVIEW CHANGES

If the Construction Project Proponent proposes changes to the Project that may result in additional or new effects on historic properties, the Construction Project Proponent will notify FRA and SHPO of such changes. Before the Construction Project Proponent takes any action that may result in additional or new effects on historic properties, FRA, SHPO, the Construction Project Proponent, and other consulting

parties as appropriate, must consult to determine the appropriate course of action. This may include, as appropriate, revision to the APE, assessment of effects to historic properties, and additional treatment measures to resolve adverse effects.

X. POST-REVIEW DISCOVERIES

If properties are discovered during Project construction that may be historically significant or unanticipated effects on historic properties are identified, FRA and the Construction Project Proponent will comply with 36 CFR § 800.13 by consulting with SHPO and, if applicable, federally recognized tribal organizations that may attach religious and/or cultural significance to the affected property; and by developing and implementing avoidance, minimization, or mitigation measures with the concurrence of SHPO and, if applicable, federally recognized tribal organizations.

XI. MONITORING AND REPORTING

If the Project receives federal assistance for construction and therefore becomes an Undertaking, the Construction Project Proponent will provide FRA, SHPO and Hero Lands Company with a summary report detailing work undertaken pursuant to the MOA's terms each year following the effective date of this MOA until it expires or is terminated. This report will include any scheduling changes proposed, any problems encountered, and any disputes or objections received in the Construction Project Proponent's efforts to carry out the terms of this MOA.

XII. DISPUTE RESOLUTION

Should any Signatory to this MOA object at any time to any actions proposed or the manner in which the terms of the MOA are implemented, FRA will consult with such Signatory to resolve the objection. If FRA determines that such objection cannot be resolved within thirty (30) days, FRA will:

- A. Forward all documentation relevant to the dispute, including FRA's proposed resolution, to the ACHP with a copy to the other Signatories to this MOA, and request that the ACHP provide FRA with its advice on the resolution of the objection within thirty (30) calendar days of receiving the documentation.
- B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) calendar day time period, FRA may make a decision on the dispute and proceed accordingly.
- C. FRA will document this decision in a written response to the objection that takes into account any timely comments regarding the dispute from the Signatories and provide the ACHP and Signatories with a copy of such written response.
- D. FRA may then proceed according to its decision.

- E. The Signatories remain responsible for carrying out all other actions subject to the terms of the MOA that are not the subject of the dispute.

XIII. TERMINATION

If any Signatory to this MOA determines that its terms will not or cannot be carried out, that Signatory will immediately consult with the other Signatories to attempt to develop an amendment per Stipulation VII. If within thirty (30) days (or another time period agreed to by all Signatories) an amendment cannot be reached, any Signatory may terminate the MOA upon written notification to the other Signatories. Once the MOA is terminated, and prior to work continuing on the Undertaking, FRA must either (a) execute a new MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR§ 800.7. FRA will notify the Signatories as to the course of action it will pursue.

Execution of this MOA by FRA and SHPO and implementation of its terms evidence that FRA has taken into account the effects of this Undertaking on historic properties and afforded the ACHP an opportunity to comment.

MEMORANDUM OF AGREEMENT
BETWEEN
THE FEDERAL RAILROAD ADMINISTRATION
AND
LOUISIANA STATE HISTORIC PRESERVATION OFFICE
REGARDING
THE LOUISIANA HIGHWAY (LA) 23 RAILWAY RELOCATION PROJECT
PLAQUEMINES PARISH, LOUISIANA

FEDERAL RAILROAD ADMINISTRATION - SIGNATORY

By: _____ Date _____

Marlys Osterhues
Chief, Environmental and Corridor Planning Division
Office of Railroad Policy and Development

MEMORANDUM OF AGREEMENT
BETWEEN
THE FEDERAL RAILROAD ADMINISTRATION
AND
LOUISIANA STATE HISTORIC PRESERVATION OFFICE
REGARDING
THE LOUISIANA HIGHWAY (LA) 23 RAILWAY RELOCATION PROJECT
PLAQUEMINES PARISH, LOUISIANA

LOUISIANA STATE HISTORIC PRESERVATION OFFICER - SIGNATORY

By: _____ Date _____

Kristin P. Sanders
Deputy State Historic Preservation Officer

MEMORANDUM OF AGREEMENT
BETWEEN
THE FEDERAL RAILROAD ADMINISTRATION
AND
LOUISIANA STATE HISTORIC PRESERVATION OFFICE
REGARDING
THE LOUISIANA HIGHWAY (LA) 23 RAILWAY RELOCATION PROJECT
PLAQUEMINES PARISH, LOUISIANA

HERO LANDS COMPANY – INVITED SIGNATORY

By: _____ Date _____

Allen Hero, Manager
Hero Lands Company