

Draft Environmental Assessment

Brushy Creek Drainage Improvement Hornbeck, LA

Vernon Parish, Louisiana
HMGP 1603-0297

FEMA-1603-DR-LA

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FEMA

U.S. Department of Homeland Security
Louisiana Transitional Recovery Office
Baton Rouge, Louisiana 70802

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LIST OF ACRONYMS

ACM	Asbestos Containing Materials
ACTT	Alabama-Coushatta Tribe of Texas
APE	Area of Potential Effect
BFE	Base Flood Elevation
BMP	Best Management Practices
CAA	Clean Air Act
CBRA	Coastal Barrier Resources Act of 1982
CBRS	Coastal Barrier Resources System
CEQ	Council of Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CMP	Corrugated Metal Pipe
CN	Caddo Nation
CNO	Choctaw Nation of Oklahoma
CT	Coushatta Tribe of Louisiana
CWA	Clean Water Act
CZMA	Coastal Zone Management Act of 1972, as Amended
dB	Decibels
DFIRM	Digital Flood Insurance Rate Map
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
e.g.	For Example
EHP	Environmental Historic Preservation
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHBM	Flood Hazard Boundary Map
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farm Protection Policy Act
FWCA	Fish and Wildlife Coordination Act
GOHSEP	Governor's Office of Homeland Security and Emergency Preparedness
H & H	Hydrologic and Hydraulic Study
HMGP	Hazard Mitigation Grant Program
HP	Historic Preservation
JBCI	Jena Band of Choctaw Indians
LAC	Louisiana Administrative Code
LA HMGP PA	Statewide Secondary Programmatic Agreement
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries

LPDES	Louisiana Pollutant Discharge Elimination System
LSB	Louisiana State Brownfield
MBCI	Mississippi Band of Choctaw Indians
msl	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NAVD 88	North American Vertical Datum 1988
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act of 1966, as Amended
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
OPA	Otherwise Protected Area
OSHA	Occupational Safety and Health Administration
PACM	Potential Asbestos Containing Materials
PR	Public Road
PCB	Polychlorinated Biphenyls
RCRA	Resource Conservation and Recovery Act
RHA	Rivers and Harbors Act
ROW	right of way
SFHA	Special Flood Hazard Area
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Office/Officer
SOV	Solicitation of Views
SPOC	Single Point of Contact
TBTL	Tunica-Biloxi Tribe of Louisiana
TSCA	Toxic Substances Control Act
U.S.	United States
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WSRA	Wild and Scenic River Act

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1.0 INTRODUCTION

1.1 Project Authority

Hurricane Katrina, a Category 4 hurricane with a storm surge above normal high tide levels, moved across the Louisiana, Mississippi and Alabama Gulf Coasts on August 29, 2005. Maximum sustained winds at landfall were estimated at 140 miles per hour. President George W. Bush declared a major disaster for the State of Louisiana due to damages from Hurricane Katrina and signed a disaster declaration (FEMA-1603-DR-LA) on August 29, 2005, authorizing the Department of Homeland Security's Federal Emergency Management Agency (FEMA) to provide federal assistance in designated areas of Louisiana. FEMA is administering this disaster assistance pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), PL 93-288, as amended. Section 404 and Section 406 of the Stafford Act authorizes FEMA's Hazard Mitigation Program (HMGP) to provide funds to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration.

This Environmental Assessment (EA) has been prepared in compliance with the National Environmental Policy Act of 1969 (NEPA); the President's Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR §§ 1500-1508); and FEMA's regulations implementing NEPA (44 CFR 10.9). The purpose of this EA is to analyze potential environmental impacts associated with alleviating flooding of Parish Road (PR) 2025, in Hornbeck, Louisiana, Vernon Parish. FEMA will use the findings in this EA to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

1.2 Project Location

Vernon Parish is located on the far western border of the state; it shares a border with Texas, but is centrally located between the northern and southern borders of Louisiana. It is approximately 2010 square miles with a large portion protected within the Kisatchie National Forest, Ft. Polk Military Reservation, and Boise Vernon Wildlife Management Area. The project location is near Hornbeck, LA, on PR 2025, in the northern portion of Vernon Parish near the Sabine / Vernon Parish line, approximately 0.75 miles south of the intersection of LA Hwy 392 and 171 (Figure 1).

Parish Road 2025, within the project area, consists of an improved dirt road with a double 48 foot flat car bridge over Brushy Creek (31.31924, -93.39731). In general, the area surrounding and including Hornbeck, LA is rural. PR 2025 is a dead end road that provides the only means in and out for the residences and single business along the roadway. The project area is forested with moderate undergrowth. The only other road within the project area is the driveway of one (1) residence on the southern end of the project boundary (See Appendix A for site photos and maps).



Figure 1, Location of Hornbeck, Vernon Parish, LA

2.0 PURPOSE AND NEED

The HMGP provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The project site is subject to flooding during major storm events. During high water events the Brushy Creek overflows across portions of PR 2025, preventing the citizens who reside and work in the area from evacuating. The conditions affecting the area can be described as flash flooding and extended rain events. The purpose of this project is to reduce flooding along PR 2025.

Per the Hydrology and Hydraulics Study (H &H) prepared by Bryant Hammett & Associates, LLC dated November 2013, most of the water from the town of Hornbeck, LA., utilizes Brushy Creek as the drainage outfall. Parish Road 2025 is a dead end road which serves 17 residential structures and one (1) business. During flooding events the road is impassable from 12 to 72 hours. In 2006, 1,325 feet of the road was flooded for approximately 72 hours. The Vernon Parish Sheriff's Department had to rescue a family by boat due to high water. The applicant, Vernon Parish, needs to protect its residents within the project area from the 50-year flood.

3.0 ALTERNATIVES CONSIDERED

3.1 No Action

The No Action Alternative would involve no hazard mitigation measures for the Brushy Creek Area. The area would continue to flood during high water events, resulting in the risk to life and property.

3.2 Alternative Eliminated from Further Consideration

The applicant considered elevating the existing roadway to meet the bridge deck elevation and installing of a pair of three (3) barrel 60 inch concrete pipe structures. The start of the work would occur at Latitude 31.3227, Longitude -93.39840 and end at Latitude 31.31884, Longitude -93.39767. During a 40 year rain event, this mitigation scenario would provide Water Surface Elevation of 303.89 mean sea level (msl). This elevation would barely keep the newly built up road from flooding and would increase the potential flooding at the 50 year event from 303.41 msl to 304.07 msl or 0.66 ft. This scenario would provide for comfortable passage along the built up roadway with flooding of the roadway being curtailed. However, the roadway would be soaked after long or extended rain events and maintenance would need to be provided after flooding as the base and surface course would be waterlogged. This alternative was considered and dismissed due to the cost of maintenance.

3.3 Alternative Considered: Elevate Public Road 2025, Replace the Brushy Creek Flat Car Bridge with 4-span concrete Bridge, and Install Relief Culverts (Proposed Action)

The proposed action would 1) replace the existing “flat-car” bridge (31.31924, -93.39731) with a new four (4) span concrete bridge measuring 80 feet in length; 2) elevate the existing roadway approximately four (4) feet starting at Latitude 31.3227, Longitude -93.39840 and ending at Latitude 31.31884, Longitude -93.39767; 3) install two (2) pairs of four (4) barrel relief culverts measuring 60 inches in diameter (31.32041, -93.39773) and (31.32000, -93.39762); and 4) construct a new ditch along the east side of the road.

The two (2) sets of four (4) barrel 60 inch Corrugated Metal Pipe (CMP) culverts are proposed upstream to provide relief at the bridge crossing and would flow into Brushy Creek via a new ditch that diverts water downstream of the bridge. The CMP structures would have concrete headwalls on each end with rip-rap added as needed for erosion control. A temporary bridge would be needed immediately south of the existing bridge while the new bridge is under construction. Additional right-of-way (ROW) would be acquired to allow for three (3) workspaces, the temporary bridge to be placed during construction activities, and the new ditch along the east side of PR 2025. Two (2) of the workspaces are planned along the west side of PR 2025, and the third workspace and the temporary detour bridge are planned to be located south of the existing bridge. Plans showing the bridge replacement, road elevation, workspaces, and new rights-of-way are enclosed (See Appendix B for Construction Plans).

The proposed action would allow for complete 50 year flood protection for the road and residents within the area. The newly built up road would have more free board during a 50

year event and the backwater would lessen upstream of the bridge due to the greater drainage capacity of the new structure.

In this mitigation scenario the backwater elevation at the 50 year flood event would increase only 0.14 feet from 303.41 at existing condition to 303.55 at the mitigated condition. At the 100 year flood event the backwater would increase only 0.4 feet from 303.54 to 303.94, well within the LADOTD range of 1 foot or less backwater.

4.0 AFFECTED ENVIRONMENT AND IMPACTS

4.1 Impact Summary

FEMA-EHP consulted with resource agencies on June 6, 2015. To date, FEMA-EHP has not received responses/concurrence from all of the resource agencies. However, FEMA-EHP has reviewed the proposed action and alternatives and determined that there would be no significant impacts to any natural resources which are documented in the matrix below.

The following resources/areas of concern were not discussed in this EA due to the limited impacts to the resources from the proposed action and alternatives. Resources not addressed are as follows:

- Climate Change – the proposed drainage improvements within the Brushy Creek community would not significantly adversely affect climate.

The following matrix summarizes the results of the environmental review process (Table 1). Potential environmental impacts found to be negligible are not evaluated further. Resource areas that have the potential for impacts of minor, moderate, or major intensity are further developed in the following sections. Definitions of the impact intensity are described below:

Negligible: The resource area (e.g., geology) would either not be affected, changes would be non-detectable, or if detected, would have effects that would be slight and local. Impacts would be well below regulatory standards, as applicable. Effects to Cultural Resources would be either non-existent, i.e., a building is less than 50 years old and/or no known archeological sites are present on the site, or the project is determined not likely to affect and State Historic Preservation Officer (SHPO)/Tribal Historic Preservation Officer (THPO) concurs. No mitigation is needed.

Minor: Changes to the resource would be measurable, although the changes would be small and localized. Impacts would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects. Effects to Cultural Resources are not likely, i.e., building is at least 50 years old and/or known archeological sites are near the project area, but special conditions/mitigation are sufficient to maintain the “not likely to affect determination.”

Moderate: Changes to the resource would be measurable and have both localized and regional scale impacts. Impacts would be within or below regulatory standards, but historical conditions would be altered on a short-term basis. Mitigation measures would be necessary

to reduce any potential adverse effects. Effects to Cultural Resources are likely, i.e., building is 50 years old and/or known archeological sites are in the project area. Impacts would have at least local and possibly regional scale impacts.

Major: Changes would be readily measurable and would have substantial consequences on a local and regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, although long-term changes to the resource would be expected. Effects to Cultural Resources are likely, i.e., building is at least 50 years old and/or known archeological sites are in the project area. Impacts would have substantial consequences on a local and regional level.

Table 1, Affected Environment and Environmental Consequences Matrix: Alternative Considered: Replacement of Flat Car Bridge with 4-span concrete (Proposed Action)

Resource Area	Impact Negligible	Impact Minor	Impact Moderate	Impact Major	Impact Summary	Agency Coordination / Permits	Mitigation
Geology and Soils	X				The Farmland Protection Policy Act (FPPA: Public Law 97-98, §§ 1539-1549; 7 U.S.C. 4201, <i>et seq.</i>) was enacted in 1981 and is intended to minimize the impact federal actions may have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. It assures that, to the extent possible, federal programs and policies are administered to be compatible with state and local farmland protection policies and programs. Potential for short-term localized increase in soil erosion during construction. Per review of the Natural Resources Conservation Services (NRCS) Web Soil Survey, the soil located on the proposed project area (Guyton-luka aomplex, frequently flooded [GYA], Letney loamy sand, 5-12% slopes [LTE], and Mayhew silt loam, 1-5% slopes [MhC]) is not classified as a prime farmland soil; FPPA is precluded.	NRCS Solicitation of Views (SOV) response dated 6/23/15.	Implement construction Best Management Practices (BMPs); install silt fences/straw bales to reduce downslope sedimentation. Area soils must be covered and/or wetted during construction. If fill is stored on site as part of unit installation or removal, the contractor is required to appropriately cover it. Construction contractor is required to obtain applicable Louisiana Pollutant Discharge Elimination System (LPDES) permit, and implement stormwater pollution prevention plan. See also Section 6.0.
Hydrology and Floodplains (Executive Order 11988)		X			Executive Order (EO) 11988 (Floodplain Management) requires Federal agencies to avoid direct or indirect support or development within the 100-year floodplain whenever there is a practicable alternative. FEMA's regulations for complying with EO 11988 are found at 44 CFR Part 9. Digital Flood Insurance Map (DFIRM) Panel 22115C0035D, dated 03/3/2011, the start of the project is located within an "A" zone, Special Flood Hazard Area (SFHA), Base Flood Elevation (BFE) has not been determined. The southern end of this project is located in a "X" zone, area outside the SFHA. See Section 4.2	DFIRM Panel 22115C0035D, dated 03/3/2011,	The applicant is required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities. All coordination pertaining to these activities and applicant compliance with any conditions should be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files. As per 44 CFR 9.11 (d) (9), mitigation or minimization standards must be applied, where possible. In particular to this bridge, culvert, and road elevation project, 44 CFR 9.11 (d) (4), There shall be no encroachments, including fill, new construction, substantial improvements of structures or facilities, or other development within a designated regulatory floodway that would result in any increase in flood levels within the community during the occurrence of the base flood discharge. Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the base floodplain unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community. The zone A area should be revised to reflect the modified condition upon completion of the project, in accordance with the floodplain management requirements at 44 CFR 60.3 (b)(4) and (b)(6). See also Section 4.2 and Section 6.0.

Resource Area	Impact Negligible	Impact Minor	Impact Moderate	Impact Major	Impact Summary	Agency Coordination / Permits	Mitigation
Wetlands (Executive Order 11990)	X				EO 11990, Protection of Wetlands, directs Federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the values of wetlands for federally funded projects. FEMA regulations for complying with EO 11990 are found at 44 CFR Part 9, Floodplain Management and Protection of Wetlands. U.S. Fish and Wildlife Service (USFWS)-mapped wetlands are not present in the proposed project area. No apparent wetlands were observed during the FEMA site visit to the proposed project site. Per U.S. Environmental Protection Agency (USEPA), jurisdictional waters of the U.S. may occur on the proposed site. At this time, the USEPA does not object to the project as proposed and recommends coordination with the U.S. Army Corps of Engineers (USACE) to verify if jurisdictional waters of the U.S. do occur on site and which permits, if any, are needed.	SOV sent to USACE, 06/05/15. USEPA response dated 6/19/15. (See Appendix D)	Any changes or modifications to the proposed project will require a revised determination. Off-site locations of activities such as borrow, disposals, haul- and detour roads, and work mobilization site developments may be subject to USACE regulatory requirements. Applicant must contact the USACE to verify if jurisdictional waters of the U.S. do occur on site and which permits, if any, are needed

Resource Area	Impact Negligible	Impact Minor	Impact Moderate	Impact Major	Impact Summary	Agency Coordination / Permits	Mitigation
Surface Water and Water Quality	X				<p>The USACE regulates the discharge of dredged or fill material into waters of the U.S., including wetlands, pursuant to §§ 401 and 404 of the Clean Water Act (CWA). Section 402 of the CWA, entitled National Pollutant Discharge Elimination System (NPDES), authorizes and sets forth standards for state administered permitting programs regulating the discharge of pollutants into navigable waters within the state's jurisdiction. The USACE also regulates the building of structures in waters of the U.S. pursuant to §§ 9 and 10 of the Rivers and Harbors Act (RHA).</p> <p>Per NEPA Assist one (1) NPDES site is located within 0.5 miles of the site. However, no impacts are anticipated.</p> <p>Potential for short-term localized increase in sedimentation during construction.</p>	SOV sent to Louisiana Department of Environmental Quality (LDEQ) on 06/05/15. (See Appendix D)	<p>The project results in a discharge to waters of the State; submittal of a LPDES application is necessary. The project results in a discharge of wastewater to an existing wastewater treatment system; that wastewater treatment system may need to modify its LPDES permit before accepting the additional wastewater.</p> <p>All precautions must be observed to control nonpoint source pollution from construction activities. LDEQ has stormwater general permits for construction areas equal to or greater than one (1) acre. The applicant must contact the LDEQ Water Permits Division at (225) 219-9371 to determine if the proposed project requires a permit.</p> <p>If the project will include a sanitary wastewater treatment facility, a Sewage Sludge and Biosolids Use or Disposal Permit application or Notice of Intent must be submitted. Additional information may be obtained on the LDEQ website at http://www.deq.louisiana.gov/portal/tabid/2296/Default.aspx or by contacting the LDEQ Water Permits Division at (225) 219- 9371.</p> <p>Please be advised that water softeners generate wastewaters that may require special limitations depending on local water quality considerations. Therefore if the applicant's water system improvements include water softeners, the applicant is to contact the LDEQ Water Permits Department to determine if special water quality-based limitations will be necessary.</p> <p>Any renovation or remodeling must comply with Louisiana Administrative Code (LAC) 33:III.Chapter 28, Lead-Based Paint Activities; LAC 33:III.Chapter 27, Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation); and LAC 33:III.5151, Emission Standard for Asbestos for any renovations or demolitions.</p> <p>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 (SPOC) at (225) 219-3640 is required. Additionally, precautions must be taken to protect workers from these hazardous constituents.</p> <p>The applicant is responsible for acquiring any Section 401/404 CWA permits and/or Section 10 permits under the Rivers & Harbors Act. When these permits are required, applicant must maintain documentation of compliance with applicable nationwide permit (NWP), exemption from requirements, or obtain individual permits from U.S. Army Corps of Engineers prior to construction, unless exempt by the NWP from pre-construction notification. The applicant shall comply with all conditions of the required permit. All coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files.</p> <p>See also Section 6.0.</p>

Resource Area	Impact Negligible	Impact Minor	Impact Moderate	Impact Major	Impact Summary	Agency Coordination / Permits	Mitigation
Groundwater	X				The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. Vernon Parish does overlay a Sole Source Aquifer- Chicot Aquifer System Project as proposed is not expected to affect any groundwater.	USEPA-Region 6 response dated 6/19/15. (See Appendix D)	The contractor must observe all precautions to protect the groundwater of the region. See also Section 6.0.
Wild and Scenic River	X				The Wild and Scenic Rivers Act (WSRA), (P. L. 90-543 as amended: 16 U.S.C. 1271-1287) established a method for providing federal protection for certain free-flowing rivers, preserving them and their immediate environments for the use and enjoyment of present and future generations. There are no Wild and Scenic Rivers in the vicinity.	NEPAssist Report dated 06/19/15. (See Appendix D)	
Coastal Resources	X				The Coastal Zone Management Act of 1972 (CZMA) encourages the management of coastal zone areas and provides grants to be used in maintaining coastal zone areas. It is intended to ensure that federal activities are consistent with state programs for the protection and, where, possible, enhancement of the nation's coastal zones. The USFWS regulates federal funding in Coastal Barrier Resource System (CBRS) units under the Coastal Barrier Resources Act (CBRA). This Act protects undeveloped coastal barriers and related areas (i.e., Otherwise Protected Areas [OPAs]) by prohibiting direct or indirect Federal funding of projects that support development in these areas. According to the state CZMA maps the project site is not located within the Louisiana Coastal Zone. The project is not located within the CBRS.	CZMA maps accessed via Google Earth 06/19/15 Louisiana Department of Natural Resources (LDNR) response dated 6/24/15 DFIRM Panel 22115C0035D, dated 03/3/2011 (for CBRS)	
Air Quality	X				The Clean Air Act (CAA) requires the State of Louisiana to adopt ambient air quality standards to protect the public from potentially harmful amounts of pollutants. The LDEQ has designated areas meeting the state's ambient air quality standards by their monitoring and modeling program efforts. During construction, there is potential for a short-term localized increase in vehicle emissions and dust particles. Vernon Parish is classified as attainment under the National Ambient Air Quality Standards (NAAQS) and has no general conformity determination obligations.	NEPAssist accessed 06/19/15. SOV sent to LDEQ on 06/05/15. (See Appendix D)	Vehicle operation times would be kept to a minimum. Area soils must be covered and/or wetted during construction to minimize dust. Any renovation or remodeling must comply with LAC 33:III.Chapter 28, Lead-Based Paint Activities; LAC 33:III.Chapter 27, Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation); and LAC 33:III.5151, Emission Standard for Asbestos for any renovations or demolitions. See also Section 6.0.

Resource Area	Impact Negligible	Impact Minor	Impact Moderate	Impact Major	Impact Summary	Agency Coordination / Permits	Mitigation
Vegetation and Wildlife	X				<p>The Fish and Wildlife Coordination Act (FWCA) provides the basic authority for the USFWS involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal consideration to other project features. It also requires Federal agencies that construct, license or permit water resource development projects to first consult with the Service (and the National Marine Fisheries Service in some instances) and State fish and wildlife agency regarding the impacts on fish and wildlife resources and measures to mitigate these impacts.</p> <p>Project site is located within a rural area with little development. Project would temporary disturb nearby vegetation and would alter the flow of streams. However, these effects would either be temporary or negligible to the overall area.</p>	SOV sent to Louisiana Department of Wildlife and Fisheries (LDWF) on 06/05/15. USFWS determination of no effect on Federal trust resources, dated 06/05/15 (See Appendix D)	
Threatened and Endangered Species (Endangered Species Act Section 7)	X				<p>The Endangered Species Act (ESA) of 1973 prohibits the taking of listed, threatened, and endangered species unless specifically authorized by permit from the USFWS or the National Marine Fisheries Service (NMFS). No rare, threatened, or endangered species are present on the site. No impacts to rare, threatened, or endangered species or critical habitats are anticipated for the proposed project. No state or Federal parks, wildlife refuges, or wildlife management areas are known at the site.</p>	USFWS determination of no effect on Federal trust resources, dated 06/05/15. SOV sent to LDWF on 06/05/15. (See Appendix C)	

Resource Area	Impact Negligible	Impact Minor	Impact Moderate	Impact Major	Impact Summary	Agency Coordination / Permits	Mitigation
Cultural Resources (National Historic Preservation Act Section 106 [NHPA])	X				Based on the available evidence, it is unlikely that intact National Register of Historic Places (NRHP)-eligible archaeological deposits are present in the Area of Potential Effect (APE). The historic map and soils data indicate that there is low-likelihood of pre-contact or historic period deposits. This is further supported by the pedestrian and subsurface investigations which did not observe or recover any evidence of archaeological deposits. In fact, the APE exhibits clear evidence of ongoing inundation and repetitive high water from heavy rainfall and other flooding events. FEMA has determined that No Historic Properties are Affected by the proposed undertaking, and submitted it to the State Historic Preservation Officer's (SHPO) office and the affected Tribes on June 10, 2015. Consultation with affected Tribes (the Alabama-Coushatta Tribe of Texas [ACTT], the Caddo Nation [CN], the Choctaw Nation of Oklahoma [CNO], Coushatta Tribe of Louisiana [CT], the Jena Band of Choctaw Indians [JBCI], the Mississippi Band of Choctaw Indians [MBCI], and the Tunica-Biloxi Tribe of Louisiana [TBTL]) was conducted per 36 CFR §800.2(c)(2)(i)(B). The applicant must comply with the NHPA conditions described in this document	FEMA submitted a finding of No Historic Properties Affected to SHPO, ACTT, CN, CNO, CT, JBCI, MBCI, and TBTL. SHPO concurrence with FEMA's determination was received on June 26, 2014. The CN submitted concurrence dated June 15, 2014. The consultation period for this will end on July 9, 2015. (See Appendix C)	Louisiana Unmarked Human Burial Sites Preservation Act: If human bone or unmarked grave(s) are present with the project area, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is required. The applicant shall notify the law enforcement agency of the jurisdiction where the remains are located within twenty-four (24) hours of the discovery. The applicant shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within seventy-two (72) hours of the discovery. Inadvertent Discovery Clause: If during the course of work, archaeological artifacts (prehistoric or historic) are discovered, the applicant shall stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The applicant shall inform their HMGP contacts at FEMA, who will in turn contact FEMA Historic Preservation staff. The applicant will not proceed with work until FEMA Historic Preservation completes consultation with the SHPO. See also Section 6.0.
Environmental Justice (Executive Order 12898)/Socioeconomics	X				EO 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," was signed on February 11, 1994. The EO directs federal agencies to make achieving environmental justice part of their missions by identifying and addressing, as appropriate, disproportionately high adverse human health, environmental, economic, and social effects of its programs, policies and activities on minority or low-income populations. According to the 2010 U.S. Census Demographic Profile of a 0.5 mile radius around the southern end of this project: the total population is 179 with, 96% White, 4% Hispanic and 1% Black. The median household income in Hornbeck, LA is \$46,406 and 7.2% of the population is below poverty level. The proposed project would reduce flooding of the roadway, allowing continued access during storm events. The project would not adversely affect any population	U.S. Census Bureau, American Fact Finder, Data for Hornbeck Town 2009-2013 American Community Survey; NEPAssist accessed 6/20/15	

Resource Area	Impact Negligible	Impact Minor	Impact Moderate	Impact Major	Impact Summary	Agency Coordination / Permits	Mitigation
Resource Recovery and Conservation Act (RCRA)	X				<p>The objectives of the RCRA are to protect human health and the environment from the potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner. RCRA regulates the management of solid waste (e.g., garbage), hazardous waste, and underground storage tanks holding petroleum products or certain chemicals.</p> <p>Per NEPAAssist, the project is not located near any RCRA facilities.</p> <p>Project involves excavation of soil and removal of existing flat car bridge and associated support facilities.. All debris would be disposed of at a permitted landfill.</p>	<p>NEPAAssist accessed 6/20/15.</p> <p>SOV sent to LDEQ on 06/05/15.</p> <p>See Appendix C)</p>	<p>If any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's SPOC at (225) 219-3640 is required. Additionally, precautions should be taken to protect workers from these hazardous constituents.</p> <p>Regardless of the asbestos content, the applicant is responsible for ensuring that renovation or demolition activities are coordinated with the LDEQ. Demolition activities related to possible Asbestos-Containing Materials (PACM) must be inspected for ACM/PACM where it is safe to do so. Should Asbestos Containing Materials (ACM) be present at the project site, the applicant is also responsible for ensuring proper disposal in accordance with the previously referenced administrative orders. ACM/PACM must be handled in accordance with local, state and federal regulations and disposed of at approved facilities that accept ACM. Demolition activity notification must be sent to the LDEQ before work begins.</p> <p>The applicant is responsible for complying with the Toxic Substances Control Act (TSCA) Section 402(c)(3) requirements as well as to the satisfaction of the governing local, state, and federal agencies to ensure that project activities are managed, administered, and/or handled by certified/accredited technicians, contractors, and providers. The applicant is responsible complying with all local, state, and federal laws and ensuring that project activities are coordinated with the LDEQ for abatement activities</p> <p>The applicant is responsible for complying with the TSCA requirements at 40 CFR 761 for electrical equipment (including transformers) containing polychlorinated biphenyls (PCB). These provisions address the storage and disposal of equipment containing PCB, as well as the remediation of any PCB spills. All required agency coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files</p> <p>See also section 6.0</p>

Resource Area	Impact Negligible	Impact Minor	Impact Moderate	Impact Major	Impact Summary	Agency Coordination / Permits	Mitigation
Noise	X				Noise is commonly defined as unwanted or unwelcome sound, and most commonly measured in decibels (dB) on the A-weighted scale, which is the scale most similar to the range of sounds that the human ear can hear. Sound is federally regulated by the Noise Control Act of 1972, which charges the USEPA with preparing guidelines for acceptable ambient noise levels. USEPA guidelines, and those of many other federal agencies, state that outdoor sound levels in excess of 55 dB day-night average sound level (DNL) are “normally unacceptable” for noise-sensitive land uses including residences, schools, or hospitals. During the construction period there would be a short-term increase in noise levels.		The applicant should limit noise levels by receiving land use in residential, public, commercial, and industrial areas to varying decibel levels during the “daytime” hours of 7 AM to 7 PM. Construction activities should be limited to this schedule on weekdays. Mitigation and abatement measures will be required to reduce the noise levels to a range that would be considered acceptable. See also Section 6.0.
Public Safety and Access	X				Congress passed the Occupational and Safety Health Act to ensure worker and workplace safety. The goal was to make sure employers provide their workers a place of employment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. During construction heavy equipment would be located in a populated area. Impacts to public safety and security would be minimized with mitigation measures, including following Occupational Safety and Health Administration (OSHA) regulations.		The contractor must place fencing around the work area perimeters to protect nearby residents from vehicular traffic. To minimize worker and public health and safety risks from project construction and closure, all construction and closure work must be done using qualified personnel trained in the proper use of construction equipment, including all appropriate safety precautions. Additionally, all activities must be conducted in a safe manner in accordance with the standards specified in OSHA regulations and the USACE safety manual. The contractor must post appropriate signage and fencing to minimize potential adverse public safety concerns. See also Section 6.0.
Traffic and Transportation	X				Traffic volumes near the respective work access areas would increase temporarily during work activities. Local Traffic would require the use of temporary roads during the construction period.		Appropriate signage and barriers should be in place prior to construction activities in order to alert pedestrians and motorists of project activities and traffic pattern changes. The contractor should implement traffic control measures, as necessary. See also Section 6.0.

Resource Area	Impact Negligible	Impact Minor	Impact Moderate	Impact Major	Impact Summary	Agency Coordination / Permits	Mitigation
Hazardous Materials and Toxic Wastes	X				<p>The management of hazardous materials is regulated under various federal and state environmental and transportation laws and regulations, including the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Toxic Substances Control Act of 1976 (TSCA); the Emergency Planning and Community Right-to-Know Act; the Hazardous Materials Transportation Act; and the Louisiana Voluntary Investigation and Remedial Action statute. The purpose of the regulatory requirements set forth under these laws is to ensure the protection of human health and the environment through proper management (identification, use, storage, treatment, transport, and disposal) of these materials. Some of these laws provide for the investigation and cleanup of sites already contaminated by releases of hazardous materials, wastes, or substances.</p> <p>Per NEPAassist database search, there are no Louisiana State Brownfield (LSB) sites or hazardous waste (RCRA) facilities located within 0.5 miles of the site. No Superfund or Toxic Release Inventory sites were listed. USEPA and LDEQ hazardous materials database searches queried. No sites of concern were identified by the database search. No environmental conditions of concern observed during field reconnaissance.</p> <p>No impacts related to hazardous materials and wastes are anticipated.</p> <p>No oil, gas, or registered active wells are located within the project area.</p>	NEPAassist-USEPA (See Appendix C)	If hazardous materials are unexpectedly encountered in the project area during the proposed construction operations, appropriate measures for the proper assessment, remediation, management and disposal of the contamination would be initiated in accordance with applicable Federal, State, and local regulations. The contractor would be required to take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction area and any offsite runoff. See also Section 6.0.

4.1 Floodplains and Hydrology

Per the H&H study the contributing drainage area contains approximately 2,242 acres, with the majority of the area consisting of woods and small open spaces along a hilly and rolling topography. The 50-year flow is estimated to be 2,487 cubic feet per second (cfs) and a backwater elevation of 303.41 mean sea level (msl) at the project site. The backwater elevation for the 100-year storm is 303.54 msl.

Executive Order 11988 (Floodplain Management) requires federal agencies to avoid or minimize development in the floodplain except when there are no practicable alternatives. Vernon Parish enrolled in the National Flood Insurance Program (NFIP) on July 26, 1977. The Village of Hornbeck enrolled in the NFIP on 8/15/1975. According to Digital Flood Insurance Rate Map (DFIRM) 22115C0495F, dated 4/30/2008, the site is located in zone A, areas subject to inundation by the 1-percent-annual-chance flood event, no BFEs have been determined.

Alternative 1- No Action: The No Action alternative would not minimize the flooding losses. There are 17 homes and one (1) business that are beyond the flood prone portion of the road and the road is a dead – end, so there is no other way out by vehicle when the flooding occurs. During the flooding events, the road is impassable from 12 to 72 hours. In 2006, 1,325 feet of the road was flooded for approximately 72 hours. Typically the conditions are flash flooding and can occur during and after short and intense rainfall events.

Alternative 2- Proposed Action: The H&H calculations and preliminary plans for this proposed action are provided in Appendix C. The calculations were ran for various recurrence interval events, evaluating flooding inundation and flow rates through the existing and two (2) alternative potential projects. The proposed project would not cause any additional flood losses, and creates a more flood resilient ingress and egress to the residents along Brushy Creek Road.

With this alternative, the Brushy Creek Road crossing of Brushy Creek would be improved and elevated. There would be insignificant increases in flow rates downstream due to the rerouting of some flood flows through the culverts and constructed ditch on the east side, and below the increased capacity bridge. The backwater impacts upstream of Brushy Creek Road would be within allowable surcharges. Per the H&H study the backwater elevation at the 50-year flood event would increase 0.14 feet from the existing 303.41 msl to 303.55 msl, and the 100-year event would increase 0.4 feet from 303.54 msl to 303.94 msl. The road elevation to 304.5 msl should be above the 100-year flood elevation, thereby allowing egress during a flood event. The zone A area should be revised to reflect the modified condition upon completion of the project, in accordance with the floodplain management requirements at 44 CFR 60.3 (b)(4) and (b)(6).

Per 44 CFR 60.3 (b)(4) “When the Federal Insurance Administrator has designated areas of special flood hazards (A zones) by the publication of a community's Flood Hazard Boundary Map (FHBM) or Flood Insurance Rate Map (FIRM), but has neither produced water surface elevation data nor identified a floodway or coastal high hazard area, the community shall: Obtain, review and reasonably utilize any base flood elevation and floodway data available from a Federal, State, or other source, including data developed pursuant to paragraph (b)(3) of this section, as criteria for requiring that new construction, substantial improvements, or other development in Zone A on the community's FHBM or FIRM meet the standards in paragraphs (c)(2), (c)(3), (c)(5), (c)(6), (c)(12), (c)(14), (d)(2) and (d)(3) of this section” and (b)(6) “Notify, in riverine situations, adjacent communities and the State Coordinating Office prior to any alteration or relocation of a watercourse, and submit copies of such notifications to the Federal Insurance Administrator.”

In accordance with EO 11988 (Floodplain Management) and EO 11990 (Wetland Protection), an 8-Step Process was prepared by FEMA to evaluate the impacts related to the construction of the Proposed Action within the 100-year floodplain (Appendix E). The 8-Step Process reviewed practicable alternatives, identified direct and indirect impacts, minimization and mitigation of impacts, and provided an evaluation of the Proposed Action’s location within the floodplain.

5.0 CUMULATIVE IMPACTS

The CEQ’s regulations state that cumulative impacts represent the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time (40 CFR § 1508.7).

In its comprehensive guidance on cumulative impacts analysis under NEPA, the CEQ notes that: “[t]he range of actions that must be considered includes not only the project proposal, but all connected and similar actions that could contribute to cumulative effects” (CEQ, 1997). The term “similar actions” may be defined as “reasonably foreseeable or proposed agency actions [with] similarities that provide a basis for evaluating the environmental consequences together, such as common timing or geography” (40 CFR § 1508.25[a][3]; see also 40 CFR §§ 1508.25[a][2] and [c]).

Not all potential issues identified during cumulative effects scoping need be included in an EA. Because some effects may be irrelevant or inconsequential to decisions about the proposed action and alternatives, the focus of the cumulative effects analysis should be narrowed to important issues of national, regional, or local significance. To assist agencies in this narrowing process, CEQ lists seven (7) basic questions, including: (1) is the proposed action one of several similar past, present, or future actions in the same geographic area; (2) do other activities (governmental or private) in the region have environmental effects similar to those of the proposed action; (3) have any recent or ongoing NEPA analyses of similar actions or nearby actions identified important adverse

or beneficial cumulative effect issues; and, (4) has the impact been historically significant, such that the importance of the resource is defined by past loss, past gain, or investments to restore resources (CEQ, 1997).

It is normally insufficient when analyzing the contribution of a proposed action to cumulative effects to merely analyze effects within the immediate area of the proposed action (CEQ, 1997, pg. 12). Geographic boundaries should be expanded for cumulative effects analysis, and conducted on the scale of human communities, landscapes, watersheds, or airsheds. Temporal frames should be extended to encompass additional effects on the resources, ecosystems, and human communities of concern. A useful concept in determining appropriate geographic boundaries for a cumulative effects analysis is the project impact zone; that is, the area (and resources within that area) that could be affected by the proposed action. The area appropriate for analysis of cumulative effects will, in most instances, be a larger geographic area occupied by resources outside of the project impact zone.

In the City of Hornbeck and surrounding areas in Vernon Parish, FEMA funded projects, when added to the proposed action at Brushy Creek and PR 2025 would not have a cumulative impact on the human environment as the vast majority of these projects restore, repair, mitigate, or replace existing structures or facilities.

6.0 CONDITIONS AND MITIGATION MEASURES

Based upon the studies and consultations undertaken in this EA, several conditions and mitigation measures must be taken by the applicant prior to and during project implementation.

- Implement construction BMPs; install silt fences/straw bales to reduce downslope sedimentation. Area soils must be covered and/or wetted during construction. If fill is stored on site as part of unit installation or removal, the contractor is required to appropriately cover it. Construction contractor is required to obtain applicable Louisiana Pollutant Discharge Elimination System (LPDES) permit, and implement stormwater pollution prevention plan.
- Any changes or modifications to the proposed project will require a revised determination. Off-site locations of activities such as borrow, disposals, haul- and detour roads, and work mobilization site developments may be subject to USACE regulatory requirements.
- Applicant must contact the USACE to verify if jurisdictional waters of the U.S. do occur on site and which permits, if any, are required.
- The project results in a discharge to waters of the State; submittal of a Louisiana Pollutant Discharge Elimination System LPDES application is necessary. The project results in a discharge of wastewater to an existing wastewater treatment

-
- system; that wastewater treatment system may need to modify its LPDES permit before accepting the additional wastewater.
- The applicant is responsible for acquiring any Section 401/404 CWA permits and/or Section 10 permits under the Rivers & Harbors Act. When these permits are required, applicant must maintain documentation of compliance with applicable NWP, exemption from requirements, or obtain individual permits from U.S. Army Corps of Engineers prior to construction, unless exempt by the NWP from pre-construction notification. The applicant shall comply with all conditions of the required permit. All coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files.
- All precautions must be observed to control nonpoint source pollution from construction activities. LDEQ has stormwater general permits for construction areas equal to or greater than one (1) acre. The applicant must contact the LDEQ Water Permits Division at (225) 219-9371 to determine if the proposed project requires a permit.
- If the project will include a sanitary wastewater treatment facility, a Sewage Sludge and Biosolids Use or Disposal Permit application or Notice of Intent must be submitted. Additional information may be obtained on the LDEQ website at <http://www.deq.louisiana.gov/portal/tabid/2296/Default.aspx> or by contacting the LDEQ Water Permits Division at (225) 219- 9371.
- Water softeners generate wastewaters that may require special limitations depending on local water quality considerations. Therefore, if the applicant's water system improvements include water softeners, the applicant is to contact the LDEQ Water Permits Department to determine if special water quality-based limitations will be necessary.
- Any renovation or remodeling must comply with LAC 33:III.Chapter 28, Lead-Based Paint Activities; LAC 33:III.Chapter 27, Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation); and LAC 33:III.5151, Emission Standard for Asbestos for any renovations or demolitions.
- If any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's SPOC at (225) 219-3640 is required. Additionally, precautions must be taken to protect workers from these hazardous constituents.
- The contractor must observe all precautions to protect the groundwater of the region.

- Vehicle operation times must be kept to a minimum. Area soils must be covered and/or wetted during construction to minimize dust.
- Any renovation or remodeling must comply with LAC 33:III.Chapter 28, Lead-Based Paint Activities; LAC 33:III.Chapter 27, Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation); and LAC 33:III.5151, Emission Standard for Asbestos for any renovations or demolitions.
- The applicant is required to coordinate with the local floodplain administrator regarding floodplain permit(s) prior to the start of any activities. All coordination pertaining to these activities and applicant compliance with any conditions should be documented and copies forwarded to the state and FEMA for inclusion in the permanent project files.
- As per 44 CFR 9.11 (d) (9), mitigation or minimization standards must be applied, where possible. In particular to this bridge, culvert, and road elevation project, 44 CFR 9.11 (d) (4), There shall be no encroachments, including fill, new construction, substantial improvements of structures or facilities, or other development within a designated regulatory floodway that would result in any increase in flood levels within the community during the occurrence of the base flood discharge. Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the base floodplain unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.
- The zone A area should be revised to reflect the modified condition upon completion of the project, in accordance with the floodplain management requirements at 44 CFR 60.3 (b)(4) and (b)(6).
- If human bone or unmarked grave(s) are present with the project area, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is required. The applicant shall notify the law enforcement agency of the jurisdiction where the remains are located within twenty-four (24) hours of the discovery. The applicant shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within seventy-two (72) hours of the discovery.
- If during the course of work, archaeological artifacts (prehistoric or historic) are discovered, the applicant shall stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The applicant shall inform their HMGP contacts at FEMA, who will in turn contact FEMA Historic Preservation staff. The applicant will not proceed with work until FEMA Historic Preservation completes consultation with the SHPO.

- Regardless of the asbestos content, the applicant is responsible for ensuring that renovation or demolition activities are coordinated with the LDEQ. Demolition activities related to possible PACM must be inspected for ACM/PACM where it is safe to do so. Should ACM be present at the project site, the applicant is also responsible for ensuring proper disposal in accordance with the previously referenced administrative orders. ACM/PACM must be handled in accordance with local, state and federal regulations and disposed of at approved facilities that accept ACM. Demolition activity notification must be sent to the LDEQ before work begins.
- The applicant is responsible for complying with the TSCA Section 402(c)(3) requirements as well as to the satisfaction of the governing local, state, and federal agencies to ensure that project activities are managed, administered, and/or handled by certified/accredited technicians, contractors, and providers. The applicant is responsible complying with all local, state, and federal laws and ensuring that project activities are coordinated with the LDEQ for abatement activities.
- Mitigation and abatement measures will be required to reduce the noise levels to a range that would be considered acceptable
- The applicant must limit noise levels by receiving land use in residential, public, commercial, and industrial areas to varying decibel levels during the “daytime” hours of 7 AM to 7 PM. Construction activities should be limited to this schedule on weekdays.
- The applicant is responsible for complying with the TSCA requirements at 40 CFR 761 for electrical equipment (including transformers) containing PCB. These provisions address the storage and disposal of equipment containing PCB, as well as the remediation of any PCB spills. All required agency coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files.
- The contractor must place fencing around the work area perimeters to protect nearby residents from vehicular traffic. To minimize worker and public health and safety risks from project construction and closure, all construction and closure work must be done using qualified personnel trained in the proper use of construction equipment, including all appropriate safety precautions. Additionally, all activities must be conducted in a safe manner in accordance with the standards specified in OSHA regulations and the USACE safety manual.

- The contractor must post appropriate signage and fencing to minimize potential adverse public safety concerns.
- Appropriate signage and barriers must be in place prior to construction activities in order to alert pedestrians and motorists of project activities and traffic pattern changes.
- The contractor must implement traffic control measures, as necessary.
- If hazardous materials are unexpectedly encountered in the project area during the proposed construction operations, appropriate measures for the proper assessment, remediation, management and disposal of the contamination would be initiated in accordance with applicable Federal, State, and local regulations. The contractor would be required to take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction area and any offsite runoff.

Failure to comply with these conditions may make part or all of these projects ineligible for FEMA funding.

7.0 PUBLIC INVOLVEMENT

The public was invited to comment on the proposed action. A legal notice was published in the following newspapers: Leesville Daily Leader on June 10, 2015; June 12, 2015; and June 14, 2015; and in The Advocate on June 8, 2015; June 9, 2015; and June 10, 2015. Additionally, the Environmental Assessment was made available 1) Hornbeck Town Hall on Monday-Thursday 8 a.m. to 3:30 p.m. and Fridays 8 a.m. to 12 p.m. and 2) the Vernon Parish Library located at 1401 Nolan Trace in Leesville, LA 71446 on Monday-Wednesday 9:00 AM to 8:00 PM, Thursday 9:00 AM to 9:00 PM, and Friday and Saturday 9:00 AM to 5:30 PM. The documents can also be downloaded from FEMA's website at <http://www.fema.gov/resource-document-library>. There was a 15 day comment period, beginning on June 8, 2015, and concluding on June 23, 2015. A copy of the Public Notice is attached in Appendix E.

8.0 CONCLUSION

Construction of the proposed project at the proposed location was analyzed based on the studies, consultations, and reviews undertaken as reported in this draft EA. The findings of this EA conclude that the proposed action at the proposed site would result in no significant adverse impacts to geology, groundwater, floodplains, public health and safety, hazardous materials, socioeconomic resources, environmental justice, or cultural resources are anticipated under the Proposed Action Alternative.

During project construction, short-term impacts to soils, surface water, transportation, air quality, and noise are anticipated and conditions have been incorporated to mitigate and minimize the effects. Project short-term adverse impacts would be mitigated using BMPs,

such as silt fences, proper vehicle and equipment maintenance, and appropriate signage. No long-term adverse impacts are anticipated from the proposed project. Therefore, FEMA presently finds the proposed action meets the requirements for a FONSI under NEPA and the preparation of an EIS will not be required. If new information is received that indicates there may be significant adverse effects, then FEMA would revise the findings and issue a second public notice, for additional comments. However, if there are no changes, this Draft EA will become the Final EA.

9.0 AGENCY COORDINATION

Louisiana Department of Environmental Quality
Louisiana Department of Natural Resources
Louisiana Department of Wildlife and Fisheries
Louisiana State Historic Preservation Officer
U.S. Army Corps of Engineers
U.S. Department of Agriculture - Natural Resources Conservation Service
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service

10.0 LIST OF PREPARERS

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11.0 REFERENCES

Bryant Hammett & Associates, LLC. 2013. Hydraulic Report for Brushy Creek
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[Online]: <http://www.epa.gov/enviro/katrina/emkatrina.html>

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[Online]: <http://www.epa.gov/oar/oaqps/greenbk/>
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<http://www.deq.louisiana.gov/portal/PROGRAMS/Air.aspx>
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- Louisiana Department of Environmental Quality. [Online]:<http://www.deq.louisiana.gov/>
- Louisiana Department of Environmental Quality. Louisiana State Brownfields List.
[Online]: <http://www.deq.louisiana.gov/portal/tabid/2620/Default.aspx>
- Louisiana Department of Natural Resources. SONRIS Integrated Applications. [Online]:
http://sonris-www.dnr.state.la.us/www_root/sonris_portal_1.htm
- National Oceanic and Atmospheric Administration. Coastal Zone Management Act.
[Online]: <http://coast.noaa.gov/czm/act/>
- U.S. Census Bureau. 2013 American Community Survey Data for Hornbeck, Louisiana.
[Online]: http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml
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<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>
- U.S. Fish & Wildlife Service. Coastal Barrier Resources Act. [Online]:
<http://www.fws.gov/CBRA/Maps/Mapper.html>
- U.S. Fish & Wildlife Service. Endangered species data. [Online] Available:
<http://www.fws.gov/lafayette/>

APPENDIX A
SITE PHOTOS

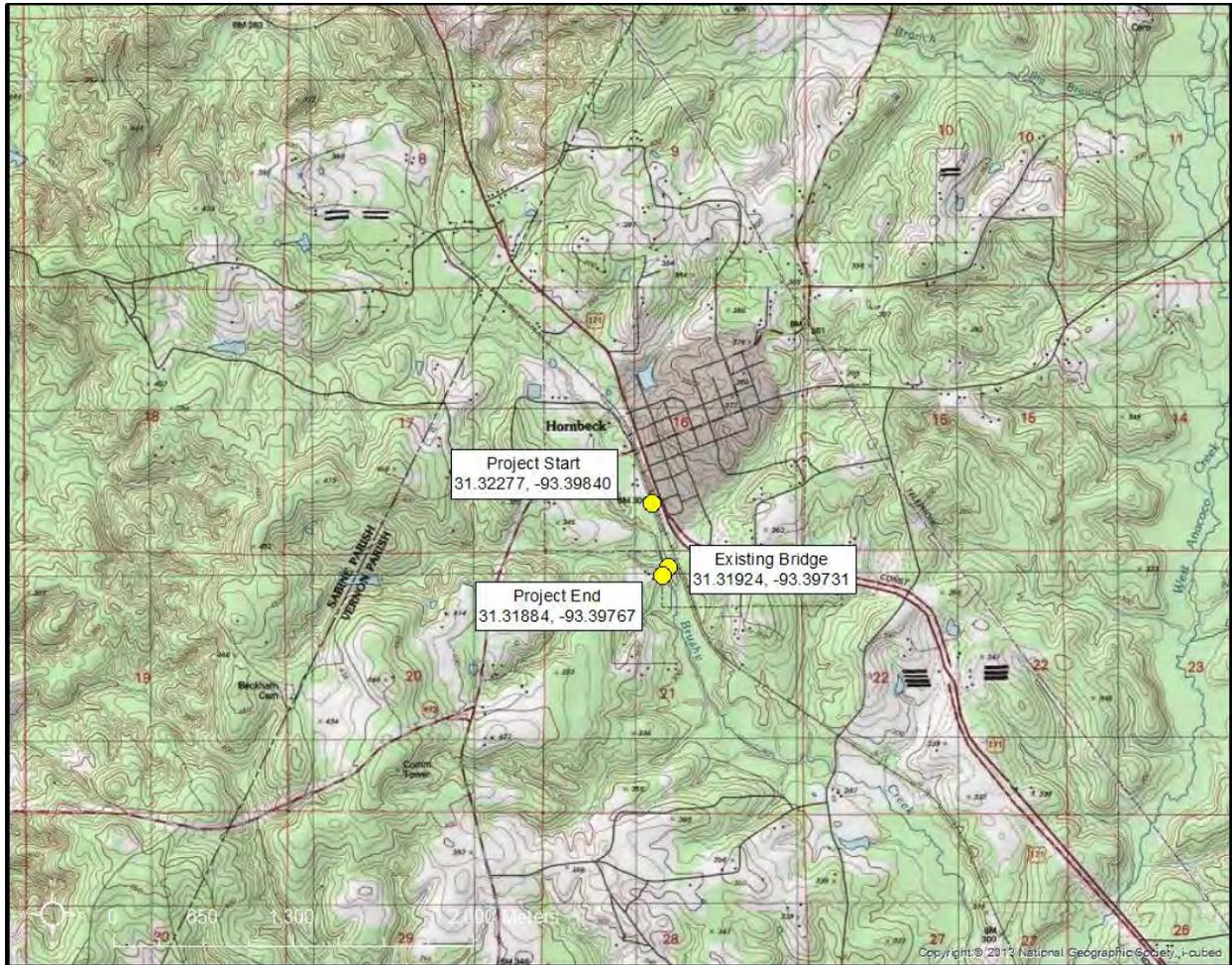


Figure 1. Quad map showing project vicinity, project start, project end and bridge location.

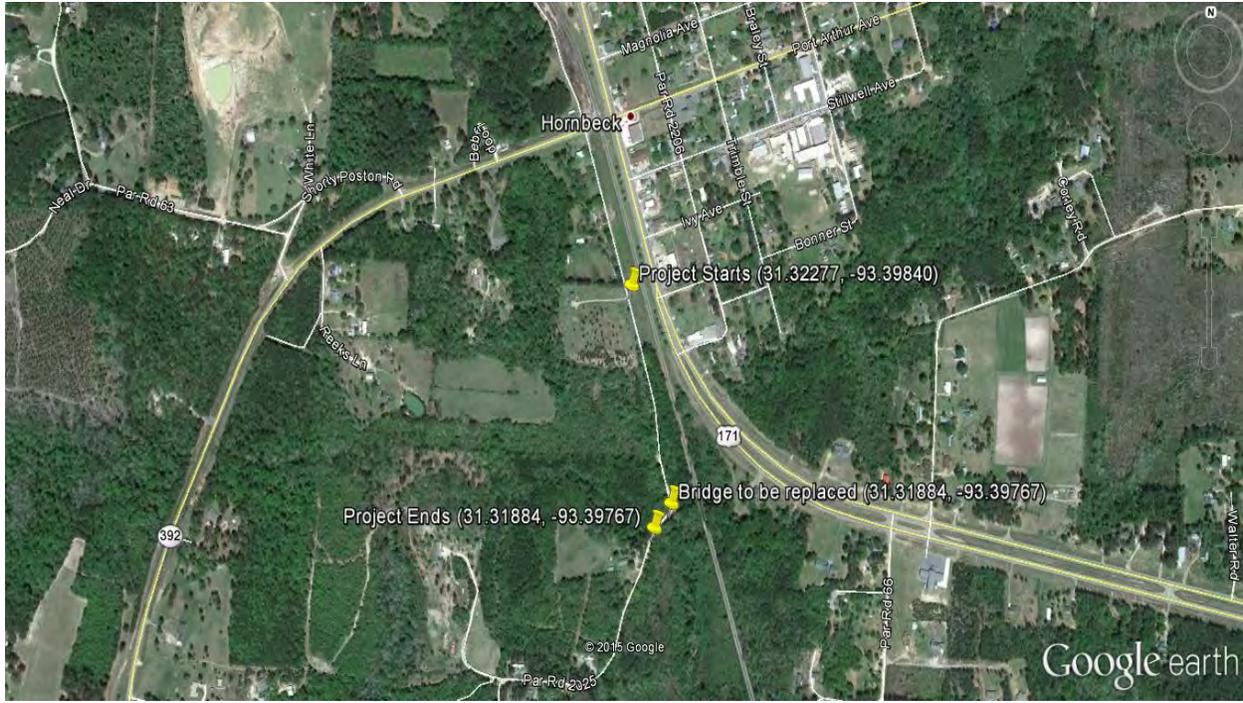


Figure 2. Aerial map from Google Earth showing project location.



Figure 3. Aerial showing extents of project area.



Figure 4. Roadway looking towards bridge facing southwest.



Figure 5. Existing railroad flat car bridge to be replaced looking northeast.



Figure 6. Typical vegetation along roadway's edge looking northeast from existing bridge.



Figure 7. Location of proposed 4 barrel 60" relief culvert looking west.

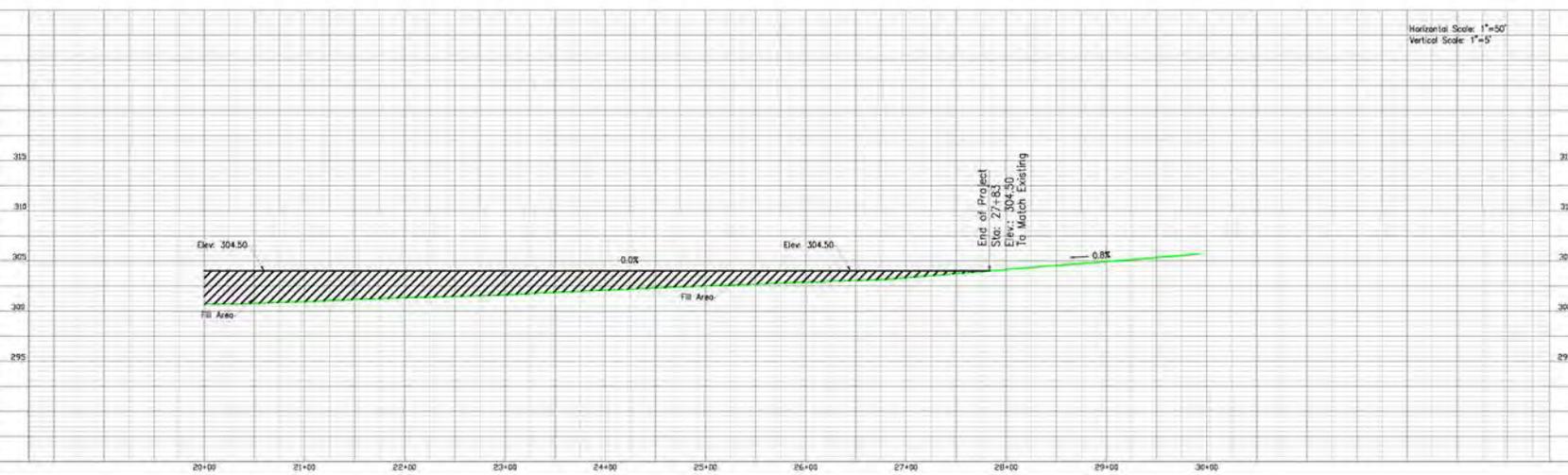
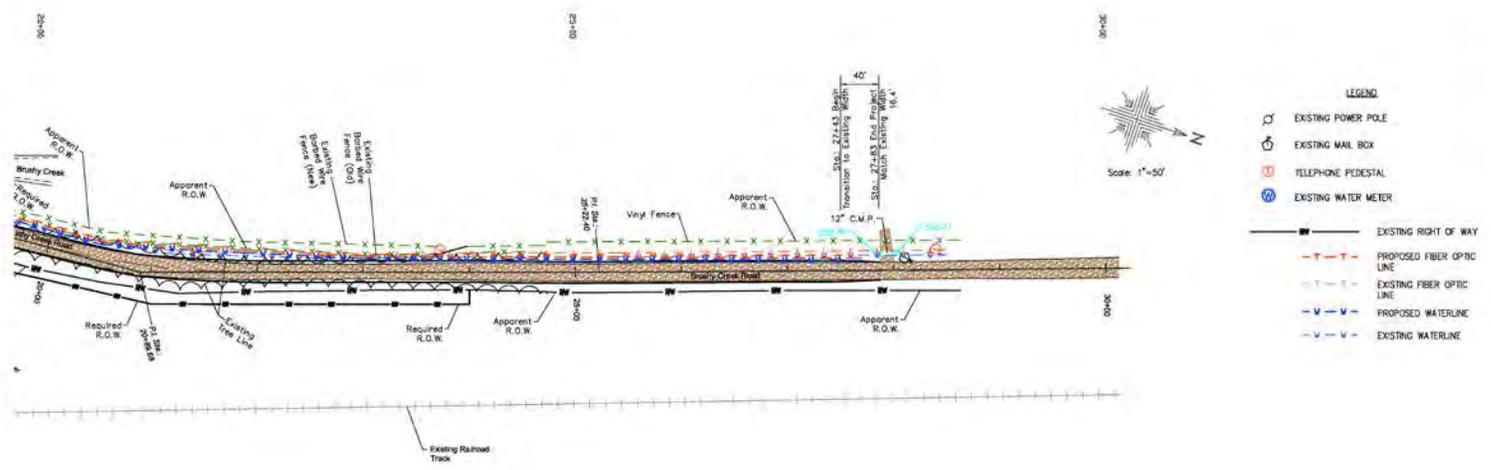


Figure 8. Location of south 4 barrel 60" culverts looking west (inside treeline & same location as Fig. 7).



Figure 9. Roadway facing north (note existing ditch to right).

APPENDIX B
CONSTRUCTION PLANS



SHEET 7

VERNON PARISH DRAINAGE IMPROVEMENTS
BRUSTY CREEK ROAD

DATE: 6/20/12	DRAWN BY: TCS	CHECKED BY: JCS	DESIGNED BY: JCS	IN CHARGE: JCS
---------------	---------------	-----------------	------------------	----------------

BRYANT HAMMETT & ASSOCIATES, LLC
CIVIL ENGINEERING & LAND SURVEYING

NO.	REVISIONS	BY
1	Revised for O&M Comments	JCS/1/15

FILE NO: 45326

APPENDIX C
HYDROLOGIC AND HYDRAULIC
STUDY

HYDRAULIC REPORT

FOR

BRUSHY CREEK DRAINAGE IMPROVEMENTS

HMGP #1603n-115-0006
FEMA PROJECT #0297

PREPARED FOR:

VERNON PARISH POLICE JURY

MAY, 2012



**BRYANT HAMMETT
& ASSOCIATES, LLC**
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HYDRAULIC IMPACT REPORT

Brushy Creek Road Drainage Improvements Vernon Parish, LA

I. GENERAL PROJECT INFORMATION

A. Site Location

The subject site is located near Hornbeck, LA, approximately 0.75 miles south of the intersection of LA Hwy 392 and 171 in the northern portion of Vernon Parish. The site is located in Section 21, Township 4 North, Range 10 West. The site is shown in detail on the watershed boundary map located in the appendix of this report.

B. Existing Conditions

The existing conditions of the site include an aggregate 2 lane road and a 48 foot bridge made with railroad flat cars. During heavy rains Brushy Creek overflows flooding a portion of Brushy Creek Road, the project area. Most of the water from the town of Hornbeck, LA., 0.75 miles to the north, utilizes this creek as the drainage outfall as shown on the drainage area map. There are 17 homes and 1 business that are beyond the flood prone portion of the road and the road is a dead - end, so there is no other way out by vehicle when the flooding occurs. During the flooding events the road is impassable from 12 to 72 hours, in 2006 1325 ft. of the road was flooded for approximately 72 hours. Typically the conditions are flash flooding and can occur during and after short and intense rainfall events.

II. DESIGN CONSIDERATIONS

A. Historical Flood Information

No recorded data was found for the subject site by searching the U.S. Geological Survey and U.S. Corps of Engineers stage-discharge records; however the Vernon Parish Police Jury have recorded numerous flooding events including a flood in 2006 making the road impassable by vehicle for 72 hours. This flood event covered the road a depth of 2 to 3 feet deep during the height of the flood.

B Potential for Watershed Development

Based upon the present nature of the contributing watershed and its distance from any significant existing metropolitan area, no significant urban development is expected to take place within the watershed boundaries during the next 20 years.

C. Utility Conflicts

There are some utilities within the project area; they cannot be completely avoided for the construction of this project.

D. Design Criteria

The design criterion for design storm frequency is the 50-year flood or the flow from a 50 yr rain event.

III. DESIGN ANALYSIS

A. Hydrology

As shown on the watershed boundary map, the contributing drainage area contains approximately 2242 acres. The majority of the area within the watershed is woods and small open spaces, with hilly and rolling topography. Minimal development is present and is expected to remain as such within the watershed during the next 20 years. Design discharges were computed using the USGS method, as the drainage area is greater than 2,000 acres. A map showing pertinent watershed details and data used in the design discharge determination is contained in the appendix of this report.

B. Hydraulics

A representative flood plain cross-section was constructed utilizing field survey information, U.S.G.S. topographic maps, and field reconnaissance data. Manning's equation was then used to establish a stage-discharge relationship for the site by estimating the flood plain roughness coefficients and calculating the average flood plain slope from the U.S.G.S. quadrangle maps.

The 50-year flow of 2487 cfs dictates the design of the project improvements

C. Design Parameters

The design of the improvements is based on the 50-year event for the watershed. The project has been designed at lines approximately equivalent to the existing conditions with grades being adjusted in the lower areas of the roadway within the project. The level of flooding created by the project improvements at the design discharge has been determined to have no more adverse impact on the surrounding property than the existing conditions.

D. Recommendations

Listed below is the project design and associated data recommended for the project.

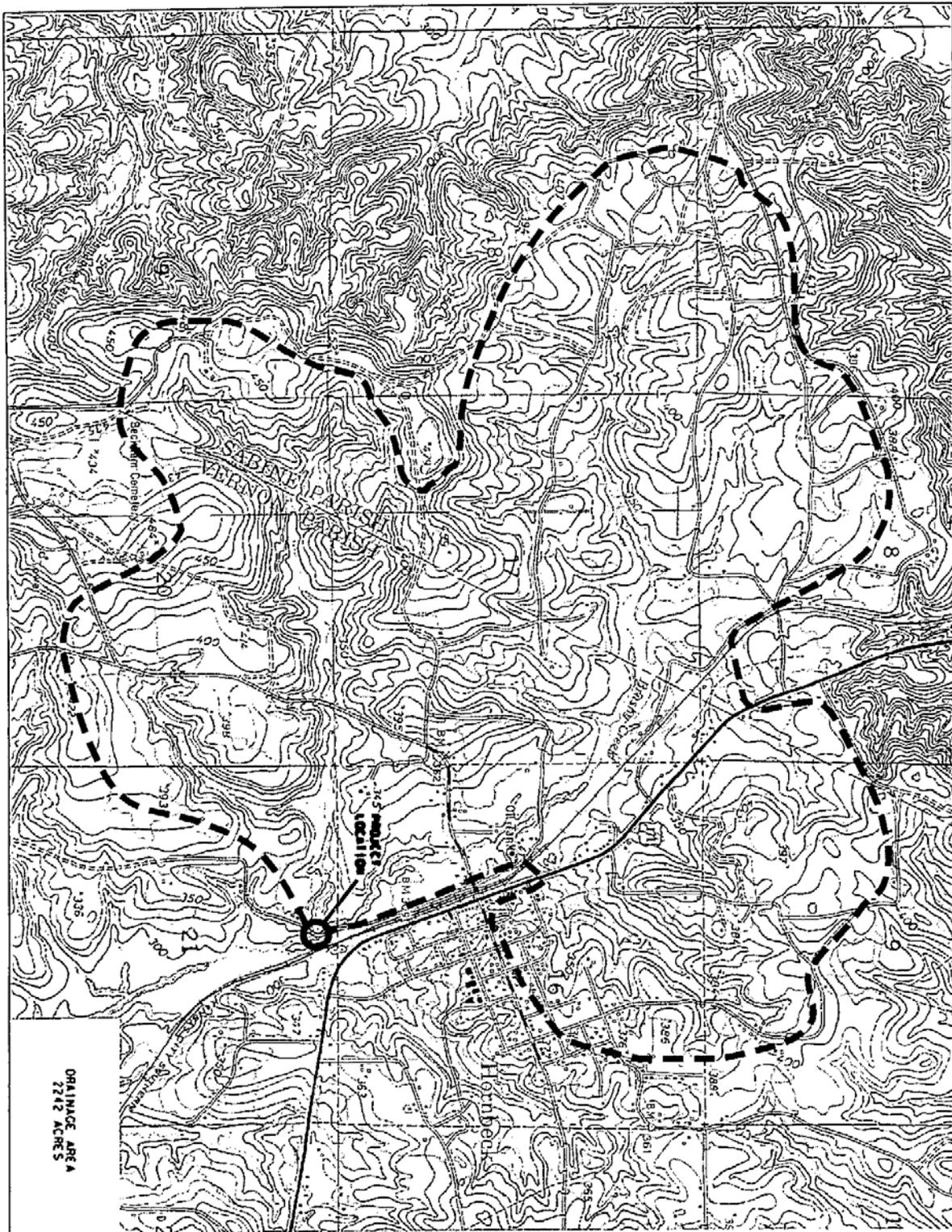
It is recommended that the existing roadway be raised to maintain the bridge deck elevation on each side of the bridge until high points in the road are met on either side of the bridge. This would generally allow for a 3.5 to 4 foot elevation increase of the road, in the lower portions of the road.

In addition to the road elevation increase there will be a pair of 2-barrell 48" concrete pipe structures installed to handle the extra flow, including flared wing walls and headwalls. These structures will be placed in/under Brushy Creek Road approximately 300 and 450 feet north of the bridge. The structure will allow drainage to cross under the road from west to east. A drainage ditch will need to be constructed along the east side of the road heading south from the culverts to a natural outfall, south east of the bridge.

APPENDIX A



WATERSHED
BOUNDARY MAP



ORAINAGE AREA
2242 ACRES



NO.	DATE	REVISIONS


BRYANT HAMMETT & ASSOCIATES, LLC
 CIVIL ENGINEERING & LAND SURVEYING

VERNON PARISH
 POLICE JURY
 BRUSHY CREEK ROAD
 DRAINAGE PROJECT
 DRAINAGE AREA MAP

APPENDIX B



DISCHARGE DATA
(USGS METHOD)
HYDR-1130

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
HYDRAULICS SECTION
DESIGNER: K Capdepon
REMARKS: Vernon Parish Job No. 6133 Brushy Creek - revised

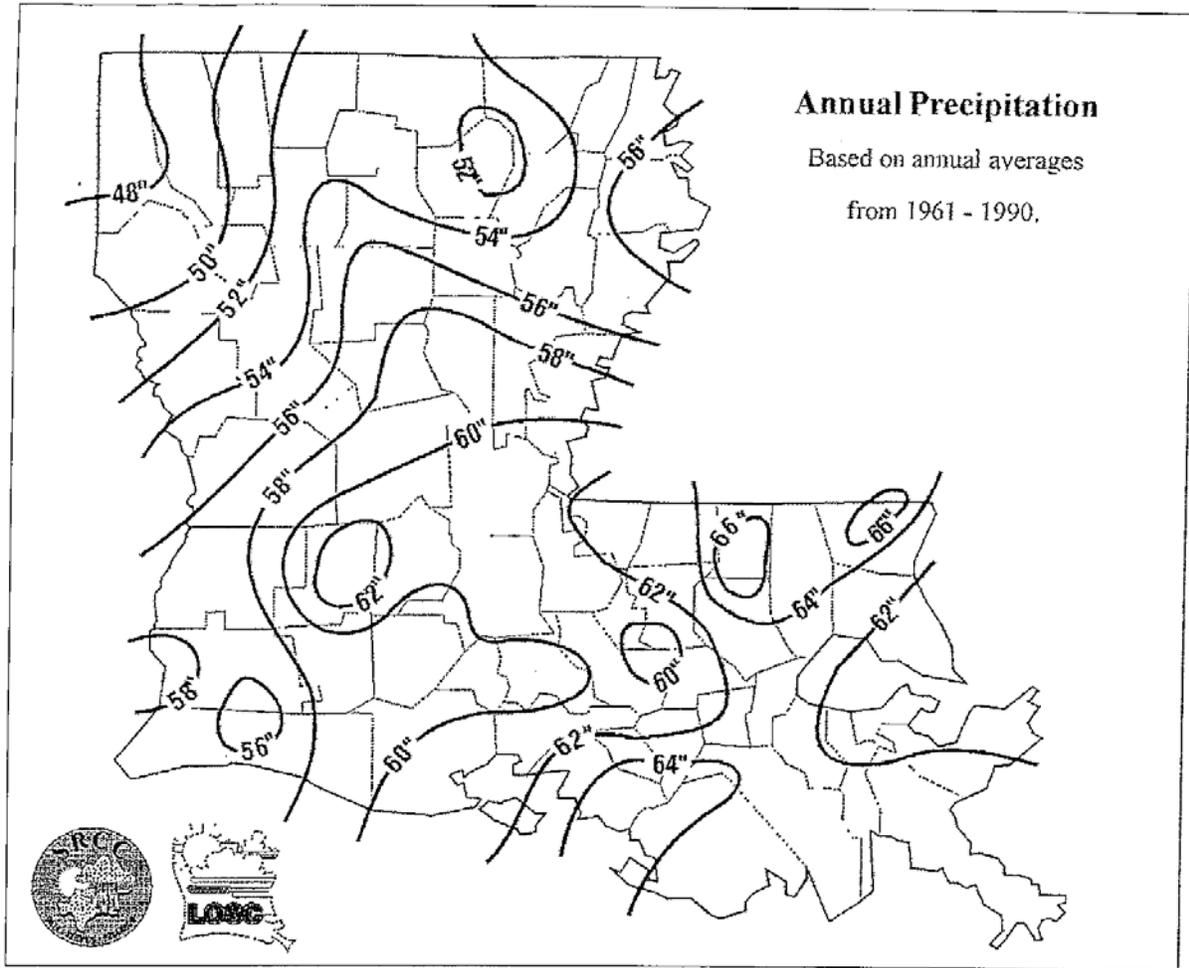
HYDR1130-071498

DATE: 04-20-2012

STATE PROJECT NUMBER 000-00-0000

USGS PEAK DISCHARGE

```
*****  
STATION                               100  
DRAINAGE AREA (SQ. MI.)              3.50  
URBAN ADJUSTMENT RATIO                1.00  
SLOPE (FT./MI.)                      100.00 (ADJ.)  
MEAN ANNUAL PRECIPITATION (IN.)      58.00  
*****  
Q2 (CFS)                             678.  
Q5 (CFS)                             1184.  
Q10 (CFS)                             1553.  
Q25 (CFS)                             2158.  
Q50 (CFS)                             2487.  
Q100 (CFS)                            2799.  
*****
```



APPENDIX C



WSPRO WATER SURFACE ELEVATION DATA

SI 0
T1 BRUSHY CREEK ROAD
T2 6133 FILE - VERNON BRUSHY
T3 BY KEITH filename: vernbrxr2
*
* Q 25 Q 50 Q 100
Q 2158,2487,2799
SK 0.0987,0.0987,0.0987
*
XT TEMP 200,0.0987
GR 1300,302.2 1335,301.7 1375,301.5 1390,300.3 1400,295.3 1412,294
1445,298.5 1462,300.1 1477,302.22
*
XS EXIT 20,*,*,*,0.001
N 0.1,.05,0.1
SA 1390,1445
*
XS FULL 140,*,*,*,0.001
*
BR BRDG 140,302.5,*,*,*,0.001
GR 1390,303.7 1402,298.8 1416,295.6 1425,294.0 1434,295.7 1445,304.4
1390,303.7
N 0.05

CD 3,24,2.5,303.5
*
XR ROAD 140,24,2
GR 1086,312.1 1148,308.9 1216,305.5 1390,303.7 1445,304.4 1500,300.75
1586,306.0 1600,312.00
*
XS APPR 240
*
* DC 0,BRDG,*,*,*,*,0,6
* DC 1,BRDG,*,*,*,*,0.000164,6
* DP BRDG *,*,6
* DA BRDG
EX
ER

Federal Highway Administration - U. S. Geological Survey
 Model for Water-Surface Profile Computations.
 Run Date & Time: 5/30/2012 4:56 pm. Version V200104
 Input File: VERNBRR1.WSP Output File: VERNBRR1.LST

 *F
 *** Input Data In Free Format ***

SI 0
 T1 BRUSHY CREEK ROAD
 T2 6133 FILE - VERNON BRUSHY
 T3 BY KEITH FILENAME: VERNBRR2
 Q 2158,2487,2799

*** Processing Flow Data; Placing Information into Sequence 1 ***

SK 0.0987,0.0987,0.0987
 ***** W S P R O *****
 Federal Highway Administration - U. S. Geological Survey
 Model for Water-Surface Profile Computations.
 Input Units: English / Output Units: English

 BRUSHY CREEK ROAD
 6133 FILE - VERNON BRUSHY
 BY KEITH FILENAME: VERNBRR2

 * Starting To Process Header Record TEMP *

XT TEMP 200,0.0987
 GR 1300,302.2 1335,301.7 1375,301.5 1390,300.3 1400,295.3 1412,294
 GR 1445,298.5 1462,300.1 1477,302.22

*** Completed Reading Data Associated With Header Record TEMP ***
 *** Storing Template Header Record Data In Memory ***

*** Data Summary For Header Record TEMP ***
 SRD Location: 200. Valley Slope: .09870 Error Code 0

X,Y-coordinates (9 pairs)

X	Y	X	Y	X	Y
1300.000	302.200	1335.000	301.700	1375.000	301.500
1390.000	300.300	1400.000	295.300	1412.000	294.000
1445.000	298.500	1462.000	300.100	1477.000	302.220

Minimum and Maximum X,Y-coordinates
 Minimum X-Station: 1300.000 (associated Y-Elevation: 302.200)
 Maximum X-Station: 1477.000 (associated Y-Elevation: 302.220)
 Minimum Y-Elevation: 294.000 (associated X-Station: 1412.000)
 Maximum Y-Elevation: 302.220 (associated X-Station: 1477.000)

 * Finished Processing Header Record TEMP *

***** W S P R O *****
 Federal Highway Administration - U. S. Geological Survey
 Model for Water-Surface Profile Computations.
 Input Units: English / Output Units: English

 BRUSHY CREEK ROAD
 6133 FILE -- VERNON BRUSHY
 BY KEITH FILENAME: VERNBRR2

XS EXIT 20,*,*,*,0.001
 N 0.1,.05,0.1
 SA 1390,1445

*** Completed Reading Data Associated With Header Record EXIT ***
 *** Storing X-Section Data In Temporary File As Record Number 1 ***

*** Data Summary For Header Record EXIT ***
 SRD Location: 20. Cross-Section Skew: .0 Error Code 0
 Valley Slope: .00100 Averaging Conveyance By Geometric Mean.
 Energy Loss Coefficients -> Expansion: .50 Contraction: .00

X,Y-coordinates (9 pairs)					
X	Y	X	Y	X	Y
1300.000	302.020	1335.000	301.520	1375.000	301.320
1390.000	300.120	1400.000	295.120	1412.000	293.820
1445.000	298.320	1462.000	299.920	1477.000	302.040

Minimum and Maximum X,Y-coordinates
 Minimum X-Station: 1300.000 (associated Y-Elevation: 302.020)
 Maximum X-Station: 1477.000 (associated Y-Elevation: 302.040)
 Minimum Y-Elevation: 293.820 (associated X-Station: 1412.000)
 Maximum Y-Elevation: 302.040 (associated X-Station: 1477.000)

Roughness Data (.3 SubAreas)		
SubArea	Roughness Coefficient	Horizontal Breakpoint
1	.100	---
	---	1390.000
2	.050	---
	---	1445.000
3	.100	---

 * Finished Processing Header Record EXIT *

***** W S P R O *****
 Federal Highway Administration - U. S. Geological Survey
 Model for Water-Surface Profile Computations.
 Input Units: English / Output Units: English

-----*
 BRUSHY CREEK ROAD
 6133 FILE - VERNON BRUSHY
 BY KEITH FILENAME: VERNBRR2

 * Starting To Process Header Record FULL *

XS FULL 140,*,*,*,0.001

*** Completed Reading Data Associated With Header Record FULL ***
 *** No Roughness Data Input, Propagating From Previous Section ***
 *** Storing X-Section Data In Temporary File As Record Number 2 ***

*** Data Summary For Header Record FULL ***
 SRD Location: 140. Cross-Section Skew: .0 Error Code 0
 Valley Slope: .00100 Averaging Conveyance By Geometric Mean.
 Energy Loss Coefficients -> Expansion: .50 Contraction: .00

X,Y-coordinates (9 pairs)					
X	Y	X	Y	X	Y

1390.000	303.700	1402.000	298.800	1416.000	295.600
1445.000	298.440	1462.000	300.040	1477.000	302.160

Minimum and Maximum X,Y-coordinates
 Minimum X-Station: 1300.000 (associated Y-Elevation: 302.140)
 Maximum X-Station: 1477.000 (associated Y-Elevation: 302.160)
 Minimum Y-Elevation: 293.940 (associated X-Station: 1412.000)
 Maximum Y-Elevation: 302.160 (associated X-Station: 1477.000)

Roughness Data (3 SubAreas)

SubArea	Roughness Coefficient	Horizontal Breakpoint
1	.100	---
		1390.000
2	.050	---
		1445.000
3	.100	---

 * Finished Processing Header Record FULL *

 ***** W S P R O *****
 Federal Highway Administration - U. S. Geological Survey
 Model for Water-Surface Profile Computations.
 Input Units: English / Output Units: English

BRUSHY CREEK ROAD
 6133 FILE - VERNON BRUSHY
 BY KEITH FILENAME: VERNBR2

 * Starting To Process Header Record BRDG *

BR BRDG 140,302.5,*,*,0.001
 GR 1390,303.7 1402,298.8 1416,295.6 1425,294.0 1434,295.7 1445,304.4
 GR 1390,303.7
 N 0.05
 N
 CD 3,24,2.5,303.5

*** Completed Reading Data Associated With Header Record BRDG ***
 *** No Roughness Data Input, Propagating From Previous Section ***
 *** Storing Bridge Data In Temporary File As Record Number 3 ***

*** Data Summary For Bridge Record BRDG ***
 SRD Location: 140. Cross-Section Skew: .0 Error Code 0
 Valley Slope: ***** Averaging Conveyance By Geometric Mean.
 Energy Loss Coefficients -> Expansion: .50 Contraction: .00

X,Y-coordinates (7 pairs)

X	Y	X	Y	X	Y
1390.000	303.700	1402.000	298.800	1416.000	295.600
1425.000	294.000	1434.000	295.700	1445.000	304.400
1390.000	303.700				

Minimum and Maximum X,Y-coordinates
 Minimum X-Station: 1390.000 (associated Y-Elevation: 303.700)
 Maximum X-Station: 1445.000 (associated Y-Elevation: 304.400)
 Minimum Y-Elevation: 294.000 (associated X-Station: 1425.000)
 Maximum Y-Elevation: 304.400 (associated X-Station: 1445.000)

Roughness Data (3 SubAreas)

```

1      .100      ---
      -----      1390.000
2      .050      ---
      -----      1445.000
3      .100      ---
      -----

```

```

Discharge coefficient parameters
BRType BRWidth EMBSS EMBELv UserCD
3      24.000  2.50  303.500  .001

```

```

Pressure flow elevations
AVBCEL PFElev
***** 302.500

```

```

Abutment Parameters
ABSLPL ABSLPR XTOELT YTOELT XTOERT YTOERT
***** ***** ***** ***** ***** *****

```

** No Pier/Pile Data Encountered **

```

*-----*
* Finished Processing Header Record BRDG *
*-----*
***** W S P R O *****
Federal Highway Administration - U. S. Geological Survey
Model for Water-Surface Profile Computations.
Input Units: English / Output Units: English
*-----*

```

```

BRUSHY CREEK ROAD
6133 FILE - VERNON BRUSHY
BY KEITH FILENAME: VERNBRR2

```

```

*-----*
* Starting To Process Header Record ROAD *
*-----*

```

```

XR ROAD 140,24,2
GR 1086,312.1 1148,308.9 1216,305.5 1390,303.7 1445,304.4 1500,300.75
GR 1586,306.0 1600,312.00

```

```

*** Completed Reading Data Associated With Header Record ROAD ***
*** Storing Roadway Data In Temporary File As Record Number 4 ***

```

```

*** Data Summary For Roadway Record ROAD ***
SRD Location: 140. Cross-Section Skew: .0 Error Code 0
Roadway Width: 24.000 User-Specified Weir Coefficient: *****
Input Code Indicates Roadway Surface Consists of a Unpaved Material.

```

```

X,Y-coordinates ( 8 pairs)
X Y X Y X Y
-----
1086.000 312.100 1148.000 308.900 1216.000 305.500
1390.000 303.700 1445.000 304.400 1500.000 300.750
1586.000 306.000 1600.000 312.000
-----

```

```

Minimum and Maximum X,Y-coordinates
Minimum X-Station: 1086.000 ( associated Y-Elevation: 312.100 )
Maximum X-Station: 1600.000 ( associated Y-Elevation: 312.000 )
Minimum Y-Elevation: 300.750 ( associated X-Station: 1500.000 )
Maximum Y-Elevation: 312.100 ( associated X-Station: 1086.000 )

```

Bridge datum projection: XREFLT = *****

Federal Highway Administration - U. S. Geological Survey
 Model for Water-Surface Profile Computations.
 Input Units: English / Output Units: English

BRUSHY CREEK ROAD
 6133 FILE - VERNON BRUSHY
 BY KEITH FILENAME: VERNBRR2

Starting To Process Header Record APPR

XS APPR 240

*** Completed Reading Data Associated With Header Record APPR ***
 *** No Roughness Data Input, Propagating From Previous Section ***
 *** Storing X-Section Data In Temporary File As Record Number 5 ***

*** Data Summary For Header Record APPR ***
 SRD Location: 240. Cross-Section Skew: .0 Error Code 0
 Valley Slope: .00100 Averaging Conveyance By Geometric Mean.
 Energy Loss Coefficients -> Expansion: .50 Contraction: .00

X,Y-coordinates (9 pairs)					
X	Y	X	Y	X	Y
1300.000	302.240	1335.000	301.740	1375.000	301.540
1390.000	300.340	1400.000	295.340	1412.000	294.040
1445.000	298.540	1462.000	300.140	1477.000	302.260

Minimum and Maximum X,Y-coordinates
 Minimum X-Station: 1300.000 (associated Y-Elevation: 302.240)
 Maximum X-Station: 1477.000 (associated Y-Elevation: 302.260)
 Minimum Y-Elevation: 294.040 (associated X-Station: 1412.000)
 Maximum Y-Elevation: 302.260 (associated X-Station: 1477.000)

Roughness Data (3 SubAreas)		
SubArea	Roughness Coefficient	Horizontal Breakpoint
1	.100	---
		1390.000
2	.050	---
		1445.000
3	.100	---

Bridge datum projection(s): XREFLT XREFRT FDSTLT FDSTRT

Finished Processing Header Record APPR

W S P R O
 Federal Highway Administration - U. S. Geological Survey
 Model for Water-Surface Profile Computations.
 Input Units: English / Output Units: English

BRUSHY CREEK ROAD
 6133 FILE - VERNON BRUSHY
 BY KEITH FILENAME: VERNBRR2

EX

Summary of Boundary Condition Information

1	2158.00	*****	.0987	Sub-Critical
2	2487.00	*****	.0987	Sub-Critical
3	2799.00	*****	.0987	Sub-Critical

 * Beginning 3 Profile Calculation(s) *

***** W S P R O *****
 Federal Highway Administration - U. S. Geological Survey
 Model for Water-Surface Profile Computations.
 Input Units: English / Output Units: English

 BRUSHY CREEK ROAD
 6133 FILE - VERNON BRUSHY
 BY KEITH FILENAME: VERNBRR2

<< Beginning Computations for Profile 1 >>

====101 WSI IN WRONG FLOW REGIME AT SECID "EXIT ": SETTING WSI = CRWS.
 WSI, CRWS: 298.25 299.65

	WSEL	VHD	Q	AREA	SRDL	LEW
	EGEL	HF	V	K	FLEN	REW
	CRWS	HO	FR #	SF	ALPHA	ERR
Section: EXIT	299.654	1.752	2158.000	210.471	*****	1390.933
Header Type: XS	301.406	*****	10.253	14195.07	*****	1459.171
SRD: 20.000	299.654	*****	1.066	*****	1.072	*****

====135 CONVEYANCE RATIO OUTSIDE OF RECOMMENDED LIMITS AT SECID "FULL ".
 KRATIO: 2.31

Section: FULL	302.028	.579	2158.000	428.815	120.000	1307.825
Header Type: FV	302.607	1.200	5.032	32795.84	120.000	1476.068
SRD: 140.000	299.774	.000	.674	.0100	1.470	.001

<<< The Preceding Data Reflect The "Unconstricted" Profile >>>

====110 WSEL NOT FOUND AT SECID "APPR ": REDUCED DELTAY.
 WSLIM1, WSLIM2, DELTAY: 299.87 302.26 .50

====115 WSEL NOT FOUND AT SECID "APPR ": USED WSMIN = CRWS.
 WSLIM1, WSLIM2, CRWS: 299.87 302.26 299.87

====130 CRITICAL WATER-SURFACE ELEVATION A _ S _ S _ U _ M _ E _ D !!!!!
 ENERGY EQUATION N O T B A L A N C E D AT SECID "APPR ".
 WSBEG, WSEND, CRWS: 299.87 302.26 299.87

Section: APPR	299.874	1.752	2158.000	210.471	100.000	1390.933
Header Type: AS	301.626	*****	10.253	14195.05	100.000	1459.171
SRD: 240.000	299.874	*****	1.066	.0041	1.072	*****

<<< The Preceding Data Reflect The "Unconstricted" Profile >>>

<<< The Following Data Reflect The "Constricted" Profile >>>
 <<< Beginning Bridge/Culvert Hydraulic Computations >>>

====230 REJECTED FLOW CLASS 1 SOLUTION.

WS1, WS2, WS3:	302.03	302.03	299.77
CRWS:	299.87	*****	300.93
YMAX:	302.26	*****	304.40

====260 ATTEMPTING FLOW CLASS 4 SOLUTION.

	CRWS	HO	FR #	SF	ALPHA	ERR
Section: BRDG	302.524	*****	2025.778	259.527	120.000	1392.881
Header Type: BR	*****	1.680	7.806	22099.74	120.000	1442.628
SRD: 140.000	300.729	*****	602.527	*****	*****	.014

Bridge Summary Information - Coordinate Mode

Flow Class: 4 - Free-surface flow with embankment overtopping
 Bridge Type: 3 - Sloping embankments & sloping spillthrough abutments

C	PFELEV	BLEN	XLAB	XRAB
.0010	302.500	*****	*****	*****

No Pier(s)/Pile(s) Present at Bridge

Unconstricted Full Valley Section Water Surface Elevation: 302.028
 Downstream Bridge Section Water Surface Elevation: 302.524
 Bridge DrawDown Distance: -.496

	WSEL EGEL	VHD HF	Q V	AREA ERR	FLEN SRD	LEW REW
Section: ROAD	302.201	.547	132.222	33.087	76.000	1478.142
Header Type: XR	302.491	.304	3.996	.000	140.000	1523.762

Hydraulic Characteristics of Left and Right Roadway Sections

		Left Weir	Right Weir
Weir Flow	(Q)	.00	132.22
Weir Length	(WLEN)	*****	45.619
Weir LEW	(LEW)	*****	1478.142
Weir REW	(REW)	*****	1523.762
Maximum Depth	(DMAX)	*****	1.451
Average Depth	(DAVG)	*****	.725
Maximum Velocity	(VMAX)	*****	4.282
Average Velocity	(VAVG)	*****	3.996
Average Head	(HAVG)	*****	1.015
Weir Coefficient	(CAVG)	*****	2.833

	WSEL EGEL CRWS	VHD HF HO	Q V FR #	AREA K SF	SRDL FLEN ALPHA	LEW REW ERR
Section: APPR	302.260	.543	2158.000	451.639	76.000	1300.000
Header Type: AS	302.803	.444	4.778	34251.98	76.469	1477.000
SRD: 240.000	299.874	.229	.652	.0041	1.530	.000

** Change in Approach Section Water Surface Elevation: 2.386 **

Approach Section APPR Flow Contraction Information					
M(G)	M(K)	KQ	XLKQ	XRKQ	OTEL
.298	.000	28961.1	1385.056	1434.752	*****

<<< End of Bridge Hydraulics Computations >>>

<< Completed Computations of Profile 1 >>

Input Units: English / Output Units: English

BRUSHY CREEK ROAD
6133 FILE - VERNON BRUSHY
BY KEITH FILENAME: VERNBRR2

<< Beginning Computations for Profile 2 >>

===101 WSI IN WRONG FLOW REGIME AT SECID "EXIT ": SETTING WSI = CRWS.
WSI, CRWS: 298.49 300.05

	WSEL	VHD	Q	AREA	SRDL	LEW
	EGEL	HF	V	K	FLEN	REW
	CRWS	HO	FR #	SF	ALPHA	ERR
Section: EXIT	300.055	1.863	2487.000	238.818	*****	1390.131
Header Type: XS	301.918	*****	10.414	16771.51	*****	1462.953
SRD: 20.000	300.055	*****	1.066	*****	1.105	*****

===110 WSEL NOT FOUND AT SECID "FULL ": REDUCED DELTAY.
WSLIM1, WSLIM2, DELTAY: 300.17 302.16 .50

===115 WSEL NOT FOUND AT SECID "FULL ": USED WSMIN = CRWS.
WSLIM1, WSLIM2, CRWS: 300.17 302.16 300.17

===130 CRITICAL WATER-SURFACE ELEVATION A _ S _ S _ U _ M _ E _ D !!!!!
ENERGY EQUATION N _ O _ T _ B _ A _ L _ A _ N _ C _ E _ D AT SECID "FULL ".
WSBEG, WSEND, CRWS: 300.17 302.16 300.17

Section: FULL	300.175	1.863	2487.000	238.818	120.000	1390.131
Header Type: FV	302.038	*****	10.414	16771.47	120.000	1462.953
SRD: 140.000	300.175	*****	1.066	.0108	1.105	*****

<<< The Preceding Data Reflect The "Unconstricted" Profile >>>

===110 WSEL NOT FOUND AT SECID "APPR ": REDUCED DELTAY.
WSLIM1, WSLIM2, DELTAY: 300.27 302.26 .50

===115 WSEL NOT FOUND AT SECID "APPR ": USED WSMIN = CRWS.
WSLIM1, WSLIM2, CRWS: 300.27 302.26 300.27

===130 CRITICAL WATER-SURFACE ELEVATION A _ S _ S _ U _ M _ E _ D !!!!!
ENERGY EQUATION N _ O _ T _ B _ A _ L _ A _ N _ C _ E _ D AT SECID "APPR ".
WSBEG, WSEND, CRWS: 300.27 302.26 300.27

Section: APPR	300.275	1.863	2487.000	238.818	100.000	1390.131
Header Type: AS	302.138	*****	10.414	16771.43	100.000	1462.953
SRD: 240.000	300.275	*****	1.066	.0108	1.105	*****

<<< The Preceding Data Reflect The "Unconstricted" Profile >>>

<<< The Following Data Reflect The "Constricted" Profile >>>

<<< Beginning Bridge/Culvert Hydraulic Computations >>>

===230 REJECTED FLOW CLASS 1 SOLUTION.
WS1, WS2, WS3: 300.17 300.17 300.17
CRWS: 300.27 ***** 301.40
YMAX: 302.26 ***** 304.40

===260 ATTEMPTING FLOW CLASS 4 SOLUTION.

	WSEL	VHD	Q	AREA	SRDL	LEW
	EGEL	HF	V	K	FLEN	REW
	CRWS	HO	FR #	SF	ALPHA	ERR
Section: BRDG	302.886	*****	2338.514	277.802	120.000	1391.993

Bridge Summary Information - Coordinate Mode

Flow Class: 4 - Free-surface flow with embankment overtopping
 Bridge Type: 3 - Sloping embankments & sloping spillthrough abutments

C	PFELEV	BLEN	XLAB	XRAB
.0010	302.500	*****	*****	*****

No Pier(s)/Pile(s) Present at Bridge

Unconstricted Full Valley Section Water Surface Elevation: 300.175
 Downstream Bridge Section Water Surface Elevation: 302.886
 Bridge DrawDown Distance: -2.712

	WSEL EGEL	VHD HF	Q V	AREA ERR	FLEN SRD	LEW REW
Section: ROAD	302.248	.726	148.486	35.297	76.000	1477.424
Header Type: XR	302.570	.404	4.207	.000	140.000	1524.542

Hydraulic Characteristics of Left and Right Roadway Sections

		Left Weir	Right Weir
Weir Flow (Q)		.00	148.49
Weir Length (WLEN)	*****		47.119
Weir LEW (LEW)	*****		1477.424
Weir REW (REW)	*****		1524.542
Maximum Depth (DMAX)	*****		1.498
Average Depth (DAVG)	*****		.749
Maximum Velocity (VMAX)	*****		4.413
Average Velocity (VAVG)	*****		4.207
Average Head (HAVG)	*****		1.071
Weir Coefficient (CAVG)	*****		2.843

	WSEL EGEL CRWS	VHD HF HO	Q V FR #	AREA K SF	SRDL FLEN ALPHA	LEW REW ERR
Section: APPR	302.260	.722	2487.000	451.639	76.000	1300.000
Header Type: AS	302.982	.569	5.507	34251.98	81.088	1477.000
SRD: 240.000	300.275	.252	.752	.0108	1.530	.000

** Change in Approach Section Water Surface Elevation: 1.985 **

Approach Section APPR Flow Contraction Information						
M(.G)	M(K)	KQ	XLKQ	XRKQ	OTEL	
.437	.000	29017.9	1383.737	1434.797	*****	

<<< End of Bridge Hydraulics Computations >>>

<< Completed Computations of Profile 2 >>

***** W S P R O *****

Federal Highway Administration - U. S. Geological Survey
 Model for Water-Surface Profile Computations.
 Input Units: English / Output Units: English

-----*

BRUSHY CREEK ROAD

<< Beginning Computations for Profile 3 >>

===101 WSI IN WRONG FLOW REGIME AT SECID "EXIT ": SETTING WSI = CRWS.
 WSI, CRWS: 298.70 300.40

	WSEL	VHD	Q	AREA	SRDL	LEW
	EGEL	HF	V	K	FLEN	REW
	CRWS	HO	FR #	SF	ALPHA	ERR
Section: EXIT	300.396	1.975	2799.000	264.561	*****	1386.556
Header Type: XS	302.370	*****	10.580	19262.16	*****	1465.364
SRD: 20.000	300.396	*****	1.084	*****	1.134	*****

===110 WSEL NOT FOUND AT SECID "FULL ": REDUCED DELTAY.
 WSLIM1, WSLIM2, DELTAY: 300.52 302.16 .50

===115 WSEL NOT FOUND AT SECID "FULL ": USED WSMIN = CRWS.
 WSLIM1, WSLIM2, CRWS: 300.52 302.16 300.52

===130 CRITICAL WATER-SURFACE ELEVATION A _ S _ S _ U _ M _ E _ D !!!!!
 ENERGY EQUATION N O T B A L A N C E D AT SECID "FULL ".
 WSBEQ, WSEND, CRWS: 300.52 302.16 300.52

	WSEL	VHD	Q	AREA	SRDL	LEW
	EGEL	HF	V	K	FLEN	REW
	CRWS	HO	FR #	SF	ALPHA	ERR
Section: FULL	300.516	1.975	2799.000	264.562	120.000	1386.556
Header Type: FV	302.490	*****	10.580	19262.22	120.000	1465.364
SRD: 140.000	300.516	*****	1.084	.0119	1.134	*****

<<< The Preceding Data Reflect The "Unconstricted" Profile >>>

===110 WSEL NOT FOUND AT SECID "APPR ": REDUCED DELTAY.
 WSLIM1, WSLIM2, DELTAY: 300.62 302.26 .50

===115 WSEL NOT FOUND AT SECID "APPR ": USED WSMIN = CRWS.
 WSLIM1, WSLIM2, CRWS: 300.62 302.26 300.62

===130 CRITICAL WATER-SURFACE ELEVATION A _ S _ S _ U _ M _ E _ D !!!!!
 ENERGY EQUATION N O T B A L A N C E D AT SECID "APPR ".
 WSBEQ, WSEND, CRWS: 300.62 302.26 300.62

	WSEL	VHD	Q	AREA	SRDL	LEW
	EGEL	HF	V	K	FLEN	REW
	CRWS	HO	FR #	SF	ALPHA	ERR
Section: APPR	300.616	1.975	2799.000	264.561	100.000	1386.556
Header Type: AS	302.590	*****	10.580	19262.10	100.000	1465.364
SRD: 240.000	300.616	*****	1.084	.0119	1.134	*****

<<< The Preceding Data Reflect The "Unconstricted" Profile >>>

<<< The Following Data Reflect The "Constricted" Profile >>>
 <<< Beginning Bridge/Culvert Hydraulic Computations >>>

===230 REJECTED FLOW CLASS 1 SOLUTION.
 WSI, WS2, WS3: 300.52 300.52 300.52
 CRWS: 300.62 ***** 301.83
 YMAX: 302.26 ***** 304.40

===260 ATTEMPTING FLOW CLASS 4 SOLUTION.

	WSEL	VHD	Q	AREA	SRDL	LEW
	EGEL	HF	V	K	FLEN	REW
	CRWS	HO	FR #	SF	ALPHA	ERR
Section: BRDG	303.236	*****	2631.396	295.883	120.000	1391.137
Header Type: BR	*****	1.740	8.893	26505.27	120.000	1443.528
SRD: 140.000	301.607	*****	659.792	*****	*****	.018

Bridge Summary Information - Coordinate Mode

Flow Class: 4 - Free-surface flow with embankment overtopping

C	PFELEV	BLEN	XLAB	XRAB
.0010	302.500	*****	*****	*****

No Pier(s)/Pile(s) Present at Bridge

Unconstricted Full Valley Section Water Surface Elevation: 300.516
 Downstream Bridge Section Water Surface Elevation: 303.236
 Bridge DrawDown Distance: -2.720

	WSEL EGEL	VHD HF	Q V	AREA ERR	FLEN SRD	LEW REW
Section: ROAD	302.248	.919	167.604	35.297	76.000	1477.424
Header Type: XR	302.656	.512	4.748	.000	140.000	1524.542

Hydraulic Characteristics of Left and Right Roadway Sections

		Left Weir	Right Weir
Weir Flow (Q)		.00	167.60
Weir Length (WLEN)	*****		47.119
Weir LEW (LEW)	*****		1477.424
Weir REW (REW)	*****		1524.542
Maximum Depth (DMAX)	*****		1.498
Average Depth (DAVG)	*****		.749
Maximum Velocity (VMAX)	*****		4.612
Average Velocity (VAVG)	*****		4.748
Average Head (HAVG)	*****		1.157
Weir Coefficient (CAVG)	*****		2.858

	WSEL EGEL CRWS	VHD HF HO	Q V FR #	AREA K SF	SRDL FLEN ALPHA	LEW REW ERR
Section: APPR	302.260	.914	2799.000	451.639	76.000	1300.000
Header Type: AS	303.174	.650	6.197	34251.98	79.708	1477.000
SRD: 240.000	300.616	.269	.846	.0119	1.530	.000

** Change in Approach Section Water Surface Elevation: 1.645 **

Approach Section APPR Flow Contraction Information						
M(G)	M(K)	KQ	XLKQ	XRKQ	OTEL	
.463	.000	29403.4	1383.355	1435.679	*****	

<<< End of Bridge Hydraulics Computations >>>

<< Completed Computations of Profile 3 >>

ER

***** Normal end of WSPRO execution. *****
 ***** Elapsed Time: 0 Minutes 1 Seconds *****

APPENDIX D



CULVERT DISCHARGE DATA HYDR-1120

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
HYDRAULICS SECTION
DESIGNER: K Capdepon
REMARKS : Brushy Creek - Vernon Parish

HYDR1120-071498

DATE: 05-30-2012

STATE PROJECT NUMBER 00-00-0000

REINFORCED CONCRETE PIPE (INLET TYPE: 1-HEADWALL)

STATION	100+00.00
NUMBER OF PIPES	4
DIAMETER (IN.)	48
DESIGN DISCHARGE (CFS)	150.00
TAILWATER (FT.)	4.00
LENGTH (FT.)	80.00
SLOPE (FT./FT.)	.00300

HEADWATER (OUTLET)	3.97	FT.
OUTLET VELOCITY	2.98	F.P.S.
DEPTH OF SCOUR FOR TYPE A SOIL	1.33	FT.

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
HYDRAULICS SECTION
DESIGNER: K Capdepon
REMARKS : Brushy Creek - Vernon Parish

HYDR1120-071498

DATE: 05-30-2012

STATE PROJECT NUMBER 00-00-0000

CORRUGATED METAL PIPE (INLET TYPE: 1-HEADWALL)

STATION	100+00.00
NUMBER OF PIPES	4
DIAMETER (IN.)	48
CORRUGATION	2 2/3" X 1/2"
DESIGN DISCHARGE (CFS)	150.00
TAILWATER (FT.)	4.00
LENGTH (FT.)	80.00
SLOPE (FT./FT.)	.00300

HEADWATER (OUTLET)	4.15	FT.
OUTLET VELOCITY	2.98	F.P.S.
DEPTH OF SCOUR FOR TYPE A SOIL	1.33	FT.

Brushy Creek - Vernon Parish

6/11/2012 14:44

Project Cost Estimate -

Item	Description	Quantity	Unit	Price	Amount
201-01	Clearing and Grubbing	1	LS	\$ 10,000.00	\$ 10,000.00
203-02	Drainage Excavation	1	LS	\$ 4,000.00	\$ 4,000.00
203-05	Excavation and Embankment	1	LS	\$100,000.00	\$100,000.00
203-07	Borrow	1	LS	\$ 75,000.00	\$ 75,000.00
204-06	Silt Fence	3,242	LF	\$ 6.00	\$ 19,452.00
403-01	Aggregate Roadway Surfacing	738	CY	\$ 25.00	\$ 18,450.00
701-01	48" RCP	160	LF	\$ 250.00	\$ 40,000.00
713-01	Temporary Signs and Barricades	1	LS	\$ 15,000.00	\$ 15,000.00
717-01	Seeding	50	LBS	\$ 100.00	\$ 5,000.00
718-01	Fertilizer	1100	LBS	\$ 10.00	\$ 11,000.00
726-01	Bedding Material	68	CY	\$ 100.00	\$ 6,800.00
727-01	Mobilization	1	LS	\$ 15,000.00	\$ 15,000.00
805-01	Class A Concrete Headwalls	1	LS	\$ 15,000.00	\$ 15,000.00
806-01	Reinforcement	1	LS	\$ 5,000.00	\$ 5,000.00
S-001	Project sign	1	LS	\$ 1,500.00	\$ 1,500.00

Construction total \$341,202.00

Contingencies \$ 51,180.30

Construction Total \$392,382.30

AMENDMENT NO. 2
HYDRAULIC REPORT
FOR
BRUSHY CREEK DRAINAGE
IMPROVEMENTS
HMGP #1603n-115-0006
FEMA PROJECT #0297

PREPARED FOR:
VERNON PARISH
POLICE JURY

SEPTEMBER, 2013



BRYANT HAMMETT
& ASSOCIATES, LLC
CIVIL ENGINEERING & LAND SURVEYING

6885 Hwy. 84 West ♦ FERRIDAY, LA 71334
(318)757~6576 ♦ (318)757~6578 Fax
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HYDRAULIC IMPACT REPORT

Brushy Creek Road Drainage Improvements Vernon Parish, LA

I. GENERAL PROJECT INFORMATION

A. Site Location

The subject site is located near Hornbeck, LA, approximately 0.75 miles south of the intersection of LA Hwy 392 and 171 in the northern portion of Vernon Parish. The site is located in Section 21, Township 4 North, Range 10 West. The site is shown in detail on the watershed boundary map located in the appendix of this report.

B. Existing Conditions

The existing conditions of the site include an aggregate 2 lane road and a 48 foot bridge made with railroad flat cars. During heavy rains Brushy Creek overflows flooding a portion of Brushy Creek Road, the project area. Most of the water from the town of Hornbeck, LA., 0.75 miles to the north, utilizes this creek as the drainage outfall as shown on the drainage area map. There are 17 homes and 1 business that are beyond the flood prone portion of the road and the road is a dead – end, so there is no other way out by vehicle when the flooding occurs. During the flooding events the road is impassable from 12 to 72 hours, in 2006 1325 ft. of the road was flooded for approximately 72 hours. Typically the conditions are flash flooding and can occur during and after short and intense rainfall events.

II. DESIGN CONSIDERATIONS

A. Historical Flood Information

No recorded data was found for the subject site by searching the U.S. Geological Survey and U.S. Corps of Engineers stage-discharge records; however the Vernon Parish Police Jury have recorded numerous flooding events including a flood in 2006 making the road impassable by vehicle for 72 hours. This flood event covered the road a depth of 2 to 3 feet deep during the height of the flood.

B Potential for Watershed Development

Based upon the present nature of the contributing watershed and its distance from any significant existing metropolitan area, no significant urban development is expected to take place within the watershed boundaries during the next 20 years.

C. Utility Conflicts

There are some utilities within the project area; they cannot be completely avoided for the construction of this project.

D. Design Criteria

The design criterion for design storm frequency is the 50-year flood or the flow from a 50 yr rain event.

III. DESIGN ANALYSIS

A. Hydrology

As shown on the watershed boundary map, the contributing drainage area contains approximately 2242 acres. The majority of the area within the watershed is woods and small open spaces, with hilly and rolling topography. Minimal development is present and is expected to remain as such within the watershed during the next 20 years. Design discharges were computed using the USGS method, as the drainage area is greater than 2,000 acres. A map showing pertinent watershed details and data used in the design discharge determination is contained in the appendix of this report.

B. Hydraulics

A representative flood plain cross-section was constructed utilizing field survey information, U.S.G.S. topographic maps, and field reconnaissance data. Manning's equation was then used to establish a stage-discharge relationship for the site by estimating the flood plain roughness coefficients and calculating the average flood plain slope from the U.S.G.S. quadrangle maps.

The 50-year flow of 2487 cfs dictates the design of the project improvements

C. Design Parameters

The design of the improvements is based on the 50-year event for the watershed. The project has been designed at lines approximately equivalent to the existing conditions with grades being adjusted in the lower areas of the roadway within the project. The level of flooding created by the project improvements at the design discharge has been determined to have no more adverse impact on the surrounding property than the existing conditions.

D. Recommendations

Listed below is the project design and associated data recommended for the project.

It is recommended that the existing roadway be raised to maintain the bridge deck elevation on each side of the bridge until high points in the road are met on either side of the bridge. This would generally allow for a 3.5 to 4 foot elevation increase of the road, in the lower portions of the road.

In addition to the road elevation increase there will be a pair of 3-barrel 60" concrete pipe structures installed to handle the extra flow, including flared wing walls and headwalls. These structures will be placed in/under Brushy Creek Road approximately 300 and 450 feet north of the bridge. The structure will allow drainage to cross under the road from west to east. A drainage ditch will need to be constructed along the east side of the road heading south from the culverts to a natural outfall, south east of the bridge.

Addendum 2:

This mitigation will provide for a 40 year (rain event) Water Surface Elevation of 303.89 msl. This elevation will barely keep the newly built up road from flooding and will increase the potential flooding at the 50 year event from 303.41 msl to 304.07 msl or 0.66 ft.

The 100 year event increase of backwater is increased by the same amount. This increase is less than the acceptable value of a 1 foot increase as long as the property upstream is not covered by the national NFIP program.

This scenario will provide for a comfortable passage along the built up roadway with flooding of the roadway being curtailed. However, the roadway would be soaked after a long or extended rain event and maintenance would need to be provided after flooding as the base and surface course would be waterlogged.

The construction expense of this mitigation is estimated to be:
\$ 442,412

Maintenance before mitigation would be as follows.

The maintenance required would be road grading and addition of material after every 2 year event:

Cost for Limestone = \$ 36.00 per CY

Cost for Limestone Spreading = \$ 4.00 per CY

Total cost for Limestone = \$40.00 per CY.

To replace a 3” layer of aggregate on the flooded portion of the road would require 146 CY.

Therefore every 2 years an expense of at least \$ 5,840.00 could be expected for road maintenance after flooding.

Multiply this expense by 25 (25 – 2 year events may happen in a 50 year time period) and the cost for maintenance before mitigation is \$ 146,000.

Mitigation Scenario 2

The second scenario would be to replace the existing “flat car” bridge with a 4-span concrete structure. This would allow for a larger area of opening under the bridge for extra flow of flood waters along with a more substantial structure for the residents of the properties beyond the existing bridge. The installation of this structure will allow for complete 50 year flood protection for the road and residents beyond the bridge. The newly built up road would have more free board during a 50 year event and the backwater would lessen upstream of the bridge due to the greater drainage capacity of the new structure. The proposed culvert system would need to remain in this scenario for the flood elevations to remain this favorable.

In this mitigation scenario the backwater elevation at the 50 year flood event would increase only 0.14 feet from 303.41 at existing condition to 303.55 at the mitigated condition. At the 100 year flood event the backwater would increase only 0.4’ from 303.54 to 303.94, this is well within the LADOTD range of 1 foot or less backwater as stated earlier.

There would be no maintenance due to flooding with this scenario and that would correlate to a maintenance savings of \$5,840.00 over a 2 year period or \$ 2,620.00 annually over a 50 year period.

APPENDIX F



BACKWATER ANALYSIS

BRUSHY CREEK (2)

BACKWATER ANALYSIS

Revised

BRUSHY CREEK ROAD OVER BRUSHY CREEK

9/12/2013

EXISTING CONDITIONS

BRIDGE SIZE		FLOW DESIGN CFS	FLOOD YR.	WSEL APPROACH FT.	WSEL BRIDGE FT.	AREA OF OPENING SQ.FT.
48'	2 Yr Flow	678	2	301.80	299.48	2088.00
48'	5 Yr Flow	1184	5	302.59	301.66	3090.00
48'	10 Yr Flow	1553	10	302.87	301.89	3512.00
48'	25 Yr Flow	2158	25	303.25	302.19	4477.00
48'	40 Yr Flow	2355	40	303.36	302.25	4525.00
48'	50 Yr Flow	2487	50	303.41	302.29	4562.00
48'	100 Yr Flow	2799	100	303.54	302.41	4633.00

PROPOSED CONDITIONS

ADDING CULVERTS TO EXISTING BRIDGE

(2- SITES OF STRUCTURES)

BARRELS

2	4	2 Yr Flow	678	2	303.96	299
		5 Yr Flow	1184	5	304.13	302
<i>(4-48" CULVERTS TOTAL)</i>		10 Yr Flow	1553	10	304.21	302
		25 Yr Flow	2158	25	304.37	302
		40 Yr Flow	2355	40	304.4	302
		50 Yr Flow	2487	50	304.43	302
		100 Yr Flow	2799	100	304.51	302
3	5	2 Yr Flow	678	2	301.36	299
		5 Yr Flow	1184	5	302.62	302
<i>(6-60" CULVERTS TOTAL)</i>		10 Yr Flow	1553	10	303.1	302
		25 Yr Flow	2158	25	304.11	302
		40 Yr Flow	2355	40	304.17	302
		50 Yr Flow	2487	50	304.19	302
		100 Yr Flow	2799	100	304.25	302
4	5	2 Yr Flow	678	2	301.33	299
		5 Yr Flow	1184	5	302.5	302
<i>(8-60" CULVERTS TOTAL)</i>		10 Yr Flow	1553	10	302.92	302
		25 Yr Flow	2158	25	303.62	302
		40 Yr Flow	2355	40	303.89	302
		50 Yr Flow	2487	50	304.07	302
		100 Yr Flow	2799	100	304.18	302

BACKWATER ANALYSIS

Revised

BRUSHY CREEK ROAD OVER BRUSHY CREEK

9/12/2013

EXISTING CONDITIONS

BRIDGE SIZE		FLOW DESIGN CFS	FLOOD YR.	WSEL APPROACH FT.	WSEL BRIDGE FT.
48'	2 Yr Flow	678	2	301.80	299.48
48'	5 Yr Flow	1184	5	302.59	301.66
48'	10 Yr Flow	1553	10	302.87	301.89
48'	25 Yr Flow	2158	25	303.25	302.19
48'	50 Yr Flow	2487	50	303.41	302.29
48'	100 Yr Flow	2799	100	303.54	302.41

PROPOSED CONDITIONS**ADDING (2)-3 BARRELL 60" CULVERT SYSTEMS AND NEW 4-SPAN BRIDGE**

BRIDGE SIZE		FLOW DESIGN CFS	FLOOD YR.	WSEL APPROACH FT.	WSEL BRIDGE FT.
80'	2 Yr Flow	678	2	301.09	299.56
80'	5 Yr Flow	1184	5	301.70	300.16
80'	10 Yr Flow	1553	10	302.22	300.3
80'	25 Yr Flow	2158	25	303.08	300.34
80'	50 Yr Flow	2487	50	303.55	300.25
80'	100 Yr Flow	2799	100	303.94	300.15

APPENDIX H



ENGINEER'S OPINION OF PROBABLE COST

**VERNON PARISH POLICE JURY
BRUSHY CREEK DRAINAGE IMPROVEMENTS
HMGP #1603n-115-0006
FEMA PROJECT #0297
ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
9/12/2013**

CONSTRUCTION - BRIDGE INCLUDED

Item	Description	Quantity	Unit	Price	Amount
201-01	Clearing and Grubbing	1	LS	\$ 15,000.00	\$ 15,000.00
203-02	Drainage Excavation	1	LS	\$ 7,500.00	\$ 7,500.00
203-05	Excavation and Embankment	1	LS	\$ 100,000.00	\$ 100,000.00
203-07	Borrow	1	LS	\$ 75,000.00	\$ 75,000.00
204-06	Silt Fence	3242	LF	\$ 6.00	\$ 19,452.00
403-01	Aggregate Roadway Surfacing	738	CY	\$ 25.00	\$ 18,450.00
701-01	60" CMP	320	LF	\$ 120.00	\$ 38,400.00
713-01	Barricades	1	LS	\$ 15,000.00	\$ 15,000.00
717-01	Seeding	50	LBS	\$ 100.00	\$ 5,000.00
718-01	Fertilizer	1100	LBS	\$ 10.00	\$ 11,000.00
726-01	Bedding Material	136	CY	\$ 100.00	\$ 13,600.00
727-01	Mobilization	1	LS	\$ 15,000.00	\$ 15,000.00
804-01	Pre-Cast Concrete Piles	1100	LS	\$ 50.00	\$ 55,000.00
805-01	Class A Concrete Headwalls	1	LS	\$ 20,000.00	\$ 20,000.00
805-10	Bridge Superstructure and Substructure	4	Span	\$ 95,000.00	\$ 380,000.00
806-01	Reinforcement	1	LS	\$ 5,000.00	\$ 5,000.00

***OPINION OF PROBABLE COST FOR CONSTRUCTION* \$ 793,402.00**

**VERNON PARISH POLICE JURY
BRUSHY CREEK DRAINAGE IMPROVEMENTS
HMGP #1603n-115-0006
FEMA PROJECT #0297
ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
4/30/2013**

CONSTRUCTION

Item	Description	Quantity	Unit	Price	Amount
201-01	Clearing and Grubbing	1	LS	\$ 15,000.00	\$ 15,000.00
203-02	Drainage Excavation	1	LS	\$ 10,000.00	\$ 10,000.00
203-05	Excavation and Embankment	1	LS	\$ 100,000.00	\$ 100,000.00
203-07	Borrow	1	LS	\$ 75,000.00	\$ 75,000.00
204-06	Silt Fence	3242	LF	\$ 6.00	\$ 19,452.00
403-01	Aggregate Roadway Surfacing	738	CY	\$ 40.00	\$ 29,520.00
701-01	66" CMP	320	LF	\$ 262.00	\$ 83,840.00
713-01	Barricades	1	LS	\$ 15,000.00	\$ 15,000.00
717-01	Seeding	50	LBS	\$ 100.00	\$ 5,000.00
718-01	Fertilizer	1100	LBS	\$ 10.00	\$ 11,000.00
726-01	Bedding Material	136	CY	\$ 100.00	\$ 13,600.00
727-01	Mobilization	1	LS	\$ 40,000.00	\$ 40,000.00
805-01	Class A Concrete Headwalls	1	LS	\$ 20,000.00	\$ 20,000.00
806-01	Reinforcement	1	LS	\$ 5,000.00	\$ 5,000.00

OPINION OF PROBABLE COST FOR CONSTRUCTION **\$ 442,412.00**

APPENDIX D
EXTERNAL AGENCY
CORRESPONDENCE



FEMA

U.S. Department of Homeland Security
Federal Emergency Management Agency
FEMA-1603/1607 -DR-LA
FEMA Louisiana Recovery Office
Environmental/Historic Preservation
1500 Main Street
Baton Rouge, LA 70802

June 10, 2015

Pam Breaux
State Historic Preservation Officer
Department of Culture, Recreation & Tourism
P.O. Box 44247
Baton Rouge LA 70804

No known historic properties will be affected by this undertaking. This effect determination could change should new information come to our attention.
Pam Breaux 6-26-15
Pam Breaux Date
State Historic Preservation Officer

RE: Section 106 Review Consultation, Hurricane Katrina, FEMA-1603-DR-LA

Applicant: Vernon Parish
Undertaking: Brushy Creek Drainage Improvements and Bridge Replacement, Parish Road 2025, Hornbeck, Vernon Parish, Louisiana (HMGP #1603-297)
Determination: No Historic Properties Affected

Dear Ms. Breaux:

The Federal Emergency Management Agency (FEMA) will be providing funds authorized under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended, in response to the following major Disaster Declarations:

FEMA-1603-DR-LA, dated August 29, 2005, as amended.

FEMA, through its 404 Hazard Mitigation Grant Program, proposes to fund the Brushy Creek drainage improvements and bridge replacement (Undertaking) as requested by Vernon Parish (Applicant). FEMA is initiating Section 106 review for the above referenced properties in accordance with the Louisiana State-Specific Programmatic Agreement among FEMA, the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP), the Louisiana State Historic Preservation Officer of the Department of Culture Recreation and Tourism (SHPO), the Alabama-Coushatta Tribe of Texas (ACTT), the Chitimacha Tribe of Louisiana (CTL), the Choctaw Nation of Oklahoma (CNO), the Jena Band of Choctaw Indians (JBCTI), the Mississippi Band of Choctaw Indians (MBCI), the Seminole Tribe of Florida (STF), and the Advisory Council on Historic Preservation (ACHP) regarding FEMA's Hazard Mitigation Grant Program (2011 LA HMGP PA) dated January 31st, 2011 and providing the State Historic Preservation Office with the opportunity to consult on the proposed Undertaking. Documentation in this letter is consistent with the requirements in 36 CFR §800.11(d).

Description of the Undertaking

Vernon Parish is proposing to make drainage improvements and replace an existing railroad "flat car" bridge on Parish Road 2025 across Brushy Creek in the Town of Hornbeck, Louisiana (Figure 1). The work includes elevating the existing roadway up to 4' higher than the current elevation and upgrading the existing bridge to a 4 span concrete bridge measuring 80 feet in length. In addition, two sets of 4 barrel 60" Corrugated Metal Pipe (CMP) culverts are proposed upstream to provide

relief at the bridge crossing and will flow into Brushy Creek via a new ditch that diverts water downstream of the bridge. The CMP structures will have concrete headwalls on each end with rip-rap added as needed for erosion control. A temporary bridge will be needed immediately south of the existing bridge while the new bridge is under construction. Additional right-of-way will be acquired to allow for three workspaces, the temporary bridge to be placed during construction activities, and the new ditch along the east side of Parish Road 2025. Two of the workspaces are planned along the west side of Parish Road 2025, and the third workspace and temporary bridge are planned to the south of the existing bridge. Plans showing the bridge replacement, road elevation, workspaces, and new rights-of-way are enclosed.

Area of Potential Effects (APE)

This letter serves as consultation for the APE in accordance with Stipulation VII.B of the 2011 HMGP PA. The APE for this undertaking includes Parish Road 2025 from GPS to GPS and the additional right-of-way required for the three workspace areas, the temporary bridge location, and the new ditch. This APE includes areas of both standing structure and archaeological concerns (Figure 2).

Identification and Evaluation

Historic Properties within the APE were identified based on FEMA's review of the National Register of Historic Places (NRHP) database, the Louisiana Department of Transportation and Development (LaDOTD) Historic Bridge Survey, the Louisiana Cultural Resources Map, the NRCS's Websoil Survey data, historic USGS map research, and a site visit conducted on May 20, 2015 by FEMA Historic Preservation staff. This data was evaluated by FEMA using the National Register (NR) Criteria.

The only structure present within the defined APE is the existing bridge over Brushy Creek (Figure 6). According to the LaDOTD Historic Bridge survey data, the Brushy Creek bridge on Parish Road 2025 was built after 1971 and does not meet the age requirement to be eligible for the National Register. Therefore, the APE does not include any historic structures. The NRHP database confirms that the APE is not located within or adjacent to recorded historic districts or individually listed or eligible properties.

Review of the La Cultural resources Map indicates the APE has not been surveyed for cultural resources, and there are no archaeological sites recorded within 2 miles of the APE. FEMA's review of the USDA's Websoil Survey indicated that the soils throughout the project area are coded as Guyton-Iuka complex, which is a frequently flooded, poorly drained soil series with found in floodplains or depressions and composed on Holocene age alluvium. FEMA's review of historic maps for this location included the 1942 15' Florein USGS Map, and the 1954 7.5' Hornbeck USGS Map. These two maps show the APE developed as a limited use road with some form of bridge (though not the current bridge) in place over Brushy Creek as early as 1954. No earlier maps with sufficient detail were located for this review. Finally, FEMA staff conducted a site visit to the project area focusing on the examination of the proposed new right-of-way areas.

The area identified in Figure 2 to the east of the current Parish Road 2025 alignment (noted as the new right-of-way) was completely inundated and therefore inaccessible for subsurface testing. However, FEMA did conduct four subsurface tests throughout the accessible portions of the

proposed new right-of-way (Figures 3 and 4). Additionally, photos taken to characterize the area during the site visit are included as Figures 5-12.

Summary of the shovel test data:

Shovel Test #1 (31.31916, -93.39711): ST1 was excavated at the location of the workspace to the southeast of the existing bridge and roadway. The shovel test was excavated from the surface to a depth of approximately 56 cm below surface and exhibited three stratigraphic levels. Strat I (0-15 cmbs) consisted of brown (10YR4/3) clayey sand full of gravel and plastic. Strat II (15-46 cmbs) consisted of brown (10YR5/3) clayey sand with gravel, plastic, and a cigarette pack (at 30 cmbs). Strat III consisted of pale brown (10YR6/3) clayey sand. No evidence of archaeological deposits was recovered from ST1. The results of the shovel test seem consistent with sand and debris washed off the roadway during rain and flooding events.

Shovel Test #2 (31.31910, -93.39727): ST2 was excavated at the location of the right-of-way needed for the temporary bridge in an area that exhibited less evidence of roadway washout near the bank of Brushy Creek. The shovel test was excavated from the surface to a depth of approximately 58 cm below surface and consisted of a single stratigraphic level of light yellowish brown (10YR6/4) sand. The sand was slightly wet and some gravel was present at or near the surface. No evidence of archaeological deposits was recovered from the shovel test. The results of this test seem consistent with deposits associated with the nearby creek with some gravels potentially deposited from high water events.

Shovel Test #3 (31.32041, -93.39773): ST3 was excavated at the northern workspace and new culvert location on the west side of Parish Road 2025, as marked by the engineer. The shovel test was excavated from the surface to a depth of approximately 60 cm below surface and exhibited three stratigraphic levels. Strat I (0-10 cmbs) consisted of dark yellowish brown (10YR4/4) sand. Strat II (10-35 cmbs) consisted of pale brown (10YR6/3) mottled with brown (10YR5/3) sand. Strat III (35-60 cmbs) consisted of dark yellowish brown (10YR4/4) sand. No evidence of archaeological deposits was recovered from ST3. The results of the shovel test seem consistent with deposits associated with the nearby creek.

Shovel Test #4 (31.32000, -93.39762): ST4 was excavated at the southern workspace and new culvert location along the west side of Parish road 2025, as marked by the engineer. The shovel test was excavated from the surface to a depth of approximately 60 cm below surface and exhibited two stratigraphic levels. Strat I (0-35 cmbs) consisted of pale brown (10YR6/3) sand. Strat II (35-60 cmbs) consisted of brown (10YR4/3) clayey sand. No evidence of archaeological deposits was recovered from ST4. The results of the shovel test seem consistent with deposits associated with the nearby creek.

Based on the available evidence, it is unlikely that intact NRHP-eligible archaeological deposits are present in the APE. The historic map and soils data indicate that there is low-likelihood of pre-contact or historic period deposits. This is further supported by the pedestrian and subsurface investigations which did not observe or recover any evidence of archaeological deposits. In fact, the APE exhibits clear evidence of ongoing inundation and repetitive high water from heavy rainfall and other flooding events.

Assessment of Effects

Based on the aforementioned identification and evaluation, FEMA has determined that there are no historic properties as defined in 36 CFR 800.16(l) within the APE. Therefore, FEMA has determined a finding of **No Historic Properties Affected** for this Undertaking and is submitting this Undertaking to you for your review and comment. FEMA requests your comments within 15 days.

We look forward to your concurrence with this determination. Should you have any questions or need additional information regarding this Undertaking, please contact me at (504) 247-7771 or jerame.cramer@fema.dhs.gov, or Kathryn Wollan, Lead Historic Preservation Specialist at (504) 289-1941 or kathryn.wollan@fema.dhs.gov or Jason Emery, Lead Historic Preservation Specialist at (504) 570-7292 or jason.emery@fema.dhs.gov.

Sincerely,

**JERAME J
CRAMER**

Digitally signed by JERAME J CRAMER
DN: c=US, o=U.S. Government, ou=Department
of Homeland Security, ou=FEMA, ou=People,
cn=JERAME J CRAMER,
0.9.2342.19200300.100.1.1=0972893910.FEMA
Date: 2015.06.11 15:53:14 -05'00'

Jeramé J. Cramer
Environmental Liaison Officer
FEMA-DR-1603-LA, FEMA-DR-1607-LA

CC: File
Division of Archaeology Reviewer
Division of Historic Preservation Reviewer
State Historic Preservation Office

Enclosures

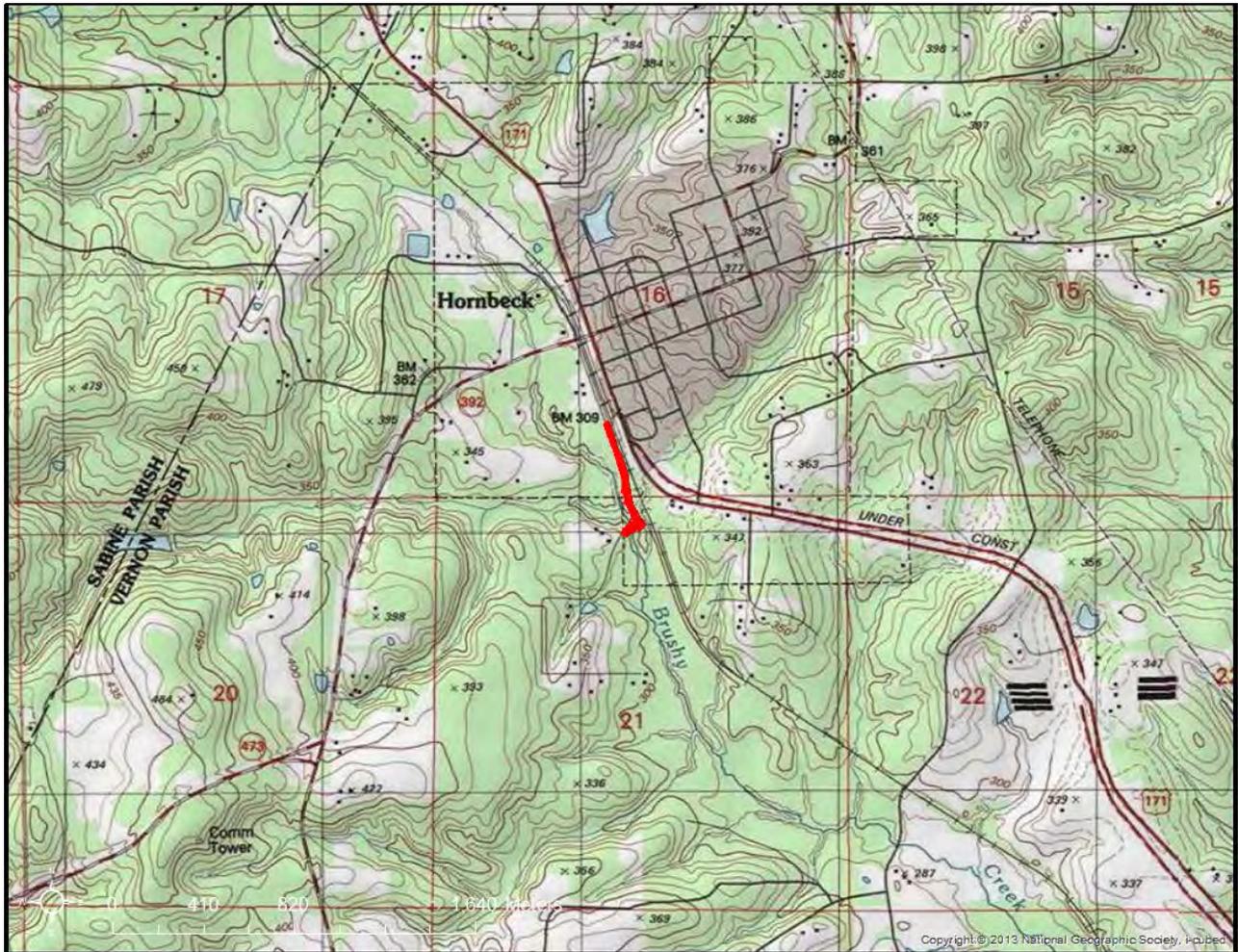


Figure 1. USGS Topographic Map showing project APE in red.



Figure 2. Aerial image showing project APE: Existing ROW shown in red; Proposed New ROW shown in yellow; and Temporary ROW shown in blue.



Figure 3. Shovel test locations within the project APE at the largest workspace and temporary bridge ROW areas. Both shovel tests were negative for archaeological deposits.

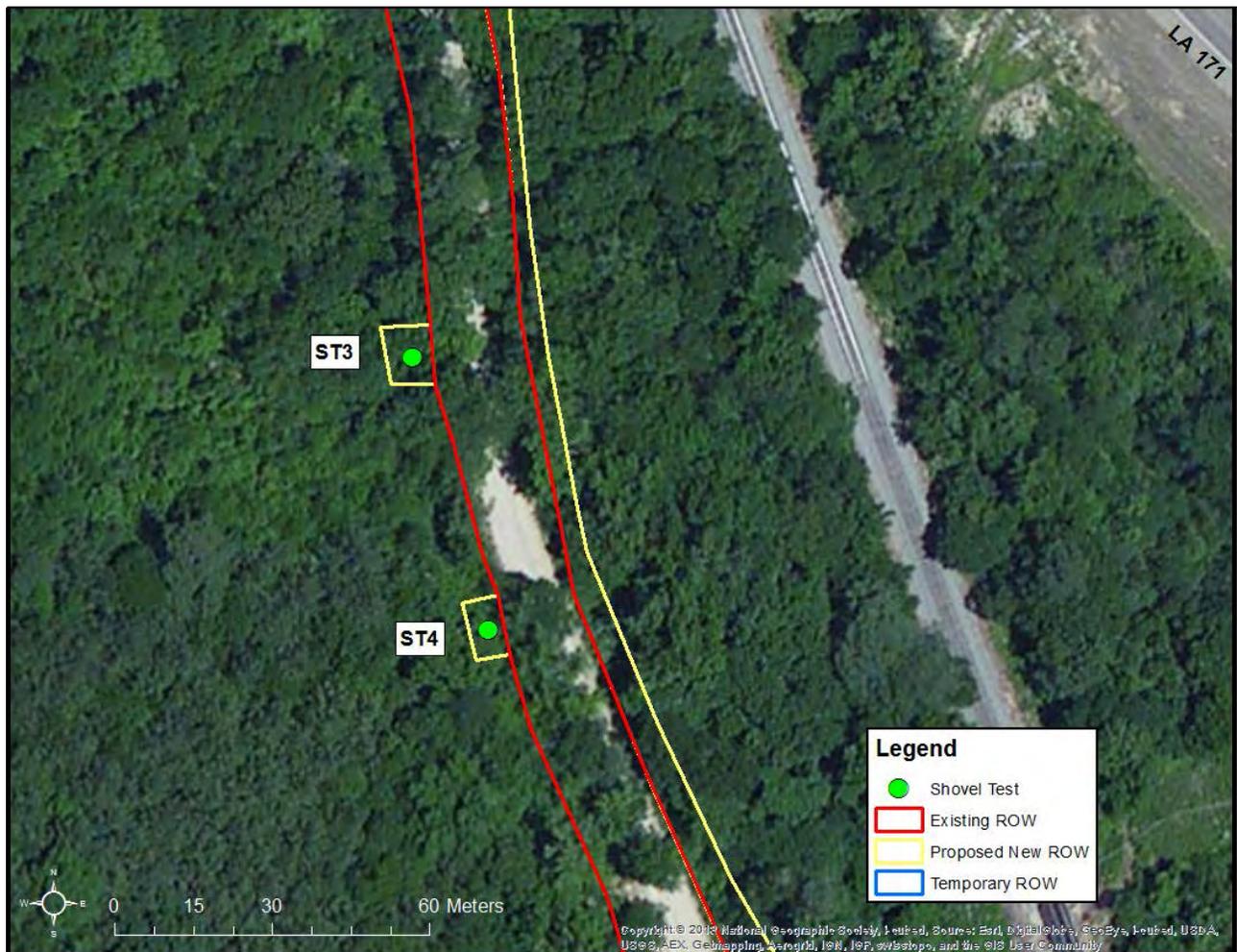


Figure 4. Shovel test locations within the project APE at the new culvert locations. Both shovel tests were negative for archaeological deposits.



Figure 5. Overview of south end of project area, Parish Road 2025, facing southwest across bridge.



Figure 6. Existing bridge over Brushy Creek on Parish Road 2025, facing northeast toward temporary ROW and largest workspace.



Figure 7. Overview of Parish Road 2025, facing southeast. Note bridge in background on right.



Figure 8. Overview of Parish Road 2025, facing northwest.



Figure 9. Example of workspace location along west side of Parish Road 2025, facing west.



Figure 10. Example of inundated eastern side of Parish Road 2025, facing east.



Figure 11. Overview of northern end of project area along Parish Road 2025, facing north.



Figure 12. Overview of northern end of project area along Parish Road 2025, facing northwest.

From: Badinger, Brandon
To: Linda.Hardy@LA.GOV; michael.lindsey@la.usda.gov; Amy.E.Powell@usace.army.mil; gutierrez.raul@epa.gov; cmichon@wlf.la.gov; Richard.Hartman@noaa.gov; Karl.Morgan@la.gov
Cc: Spann, Tiffany; Holmes, Leschina; Pitts, Melanie
Subject: Request for Solicitation of Views (SOV) for HMGP# 1603-0297 - Vernon Parish Brushy Creek Drainage Improvements and Bridge Replacement
Date: Friday, June 05, 2015 4:25:00 PM
Attachments: image001.png
image002.png
SOW for HMGP 1603-297.pdf
SOV - 297 Brushy Creek Plans.pdf

Security
June 5, 2015
Agency

U.S. Department of Homeland

Federal Emergency Management

FEMA-DR 1603/1607 LA
Louisiana Recovery Office
1500 Main St., Baton Rouge, LA

70802



FEMA

MEMORANDUM TO: See Distribution

SUBJECT: Scoping Notification/Solicitation of Views
Vernon Parish Brushy Creek Drainage Improvements and Bridge Replacement,
HMGP# 1603-0297, FEMA-1603-DR-LA

To Whom It May Concern:

The Department of Homeland Security's Federal Emergency Management Agency (FEMA) is mandated by the U.S. Congress to administer Federal disaster assistance pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), PL 93-288, as amended. Section 404 and Section 406 of the Stafford Act authorizes FEMA's Hazard Mitigation Program to provide funds to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. FEMA is considering providing Hazard Mitigation Grant Program funding for the attached project in relation to Hurricanes Katrina and Rita (FEMA-1603/1607-DR-LA).

Please review the attached project description and proposed project plans to determine whether your office has any objections to the proposed project and whether any permits from your office would need to be obtained. The applicant is the Vernon Parish Government.

This project is the applicant's request to implement drainage improvements and replace an existing double railroad "flat car bridge" as a mitigation project to prevent roadway flooding

along Brushy Creek Road. The applicant proposes to install a new four (4) span concrete bridge measuring 80 feet in length, raise the roadway approximately four (4) feet, install two (2) pairs of four (4) barrel relief culverts measuring 60” in diameter, and construct a new ditch along the east side of the road. The project site is located at Latitude 31.31925 and Longitude -93.39732 in Hornbeck, Louisiana (start and end coordinates are listed in the attached scope of work).

To ensure compliance with the National Environmental Policy Act (NEPA), Executive Orders (EOs), and other applicable Federal regulations, FEMA-EHP will be preparing an Environmental Assessment (EA). To assist us in preparation of the EA, FEMA-EHP requests that your office review the attached documents for a determination as to the requirements of any formal consultations, regulatory permits, determinations, or authorizations.

We would appreciate your comments on this project within thirty (30) days. If we do not receive comments from you within this time period, we will assume that you have no concerns or issues with the proposed project. If appropriate, FEMA will add the condition that the applicant will be required to obtain applicable permits from your office.

Comments may be emailed to brandon.badinger@fema.dhs.gov or mailed to the attention of Brandon Badinger, Environmental Department, at the address above. For questions regarding this matter, please contact Brandon Badinger, Historic Preservation Specialist at (504) 875-1047.

Sincerely,

Tiffany Spann-Winfield,
Deputy Environmental Liaison Officer, FEMA LRO
FEMA 1603/1607-DR-LA

Distribution: LDEQ, NRCS, USACE, LDWF, NOAA, LADNR

Attachment: Scope of Work, Project Plans

Brandon Badinger
Historic Preservation Specialist
FEMA Region VI – LRO
1500 Main Street
Baton Rouge, LA 70802
BB (504) 875-1047
brandon.badinger@fema.dhs.gov



depending on local water quality considerations. Therefore if your water system improvements include water softeners, you are advised to contact the LDEQ Water Permits to determine if special water quality-based limitations will be necessary.

- Any renovation or remodeling must comply with LAC 33:III.Chapter 28, Lead-Based Paint Activities; LAC 33:III.Chapter 27, Asbestos-Containing Materials in Schools and State Buildings (includes all training and accreditation); and LAC 33:III.5151, Emission Standard for Asbestos for any renovations or demolitions.
- 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 (SPOC) at (225) 219-3640 is required. Additionally, precautions should be taken to protect workers from these hazardous constituents.

Currently, Vernon Parish is classified as attainment with the National Ambient Air Quality Standards and has no general conformity determination obligations.

Please send all future requests to my attention. If you have any questions, please feel free to contact me at (225) 219-3954 or by email at linda.hardy@la.gov.

Sincerely,

Linda M. Hardy

Technical Assistant to the Deputy Secretary
Louisiana Department of Environmental Quality
Office of the Secretary
P.O. Box 4301
Baton Rouge, LA 70821-4301
Ph: (225) 219-3954
Fax: (225) 219-3971
Email: linda.hardy@la.gov



BOBBY JINDAL
GOVERNOR

State of Louisiana
DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

ROBERT J. BARHAM
SECRETARY
JIMMY L. ANTHONY
ASSISTANT SECRETARY

Date June 26, 2015

Name Brandon Badinger

Company FEMA

Street Address 1500 Main St.

City, State, Zip Baton Rouge, LA 70802

Project Vernon Parish Brushy Creek Drainage
Improvements & Bridge Replacement

Project ID 1262015

Invoice Number 15062605

Personnel of the Coastal & Nongame Resources Division have reviewed the preliminary data for the captioned project. After careful review of our database, no impacts to rare, threatened, or endangered species or critical habitats within Louisiana's boundary are anticipated for the proposed project. No state or federal parks, wildlife refuges, scenic streams, or wildlife management areas are known at the specified site within Louisiana's boundaries.

The Louisiana Natural Heritage Program (LNHP) has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. The quantity and quality of data collected by the LNHP are dependent on the research and observations of many individuals. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Louisiana have not been surveyed. This report does not address the occurrence of wetlands at the site in question. Heritage reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. LNHP requires that this office be acknowledged in all reports as the source of all data provided here. If at any time Heritage tracked species are encountered within the project area, please contact the LNHP Data Manager at 225-765-2643. If you have any questions, or need additional information, please call 225-765-2357.

Sincerely,

for 
Amity Bass, Coordinator
Natural Heritage Program

**FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS**

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 6/5/15	4. Sheet 1 of _____
1. Name of Project Brushy Creek		5. Federal Agency Involved FEMA	
2. Type of Project Drainage Improvement & Bridge Replacement		6. County and State Vernon Parish, LA	
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 6/5/15	2. Person Completing Form M. Mouton
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		4. Acres Irrigated Average Farm Size	
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: _____ %	7. Amount of Farmland As Defined in FPPA Acres: _____ %	
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS 6/23/15	

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor				

PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				

PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)

PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points				
1. Area in Nonurban Use	15				
2. Perimeter in Nonurban Use	10				
3. Percent Of Corridor Being Farmed	20				
4. Protection Provided By State And Local Government	20				
5. Size of Present Farm Unit Compared To Average	10				
6. Creation Of Nonfarmable Farmland	25				
7. Availability Of Farm Support Services	5				
8. On-Farm Investments	20				
9. Effects Of Conversion On Farm Support Services	25				
10. Compatibility With Existing Agricultural Use	10				
TOTAL CORRIDOR ASSESSMENT POINTS	160	0	0	0	0

PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	0	0	0	0
Total Corridor Assessment (From Part VI above or a local site assessment)	160	0	0	0	0
TOTAL POINTS (Total of above 2 lines)	260	0	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>
-----------------------	---	-----------------------	--

5. Reason For Selection:

Signature of Person Completing This Part: _____ DATE _____

NOTE: Complete a form for each segment with more than one Alternate Corridor

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

- (1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points
 - (2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points
 - (3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points
 - (4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points
 - (5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ?
(Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with \$1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points
 - (6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points
 - (7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points
 - (8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points
 - (9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points
 - (10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points
-



BOBBY JINDAL
GOVERNOR

State of Louisiana
DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

ROBERT J. BARHAM
SECRETARY
JIMMY L. ANTHONY
ASSISTANT SECRETARY

INVOICE

RETAIN THIS COPY FOR YOUR RECORDS

Date	June 26, 2015
Invoice Number	15062605
Project	Vernon Parish Brushy Creek Drainage Improvements & Bridge Replacement
Name	Brandon Badinger
Company	FEMA
Street Address	1500 Main St.
City, State, Zip	Baton Rouge, LA 70802
Number of Quads Reviewed	1
Total Due	\$0.00

Payment should be made to "Louisiana Department of Wildlife & Fisheries" within 30 days of the date of this invoice. Please include the invoice number on your check and return a copy of this invoice with your remittance to the following address:

Louisiana Department of Wildlife & Fisheries
Attn: Jennifer Riddle
P.O. Box 80399
Baton Rouge, LA 70898-0399

Should you have any questions regarding this invoice, for review of the Louisiana Natural Heritage database for information on known sensitive elements at a charge of \$30.00 per quad reviewed, please contact LNHP at (225) 765-2357.

The drawings submitted with your referenced application are attached hereto and made a part of the record. If you have any questions regarding this authorization, please contact our office at (225) 342-7591 or (800) 267-4019.

Sincerely,

A handwritten signature in black ink that reads "Karl L. Morgan". The signature is written in a cursive style with a long, sweeping underline.

Karl L. Morgan
Administrator

Karl L. Morgan/az

Attachments

Final Plats:

1) P20150583 Final Plats 06/23/2015

cc: Jessica Diez, OCM w/plats

From: Office of Coastal Management
To: DBUTLER@WLF.LA.GOV; Badinger, Brandon; ANDREA.ZACHARY@LA.GOV; UCM_MAIL@LA.GOV
Subject: P20150583 - Processing Complete
Date: Wednesday, June 24, 2015 2:40:56 PM

If you would like to respond, provide comment or contact someone about this application please click the OCM Analyst name below to send an email to the permit analyst, use the "Make Comments" link below to post a comment to the administrative record or call the OCM Analyst at 225-342-7591 or 800-267-4019. Be sure to reference your P# as found in the subject of this email. Do not use the "reply" button to respond to this email as this account is not monitored for incoming messages.

Coastal Use Permit Application Information

Applicant: FEMA
Project: HMGP# 1603-0297 - Vernon Parish Brushy Creek Drainage Improvements and Bridge Replacement
Project Parish(es):

OCM Analyst: andi.zachary@la.gov
Final Determination: OCZ, Solicitation of View
Application Modification: Compiled plats. No changes to project. 6/23/2015 AZ

Processing of the above application has been completed. Click the link below to view the final determination:

[Authorization](#)

**Louisiana Ecological Services Office****ESA Technical Assistance Form**General Information**Name:** FEMA**Point of Contact:** Brandon Badinger**Address:** 1500 Main Street (Environmental Department)**City:** Baton Rouge**State:** Louisiana**Zip Code:** 70802**Phone Number 1:** 504-875-1047**Phone Number 2:** _____**Email Address:** brandon.badinger@fema.dhs.govProposed Project Information**Project Reference ID:** 5031**Project Latitude:** 31.31924 **Project Longitude:** -93.39731**Project Parish(es):** Vernon

Project Description: Vernon Parish proposes making drainage improvements to mitigate repetitive flooding on Brushy Creek Road, also called Parish Road 2025, and to replace an existing double railroad "flat car" bridge. Brushy Creek Road is a dead end unpaved road located in Hornbeck, Louisiana that routinely floods during heavy rain events and becomes impassable trapping the residents of approximately 20 households. Additional permanent right of way (ROW) measuring approximately 0.7 acres would need to be acquired to install new culverts and a new ditch. In addition, a temporary ROW measuring approximately 0.85 acres would need to be acquired for a temporary bridge during construction of the replacement bridge. The scope of work (SOW) for the project includes the following: (1) Installation of a temporary bridge in a temporary ROW immediately south of the existing bridge that would be replaced, (2) Elevation of the existing roadway (approximately four (4) feet but varies) for a distance of about 1,325 feet (see attached map for starting and ending GPS coordinates), (3) Installation of two (2) pair of four (4) barrel corrugated metal pipe (CMP) culverts measuring 60" in diameter upstream inside new permanent ROW to provide relief at the bridge crossing, (4) Installation of concrete headwalls on each end of new CMPs with rip-rap added as needed for erosion control, (5) Construction of a new ditch on the east side of the



Louisiana Ecological Services Office

ESA Technical Assistance Form

four (4) span concrete bridge measuring 80 feet in length in the alignment of the existing bridge (see attached map for GPS coordinates), (7) Disconnection and abandoning in place the existing water and telephone lines, (8) Installation of new water lines and telephone lines within existing ROW.

Based on the information provided, the proposed project is not an activity that would affect a federally listed threatened or endangered species; nor is there proposed or designated critical habitat present within this Parish.

Therefore, a "no effect" conclusion is appropriate. No further ESA coordination with the Service is necessary for the proposed action, unless there are changes in the scope or location of the proposed project or the project has not been initiated one year from the date of this letter.

If the proposed project has not been initiated within one year, follow-up coordination via this website should be accomplished prior to making expenditures because our threatened and endangered species information is updated annually. If the scope or location of the proposed project is changed, coordination via this website should occur as soon as such changes are made.

This finding completes project review by the Service for effects to Federal trust resources under our jurisdiction and currently protected by the ESA.

Please keep a copy of this pre-development coordination for your records. Do not send it to the Lafayette ES Office.

If you have additional questions, please contact Louisiana ES Office Biological Science Technician at 337/291-3100 for further assistance.



Louisiana Ecological Services Office

ESA Technical Assistance Form

Project Type: Non-Emergency FEMA Project

Does the project propose to obtain, remodel, refurbish, or rehabilitate existing structures in such a way that does not significantly alter the present capacity or use, and does not alter surrounding land areas that were previously undisturbed? **No**

Does the project propose to reconstruct, resurface, or enhance infrastructure and/or cityscape (e.g. streets, sewers, sidewalks, etc.) within the current footprint of the infrastructure and in a manner that does not disturb previously undisturbed ground? **No**

Does the project propose to remove urban blight through the demolition of unwanted and unsightly structures in a manner that does not disturb surrounding plant or animal habitat; including the planned locations for disposal and stockpiling of demolition debris? **No**

Is the construction project located entirely within the footprint of an established urban/suburban area (incorporated villages, towns, or cities)? **No**

Does the project propose to construct new buildings, streets, sidewalks or other urban/suburban infrastructure in an area that has been previously undisturbed? **Yes**

Does the project propose to conduct any activity in a natural area or water body? **Yes**

APPENDIX E
8-STEP/ PUBLIC NOTICE/
FONSI

**VERNON PARISH
BRUSHY CREEK ROAD
8-STEP PROCESS CHECKLIST**

**EO 11988-FLOODPLAIN MANAGEMENT
EO 11990-WETLAND PROTECTION**

DATE: July 10, 2015

PREPARED BY: Alan Johnson, CFM, Civil Engineer, FEMA Environmental
PROJECT: Brushy Creek Road (Parish Road 2025) Bridge and Culverts Hazard
Mitigation ;

FIPS# 115-43010-00, HM# 0297

LOCATION: Brushy Creek Road, Hornbeck, LA

Lat: 31.31924 /Long.: -93.39731

STEP 1 Determine whether the proposed action is located in a wetland and/or the 100-year floodplain (500-year floodplain for critical actions [44 CFR 9.4]), or whether it has the potential to affect or be affected by a floodplain or a wetland (see 44 CFR 9.7).

The project is located in a floodplain as mapped by:

Vernon Parish FIRM, panel 22115C0035D, dated 3/3/2011, and the project is located within an "A" zone, Special Flood Hazard Area (SFHA), Base Flood Elevation (BFE) not determined.

The project is located in a wetland as identified by:

STEP 2 Notify the public at the earliest possible time of the intent to carry out an action in a floodplain or wetland, and involve the affected and interested public in the decision making process (see 44 CFR 9.8).

Not applicable - Project is not located in a floodplain or in a wetland.

Applicable - Notice will be or has been provided by:

A cumulative public concerning the Hazard Mitigation Grant Program (HMGP) Assistance in floodplain and wetland areas will be or has been published in the New Orleans Times-Picayune, Baton Rouge Advocate, Lafayette Daily Advertiser, Lake Charles

American Press, Hammond Star, Monroe News-Star, Shreveport Times, and the Alexandria Daily Town Talk.

STEP 3 Identify and evaluate practicable alternatives to locating the proposed action in a floodplain or wetland (including alternative sites, actions and the "no action" option) [see 44 CFR 9.9]. If a practicable alternative exists outside the floodplain or wetland, FEMA must locate the action at the alternative site.

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Alternative identified in the EA Document or is described below:

ALTERNATIVE 1: NO ACTION is not considered a feasible alternative as it would leave the residential and business properties without access on this dead-end Brushy Creek Road, and at risk to being damaged again in the future from other flood events. No Action could also result in a life and safety risk for the residents and any potential rescuers.

ALTERNATIVE 2: REPAIRING/REPLACEMENT TO PRE-DISASTER CONDITION/FOOTPRINT is also not considered a feasible alternative due to the high risk of future/repetitive damage. This alternative could also result in a life and safety risk for the homeowners and any potential rescuers.

ALTERNATIVE 3: REPLACEMENT (INCLUDING RETROFIT PROJECTS INVOLVING THE INSTALLATION OF MITIGATION MEASURES), ELEVATION, RECONSTRUCTION (WITH ELEVATION), is the proposed alternative for this HMGP bridge and culvert project. The proposed action would 1) replace the existing 48 feet length "flat-car" bridge (31.31924, -93.39731) with a new four (4) span concrete bridge measuring 80 feet in length; 2) elevate the existing roadway approximately four (4) feet starting at Latitude 31.3227, Longitude -93.39840 and ending at Latitude 31.31884, Longitude -93.39767; 3) install two (2) pairs of four (4) barrel relief culverts each measuring 60 inches in diameter (31.32041, -93.39773) and (31.32000, -93.39762); and 4) construct a new ditch along the east side of the road.

The two (2) sets of four (4) barrel 60 inch Corrugated Metal Pipe (CMP) culverts are proposed upstream to provide relief at the bridge crossing and would flow into Brushy Creek via a new ditch

that captures tributary water downstream of the bridge. The CMP structures would have concrete headwalls on each end with rip-rap added as needed for erosion control. A temporary bridge would be needed immediately south of the existing bridge while the new bridge is under construction. Additional right-of-way (ROW) would be acquired to allow for three (3) workspaces, the temporary bridge to be placed during construction activities, and the new ditch along the east side of PR 2025. Two (2) of the workspaces are planned along the west side of PR 2025, and the third workspace and the temporary detour bridge are planned to be located south of the existing bridge. Plans showing the bridge replacement, road elevation, workspaces, and new rights-of-way are enclosed (See Appendix B for Construction Plans).

The proposed action would allow for allow the estimated 50-year flood event on Brushy Creek to flow through the improved bridge and relief culverts without inundating and closing the road. This would decrease closures and assist residents within the area with safer passage. The newly built up road would have more free board during a 50-year event. Backwater impacts would be lessened upstream of the bridge due to the greater flow capacity of the new structure and culvert system. All of these activities should be coordinated and comply with local floodplain administration and ordinance.

STEP 4

Identify the full range or potential direct or indirect impacts associated with, the occupancy or modification of floodplains and wetlands and the potential direct and indirect support of floodplain and wetland development that could result from the proposed action (see 44 CFR 9.10).

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Alternatives identified in the EA Document or is described below:

ALTERNATIVE 1: NO ACTION is not considered a feasible alternative as it would leave the residential and business properties without access on this dead-end Brushy Creek Road, and at risk to being damaged again in the future from other flood events. No Action could also result in a life and safety risk for the residents and any potential rescuers.

ALTERNATIVE 3: ELEVATE PUBLIC ROAD 2025, REPLACE THE BRUSHY CREEK FLAT CAR BRIDGE WITH 4-SPAN CONCRETE BRIDGE, AND INSTALL RELIEF CULVERTS (PROPOSED ACTION)

The two (2) sets of four (4) barrel 60 inch Corrugated Metal Pipe (CMP) culverts are proposed upstream to provide relief at the bridge crossing and would flow into Brushy Creek via a new ditch that captures tributary water downstream of the bridge. The CMP structures would have concrete headwalls on each end with rip-rap added as needed for erosion control. A temporary bridge would be needed immediately south of the existing bridge while the new bridge is under construction. Additional right-of-way (ROW) would be acquired to allow for three (3) workspaces, the temporary bridge to be placed during construction activities, and the new ditch along the east side of PR 2025. Two (2) of the workspaces are planned along the west side of PR 2025, and the third workspace and the temporary detour bridge are planned to be located south of the existing bridge. Plans showing the bridge replacement, road elevation, workspaces, and new rights-of-way are enclosed (See Appendix B for Construction Plans).

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STEP 5

Minimize the potential adverse impacts and support to or within floodplains and wetlands to be identified under step # 4, restore and preserve the natural and beneficial values served by floodplains, and preserve and enhance the natural and beneficial values served by wetlands (see 44 CFR 9.11).

Not applicable - Project is not located in a floodplain or in a wetland.

Applicable - Mitigation measures identified in the EA Document or is described below:

ALTERNATIVE 3: ELEVATE PUBLIC ROAD 2025, REPLACE THE BRUSHY CREEK FLAT CAR BRIDGE WITH 4-SPAN CONCRETE BRIDGE, AND INSTALL RELIEF CULVERTS (PROPOSED ACTION)

The two (2) sets of four (4) barrel 60 inch Corrugated Metal Pipe (CMP) culverts are proposed upstream to provide relief at the bridge crossing and would flow into Brushy Creek via a new ditch that captures tributary water downstream of the bridge. The CMP structures would have concrete headwalls on each end with rip-rap added as needed for erosion control. A temporary bridge would be needed immediately south of the existing bridge while the new bridge is under construction. Additional right-of-way (ROW) would be acquired to allow for three (3) workspaces, the temporary bridge to be placed during construction activities, and the new ditch along the east side of PR 2025. Two (2) of the workspaces are planned along the west side of PR 2025, and the third workspace and the temporary detour bridge are planned to be located south of the existing bridge. Plans showing the bridge replacement, road elevation, workspaces, and new rights-of-way are enclosed (See Appendix B for Construction Plans).

The proposed action would allow for allow the estimated 50-year flood event on Brushy Creek to flow through the improved bridge and relief culverts without inundating and closing the road. This would decrease closures and assist residents within the area with safer passage. The newly built up road would have more free board during a 50-year event. Backwater impacts would be lessened upstream of the bridge due to the greater flow capacity of the new structure and culvert system. All of these activities should be coordinated and comply with local floodplain administration and ordinance.

This proposed plan assists with the conveyance of floodwaters of Brushy Creek, and addresses erosion, construction constraints, and potential life and safety risks for the residents and any potential rescuers.

STEP 6

Reevaluate the proposed action to determine first, if it is still practicable in light of its exposure to flood hazards, the extent to which it will aggravate the hazards to others. And its potential to disrupt floodplain and wetland values and second, if alternatives preliminarily rejected at step # 3 are practicable in light of the information gained in steps # 4 and # 5. FEMA shall not act in a floodplain or wetland unless it is the only practicable location (see 44 CFR 9.9).

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Action proposed is located in the only practicable location as described below:

Proposed project is a bridge/culvert plus road elevation project to reduce closure of this dead end road due to flooding. As such, it cannot be relocated as it is a functionally dependent project. This project has minimal potential to disrupt floodplain and wetland values.

STEP 7 Prepare and provide the public with a finding and public explanation of any final decision that the floodplain or wetland is the only practicable alternative (see 44 CFR 9.12).

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Finding is or will be prepared as described below:
Public notice dated:

A final public notice will be published as part of the Environmental Assessment.

STEP 8 Review the implementation and post-implementation phases of the proposed action to ensure that the requirements of the order are fully implemented. Oversight responsibility shall be integrated into existing processes.

- Not applicable - Project is not located in a floodplain or in a wetland.
- Applicable - Approval conditioned on review of implementation and post-implementation phases to insure compliance of the order(s)

Project has been reviewed for compliance with 44 CFR Part 9. Local Floodplain Administrators coordination and action is an integral element of this action in the regulatory floodplain of both Vernon Parish and the Village of Hornbeck. Upon completion of project, in accordance with 44 CFR 65.3, a community's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, a community shall notify the Administrator of the changes by submitting technical or scientific data in accordance with this part.

**PUBLIC NOTICE
FEMA NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL ASSESSMENT
DRAFT FINDING OF NO SIGNIFICANT IMPACT
BRUSHY CREEK ROAD DRAINAGE IMPROVEMENTS
CONSTRUCTION OF NEW BRIDGE
VERNON PARISH, LOUISIANA**

Interested parties are hereby notified that the Federal Emergency Management Agency (FEMA) has prepared a draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) in compliance with the National Environmental Policy Act (NEPA). The purpose of the EA is to assess the effects on the human and natural environment for the construction of a new bridge crossing on Brushy Creek Road in Hornbeck, Louisiana, a proposed action for which FEMA is considering providing funding assistance.

The purpose of the draft EA is to analyze the potential environmental impacts associated with the preferred action and alternatives. The draft EA evaluates a No Action Alternative; the Preferred Action Alternative, which is to demolish the existing railroad "flat car" bridge and construct a new 4 span concrete bridge measuring 80 feet in length and elevate the existing roadway on Brushy Creek Road; and an Alternative Action which is to make drainage improvements including increasing culvert sizes and installing storm water aprons to Cooper Church Road which flows to Castor Creek.

The draft FONSI is FEMA's finding that the preferred action will not have a significant effect on the human and natural environment.

The draft EA and draft FONSI are available for review at the following locations: 1) Hornbeck Town Hall located at 1083 Hammond St, Hornbeck, LA 71439 on Mondays - Thursdays 8 AM to 3:30 PM and Fridays 8 AM to 12 PM and 2) the Vernon Parish Library located at 1401 Nolan Trace in Leesville, LA 71446 on Mondays - Wednesdays 9:00 AM to 8:00 PM, Thursdays 9:00 AM to 9:00 PM, and Fridays and Saturdays 9:00 AM to 5:30 PM. This public notice will run in the local newspaper, Leesville Daily Leader, on June 10, 2015; June 12, 2015; and June 14, 2015. This public notice will also run in The Advocate on June 8, 2015; June 9, 2015; and June 10, 2015. The documents can also be downloaded from FEMA's website at <http://www.fema.gov/resource-document-library>. There will be a fifteen (15) day comment period, beginning on June 8, 2015, and concluding on June 23, 2015. Comments may be mailed to: DEPARTMENT OF HOMELAND SECURITY-FEMA EHP-HORNBECK, 1500 MAIN STREET, BATON ROUGE, LOUISIANA 70802. Comments may be emailed to: FEMA-NOMA@dhs.gov or faxed to 225-346-5848. Verbal comments will be accepted or recorded at 504-427-8000. If no substantive comments are received, the draft EA and associated FONSI will become final.



FEMA

U.S. Department of Homeland Security
Louisiana Recovery Office
1500 Main St
Baton Rouge, Louisiana 70802

**DRAFT FINDING OF NO SIGNIFICANT IMPACT
FOR THE
BRUSHY CREEK DRAINAGE IMPROVEMENT
VERNON PARISH, LOUISIANA
*FEMA-1603-DR-LA***

BACKGROUND

During high water events the Brushy Creek overflows across portions of Public Road (PR) 2025, preventing the citizens who reside and work in the area from evacuating. Parish Road 2025 is a dead end road which serves 17 residential structures and one (1) business. Per the Hydrology and Hydraulics Study (H &H) prepared by Bryant Hammett & Associates, LLC dated November 2013, most of the water from the town of Hornbeck, LA., utilizes Brushy Creek as the drainage outfall. During flooding events the road is impassable from 12 to 72 hours. Due to repetitive loss in the area, Vernon Parish (Applicant) has requested federal funding through FEMA's 404 Hazard Mitigation Grant Program (HMGP) to improve the drainage of Brushy Creek.

In accordance with 44 CFR Part 10, FEMA regulations to implement the National Environmental Policy Act (NEPA), an Environmental Assessment (EA) was prepared. The purpose of the EA was to analyze the potential environmental impacts associated with the proposed drainage improvements and to determine whether to prepare an Environmental Impact Statement (EIS) or Finding of No Significant Impact (FONSI). The need for the proposed project is to minimize the ancillary flooding during and after storm events. The alternatives considered include 1) No Action, 2) Elevate Public Road 2025, Replace the Brushy Creek Flat Car Bridge with 4-span concrete Bridge, and Install Relief Culverts (Proposed Action); and 3) Elevate the Existing Roadway and Install Additional Culverts.

The proposed action would 1) replace the existing "flat-car" bridge with a new four (4) span concrete bridge measuring 80 feet in length; 2) elevate the existing roadway approximately four (4) feet starting at Latitude 31.3227, Longitude -93.39840 and ending at Latitude 31.31884, Longitude -93.39767; 3) install two (2) pairs of four (4) barrel relief culverts measuring 60 inches in diameter; and 4) construct a new ditch along the east side of the road. The proposed action would allow for complete 50 year flood protection for the road and residents within the area. The newly built up road would have more free board during a 50 year event and the backwater would lessen upstream of the bridge due to the greater drainage capacity of the new structure.

The culverts would have concrete headwalls on each end with rip-rap added as needed for erosion control. A temporary bridge would be needed immediately south of the existing bridge while the new bridge is under construction. Additional right-of-way (ROW) would be acquired to allow for three (3) workspaces, the temporary bridge to be placed during construction activities, and the new ditch along the east side of PR 2025.

FINDINGS

FEMA has evaluated the proposed project for significant adverse impacts to geology, soils, water resources (surface water, groundwater, and wetlands), floodplains, coastal resources, air quality, biological resources (vegetation, fish and wildlife, Federally-listed threatened or endangered species and critical habitats), cultural resources, socioeconomics (including minority and low income populations), safety, noise, and hazardous materials. The results of these evaluations as well as consultations and input from other federal and state agencies are presented in the EA.

The applicant chose the proposed project to decrease the flood risk to nearby residents and provide protection to the 100-year flood event.

CONDITIONS

The following conditions must be met as part of the implementation of the project. Failure to comply with these conditions may jeopardize federal funds:

- Any changes or modifications to the proposed project will require a revised determination. Off-site locations of activities such as borrow, disposals, haul- and detour roads, and work mobilization site developments may be subject to U.S. Army Corps of Engineers (USACE) regulatory requirements.
- Applicant must contact the USACE to verify if jurisdictional waters of the U.S. do occur on site and which permits, if any, are required.
- The applicant is responsible for acquiring any Section 401/404 Clean Water Act (CWA) permits and/or Section 10 permits under the Rivers & Harbors Act (RHA). When these permits are required, applicant must maintain documentation of compliance with applicable nationwide permit (NWP), exemption from requirements, or obtain individual permits from USACE prior to construction, unless exempt by the NWP from pre-construction notification. The applicant shall comply with all conditions of the required permit. All coordination pertaining to these activities should be documented and copies forwarded to the state and FEMA as part of the permanent project files.
- The project results in a discharge to waters of the State; submittal of a Louisiana Pollutant Discharge Elimination System (LPDES) application is necessary.

- All precautions must be observed to control nonpoint source pollution from construction activities. Louisiana Department of Environmental Quality (LDEQ) has stormwater general permits for construction areas equal to or greater than one (1) acre. The applicant must contact the LDEQ Water Permits Division at (225) 219-9371 to determine if the proposed project requires a permit.
- 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 (SPOC) at (225) 219-3640 is required. Additionally, precautions must be taken to protect workers from these hazardous constituents.
- If human bone or unmarked grave(s) are present with the project area, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is required. The applicant shall notify the law enforcement agency of the jurisdiction where the remains are located within twenty-four (24) hours of the discovery. The applicant shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within seventy-two (72) hours of the discovery.
- If during the course of work, archaeological artifacts (prehistoric or historic) are discovered, the applicant shall stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The applicant shall inform their HMGP contacts at FEMA, who will in turn contact FEMA Historic Preservation staff. The applicant will not proceed with work until FEMA Historic Preservation completes consultation with the SHPO.
- The applicant is responsible for complying with the Toxic Substances Control Act (TSCA) Section 402(c)(3) requirements as well as to the satisfaction of the governing local, state, and federal agencies to ensure that project activities are managed, administered, and/or handled by certified/accredited technicians, contractors, and providers. The applicant is responsible complying with all local, state, and federal laws and ensuring that project activities are coordinated with the LDEQ for abatement activities.
- The applicant should limit noise levels by receiving land use in residential, public, commercial, and industrial areas to varying decibel levels during the "daytime" hours of 7 AM to 7 PM. Construction activities should be limited to this schedule on weekdays.
- The contractor must place fencing around the work area perimeters to protect nearby residents from vehicular traffic. To minimize worker and public health and safety risks from project construction and closure, all construction and closure work must be done using qualified personnel trained in the proper use of construction equipment, including all appropriate safety precautions. Additionally, all activities must be conducted in a safe manner in accordance with the standards specified in OSHA regulations and the USACE safety manual.

- Appropriate signage and barriers should be in place prior to construction activities in order to alert pedestrians and motorists of project activities and traffic pattern changes.
- If hazardous materials are unexpectedly encountered in the project area during the proposed construction operations, appropriate measures for the proper assessment, remediation, management and disposal of the contamination would be initiated in accordance with applicable Federal, State, and local regulations. The contractor would be required to take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction area and any offsite runoff.

CONCLUSIONS

Based upon the incorporated EA, and in accordance with Presidential Executive Orders 12898 (Environmental Justice), 11988 (Floodplain Management), and 11990 (Wetland Protection), FEMA has determined that the proposed action implemented with the conditions and mitigation measures outlined above and in the EA will not have any significant adverse effects on the quality of the natural and human environment. As a result of this FONSI, an Environmental Impact Statement will not be prepared (44 CFR Part 10.8) and the proposed action alternative as described in the EA may proceed.

APPROVALS

Kevin Jaynes	Date
Regional Environmental Officer	
Region VI	

Thomas "Mike" Womack	Date
Director of the Louisiana Recovery Office	
FEMA 1603-1607-DR-LA	