



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF

Regional Planning and
Environmental Division South
New Orleans Environmental Branch

Decision Record

Individual Environmental Report Supplemental #16.a
WESTERN TIE-IN
JEFFERSON AND ST. CHARLES PARISHES, LOUISIANA

IERS #16.a

Description of Proposed Action. The New Orleans District, US Army Corps of Engineers (CEMVN) proposes to construct and maintain a new 100-year level of Risk Reduction along the West Bank and Vicinity (WBV), Western Tie-In from the Lake Cataouatche Levee and continuing westerly along the south bank of the outer Cataouatche Canal before turning north to the Mississippi River Levee along the Davis Pond Freshwater Diversion's east guide levee. The action is located in Jefferson and St. Charles Parishes, near New Orleans, Louisiana. The term "100-year level of Risk Reduction," refers to a level of protection that reduces the risk of hurricane surge and wave-driven flooding that the New Orleans Metropolitan area has a 1 percent chance of experiencing each year. The project addresses proposed revisions to IER #16, Western Tie-In project. Since IER #16 was completed, the preliminary project feature designs have undergone revisions. These modifications include constructing utility relocations, replacing the Hwy 90 pump station, adding bank stabilization to some areas, retaining the detour roads as permanent access for Hwy 90 and the construction of a ramp at Hwy 18 instead of a floodgate. In addition the degrading of a section of the Davis Pond Guide Levee was proposed in the draft IERS #16.a but has been removed from the final plan. These proposed changes would result in impacts in addition to those discussed in IER #16. The proposed action for IER #16 was divided into 5 component reaches. The IERS #16.a, which is referenced and incorporated herein, includes four of the five component reaches as well as additional areas for pipeline and other utility relocations.

Relocation of Utilities (Reaches 3 and 5)

While final plans have not been completed for the utility relocations, information is available as to the type and location of the existing utilities and that they require relocation. To meet the goal of providing hurricane and storm damage risk reduction to the Greater New Orleans area by June 2011, the USACE must move forward with identifying an envelope of impacts so the environmental assessment and compliance can be achieved and construction activities for the overall Western Tie-in project can proceed to completion. Each individual utility owner prepares a relocation plan. Because specific relocation plans have not been completed for these utilities, an area within which all the relocation activities are anticipated to occur has been conservatively identified and a discussion of impacts within the area identified has been developed. This area will be described within this document as the general project area. Previous proposals for directional drill pipeline relocations identified the need to construct temporary work pads for pushing and pulling the pipeline on either side of the directional drill under the HSDRRS project feature. In those cases, in addition to re-impacting the existing pipeline corridor, additional ROW of approximately 5 acres is needed to construct temporary work locations. Impacts for features such as overhead power lines would require less physical space for the relocations as the

equipment and utility footprints are smaller. Utility owners would also be required to obtain all permits necessary to comply with all Federal and State laws, rules and regulations including Section 404 permits through the CEMVN regulatory office. The Section 404 process focuses on minimizing impacts to wetlands.

Four gas lines, one waterline, one overhead communication line and three oil and gas pipelines are located within reach 3. In reach 5, two communication lines, one power line and one gas line would require relocation. Possible relocation techniques are directional drill or sleeve through the floodwall. Both of these relocation methods would require staging and construction areas located outside of the previously cleared project ROW.

Table 1. Utilities to be Relocated by Reach and Type

| Reach | # of Utilities to be Relocated | Type of Utility |
|-------|--------------------------------|---|
| 3 | 9 | Gas pipelines, communication lines, water lines |
| 5 | 4 | Gas pipelines, communication lines, power line |

Utilities including large gas pipelines are located within the alignment of the Government’s approved plan. Failing to construct utility relocations would result in physical gaps in the Government’s approved plan outlined in IER #16. This would occur mainly at the floodwall in reach 3 where pile driving associated with floodwall construction could not occur until pipelines are relocated. If the piles are not driven some segments of the floodwall could not be constructed.

Degrading Section of Davis Pond Fresh Water Diversion East Guide Levee (no associated reach)

A degrade of approximately 2,400 LF of the existing Davis Pond East Guide Levee was proposed in the draft IERS. The degrade was recommended by state and federal resources agencies during the comment period for IER #16 to provide benefits to the adjacent wetlands. Because the new Western Tie-In Levee would replace the function served by the guide levee, guide levee could be removed without affecting the HSDRRS. Additional hydrologic evaluation was conducted to ensure that degrading the guide levee would not impact the reach of Hwy 90 outside of the new HSDRRS and east of the Davis Pond Diversion canal. Objections raised during the public comment period regarding impacts to future use of the property were considered and as a result the 2,400 LF degrade of the existing Davis Pond Guide Levee will not be implemented. The gap originally described in IER #16 to provide water exchange to the same 63 acre area will be constructed to retain water exchange to the wetlands that would otherwise be isolated by the construction of the western Outer Cataouatche Canal Closure.

Reach 1 - Closure Across Outer Cataouatche Canal and Levee to Bayou Verret: Pump Station Demolition and Construction

The existing Hwy 90 pump station is located on previously disturbed habitat adjacent to Lake Cataouatche Levee with discharge lines over the levee crown. The exact location of the new pump station has not been identified. However, the proposed pump station would be located along the Lake Cataouatche Levee alignment between 250 feet to 850 feet southeast of the

existing Hwy 90 pump station on the protected side of the levee. It would be designed to pump over elevation 15.5 NAVD88 to a still water level (SWL) (2057 90% SWL) of 9.4 feet. The pump station would include two 300 Hp pumps each with a flow capacity of 72.5 cubic feet per second (cfs) (145 cfs total) and a flow velocity of 7.8 feet per second each. Depending on the location, the discharge pipes would be between 615 feet and 340 feet long and have a 42 inch diameter. A riprap discharge pad would be required at the out fall of the discharge lines and would be approximately 2,500 feet square and would be placed in the Outer Cataouatche Canal. Approximately 160 cubic yards of debris would be generated from pumping station demolition. The material generated would be re-cycled and/or placed in a solid waste land fill. In addition, an access road and ramps would be constructed within the existing Lake Cataouatche levee (IER #15) ROW to provide access from Hwy 90 to the new pump station and access ramps off the levee crown around the pump station. To provide power to the new pump station 300 LF to 1,000 LF of additional power overhead lines would need to be installed within the Lake Cataouatche Levee (IER #15) ROW.

The recommendation to replace the Hwy 90 pump station is based on current flow capacity and the significant increase in the length of the discharge line (from 270 to 825 feet) to reach up and over the newly constructed Western Tie-in Levee. The existing pump station does not have the power to adequately pump water the distance required while maintaining the current flow capacity over the HSDRRS levee elevations. If the pumps at the existing pump station were upgraded to accommodate the increased length of the discharge line, the entire facility would need to be reconstructed.

Reach 2 - Bayou Verret Closure Structure to Hwy 90 Crossing Levee: Adding Bank Stabilization to Closures across the Outer Cataouatche Canal

Approximately 4,062 tons of 18 inch thick riprap and 4,299 square yards of Geotextile Separator Fabric would be placed on the flood-side toe of the Outer Cataouatche Canal closure located at the most eastern reach of the Western Tie-In levee alignment (Sta. 236+25 to Sta. 241+53). The berm elevation would be +6.0 feet NAVD88.

Additionally, where the East-West levee turns north and crosses the Outer Cataouatche Canal, 2,070 tons of 18 inch thick riprap and 2,190 square yards of Geotextile Separator Fabric would be placed on the protected side of the levee, immediately east of where the levee crosses and closes the canal (Sta. 91+50 to Sta. 94+20). The berm elevation would be +3.0 feet NAVD88. Lastly, 273 tons of 18 inch riprap and 289 square yards of Geotextile Separator Fabric would be placed underneath the bridges located along the foreshore to provide scour protection.

The recommendation to add foreshore protection at the locations listed previously would protect against erosion in areas that have been identified as being susceptible to wave wash from vessel traffic.

Reach 3 – Hwy 90 Crossing: Temporary Detour as Permanent Access for Hwy 90

Hwy 90 traffic would be maintained during levee construction by the use of a detour roadway. The detour would be a two-lane detour to the north of Hwy 90 for westbound traffic and a two-lane detour to the south for eastbound traffic.

The detours would remain in place to provide access to adjoining properties following the construction of the Hwy 90 Bridge, which construction would permanently impair existing access. In addition, U-shaped turnaround lanes that would cross underneath the Hwy 90 Bridge and tie back into the access road on the other side of the highway would be constructed. The turnaround lanes would consist of only one lane in either direction. These roadways were

originally designated to be temporary and they would now become permanent. Construction of the detour roads and turnarounds would require approximately 38,502 cubic yards of earthen fill. The project is located on the west bank of the Mississippi River, in Jefferson and St Charles Parishes, Louisiana. The approximate project area boundaries are South Kenner Road on the east; the Davis Pond Freshwater Diversion Project Canal on the west; South Kenner at the Union Pacific and Burlington Northern Santa Fe (BNSF) Railroad Lines and the Mississippi River on the north and the Outer Cataouatche Canal and Davis Pond on the south. Communities near the project area include Avondale and Waggaman to the east, Ama and South Kenner to the north, and Luling to the west. With the exception of landfills on the eastern portion of the project area and some development between Hwy 90 and the Outer Cataoutache Canal, much of the project area remains undeveloped.

Construction of the detour roads was described in IER #16. The construction activities will occur within existing LADODT ROW. The LADODT ROW is comprised of both maintained road shoulder and wetlands. Approximately 10 acres of wetlands would be impacted by detour road construction.

Reach 5 – Levee on East Side of the Davis Pond Diversion Project to Mississippi River Levee: Ramp vs. Floodgate at Hwy 18

Hwy 18, also known as River Road, is an existing two lane rural arterial highway located in St. Charles Parish, with traffic flow in both directions. This corridor of Hwy 18 is used for both commercial and rural traffic for the citizens living in and around the Ama and Luling communities. At the southern end of the alignment, the levee constructed for Western Tie-in north-south levee reach would transition to a floodwall and closure structure to cross the Union-Pacific Railroad track. The floodwall would then be tied into the proposed Hwy 18 ramp. In IER #16, a floodgate was proposed to cross Hwy 18, but in response to public concerns about maintaining Hwy 18 as an open evacuation route, an earthen ramp is proposed instead. The Hwy 18 earthen ramp is designed to have two 12-foot lanes, 8-foot outside shoulder, 1:4 slope and pavement grade of 2.5 percent as stated in the LADOTD design standards. The approved pavement section of the ramp consists of a 2 inch asphaltic concrete wearing course, 6 inch asphaltic concrete binder course and 5 inch asphaltic concrete base course. The ramp would span approximately 1,200 feet east to west; the initial crest elevation at year 2011 would be +12.0 feet and a lift during year 2027 would raise the crest elevation to +15.0 feet. Hwy 18 would be closed for approximately 2 months during the construction period. During this period a two-lane, two way bypass road running parallel and south of Hwy 18 would be in place. The bypass road would be in place for all traffic. Traffic flow on the two-lane, two way bypass road would be unregulated. Through the 2 month Hwy 18 closure period a LADOTD detour would also be in place. Traffic would detour using Hwy 90 via Hwy 3060 and back on to Hwy 18, an approximately 25 mile detour. Traffic eastbound on Hwy 18 west of the Davis Pond Diversion Canal would be rerouted to Hwy 90 at Hwy 3060. Eastbound traffic would proceed east on Hwy 90 to the intersection with Hwy 18 and then proceed west on Hwy 18. Westbound traffic on Hwy 18 east of the Davis Pond Diversion Canal would travel east on Hwy 18 to Hwy 90, then westbound on Hwy 90 to Hwy 3060 where it could rejoin westbound Hwy 18. Constructing the two-lane, two way bypass road would provide emergency and other vehicles a direct route along Hwy 18. The two-lane, two way bypass road would run parallel to the ramp construction along the south, and would have a total width of 27 feet with an 11-foot lane width, a 2-foot shoulder and a 1-foot stripped area on each side. It is designed to maintain a minimum 9-foot clear distance from the centerline of the northern most Union Pacific Railroad track to the southernmost edge of the bypass road. The two-lane, two way bypass road is designed to support emergency vehicles including fire trucks. Less than 0.25 acres would be graded, filled

with earthen material, and surfaced with asphalt to construct the bypass road on the south side of Hwy 18. The two lane, two way bypass road would be removed after ramp construction is complete. The total amount of fill required for both the ramp and the bypass road construction is estimated at 5,364 cubic yards.

The levee would terminate on the north side of the ramp by tying into high ground at the Mississippi River Levee in St. Charles Parish. This section would require an additional approximate 0.7 acres construction right of way (ROW) west of the Davis Pond Diversion Structure and approximately 2.6 acres of additional ROW east of the structure. The impacts would be within the previously disturbed areas including Davis Pond Levee, Mississippi River Levee, LA Department of Transportation and Development and public and private utilities ROW. Construction of these features would occur within previously designated and disturbed LA Hwy 18 or Mississippi River Levee ROW and a small area of private land. Construction of the ramp and emergency detour would require additional ROW: 2.6 acres for the east end of the ramp and detour, and 0.7 acres for the west end. Earthen fill for the bypass road and ramp construction could be acquired from one or both of two different sources, contractor furnished borrow, or government furnished borrow.

Comments received during the public comment period for the original IER 16 recommended that the proposed gate feature not be constructed across Hwy 18 because the gate would hinder the use of Hwy 18 during evacuation events. With the increased ROW required for ramp construction and the construction of the Union Pacific railroad gate with its adjacent temporary work site, adequate space does not exist between the railroad and the Hwy 18 road surface to completely reroute Hwy 18 south of the existing Hwy 18 alignment. During previous construction of the Davis Pond Diversion Canal, Hwy 18 remained open to local traffic because the adjacent Union Pacific Railroad was temporarily shifted to the south. At that time, the Davis Pond Freshwater Diversion project was under construction and the Davis Pond Diversion Canal had not been completed; therefore, a bridge capable of supporting the railroad was not previously required to relocate the railroad. Since the canal is in place, temporarily relocating the Union Pacific Railroad in the same location as was done during Davis Pond construction would be significantly more costly, and have significantly longer construction duration because construction of a bridge for the railroad crossing the Davis Pond Canal would be necessary. Railroad relocation was eliminated from consideration at a part of ramp construction because of cost and increased construction duration.

During construction of the Hwy 18 ramp, Hwy 18 would be closed to traffic for approximately 2 months during the overall 10 month estimated construction period. A two-lane, two way bypass road at the construction site and south of Hwy 18 will allow traffic to continue to flow at the construction site; however, delays in traffic are expected.

To minimize erosion and runoff of exposed solids at the detour road construction site a combination of sod, erosion control, and soil stabilizing mats and seeding would be utilized. These activities would result in the physical disturbance of maintained levee toe and maintained road shoulder, and the adjacent ditch.

Draft IERS #16, which detailed the impacts to the actions, was released for public review on 25 June 2010. Stakeholders had until July 24, 2010 to comment on the document. Comments were received from Federal and state governmental agencies and the public. Public meetings were held on April 27, June 9, and June 29, 2010.

Factors Considered in Determination. CEMVN has assessed the impacts of the action on significant resources in the project area including air quality, water quality, terrestrial habitats, wetlands, fisheries and aquatic habitat, wildlife, threatened and endangered species, cultural resources, recreation, aesthetics, and socioeconomic resources.

The CEMVN has assessed the environmental impacts of the proposed action and has determined that the proposed action would have the following impacts:

Short-term impact to air quality from heavy equipment and trucks used during the utility relocation construction activities;

Short-term direct impact to water quality in the Outer Cataouatche Canal from the placement of fill into the Outer Cataouatche Canal, for bank stabilization at closure and bridges and the construction of a scour pad at the outfall of the new Hwy 90 pump station;

Short-term disturbance to residents and nearby habitat from construction noise generated during Hwy 18 ramp construction and utility relocations;

Traffic delays and short-term closure of Hwy 18 to traffic;

Permanent loss of 1 acres of forested habitat from Hwy 18 ramp construction;

Permanent loss of up to 119 acres of vegetated wetlands (clearing, grubbing and filling and excavation);

Permanent loss of up to 16.5 acres of aquatic habitat;

Permanent loss of up to 34 acres of prime farmland;

Permanent displacement of fish and temporary displacement of wading birds, waterfowl, or other wildlife within the footprint of construction, and;

Long term benefits of providing an alternate evacuation route to Hwy 90 at Hwy 18.

All jurisdictional wetlands and bottomland hardwood forest impacts were assessed by the US Fish and Wildlife Service (USFWS) and CEMVN under the NEPA, Fish and Wildlife Coordination Act, and Section 906 (b) WRDA 1986 requirements. The impacts for the action are shown in Table 1.

Mitigation IERs documenting and compiling the unavoidable impacts discussed in each IER and containing mitigation plans to compensate for unavoidable habitat losses will be prepared. The mitigation plans will implement compensatory mitigation as early as possible. All mitigation activities will be consistent with standards and policies established in the Clean Water Act Section 404 and the appropriate USACE policies and regulations governing compensatory mitigation.

Table 1: Impacts to jurisdictional wet bottomland hardwoods swamps

| Habitat Type | Acres | AAHUs Needed (average annual habitat units) |
|--------------------------|-------|--|
| Wet Bottomland Hardwoods | 79.1 | 37.26 |
| Fresh marsh | 14.1 | 9.0 |

Environmental Design Commitments. The majority of the USFWS recommendations mirror those provided with IER #16 and were incorporated by reference into IERS #16.a. However, the USFWS recommendations that non-development easements be acquired for enclosed wetlands, the hydrologic connections with adjacent enclosed wetlands be maintained and additional hydrologic studies be conducted were not adopted by USACE. USACE Policy on mitigation for induced development states that “indirect impacts such as land development are subject to compliance with federal, local and state permit and zoning requirements and therefore, those interests are responsible for defining the appropriate mitigation requirement for land development activities.” As such, the recommended action of the purchase of non-developmental easements for wetlands enclosed by the project could not be purchased as part of the project because the conservation easement is not a part of the authorized purpose or need of the project that is flood damage reduction. At the time of the development those responsible for the development themselves, the developers, would be responsible for mitigating those impacts. Therefore, the recommendation to acquire non-developmental easements, which was responded to during the IER #16 review, was determined to be unnecessary. Hydrologic connections for the majority of the wetland enclosed will be maintained except during storm events when the system is closed. The need to perform additional studies of the 289 acre area to further investigate ponding or impacts to Hwy 90 east of the floodwall was responded to during the IER #16 review and was determined to be unnecessary. USFWS had one additional comment specific to this IERS regarding the avoidance of wading bird colonies with which the CEMVN concurs.

If any unrecorded cultural resources are determined to exist within the proposed project site, then work will not proceed in the area containing these cultural resources until a CEMVN staff archeologist has been notified and final coordination with the Louisiana State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officer has been completed.

Agency & Public Involvement. Various governmental agencies, non-governmental organizations, and citizens were engaged throughout the preparation of IER #16 and IERS #16.a. Agency staff from USFWS, National Marine Fisheries Service (NMFS), USEPA, US Geologic Survey, National Park Service, Louisiana Department of Natural Resources (LDNR), and Louisiana Department of Wildlife and Fisheries (LDWF) were part of an interagency team that has and will continue to have input throughout the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS) planning process (Appendix C of Final IERS #16.a).

Consistency with Coastal Zone Management Program. The consistency determination concurrence, C20080324 modification 2, was dated 4 June 2010.

Clean Air Act. The project is located in Jefferson Parish and St. Charles Parishes, which are both classified as attainment areas. The LDEQ indicated that in their 24 February 2010 e-mail that the submittal of additional information for general air conformity air quality purposes is not required.

Clean Water Act. Section (404)(b)(1) public notice was advertised for the 30-day period of 25 June - 24 July 2010. The Final 404(b)(1) evaluation was signed on 12 August 2010. A LDEQ Water Quality Certification letter, WQC 090212-06/AI 163172/CER20100001, was dated 14 April 2010.

Endangered Species Act. The USFWS concurred with the USACE determination that no threatened or endangered species or their critical habitat would be impacted by the proposed

project in their letter dated 7 May 2010 and in the draft Coordination Act Report dated 1 June 2010. During coordination for IER #16 the National Oceanic and Atmospheric Administration (NOAA) NMFS provided a list of 18 federally protected species under NMFS jurisdiction found in the State of Louisiana. The USACE made a no effect determination for the original IER #16 and for the proposed modifications described in IERS #16.a for federally protected species under the jurisdiction of NOAA NMFS.

Fish and Wildlife Coordination Act. A draft project-specific Coordination Act Report was received from USFWS by letter date 1 June 2010. A final report was received on 11 August 2010. All comments regarding USFWS trust resources have been resolved.

Migratory Bird Treaty Act. The USFWS addressed compliance with this Act in the “Draft Fish and Wildlife Coordination Act Report for the IER, Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4)” in November 2007. The USFWS will provide a post-authorization final supplemental 2(b) report to the draft programmatic report.

Section 305 of the Magnuson-Stevens Fishery Conservation and Management Act. The NMFS concurred with our determination that the proposed action would have no effect on essential fish habitat by their letter dated 15 April 2010.

Section 106 of the National Historic Preservation Act. The USACE forwarded two finding of “no historic properties affected” letters in conjunction with the proposed project modifications. The State Historic Preservation Officer by letters dated 20 May and 2 June 2010 concurred with the USACE findings of “no historic properties affected”. Eleven federally recognized tribes that have an interest in the region were given the opportunity to review the proposed action. The Alabama-Coushatta of Texas Tribe and the Choctaw Nation of Oklahoma concurred with our first “no historic properties affected” findings on 4 May and 10 May 2010. The Alabama-Coushatta of Texas Tribe also concurred with our second “no historic properties affected” finding by a letter dated 28 May 2010. No other Indian Tribes responded to the requests for comments.

There have been over 100 public meetings since March 2007 about proposed HSDRRS work. Issues relating to the modifications described in IERS #16.a were discussed at public meetings held on 27 April, 9 June and 29 June 2010.

CEMVN sends out public notices in local and national newspapers, news releases (routinely picked up by television and newspapers in stories and scrolls), and mail notifications to stakeholders for each public meeting. In addition, www.nolaenvironmental.gov was set up to provide information to the public regarding proposed HSDRRS work. CEMVN sends out e-mail notifications of the meetings to stakeholders who requested to be notified by this method. Public meetings will continue throughout the planning process.

Draft IERS #16.a Public Review Period

1. Agency Comments (found in Appendix G of Final IERS #16.a)
 - a. NMFS
 1. Comment letter draft IERS dated 1 July 2010
 2. Comment e-mail 404 Public Notice dated 1 July 2010
 - b. LDEQ

1. Comment e-mail dated 6 July 2010
 - c. LDWF
 1. Comment e-mail dated 22 July 2010
 - d. Seminole Tribe of Florida
 1. Comment letter dated 22 July 2010
 - e. USFWS
 1. Comment e-mail dated 23 July 2010
2. Public Comments (found in Appendix B of Final IERS #16.a)
 - a. Mr. and Mrs. Neal Clulee
 1. Fax comment dated 2 July 2010
 - b. Mr. Sebastian Valverde
 1. Fax comment dated 23 July 2010
 - c. Mr. Jeff Roux
 1. Fax comment dated 23 July 2010

Verbal comments about the proposed action were received during the public meetings held on 27 April, 9 June, and 29 June 2010.

Decision. The CEMVN Environmental Planning and Compliance Branch has assessed the potential environmental impacts of the proposed action described in this IER, coordinated the proposed action with other agencies as described above, and performed a review of the comments received during the public review period for draft IERS #16.a, as well as public meetings held on 27 April, 9 June and 29 June 2010.

The no action alternative was considered as discussed in the IERS. Furthermore, all practicable means to avoid or minimize adverse environmental effects have been incorporated into the recommended plan. Approximately 37.26 AAHUs of wet bottomland hardwood impacts and 9.0 AAHUs of fresh marsh will be compensated and will be addressed in a separate mitigation IER.

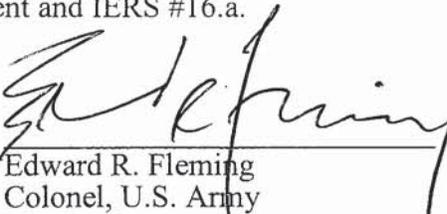
The public interest will be best served by implementing the selected plan as described in IERS #16.a in accordance with the environmental considerations discussed above.

CEMVN will prepare a Comprehensive Environmental Document (CED) or supplemental IER that may contain additional information related to IERS #16.a that becomes available after the execution of the Final IERS. The CED will provide a mitigation plan, comprehensive cumulative impacts analysis, and any additional information that addresses outstanding data gaps in any of the IERS.

I have reviewed IERS #16.a, and have considered agency recommendations and comments received from the public during the scoping phase and comment periods. I find the recommended plan fully addresses the objectives as set forth by the Administration and Congress in the 3rd, 4th, and 5th Supplemental Appropriations.

The plan is justified, in accordance with environmental statutes, and it is in the public interest to construct the actions as described in this document and IERS #16.a.

24 Aug 2010
Date


Edward R. Fleming
Colonel, U.S. Army
District Commander

**FINAL INDIVIDUAL ENVIRONMENTAL REPORT
SUPPLEMENTAL**

WEST BANK AND VICINITY

WESTERN TIE-IN

JEFFERSON AND ST. CHARLES PARISHES, LOUISIANA

IERS #16.a



**US Army Corps
of Engineers®**

August 2010

TABLE OF CONTENTS

| | | |
|--------|---|----|
| 1.0 | INTRODUCTION | 1 |
| 1.1 | PRIOR REPORTS | 1 |
| 2.0 | ALTERNATIVES | 2 |
| 2.1 | Description of the Alternatives | 3 |
| 2.2 | PROPOSED ACTION | 9 |
| 3.0 | AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES | 14 |
| 3.1 | Environmental Setting | 14 |
| 3.2 | Significant Resources..... | 14 |
| 3.2.1 | Air Quality | 15 |
| 3.2.2 | Water Quality..... | 16 |
| 3.2.3 | Terrestrial Habitat | 16 |
| 3.2.4 | Aquatic Habitat | 18 |
| 3.2.5 | Fish and Wildlife..... | 19 |
| 3.2.6 | Wetlands | 23 |
| 3.2.7 | Threatened and Endangered Species | 24 |
| 3.2.8 | Recreational Resources..... | 24 |
| 3.2.9 | Aesthetic (Visual) Resources..... | 25 |
| 3.2.10 | Cultural Resources | 25 |
| 3.2.11 | Farmland | 27 |
| 3.3 | Socioeconomics | 28 |
| 3.3.1 | Displacement of Population and Housing..... | 28 |
| 3.3.2 | Impacts to Employment, Business, and Industrial Activity..... | 29 |
| 3.3.3 | Availability of Public Facilities and Services..... | 30 |
| 3.3.4 | Effects on Transportation..... | 30 |
| 3.3.5 | Disruption of Desirable Community and Regional Growth | 31 |
| 3.3.6 | Impacts to Tax Revenues and Property Values | 32 |
| 3.3.7 | Changes in Community Cohesion | 32 |
| 3.4 | Environmental Justice..... | 33 |
| 3.4.2 | Discussion of Impacts..... | 35 |
| 3.5 | Hazardous, Toxic, And Radioactive Waste (HTRW)..... | 35 |
| 3.5.1 | Existing Conditions..... | 35 |

| | | |
|-------|---|-----|
| 3.5.2 | Discussion of Impacts | 36 |
| 3.6 | Noise | 36 |
| 3.6.1 | Discussion of Impacts | 37 |
| 4.0 | CUMULATIVE IMPACTS..... | 38 |
| 5.0 | SELECTION RATIONALE..... | 42 |
| 6.0 | COORDINATION AND CONSULTATION | 43 |
| 6.1 | PUBLIC COORDINATION..... | 43 |
| 6.2 | AGENCY COORDINATION | 44 |
| 7.0 | MITIGATION | 47 |
| 8.0 | COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS | 48 |
| 9.0 | CONCLUSION..... | 51 |
| 9.1 | Final Decision | 51 |
| 9.2 | Prepared By..... | 53 |
| 9.3 | Literature Cited | 54 |
| 10.0 | APPENDICES | 56 |
| | Appendix A - List of Acronyms and Definitions of Common Terms | 56 |
| | Appendix B - Public Comment and Response Summary | 58 |
| | Appendix C - Institutional, Ecological, and Public Significance of Resources..... | 69 |
| | Appendix D - Members of Interagency Environmental Team | 76 |
| | Appendix E –Engineering Evaluation of Degrade of Section of Davis Pond East Guide Levee | 77 |
| | Appendix F – Hydraulics and Hydrologic Analysis Addendum | 97 |
| | Appendix G- Interagency Correspondence..... | 145 |

LIST OF TABLES

| | |
|---|----|
| Table 1. Utilities to be Relocated by Reach and Type..... | 9 |
| Table 2. Significant Resources in Project Study Area..... | 15 |
| Table 3. Population by Race and Ethnicity St.Charles and Jefferson Parishes | 35 |
| Table 4. HSDRRS Impacts and Compensatory Mitigation to be Completed..... | 39 |
| Table 5. IERS #16.a Preparation Team | 53 |
| Table 6. Institutional, Ecological, and Public Significance of Resources | 70 |

LIST OF FIGURES

Figure 1: IER #16 WBV – Western Tie-In Project Area.....4
Figure 2. No Action Alternative8
Figure 3. Proposed Project Changes12
Figure 4. Davis Pond Guide Levee South of Outer Cataouatche Canal Looking West21
Figure 5. Outer Cataouatche Canal Aquatic Habitat22

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, New Orleans District (CEMVN), has prepared this Individual Environmental Report Supplemental #16.a (IERS #16.a) to evaluate the potential impacts associated with the proposed project revisions to the original IER #16 project West Bank and Vicinity (WBV), Western Tie-In Project Area. Since IER #16 was completed, the preliminary project feature designs have undergone revisions. This IER Supplemental contains changes to the original plan including:

- utilities relocations,
- the relocation of Highway (Hwy) 90 Pumping Station,
- installing bank stabilization to closures across the Outer Cataouatche Canal,
- converting temporary bypass roads to permanent access for Hwy 90, and
- construction of a ramp at Hwy 18, River Road, instead of a floodgate.

Comments received during the public comment period for the original IER #16 recommended that the proposed gate feature not be constructed across Hwy 18 because the gate would hinder the use of Hwy 18 during evacuation events. Additionally State of Louisiana and local transportation, safety and law enforcement personnel raised similar concerns about the closure of Hwy 18 during storm events if a gate was constructed at Hwy 18.

The term “100-year level of risk reduction,” as it is used throughout this document, refers to a level of protection that reduces the risk of hurricane surge and wave-driven flooding that the New Orleans metropolitan area has a 1 percent chance of experiencing each year. The proposed action is located in Jefferson and St. Charles Parishes near New Orleans, Louisiana (figure 1).

IERS #16.a has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality’s (CEQ) Regulations (40 CFR §1500-1508), as reflected in the USACE Engineering Regulation, ER 200-2-2. The execution of alternative arrangements, in lieu of the traditional Environmental Assessment or Environmental Impact Statement, is provided for in ER 200-2-2, Environmental Quality (33 CFR §230) and pursuant to the CEQ NEPA Implementation Regulations (40 CFR §1506.11). The alternative arrangements can be found at www.nolaenvironmental.gov, and are herein incorporated by reference.

The CEMVN implemented Alternative Arrangements on March 13, 2007, under the provisions of the CEQ Regulations for Implementing the NEPA (40 CFR §1506.11). This process was implemented in order to expeditiously complete environmental analysis for any changes to the authorized system and the 100-year level of the Hurricane and Storm Damage Risk Reduction System (HSDRRS), formerly known as the Hurricane Protection System (HPS), authorized and funded by Congress and the Administration. The proposed actions are located in southeastern Louisiana and are part of the Federal effort to rebuild and complete construction of the HSDRRS in the New Orleans Metropolitan area as a result of Hurricanes Katrina and Rita.

On June 12, 2009, the CEMVN Commander signed the Decision Record for IER #16. IER #16 is incorporated by reference into this supplemental document. Copies of the document and other supporting information are available upon request or at nolaenvironmental.gov. This supplemental document has been prepared to address the proposed changes in the Government’s approved plan.

1.1 PRIOR REPORTS

A number of studies and reports in the proposed project area have been prepared by the USACE, other Federal, state and local agencies, research institutions, and individuals. Pertinent studies,

reports and projects prepared since June 2009 are discussed below. All other relevant reports are listed in IER #16 and are incorporated herein by reference.

West Bank and Vicinity Relevant Reports:

- On 9 February 2010, the CEMVN District Engineer signed a Decision Record on IER Supplemental #14.a entitled “Westwego to Harvey Levee, Jefferson Parish, Louisiana.” The document evaluates the potential impacts associated with constructing a larger levee footprint for the WBV-14.c.2 reach and revisions to fronting protection and floodwall construction at the Ames and Mt. Kennedy Pump Stations.
- On 22 January 2010, the CEMVN District Commander signed a Decision Record on IER #32 entitled “Contractor-Furnished Borrow Material #6, Ascension, Plaquemines, and St. Charles Parishes, Louisiana.” The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.
- On 4 December 2009, the CEMVN District Commander signed a Decision Record on IER #13 entitled “Hero Canal Levee and Eastern Tie-In, Plaquemines Parish, Louisiana.” IER #13 evaluates the potential impacts associated with raising and/or constructing levees, and other structures to meet the 100-year level of risk reduction for Belle Chase, Oakville and other unincorporated areas of Plaquemines Parish.
- On 28 September 2009, the CEMVN District Commander signed a Decision Record on IER #30 entitled, “Contractor-Furnished Borrow Material #5, St. Bernard and St. James Parishes, Louisiana and Hancock County, Mississippi.” The document evaluates the potential impacts associated with the action taken by commercial contractors as a result of excavating contractor furnished borrow area for use in construction for HSDRRS.
- On 31 July 2009 the CEMVN District Commander signed a Decision Record on IER #28 entitled “Government-Furnished Borrow Material #4, Plaquemine, St. Bernard and Jefferson Parishes, Louisiana.” The document evaluates the potential impacts associated with approving government-furnished borrow areas and an access route for use in construction of the HSDRRS.

2.0 ALTERNATIVES

At the time IER #16 was completed, engineering designs were not finalized for all actions and alternatives. Following completion of IER #16 more detailed analysis has been conducted for some project features. Relocations plans have also progressed to a point that a larger project footprint is necessary to provide right of way (ROW) for utility relocations during flood risk reduction feature construction activities.

The proposed changes include utilities relocations, the relocation of Hwy 90 Pumping Station, installing bank stabilization to closures across the Outer Cataouatche Canal, retaining temporary bypass roads to provide permanent access for Hwy 90 and construction of a ramp at Hwy 18 (River Road). In addition degrading a section of the Davis Pond Freshwater Diversion Canal’s east guide levee and use of the material for levee construction was proposed in the draft supplemental but will not be implemented. If the relocations do not occur, gaps would occur within the IER #16 risk reduction features. Additionally, comments received during the public comment period for the original IER #16 and from state and local government officials recommended not constructing the proposed gate across Hwy 18 because the gate would hinder the use of Hwy 18 during evacuation events. The proposed changes would result in additional impacts to the natural or human environment and are addressed in this IER Supplemental.

2.1 DESCRIPTION OF THE ALTERNATIVES

No Action. Under the no action alternative, the Government-approved action as described in IER #16 would be constructed (figure 2). The no action alternative was divided into five main reaches: reach 1- Closure Across the Outer Cataouatche Canal and Levee to Bayou Verret; reach 2- Bayou Verret Closure Structure to Hwy 90 Crossing Levee; reach 3- Hwy 90 Crossing, reach 4- Hwy 90 Crossing to Davis Pond diversion Control Structure; and reach 5- Levee on East Side of the Davis Pond Diversion Project to Mississippi River Levee.

Proposed Action. Under the proposed action alternative modifications to the approved action as stated in IER #16 would be implemented. These modifications include utility relocations, replacement of the Hwy 90 pump station, the construction of a ramp at Hwy 18 instead of a floodgate, adding bank stabilization at closures along the Outer Cataouatche Canal and keeping the detour roads as permanent access for Hwy 90 (figure 3). In addition the degrading of a section of the Davis Pond Guide Levee was proposed in the draft IERS #16.a, that modification has been removed from the final plan.

2.1.1 No Action

The no action alternative is the South of Outer Cataouatche Canal to Davis Pond Tie-In (Figure 2). This alternative would consist of approximately 23,600 linear feet (LF) of levee, floodwall, and closure structures constructed to an elevation of +13.5 feet to +15.5 feet NAVD88.

2.1.1.1 Reach 1 - Closure Across Outer Cataouatche Canal and Levee to Bayou Verret

Connecting to the western end of the Lake Cataouatche Levee, reach 1 originates approximately 1,200 feet south of Hwy 90 with an approximately 500-foot long, non-navigable earthen closure across the Outer Cataouatche Canal. The earthen closure would require approximately 500 feet of ROW to accommodate construction resulting in approximately 5.7 acres being disturbed for construction of which 2.3 acres would be fill placed into open water. Discharge lines from the Hwy 90 Pumping Station would be extended approximately 800 feet in length south to cross over the new closure so that the pumping station discharge would be on the flood side of the new alignment.

Once across the Outer Cataouatche Canal, the alignment would continue west as earthen levee with a geotextile base, a base width of 500 feet, and a top elevation of +15.5 feet NAVD88. The alignment would continue west and transition to an approximately 300-foot long floodwall on the eastern side of Bayou Verret with a top of elevation of +15.5 feet NAVD88. The floodwall would then tie into the approximately 135-foot long Bayou Verret closure structure. In the area adjacent to the new Bayou Verret closure structure, the ROW width would be expanded to 700 feet.

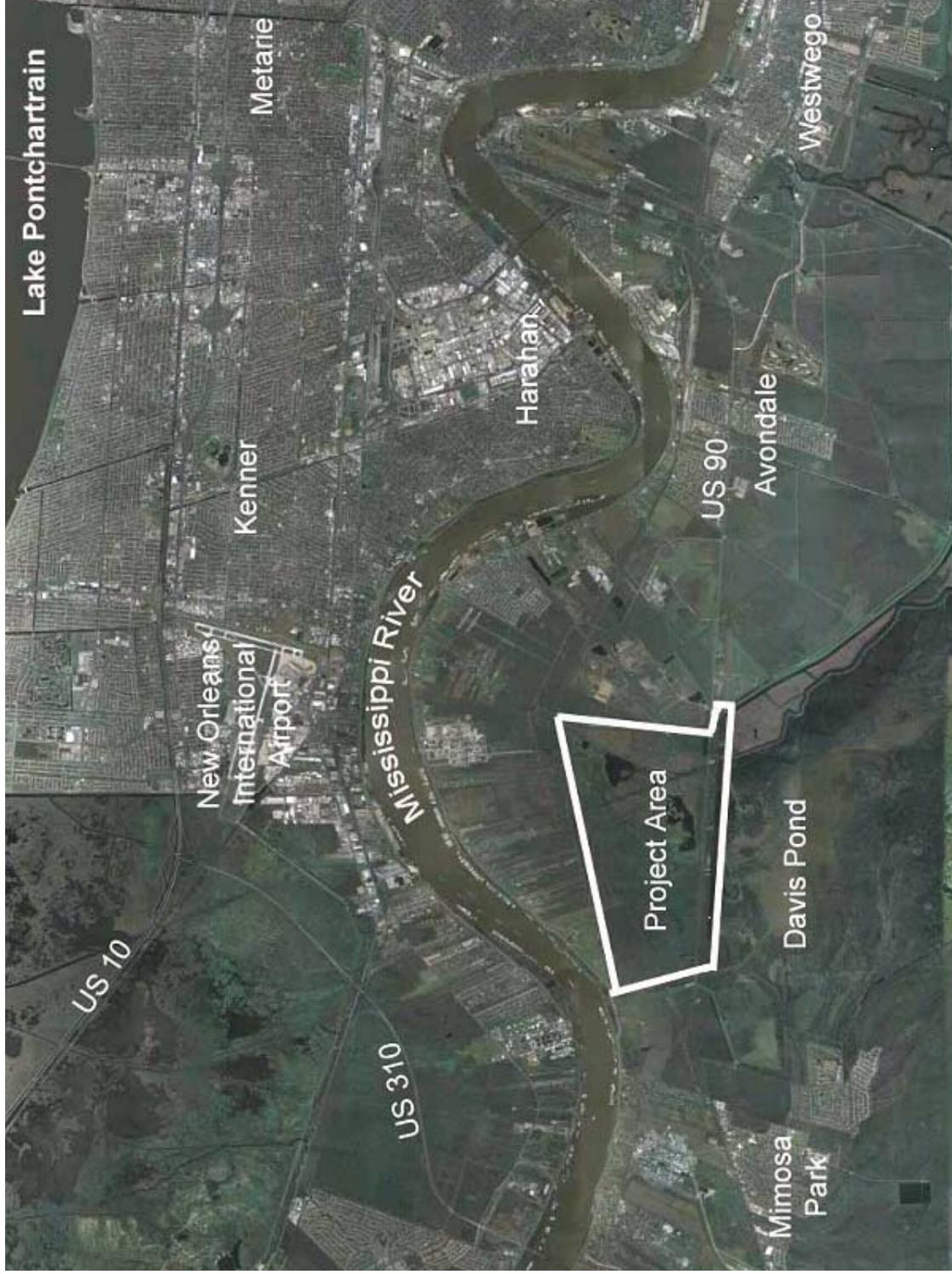


Figure 1. IER #16 WBV-Western Tie-In Area

The Bayou Verret closure structure would have a usable navigation opening of approximately 60 feet and a depth of -10 feet NAVD88. The maximum width would be approximately 135 feet. The closure structure would remain open most of the time. In the event of a storm, the structure would be closed and remain closed until the storm has passed and emergency operations were concluded.

Adjacent to the Bayou Verret structure, a bypass channel would be constructed to allow navigation and drainage while the closure structure is being built. Providing a cross sectional drainage area equal to the cross sectional area of the openings under Hwy 90 was a design criterion to ensure water exchange to the more than 2,000 acres of wetland north of Hwy 90. The bypass channel could be on the east or west side of Bayou Verret and would be approximately -6 feet deep NAVD88, approximately 78 feet wide, and 1,000 feet long.

In addition to the eastern closure of the Outer Cataouatche Canal, access and egress to reach 1 would be provided by the construction of a permanent access corridor approximately 100 feet wide and extend approximately 500 feet in length from Hwy 90 to the north bank of the Outer Cataouatche Canal. As part of this access, a permanent bridge would be constructed spanning the outer Cataouatche Canal. South of the Outer Cataouatche Canal, the permanent access would continue the 100-foot width for an additional 300-foot length to join the work site.

Construction of reach 1 would require approximately 44 acres of new ROW, would permanently fill approximately 4.5 acres of open water habitat, would require the clearing, grubbing, and fill of approximately 38 acres of vegetated wetlands, and excavation of 1.78 acres of wetlands to construct the bypass channel and would permanently alter approximately 0.15 acres of canal bottom from the footing under a permanent bridge spanning the Outer Cataouatche Canal.

2.1.1.2 Reach 2 - Bayou Verret Closure Structure to Hwy 90 Crossing Levee

On the west side of the Bayou Verret closure structure, the alignment would continue west as floodwall with a top elevation of +15.5 feet NAVD88 for approximately 300 feet in length. The alignment would then turn northwest for a short distance and then again transition to a westerly direction to parallel the south bank of the Outer Cataouatche Canal. Along the west side of the Bayou Verret closure structure, the ROW would be expanded to 1,100 feet in width. Within this increased ROW, an approximately 1,200-foot length of an unnamed canal that is approximately 100 feet wide would be filled.

As the alignment continues west, the floodwall would transition to a geotextile base levee with a base width of 500 feet and a top elevation of +15.5 NAVD88 for a length of approximately 9,600 feet. At the western end of the 9,600-foot length, the levee would then turn north for a length of approximately 800 feet crossing the Outer Cataouatche Canal and approaching Hwy 90. This cutoff would isolate approximately 6 acres of open water of the Outer Cataouatche Canal. To provide some opportunity for water exchange to this portion of the Outer Cataouatche Canal a gap would be cut into the Davis Pond east guide levee (to the south) opening the potential for flow into Davis Pond. North of the Outer Cataouatche Canal, the levee would transition to a floodwall, approximately 300 feet in length, turn 90-degrees to the west, and continue westward parallel Hwy 90.

An unnamed drainage canal would be enlarged between Hwy 90 and the Outer Cataouatche Canal. The drainage canal would be enlarged from the existing 20-foot width to approximately 100-feet wide and 10-feet deep.

Two temporary access corridors with temporary bridges, a permanent access corridor and permanent bridge, and two temporary staging areas would be constructed.

Construction of reach 2 would require approximately 167 acres of new ROW, would create approximately 1 acre of aquatic habitat (canal widening), would permanently fill approximately 7.4 acres of open water habitat, would require the clearing, grubbing, and fill of approximately 143 acres of vegetated wetlands, and would permanently alter approximately 0.1 acres of canal bottom from the footing under a permanent bridge spanning the Outer Cataouatche Canal.

2.1.1.3 Reach 3 – Hwy 90 Crossing

The floodwall that had paralleled Hwy 90 in the end of reach 2 would turn north on a 90-degree angle and continue another 800 feet in length crossing Hwy 90.

Construction of reach 3 would require approximately 10.2 acres of new ROW and would require the clearing, grubbing, and fill of approximately 1 acre of vegetated wetlands. All other actions necessary to construct this reach would occur within existing LADOTD Hwy 90 ROW.

2.1.1.4 Reach 4 – Hwy 90 Crossing to Davis Pond Diversion Control Structure

North of Hwy 90, the floodwall would continue for approximately 200 feet in length, turn 90 degrees west for approximately 100 feet in length with a width of disturbance of approximately 500 feet. At the end of the floodwall, the alignment would transition to a geotextile base earthen levee with a base width of 300 feet and a top elevation of +13.5 NAVD88. The levee would extend approximately 2,700 feet long in a west northwesterly direction. The drainage canal enlargement that began south of Hwy 90 would continue in this reach initially paralleling and offsetting the floodwall alignment by approximately 500 feet and then turning west northwesterly and paralleling the protected-side levee toe for the entire 2,700-foot length. The drainage canal would be approximately 100 feet wide and 10 feet deep.

Construction of reach 4 would require approximately 29 acres of new ROW and would require the clearing, grubbing, and fill of approximately 22 acres of vegetated wetlands. An additional 6.75 acres of vegetated wetlands would be excavated to create 6.75 acres of new open water (drainage canal) habitat.

2.1.1.5 Reach 5 – Levee on East Side of the Davis Pond Diversion Project to Mississippi River Levee

When the alignment reaches the Davis Pond Freshwater Diversion Canal's eastern construction ROW, the levee would turn north and run parallel to the Davis Pond Diversion Project's Main East Guide Levee to the BNSF Railroad. The existing guide levee would be incorporated into the new levee. The new levee would be constructed to +13.5 feet NAVD88 for a distance of approximately 1,300 feet.

At the BNSF Railroad crossing, the alignment would transition to floodwall of approximately +13.5 feet NAVD88 for a distance of approximately 150 feet and require 400 feet of construction ROW for the construction of the railroad closure structure. On the north side of the BNSF Railroad crossing, the alignment would again return to a levee of +13.5 feet NAVD88 for the remaining distance (approximately 3,000 feet).

At the northern end of the alignment, the levee would transition to floodwall and closure structures (e.g., roller gate) to cross the Union-Pacific Railroad track, Hwy 18 (River Road) (with a closure structure), and terminate by tying into high ground at the Mississippi River Levee in St. Charles Parish.

During construction of the closure structures on Hwy 18, a temporary traffic detour would be constructed south of, and parallel to, Hwy 18 and an emergency bypass route with two ramps would be constructed on the north side of Hwy 18, to provide emergency access to the toe of the Mississippi River Levee.

Construction of these features would occur entirely within previously designated or disturbed Hwy 18 or Mississippi River Levee ROW. Approximately 1,300 cubic yards (cy) of earthen fill and 180 tons of asphalt would be required for the detour road, bypass route, and ramp construction.

Construction of reach 5 would require less than 5 acres of new construction ROW as the majority of the footprint of disturbance is already designated as USACE ROW. There would be no clearing, grubbing, or filling of wetlands. There would be a small wooded area impacted by the Hwy 18 ramp construction.

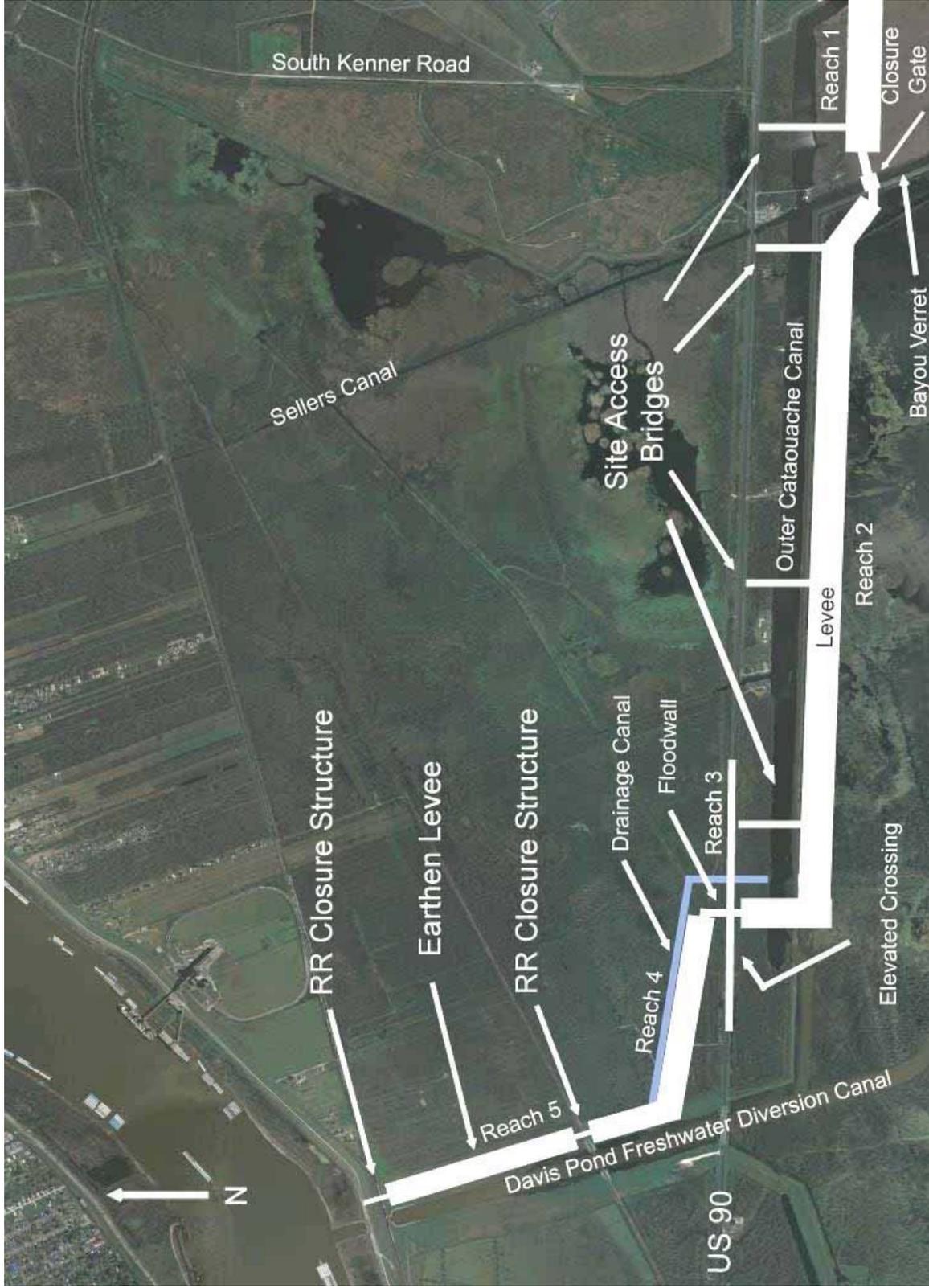


Figure 2. No Action Alternative

2.2 PROPOSED ACTION

The proposed action consists of modifications to the Government –approved action in IER #16 (figure 3). These modifications include constructing utility relocations, replacing the Hwy 90 pump station, adding bank stabilization to some areas, retaining the detour roads as permanent access for Hwy 90 and the constructing of a ramp at Hwy 18 instead of a floodgate. In addition degrading of a section of the Davis Pond Guide Levee was proposed in the draft IERS #16.a but has been removed from the final plan. These proposed changes would result in impacts in addition to those discussed in IER #16. The impacts associated with the proposed action discussed below are additional to the “no action” impacts.

2.2.1 Relocation of Utilities (Reaches 3 and 5)

While final plans have not been completed for the utility relocations, information is available as to the type and location of the existing utilities and that they require relocation. To meet the goal of providing hurricane and storm damage risk reduction to the Greater New Orleans area by June 2011, the USACE must move forward with identifying an envelope of impacts so the environmental assessment and compliance can be achieved and construction activities for the overall Western Tie-in project can proceed to completion. Each individual utility owner prepares a relocation plan. Because specific relocation plans have not been completed for these utilities, an area within which all the relocation activities are anticipated to occur has been conservatively identified and a discussion of impacts within the area identified has been developed. This area will be described within this document as the general project area. Previous proposals for directional drill pipeline relocations identified the need to construct temporary work pads for pushing and pulling the pipeline on either side of the directional drill under the HSDRRS project feature. In those cases, in addition to re-impacting the existing pipeline corridor, additional ROW of approximately 5 acres is needed to construct temporary work locations. Impacts for features such as overhead power lines would require less physical space for the relocations as the equipment and utility footprints are smaller. Utility owners would also be required to obtain all permits necessary to comply with all Federal and State laws, rules and regulations including Section 404 permits through the CEMVN regulatory office. The Section 404 process focuses on minimizing impacts to wetlands.

Four gas lines, one waterline, one overhead communication line and three oil and gas pipelines are located within reach 3. In reach 5, two communication lines, one power line and one gas line would require relocation. Possible relocation techniques are directional drill or sleeve through the floodwall. Both of these relocation methods would require staging and construction areas located outside of the previously cleared project ROW.

Table 1. Utilities to be Relocated by Reach and Type

| Reach | # of Utilities to be Relocated | Type of Utility |
|-------|--------------------------------|---|
| 3 | 9 | Gas pipelines, communication lines, water lines |
| 5 | 4 | Gas pipelines, communication lines, power line |

Utilities including large gas pipelines are located within the alignment of the Government's approved plan. Failing to construct utility relocations would result in physical gaps in the Government's approved plan outlined in IER #16. This would occur mainly at the floodwall in reach 3 where pile driving associated with floodwall construction could not occur until pipelines are relocated. If the piles are not driven some segments of the floodwall could not be constructed.

2.2.2 Degrading Section of Davis Pond Fresh Water Diversion East Guide Levee (no associated reach)

A degrade of approximately 2,400 LF of the existing Davis Pond East Guide Levee was proposed in the draft IERS. Due to objections received during the comment period the proposed Davis Pond East Guide Levee Degrade will not be implemented. The purpose of the proposed levee degrade was to improve water exchange to wetlands whose water exchange would be reduced with the construction of the Outer Cataouatche Canal western closure associated with Western Tie-In levee construction with the added benefit of generating borrow material that could be utilized for levee construction. Although the levee degrade will not be implemented the gap described in IER #16 to provide water exchange to the same 63 acre area will be constructed to retain water exchange to wetlands that would otherwise be isolated by the construction of the western Outer Cataouatche Canal closure.

The levee degrade was recommended by state and federal resources agencies during the comment period for IER #16. It was recommended that additional lengths of the Davis Pond East Guide Levee be degraded to provide benefits to the adjacent wetlands. Because the Western Tie-In Levee would replace the function served by the guide levee, the guide levee could be removed without affecting the HSDRRS. Additional hydrologic evaluation was conducted to ensure that degrading the guide levee would not impact the reach of Hwy 90 outside of the new HSDRRS and east of the Davis Pond Diversion canal. Due to objections received during the public comment period the proposed Davis Pond East Guide Levee degrade will not be implemented.

2.2.3 Reach 1 - Closure Across Outer Cataouatche Canal and Levee to Bayou Verret: Pump Station Demolition and Construction

The existing Hwy 90 pump station is located on previously disturbed habitat adjacent to Lake Cataouatche Levee with discharge lines over the levee crown. The exact location of the new pump station has not been identified. However, the proposed pump station would be located along the Lake Cataouatche Levee alignment between 250 feet to 850 feet southeast of the existing Hwy 90 pump station on the protected side of the levee. It would be designed to pump over elevation 15.5 NAVD88 to a still water level (SWL) (2057 90% SWL) of 9.4 feet. The pump station would include two 300 Hp pumps each with a flow capacity of 72.5 cubic feet per second (cfs) (145 cfs total) and a flow velocity of 7.8 feet per second each. Depending on the location, the discharge pipes would be between 615 feet and 340 feet long and have a 42 inch diameter. A riprap discharge pad would be required at the out fall of the discharge lines and would be approximately 2,500 feet square and would be placed in the Outer Cataouatche Canal. Approximately 160 cubic yards of debris would be generated from pumping station demolition. The material generated would be re-cycled and/or placed in a solid waste land fill. In addition, an access road and ramps would be constructed within the existing Lake Cataouatche levee (IER #15) ROW to provide access from Hwy 90 to the new pump station and access ramps off the levee crown around the pump station. To provide power to the new pump station 300 LF to 1,000 LF of additional power overhead lines would need to be installed within the Lake Cataouatche Levee (IER #15) ROW.

The recommendation to replace the Hwy 90 pump station is based on current flow capacity and the significant increase in the length of the discharge line (from 270 to 825 feet) to reach up and over the newly constructed Western Tie-in Levee. The existing pump station does not have the

power to adequately pump water the distance required while maintaining the current flow capacity over the HSDRRS levee elevations. If the pumps at the existing pump station were upgraded to accommodate the increased length of the discharge line, the entire facility would need to be reconstructed.

2.2.4 Reach 2 - Bayou Verret Closure Structure to Hwy 90 Crossing Levee: Adding Bank Stabilization to Closures across the Outer Cataouatche Canal

Approximately 4,062 tons of 18 inch thick riprap and 4,299 square yards of Geotextile Separator Fabric would be placed on the flood-side toe of the Outer Cataouatche Canal closure located at the most eastern reach of the Western Tie-In levee alignment (Sta. 236+25 to Sta. 241+53). The berm elevation would be +6.0 feet NAVD88.

Additionally, where the East-West levee turns north and crosses the Outer Cataouatche Canal, 2,070 tons of 18 inch thick riprap and 2,190 square yards of Geotextile Separator Fabric would be placed on the protected side of the levee, immediately east of where the levee crosses and closes the canal (Sta. 91+50 to Sta. 94+20). The berm elevation would be +3.0 feet NAVD88.

Lastly, 273 tons of 18 inch riprap and 289 square yards of Geotextile Separator Fabric would be placed underneath the bridges located along the foreshore to provide scour protection.

The recommendation to add foreshore protection at the locations listed previously would protect against erosion in areas that have been identified as being susceptible to wave wash from vessel traffic.

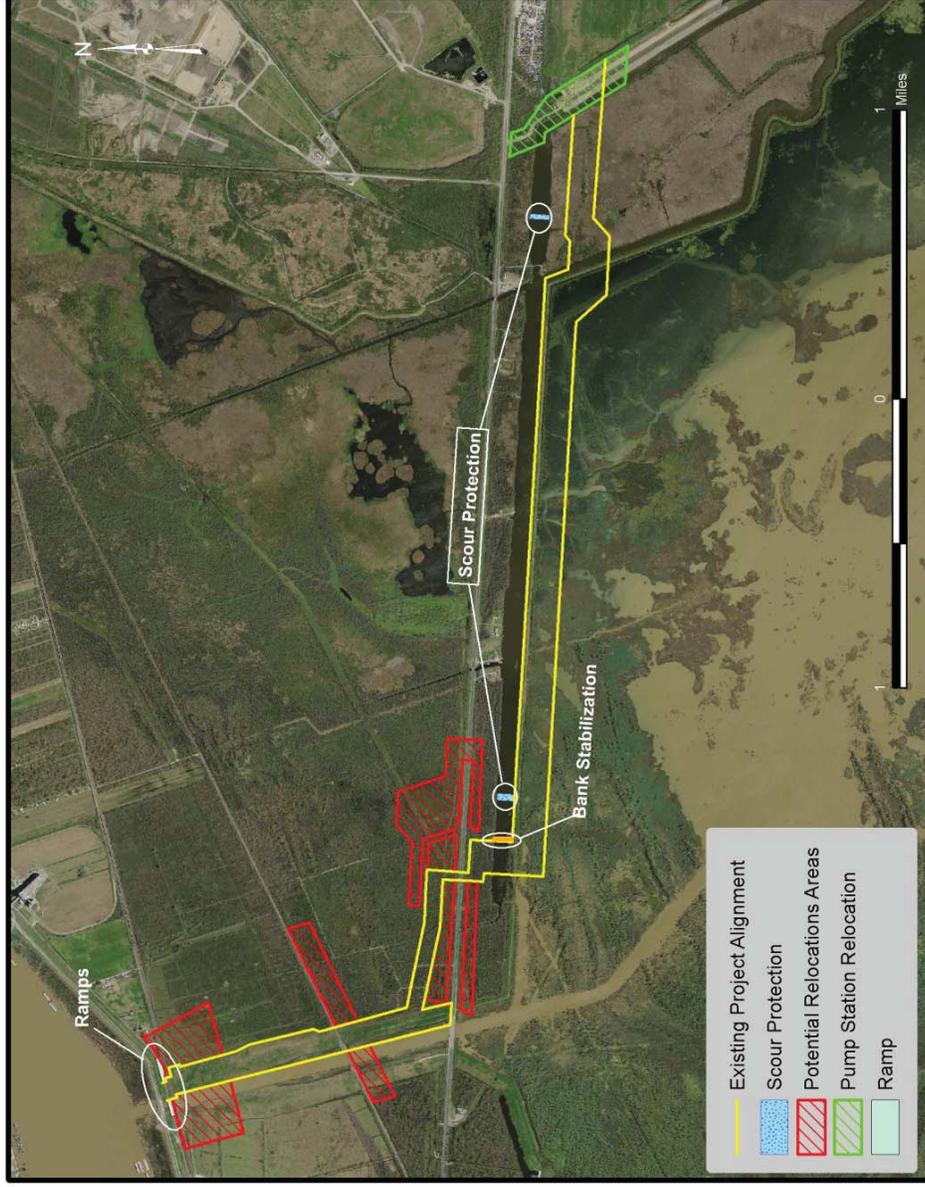
2.2.5 Reach 3 – Hwy 90 Crossing: Temporary Detour as Permanent Access for Hwy 90

Hwy 90 traffic would be maintained during levee construction by the use of a detour roadway. The detour would be a two-lane detour to the north of Hwy 90 for westbound traffic and a two-lane detour to the south for eastbound traffic.

The detours would remain in place to provide access to adjoining properties following the construction of the Hwy 90 Bridge, which construction would permanently impair existing access. In addition, U-shaped turnaround lanes that would cross underneath the Hwy 90 Bridge and tie back into the access road on the other side of the highway would be constructed. The turnaround lanes would consist of only one lane in either direction. These roadways were originally designated to be temporary and they would now become permanent. Construction of the detour roads and turnarounds would require approximately 38,502 cubic yards of earthen fill.

Construction of the detour roads was described in IER #16. The construction activities will occur within existing LADODT ROW. The LADODT ROW is comprised of both maintained road shoulder and wetlands. Approximately 10 acres of wetlands would be impacted by detour road construction.

Western Tie-In IER Supplemental 16



Imagery: 2009 NORPC

Figure 3. Proposed Project Changes

2.2.6 Reach 5 – Levee on East Side of the Davis Pond Diversion Project to Mississippi River Levee: Ramp vs. Floodgate at Hwy 18

Hwy 18, also known as River Road, is an existing two lane rural arterial highway located in St. Charles Parish, with traffic flow in both directions. This corridor of Hwy 18 is used for both commercial and rural traffic for the citizens living in and around the Ama and Luling communities. At the southern end of the alignment, the levee constructed for Western Tie-in north-south levee reach would transition to a floodwall and closure structure to cross the Union-Pacific Railroad track. The floodwall would then be tied into the proposed Hwy 18 ramp. In IER #16, a floodgate was proposed to cross Hwy 18, but in response to public concerns about maintaining Hwy 18 as an open evacuation route, an earthen ramp is proposed instead.

The Hwy 18 earthen ramp is designed to have two 12-foot lanes, 8-foot outside shoulder, 1:4 slope and pavement grade of 2.5 percent as stated in the LADOTD design standards. The approved pavement section of the ramp consists of a 2 inch asphaltic concrete wearing course, 6 inch asphaltic concrete binder course and 5 inch asphaltic concrete base course. The ramp would span approximately 1,200 feet east to west; the initial crest elevation at year 2011 would be +12.0 feet and a lift during year 2027 would raise the crest elevation to +15.0 feet. Hwy 18 would be closed for approximately 2 months during the construction period. During this period a two-lane, two way bypass road running parallel and south of Hwy 18 would be in place. The bypass road would be in place for all traffic. Traffic flow on the two-lane, two way bypass road would be unregulated. Through the 2 month Hwy 18 closure period a LADOTD detour would also be in place. Traffic would detour using Hwy 90 via Hwy 3060 and back on to Hwy 18, an approximately 25 mile detour. Traffic eastbound on Hwy 18 west of the Davis Pond Diversion Canal would be rerouted to Hwy 90 at Hwy 3060. Eastbound traffic would proceed east on Hwy 90 to the intersection with Hwy 18 and then proceed west on Hwy 18. Westbound traffic on Hwy 18 east of the Davis Pond Diversion Canal would travel east on Hwy 18 to Hwy 90, then westbound on Hwy 90 to Hwy 3060 where it could rejoin westbound Hwy 18. Constructing the two lane, two way bypass road would provide emergency and other vehicles a direct route along Hwy 18. The two lane, two way bypass road would run parallel to the ramp construction along the south, and would have a total width of 27 feet with an 11-foot lane width, a 2-foot shoulder and a 1-foot stripped area on each side. It is designed to maintain a minimum 9-foot clear distance from the centerline of the northern most Union Pacific Railroad track to the southern most edge of the bypass road. The two lane bypass road is designed to support emergency vehicles including fire trucks. Less than 0.25 acres would be graded, filled with earthen material, and surfaced with asphalt to construct the bypass road on the south side of Hwy 18. The bypass road would be removed after ramp construction is complete. The total amount of fill required for both the ramp and the bypass road construction is estimated at 5,364 cubic yards.

The levee would terminate on the north side of the ramp by tying into high ground at the Mississippi River Levee in St. Charles Parish. This section would require an additional approximate 0.7 acres construction right of way (ROW) west of the Davis Pond Diversion Structure and approximately 2.6 acres of additional ROW east of the structure. The impacts would be within the previously disturbed areas including Davis Pond Levee, Mississippi River Levee, LA Department of Transportation and Development and public and private utilities ROW. Construction of these features would occur within previously designated and disturbed LA Hwy 18 or Mississippi River Levee ROW and a small area of private land. Construction of the ramp and emergency detour would require additional ROW: 2.6 acres for the east end of the ramp and detour, and 0.7 acres for the west end. Earthen fill for the bypass road and ramp construction could be acquired from one or both of two different sources, contractor furnished borrow, and /or government furnished borrow.

Comments received during the public comment period for the original IER 16 recommended that the proposed gate feature not be constructed across Hwy 18 because the gate would hinder the use of Hwy 18 during evacuation events. With the increased ROW required for ramp construction and the construction of the Union Pacific railroad gate with its adjacent temporary work site, adequate space does not exist between the railroad and the Hwy 18 road surface to completely reroute Hwy 18 south of the existing Hwy 18 alignment. During previous construction of the Davis Pond Diversion Canal, Hwy 18 remained open to local traffic because the adjacent Union Pacific Railroad was temporarily shifted to the south. At that time, the Davis Pond Freshwater Diversion project was under construction and the Davis Pond Diversion Canal had not been completed; therefore, a bridge capable of supporting the railroad was not previously required to relocate the railroad. Since the canal is in place, temporarily relocating the Union Pacific Railroad in the same location as was done during Davis Pond construction would be significantly more costly, and have significantly longer construction duration because construction of a bridge for the railroad crossing the Davis Pond Canal would be necessary. Railroad relocation was eliminated from consideration at a part of ramp construction because of cost and increased construction duration.

During construction of the Hwy 18 ramp, Hwy 18 would be closed to traffic for approximately 2 months during the overall 10 month estimated construction period. A two-lane, two way bypass road at the construction site and south of Hwy 18 will allow traffic to continue to flow at the construction site; however, delays in traffic are expected.

To minimize erosion and runoff of exposed solids at the detour road construction site a combination of sod, erosion control, and soil stabilizing mats and seeding would be utilized. These activities would result in the physical disturbance of maintained levee toe and maintained road shoulder, and the adjacent ditch.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 ENVIRONMENTAL SETTING

IER #16 contains a complete discussion of the environmental setting for the project area and is incorporated by reference into this document. As such, no discussion of environmental setting is made in this document.

3.2 SIGNIFICANT RESOURCES

This section identifies the significant resources located in the vicinity of the proposed action, and describes in detail those resources that would be impacted, directly or indirectly, by the alternatives. Direct impacts are those that are caused by the action taken and occur at the same time and place (40 CFR §1508.8(a)). Indirect impacts are those that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR §1508.8(b)). Cumulative impacts are discussed in section 4.

The resources described in this section are those recognized as significant by laws, executive orders, regulations, and other standards of Federal, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. Further detail on the significance of each of these resources can be found by contacting the CEMVN, or on www.nolaenvironmental.gov, which offers information on the ecological and human value of these resources, as well as the laws and regulations governing each resource. Search for “Significant Resources Background Material” in the website’s digital library for additional

information. Table 2 shows those significant resources found within the project area, and notes whether they would be impacted by the proposed action analyzed in this IERS.

Existing conditions for significant resources were discussed in IER #16 and are incorporated by reference. For those resources where the proposed project modifications incorporate an area that has differing existing conditions, additional discussion is provided.

Table 2. Significant Resources in Project Study Area

| Significant Resource | Impacted | Not Impacted |
|-----------------------------------|----------|--------------|
| Air Quality | X | |
| Water Quality | X | |
| Terrestrial Habitat | X | |
| Aquatic Habitat | X | |
| Fish and Wildlife | X | |
| Wetlands | X | |
| Threatened and Endangered Species | | X |
| Recreational Resources | X | |
| Aesthetic Resources | X | |
| Cultural Resources | | X |
| Farmland | X | |

3.2.1 Air Quality

3.2.1.1 Discussion of Impacts

3.2.1.1.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government’s approved action as discussed in IER #16 would be constructed. Consequently direct, indirect and cumulative impacts to air quality would not differ from those described in IER #16. Both Jefferson and St. Charles Parishes have been identified as attainment areas for designated priority pollutants.

3.2.1.1.2 Proposed Action

Direct, Indirect and Cumulative

Under the proposed action for all reaches there would be additional air quality impacts. Direct air quality impacts would increase because of the additional construction activities and construction duration for proposed utility relocations and demolition of the Hwy 90 Pump Station. Emissions from construction equipment and associated fugitive dust as well as any minor burning that may be conducted in association with clearing activities would decrease local

air quality. All of these impacts would be temporary. These actions would contribute to the cumulative degradation of air quality; however, ambient air quality does not violate air quality standards in either Jefferson or St. Charles Parishes. Jefferson and St. Charles Parishes are designated as attainment areas for designated priority pollutants (USEPA 2007).

3.2.2 Water Quality

3.2.2.1 Discussion of Impacts

3.2.2.1.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to water quality would not differ from those previously described in IER #16.

3.2.2.1.2 Proposed Action

Direct and Indirect

With the implementation of the proposed action, temporary increases in turbidity would be expected during the removal of discharge lines during demolition of the Hwy 90 pump station, the installation of the new Hwy 90 pump station discharge lines, the placement of the scour pad at the Hwy 90 pump station discharge, the placement of rip rap to be used for bank stabilization, degrading a section of the Davis Pond Eastern Guide Levee and the construction of work sites in wetlands associated with pipeline or utility relocations. These turbidity impacts are anticipated to be local and temporary.

Cumulative

The impacts of the proposed construction activities would not be significantly different from the previously approved action. The areas and duration of riprap and discharge line placement, which would cause negative impacts, are small and would be temporary. Since construction activities would coincide with adjacent project areas, construction related water quality degradation would have a temporary cumulative impact. Through the implementation of best management practices those impacts would be reduced. No permanent negative impacts to water quality would be anticipated from the implementation of the proposed action.

3.2.3 Terrestrial Habitat

3.2.3.1 Discussion of Impacts

3.2.3.1.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect, and cumulative impacts to terrestrial habitat would not differ from those described in IER #16. In total, 211 acres of wetlands (marsh, scrub/shrub, wet bottomland hardwood forest) and 56 acres of maintained ROW would be directly impacted by construction activities and 4 acres of wetlands would be impacted by the construction of access routes for project construction activities.

3.2.3.1.2 Proposed Action

Direct

In addition to the terrestrial impacts identified under the no action alternative, approximately 10 acres of wetlands impacts have been identified for construction of the detour roads. Another 8 acres of previously disturbed habitat impacts have been identified for Davis Pond Levee degradation and pump station demolition. For the other proposed actions where the specific plan has not been finalized a larger than required area for direct impacts is being assessed. Since the specific plans for utility relocations have not been identified and the final location for the construction of the Hwy 90 Pump Station has not been determined, the entire area that is being considered for these actions to take place is included in the direct impacts analysis. This represents a worse case or greater than a worse case scenario. This evaluation method ensures that all potentially impacted areas are evaluated and when relocations plans are finalized additional areas will not need to be evaluated. A drawback of employing this method of analysis is that direct impacts are overestimated. The general project area includes 1 acre of forested upland, 109 acres of wetlands (marsh, scrub/shrub and wet bottomland hardwood forest), and 72 acres of previously impacted ROW. Direct impacts would occur within that larger project area. Although 99 acres of additional wetland impacts are being evaluated for the proposed utility relocations, a typical directional drill relocation would require up to 5 acres of work sites and staging areas associated with pushing and pulling pipeline. There are 3 gas pipeline relocations that have diameters of 12 inches or greater in size. These types of relocations have the potential to be conducted via the directional drill method and the potential to have the largest construction footprint of the potential alternatives; directional drill, sleeve through floodwall or up and over. If all three of these utilities would be directional drilled, potentially 15 acres of wetlands impacts could occur. Any relocation within a wetland would require a Department of the Army Section 404 permit. Best management practices as well as requirements for the minimization of wetlands impacts by the utility owners' sites sizes would be required throughout the relocation planning process. Similarly, the general area where the proposed pump station construction would occur is 9.5 acres of previously disturbed ROW and 9.5 acres of wetlands; however, the direct area of impact of the pump station footprint and access road within in this area would be between 1 acre and 3 acres. Utility owners would also be required to obtain all permits necessary to comply with all Federal and State laws, rules and regulations including Section 404 permits through the CEMVN regulatory office. The Section 404 process focuses on minimizing impacts to wetlands. Under a worse case scenario there would be 1 acre of forested upland impacted, 119 acres of wetlands impacted (10 acres for detour roads and 109 within general area of utility and pump station relocations) and 66.5 acres of previously disturbed habitat impacts most of which is levee.

Indirect

Indirect effects of construction would include noise, and fugitive dust. Since additional construction actions and increased project duration associated with the proposed construction of a Hwy 90 pump station have been identified, these impacts would be greater than the previously approved action.

Cumulative

In order to meet the June 2011 construction completion date, construction activities will be occurring concurrently in the nearby IER #15 (Lake Cataouatche Levee) project area as well as other areas within the HSDRRS project areas, all of which would have a temporary cumulative effect to the adjacent terrestrial areas and wildlife utilizing these areas. To date, impacts to approximately 2,000 acres of bottomland hardwood forests have been identified for the construction of the proposed HSDRRS features (table 3.) Construction of the proposed project would convert areas both temporarily and permanently from undeveloped or forested to developed and cleared terrestrial habitat.

3.2.4 Aquatic Habitat

3.2.4.1 Discussion of Impacts

3.2.4.1.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to aquatic habitat would not differ from those described in IER #16. Approximately 10 acres of open water habitat would be filled and construction of a new drainage canal and other project features would create 7 acres of new open water habitat.

3.2.4.1.2 No Action

Direct

Since the specific plans for utility relocations have not been identified and the final location for the Hwy 90 Pump Station has not been determined, the entire area that is being considered for these actions to take place is included in the direct impacts analysis. This represents a worse case or greater than a worse case scenario related to the physical footprint of the impacts. This evaluation method ensures that all potentially impacted areas are evaluated and when relocations plans are finalized all projects impacts would have been addressed. A drawback of employing this method of analysis is that direct impacts are overestimated. In addition to the aquatic impacts described in the no action alternative, another 16.5 acres of open water habitat are being evaluated as potential aquatic habitat impact locations. Aquatic impacts would occur because of the placement of bank stabilization, and installation and removal of the Hwy 90 pump station discharge lines and utility relocations. Neither the plan for the pump station nor the utility relocations has been finalized. As a result, a larger area than would be required for construction activities is evaluated. The general area evaluated for the proposed pump station construction includes 10 acres of the Outer Cataouatche Canal; however, the direct open water impacts that would occur from removing the existing discharge line and constructing a new discharge line and placing riprap for the discharge scour pad would be less than 0.5 acres. Another 1.4 acres of aquatic habitat would be affected by the installation of bank stabilization and scour protection along closures and permanent bridges in the Outer Cataouatche Canal. Utility owners would also be required to obtain all permits necessary to comply with all Federal and State laws, rules and regulations including Section 404 permits through the CEMVN regulatory office. The Section 404 process focuses on minimizing impacts to wetlands.

Indirect

Indirect impacts to aquatic habitat would include increased local turbidity, decreased dissolved oxygen, vibration and subsurface noise. These impacts would occur at stabilization placement, discharge line removal and installation and scour pad construction areas.

Cumulative

Potential cumulative impacts to aquatic habitat primarily involve the loss of open water. The impacts evaluated for the proposed action provide a worse case scenario and would be less than 17 acres of open water. Aquatic habitat impacts of the overall HSDRRS project have the potential to be significant. To date, approximately 237 acres of open water impacts have been identified in previous IERs and are summarized in table 4.

3.2.5 Fish and Wildlife

3.2.5.1 Discussion of Impacts

3.2.5.1.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to fish and wildlife would not differ from those described in IER #16. Direct and permanent impacts to fish habitat were determined to include the loss of 12 acres of aquatic habitat in the Outer Cataouatche Canal. An additional loss of fish and wildlife habitat was identified to occur with the clearing, grubbing and filling of 211 acres of vegetated wetlands.

3.2.5.1.2 Proposed Action

Direct

In addition to the 211 acres of fish and wildlife habitat impacts identified in the no action alternative, additional direct and permanent effects to fish habitat would result from the placement of fill for bank stabilization and scour protection and the installation of discharge lines for the Hwy 90 pump station into the Outer Cataouatche Canal and would impact less than 2 acres of canal bottom. A larger area has been evaluated for potential impacts (16.5 acres) because the specific location that the new Hwy 90 pump station discharge lines would be placed has not been identified and utility relocations are not finalized. The areas filled would no longer be available for fish use. There would be permanent impacts to wildlife because of the loss of 1 acre of forested upland, 10 acres of wetlands for construction of detour roads, 8 acres of previously disturbed habitat and the potential loss of up to 109 acres of wetlands (marsh, scrub/shrub and wet bottomland hardwood forest) within the area designated for utility and pump station relocations, and up to 66.5 acres of previously impacted ROW. Of the additional 181 acres evaluated, direct impacts would be expected to occur in only about 18 acres of a combination of wetlands and previously impacted ROW. 16.5 acres of aquatic habitat are also being evaluated as potential areas for aquatic impacts. Mobile species of fish and wildlife would relocate to nearby areas. Sessile organisms would be destroyed during the construction activities. Utility owners would also be required to obtain all permits necessary to comply with all Federal and State laws, rules and regulations including Section 404 permits through the CEMVN regulatory office. The Section 404 process focuses on minimizing impacts to wetlands. The entire area accessed, which represents the worse case scenario, includes 1 acre of forested habitat, 119 acres of wetlands, 66.5 acres of previously disturbed areas and 16.5 acres of open water.

Indirect

Benefits to fish would result from the placement of bank stabilization and scour protection along the levee closures and beneath the bridges which would provide hard structure substrate that attracts species that associate with rocky bottoms.

Other indirect effects would include disturbance to fish and wildlife species due to noise, vibration and turbidity. The project area is part of the much larger Barataria Basin which has large areas of undeveloped lands that would provide areas of refuge for mobile organisms during construction activities.

Cumulative

Because of the goal of completing the HSDRRS construction activities by June 2011, numerous construction activities in the IER #16 and IER #15 project areas would be underway concurrently. This would result in temporary cumulative effects to fish and wildlife. Permanent effects to fish and wildlife would occur from the loss of both wetland and terrestrial habitat associated with the construction of the overall HSDRRS project and would contribute to the cumulative loss of fish and wildlife habitat. To date, impacts to approximately 2,000 acres of bottomland hardwood and another 1,880 acres of wetlands have been identified for the construction of the proposed HSDRRS features (table 4.)



Figure 4. Davis Pond Freshwater Diversion Canal East Guide Levee

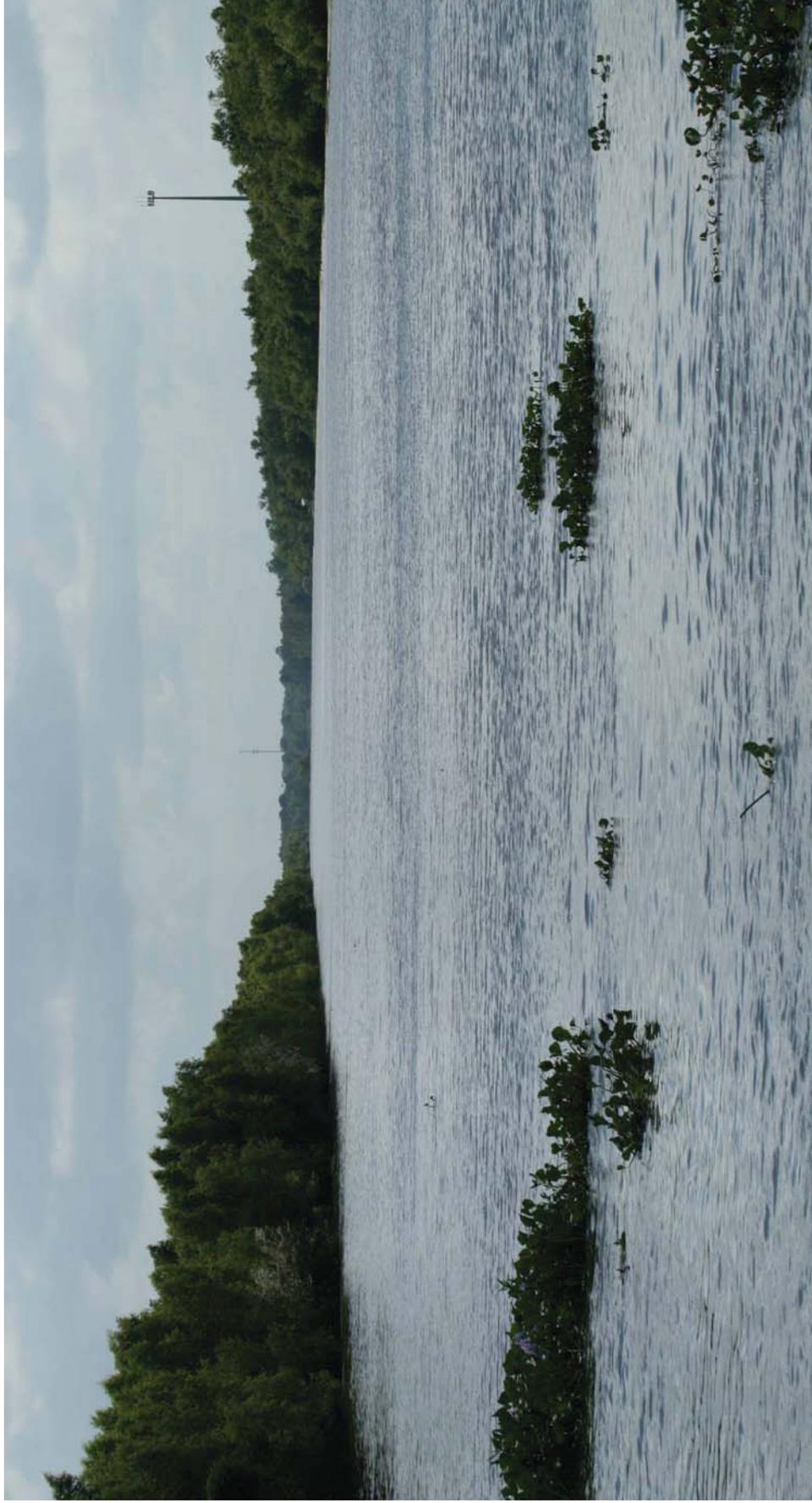


Figure 5. Outer Cataouatche Canal Aquatic Habitat

3.2.6 Wetlands

3.2.6.1 Discussion of Impacts

3.2.6.1.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to wetlands would not differ from those described in IER #16. A direct loss of 211 acres of vegetated wetlands, including fresh marsh, scrub/shrub and wet bottomland hardwoods, would occur as a result of the construction activities.

3.2.6.1.2 Proposed Action

Direct

Direct and permanent effects to wetlands would occur from permanently retaining the detour roads originally designed as a temporary by pass for the Hwy 90 Bridge. Approximately 10 acres of wetlands within the LADOTD ROW would be impacted due to the construction of the detour roads. Additional direct impacts to wetlands would occur from construction activities associated with utility relocations. A larger area has been evaluated for these impacts because the specific plans for utility relocations have not been finalized. There would be a potential loss of 99 acres of wetlands due to the utility relocations. Of the 99 acres of wetlands impacts evaluated associated with pipeline and utility relocations, direct impacts are expected to occur in about 18 acres. Similarly direct impacts for the removal and placement of the Hwy 90 pump station discharge lines would impact less than 1 acre of wetlands; however, the final location of the pump station has not been identified and a larger 10 acre area is being evaluated for construction of the Hwy 90 pump station. Of the 109 acres being evaluated as general wetland impact areas, and the 10 acres of known wetlands impacts for the Hwy 90 detour roads, direct impacts are expected to occur in 30 acres of wetlands (10 acres detours, 18 acres pipeline and other utility relocations and 2 pump station associated). Utility owners would also be required to obtain all permits necessary to comply with all Federal and State laws, rules and regulations including Section 404 permits through the CEMVN regulatory office. The Section 404 process focuses on minimizing impacts to wetlands. The entire area accessed, which represents the worse case scenario, includes 119 acres of wetlands.

Indirect

Indirect impacts to wetlands would include temporary and local changes in water circulation immediately adjacent to areas that would be impacted during utility relocation construction activities.

Cumulative

To date, the clearing, grubbing or filling of approximately 1,880 acres of wetlands have been identified for the construction of the proposed HSDRRS features (table 4). Construction of the HSDRRS project features would cumulatively impact wetlands. Additionally, other authorized federal flood control projects including Morganza to the Gulf, Larose to Golden Meadow project and Plaquemines Parish West Bank non-Federal levee construction would likely impact wetlands based on fact that the flood control projects are designed to provide flood damage risk reduction

from coastal storm events, as such, the alignments are located in the wetland non-wetland interfaces. Additionally, it is expected that non-Federal flood control projects and regional private development would continue to occur and cause some wetlands impact.

3.2.7 Threatened and Endangered Species

3.2.7.1 Discussion of Impacts

3.2.7.1.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to threatened and endangered species would not differ from those described in IER #16.

3.2.7.1.2 Proposed Action

Direct, Indirect, and Cumulative

Under the proposed actions, no listed endangered, threatened or candidate species are known to exist in the potential project impact areas. Therefore, no direct, indirect, or cumulative effects would be predicted to protected species or their critical habitat as a result of implementing the proposed actions. The USFWS concurred with the CEMVN's determination that project implementation would not adversely affect any threatened or endangered species or their critical habitat in their letter dated May 7, 2010.

3.2.8 Recreational Resources

3.2.8.1 Discussion of Impacts

3.2.8.1.1 No Action

Direct, Indirect and Cumulative

Under the No Action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts recreational resources would not differ from those previously described in IER #16. The area of direct disturbance for recreation was estimated to be approximately 1.4 acres of open water habitat. There would be little effect to recreation as the area of disturbance is not extensively used for recreation.

3.2.8.1.1 Proposed Action

Direct, Indirect, and Cumulative

The proposed project changes occur either within previously identified project ROW or areas immediately adjacent to existing project ROW. As with the original IER #16, minor direct impacts to recreation would occur through the loss or modification of open water habitat. Indirect or cumulative recreation impacts would not be anticipated.

3.2.9 Aesthetic (Visual) Resources

3.2.9.1 Discussion of Impacts

3.2.9.1.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct impacts on visual resources would not differ from those described in the original IER.

3.2.9.1.2 Proposed Action

Direct

Under the proposed action, no foreseen long term direct impacts to visual resources would occur at the proposed project area. Visually, the vast majority of the footprint of disturbance necessary to construct the proposed action is within the existing right-of-way in areas where similar flood protection measures and other civil work's infrastructure currently exists. However, the movement of material and construction of the flood control infrastructure could be considered a temporary visual impact. The visual attributes of the project corridor would be temporarily impacted by construction at the project sites and by transport activities needed to move equipment and materials to and from the sites. However, these impacts would last only through the period when the risk reduction system element is under construction.

Indirect

Under the proposed action, no foreseen indirect impacts to visual resources would occur at the proposed project area.

Cumulative

Cumulatively, the visual impacts caused by structural risk reduction measures regionally and nationwide may be considered significant. Flood prone natural landscapes protected by unnatural visual conditions similar to the proposed project may be increasingly converted to developable land. Land development may be considered visually distressing depending on the complexity of natural elements lost.

3.2.10 Cultural Resources

3.2.10.1 Existing Conditions

The existing conditions for the project areas discussed in this IER are largely unchanged from existing conditions discussed in the IER #16 project area. For the proposed action discussed below, three parcels of land were considered to have high potential to contain cultural resources. A Phase I cultural resources survey was performed for those areas.

In letters sent to the State Historical Preservation Officer (SHPO) and Indian Tribes dates April 20, 2010 and May 3, 2010, the CEMVN provided project documentation, evaluated cultural resources potential for the proposed action, and found that the proposed action would have no impact on cultural resources. All elements of the proposed action except for three Relocation of Utilities areas were determined to be of low cultural resources potential and did not require further cultural resources survey in addition to the cultural resources survey completed for IER #16 (Wells 2008). A conclusion of no impacts to cultural resources for these areas was sent in the April 20, 2010 letters described previously. A Phase I cultural resources survey (Wells 2010) was conducted for the three Relocation of Utilities areas and no cultural resources were located.

The SHPO, the Alabama-Coushatta of Texas Tribe and the Choctaw Nation of Oklahoma concurred with our “no historic properties” findings on May 20, 2010, May 4, 2010, and May 10, 2010, respectively. In response to the May 3, 2010 letters, the SHPO and the Alabama-Coushatta of Texas Tribe concurred with our “no historic properties” findings on June 2, 2010 and May 28, 2010, respectively. No other Indian Tribes responded to our request for comments. Section 106 consultation for the proposed project is concluded. However, if any unrecorded cultural resources are determined to exist within the proposed project boundaries, then no work would proceed in the area containing these cultural resources until a CEMVN archaeologist has been notified and final coordination with the SHPO and Indian Tribes has been completed.

3.2.10.2 Discussion of Impacts

3.2.10.2.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government’s approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect, and cumulative impacts to cultural resources would not differ significantly from those described in IER #16. The likelihood for intact and undisturbed cultural resources is considered extremely minimal. The implementation of the Government’s approved action would have beneficial indirect impacts by providing an added level of flood protection to known and unknown cultural resources located on the protected side of the project vicinity by reducing the damage caused by flood events. The Government’s approved action also would have beneficial cumulative impacts on historical properties in the West Bank area. The Government’s approved action is part of the ongoing Federal effort to reduce the threat to property posed by flooding. The combined effects from construction of the multiple projects underway and planned for the HSDRRS would reduce flood risk and storm damage to significant archaeological sites, individual historical properties, engineering structures and historic districts.

3.2.10.2.2 Proposed Action

Direct

Based on the review of state records, previous cultural resources studies, and the results of a recent Phase I cultural resources investigation (Wells 2010), implementation of the proposed action would have no direct impact on cultural resources. Researchers analyzed background, soils, and geological data and identified land parcels exhibiting a high potential for archaeological resources. Field investigations conducted in these parcels did not produce any archaeological material or subsurface features. The likelihood for intact and undisturbed cultural resources in this alternative is considered extremely minimal. No further cultural resources investigations would be recommended.

Indirect

Implementation of the proposed action would have beneficial impacts by providing an added level of flood protection to known and unknown cultural resources located on the protected side of the project vicinity by reducing the damage caused by flood events.

Cumulative

Implementation of the proposed action would have beneficial cumulative impacts on historic properties in the West Bank area. This proposed action is part of the ongoing Federal effort to reduce the threat to property posed by flooding. The combined effects from construction of the multiple projects underway and planned for the HSDRRS would reduce flood risk and storm damage to significant archaeological sites, individual historic properties, engineering structures and historic districts.

3.2.11 Farmland

3.2.11.1 Existing Conditions

Within NEPA evaluations, the USACE must consider the protection of the nations' significant/important agricultural lands from irreversible conversion to uses that result in their loss as an environmental or essential food production resource. The Farmland Protection Policy Act (FPPA), 7 USC 4201 et seq., and the U.S. Department of Agriculture's (USDA) implementing procedures (7 CFR § 658) require Federal agencies to evaluate the adverse effects of their actions on prime and unique farmland, including farmland of statewide and local importance.

During consultation with the Natural Resources Conservation Service (NRCS) for the IERS #16 area, a farmland conversion impact rating form was developed and sent to the NRCS containing information on those lands to be converted by the proposed action. The rating form was returned with the determination that there are prime farmlands in the project area. The soil located in this area is Cancienne silt loam (Cc), Schriever silty clay loam (SA) and Cancienne silty clay loam (Cm). These soils classifications qualify the land as prime farmland even though it currently may not be under cultivation.

3.2.11.2 Discussion of Impacts

3.2.11.2.1 No Action

Direct, Indirect, and Cumulative

Implementation of the no action alternative would not involve conversion of, or cause direct, indirect, or cumulative affects to prime, unique, or important U.S. farmland.

3.2.11.2.2 Proposed Action

Direct

With the implementation of the proposed action there is a potential that utility relocations would occur within an approximately 34 acres area that is comprised of prime farmland. Coordination with NRCS has taken place and the USACE received a letter of concurrence dated April 22, 2010. Utility relocations have not been finalized; therefore, the 34 acres represents a worst case scenario for direct farmland conversion.

Indirect

No indirect impacts are expected to occur from the implementation of the proposed action.

Cumulative

In addition to the impacts identified for the proposed action, another 40 acres of direct impacts to prime farmlands have been identified in conjunction with the construction of other proposed HSDRRS flood damage risk reduction features (levees, floodwalls etc.). An additional 2,300 acres of direct impacts to prime farmlands would occur if all the areas that have been environmentally cleared for borrow areas for HSDRRS project construction activities are utilized. Construction of HSDRRS project features and use of the proposed borrow sites would cumulatively impact farmland and prime and unique farmland soils in southeastern Louisiana. Additionally, other authorized federal projects including the Morganza to Gulf project, Larose to Golden Meadow project, Plaquemines Parish West Bank non-Federal levee construction, Grand Isle non-Federal Levee construction and Mississippi River Levee maintenance would require borrow material for construction and on-going operations and maintenance. Some of this borrow material may come from farmlands.

Additionally, levee systems under state and local control also require maintenance and improvement. Borrow used to maintain those levee systems also may impact farmland or prime and unique farmland soils to acquire borrow material.

Farmland and prime and unique farmland soils in southern Louisiana have been and continue to be impacted by residential, commercial and industrial development. Historically land has been converted for residential, commercial and industrial uses within leveed areas. This trend is expected to continue regionally.

3.3 SOCIOECONOMICS

The focus of this section is to evaluate the relative socioeconomic impacts of construction activities associated with the proposed revisions to IER #16 in portions of the WBV Project. The proposed modifications to the project include a portion of St. Charles Parish in the state of Louisiana.

3.3.1 Displacement of Population and Housing

3.3.1.1 Existing Conditions

The area that may potentially be affected by the modifications to IER #16 is the US Hwy 90 corridor between the Davis Pond Freshwater Diversion Project Canal and South Kenner Road; and along the Davis Pond Freshwater Diversion Canal between the Union Pacific railroad tracks and south of the Outer Cataouatche Canal. All of the affected area is within St. Charles Parish. The affected area is generally vacant with no structures for residential use north of Hwy 90 and only six housing units between Hwy 90 and the Outer Cataouatche Canal. Just north of the affected area is the community of Ama. Ama is characterized by small to medium-sized single-family homes.

3.3.1.2 Discussion of Impacts

3.3.1.2.1 No Action

Direct, Indirect, Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to population and housing would not differ from those described in IER #16. No direct, indirect or cumulative impacts to population and housing were identified.

3.3.1.2.2 Proposed Action

Direct, Indirect, Cumulative

With the implementation of the proposed action, there would be some positive direct impacts of retaining temporary detours as permanent access. It would allow the population additional permanent access to adjoining properties. It would allow utility, maintenance and other vehicles access to the levee and adjacent areas, which would not be otherwise easily accessible after the Hwy 90 Bridge is complete. No indirect or cumulative impacts to population or housing were identified.

3.3.2 Impacts to Employment, Business, and Industrial Activity

3.3.2.1 Existing Conditions

The affected area is generally vacant, with no structures for commercial use north of Hwy 90 and very few buildings between Hwy 90 and the Outer Cataouatche Canal; however, there are two boat launch facilities in this area. Additionally, a large private industrial complex operated by Archer Daniels Midland (ADM) is located north of the Union Pacific and Burlington Northern Santa Fe railroad lines, and east of Ama.

3.3.2.2 Discussion of Impacts

3.3.2.2.1 No Action

Direct, Indirect, Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to employment, business and industrial activity would not differ from those described in IER #16. No direct, indirect, or cumulative impacts to employment, business or industrial activity were identified.

3.3.2.2.2 Proposed Action

Direct, Indirect and Cumulative

The construction of a ramp at Hwy 18 and the associated Hwy 18 road closure could have some negative direct impacts to employment, business, and industrial activity. A closure of Hwy 18 to traffic is anticipated as being required during approximately 2 months of the 10 month ramp construction period. The point of closure on Hwy 18 will have a two-lane, two way bypass road on the south side of the highway that is intended to be used by emergency vehicles, school buses, and local traffic. Traffic flow on the two-lane bypass road would be uncontrolled. Delays would be expected on the bypass road because of the construction zone.

Businesses located on Hwy 18 between Hwy 3060 (Barton Avenue) and Avondale could see some decline in business due to the disrupted traffic flow along Hwy 18. This stretch of approximately 12 miles of Hwy 18 is mostly characterized as rural residential, with a few farms and ranches. There are five small businesses such as service/convenience stores, grocery stores and barber shops located along Hwy 18 in this area. The area also includes five river services businesses on the batture side of the Mississippi River levee. Public facilities include a post office, American Legion hall, three churches, and a municipal airport. Industrial sites include Northrop Grumman Shipbuilding, Cytec Chemical, ADM Grain Elevators, and Union Pacific rail yard. All of the businesses are located between the Davis Pond Freshwater Diversion Structure and Avondale. There are no businesses located between the Davis Pond Diversion Structure and Hwy 3060.

In addition to the bypass located at the construction site, there would also be a LADOTD traffic detour established to reroute traffic. Through traffic eastbound on Hwy 18 west of the Davis Pond Diversion Structure would be rerouted by LADOTD to Hwy 90 at Hwy 3060 during the two month closure. Eastbound traffic would proceed east on Hwy 90 to the intersection with Hwy 18 and then proceed west on Hwy 18. Westbound traffic on Hwy 18 east of the Davis Pond Diversion Canal would be required to travel east on Hwy 18 to Hwy 90, then westbound on Hwy 90 to Hwy 3060 where it could rejoin westbound Hwy 18.

No indirect or cumulative impacts to employment, business or industrial activity were identified.

3.3.3 Availability of Public Facilities and Services

3.3.3.1 Discussion of Impacts

3.3.3.1.1 No Action

Direct, Indirect and Cumulative

Under the No Action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to the availability of public facilities and services would not differ from those previously described in IER #16. No direct, indirect, or cumulative impacts to the availability of public facilities and services were identified.

3.3.3.1.2 Proposed Action

Direct, Indirect and Cumulative

With the implementation of the proposed action, no direct, indirect or cumulative impacts to public facilities and services were identified. The two-lane, two way bypass around the Hwy 18 ramp construction will allow for the passage of emergency vehicles, school buses and other traffic.

3.3.4 Effects on Transportation

3.3.4.1 Existing Conditions

Hwy 90 is a primary roadway for the affected area, and is a critical roadway as it serves as a major highway and evacuation route. The most recent LADOTD average daily traffic counts from 2007 report approximately 18,423 vehicles per day on Hwy 90 in the affected area (LADOTD 2009). River Road also borders the affected area and is the major roadway through Ama. South Kenner Road is the eastern boundary of the affected area, and serves as the access point for the landfills in the area. There are two railroad lines, Burlington Northern Santa Fe and Union Pacific, which also pass through the affected area.

3.3.4.2 Discussion of Impacts

3.3.4.2.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to transportation would not differ from those described in IER #16. Implementation of the Government's approved actions would increase traffic congestion. The indirect impacts associated with implementation of the Government's approved action include local and temporary decreases in air quality caused by vehicle emissions and decreased road surface quality. Current estimates of the total earthen borrow truck transport for the HSDRRS project are of 2 million round trips with 57 million miles traveled (USACE 2010). During the overall HSDRRS project construction it is estimated that there would be over 40 continuous weeks of more than 3,000 daily round trips for borrow alone. Daily round trips for steel and concrete would add less than 300 additional daily round trips. The cumulative effects on transportation for the overall HSDRRS project may be significant and will be discussed in the cumulative effects analysis in the Comprehensive Environmental Document.

3.3.4.2.2 Proposed Action

Direct

During construction of the LA Hwy 18 ramp the highway would be closed to local traffic for approximately 2 months of the overall estimated construction period of 10 months. Through traffic would be rerouted to the LADOTD detour, an approximately 25 mile detour. For this period, local traffic for Ama and vicinity would have access to a two lane, two way bypass road at Hwy 18 and the Davis Pond Diversion Structure. During that time period a two lane, two way bypass road would be in place for use by emergency service vehicles, school buses, and local traffic. Traffic flow at the two lane, two way bypass road would be uncontrolled. Delays in traffic flow should be expected on the bypass road because the bypass road is in a construction zone. Once the construction of the ramp is completed, there would be positive direct impacts to transportation under this modification. Hwy 18 is a two lane rural highway that runs along the toe of the Mississippi River Levee in St. Charles Parish. In the area of the proposed ramp, it is used for both commercial and rural traffic for citizens living in and around the Ama and Luling communities. In this area, it largely parallels Hwy 90 and serves as an alternative route/detour for Hwy 90 when congestion problems arise on Hwy 90. While a floodgate would close access to Hwy 18 during storm events when the gate is closed, a ramp would allow continuous access to Hwy 18.

Additionally, there would be some positive direct impacts of retaining temporary detours as permanent access. The detours would allow additional permanent access to adjoining properties. It would allow utility, maintenance and other vehicles access to the levee and adjacent areas, which would not be otherwise easily accessible after the Hwy 90 Bridge is complete.

Construction activities of the relocation of utilities would cause additional traffic congestion along Hwy 90 where Davis Pond crosses the highway and at Hwy 18 and Davis Pond.

Indirect

With the increased work associated with the proposed action, there would be additional impacts to air quality and roads.

Cumulative

Even with the minor reduction in borrow transportation that would be realized by the use of the Davis Pond East Guide Levee material for nearby levee construction, impacts to transportation of the overall HSDRRS project may be significant.

3.3.5 Disruption of Desirable Community and Regional Growth

3.3.5.1 Existing Conditions

Desirable community growth is considered a growth that provides a net increase in benefits to a local or regional economy, social conditions, and the human environment, including water resource development. Similar to other references to social and economic conditions, community and regional growth has been heavily dependent on reliable flood risk reduction. The proposed project is planned with the result being improved flood and hurricane risk reduction within the HSDRRS.

The results of specific market research indicated that, despite enhanced hurricane risk reduction afforded, numerous adverse attributes characteristic of the area would continue to significantly discourage infrastructure development for the foreseeable future (USACE, 2008a). The St. Charles Development Project Study can be found in Appendix E of IER #16.

3.3.5.2 Discussion of Impacts

3.3.5.2.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently direct, indirect and cumulative impacts to community and regional growth would not differ from those described in IER #16. No direct, indirect, or cumulative impacts community and regional growth were identified.

3.3.5.2.2 Proposed Action

Direct, Indirect and Cumulative

With the implementation of the proposed action no direct, indirect or cumulative impacts to community and regional growth were indentified.

3.3.6 Impacts to Tax Revenues and Property Values

3.3.6.1 Existing Conditions

The affected area is generally vacant with no structures for commercial or residential use north of the Hwy 90 and seven scattered sites with buildings between Hwy 90 and the Outer Cataouatche Canal. As such, the affected area provides limited tax revenue to St. Charles Parish Government.

The protected area includes the nearby town of Ama, which according to the 2000 U.S. Census is comprised of tract 630 with St. Charles Parish. The median value for specified owner occupied housing units in the area is \$81,500 (U.S.Bureau of the Census 2000).

3.3.6.2 Discussion of Impacts

3.3.6.2.1 No Action

Direct, Indirect, Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to tax revenues and property values would not differ from those described in IER #16. The Government's approved action would likely preserve or possibly enhance property values in the protected area. The HSDRRS by providing risk reduction to the area would have a positive effect on property values and tax revenues in the vicinity.

3.3.6.2.2 Proposed Action

Direct, Indirect and Cumulative

Under the proposed action, the impacts to tax revenues and property values would not differ from those indentified for the Government's approved action. The HSDRRS by providing risk reduction would have a positive effect on property values and tax revenues in the vicinity.

3.3.7 Changes in Community Cohesion

3.3.7.1 Existing Conditions

Community cohesion refers to the common vision and sense of belonging within a community that is created and sustained by the extensive development of individual relationships that are social, economic, cultural, and historical in nature. The degree to which these relationships are

facilitated and made effective is contingent upon the spatial configuration of the community itself; the functionality of the community owes much to the physical landscape within which it is set. The viability of community cohesion is compromised to the extent to which these physical features are exposed to interference from outside sources.

The affected area is generally vacant with no structures for commercial or residential use north of Hwy 90 and seven scattered sites with buildings between Hwy 90 and the Outer Cataouatche Canal. As such, the affected area has limited community, other than the nearby community of Ama.

3.3.7.2 Discussion of Impacts

3.3.7.2.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to community cohesion would not differ from those described in IER #16. The Government's approved action would likely increase community cohesion in the areas that would be protected by the selected project alignment and decrease community cohesion in the portion of the west bank of St. Charles Parish that lies outside of the HSDRRS. This would likely decrease community cohesion with those communities in the lower parish not receiving the benefits of risk reduction.

3.3.7.2.2 Proposed Action

Direct, Indirect, Cumulative

Under the proposed action, the impacts to community cohesion would not differ from those identified for the Government's approved action. The HSDRRS by providing risk reduction would have a positive effect on community cohesion in the portions of St. Charles Parish that are protected and a decrease in community cohesion at the parish level with those communities in the lower parish not receiving the benefits of risk reduction.

3.4 ENVIRONMENTAL JUSTICE

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations* (Executive Order, 1994), directs Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority population and low-income populations. When conducting NEPA evaluations, the USACE incorporates Environmental Justice (EJ) considerations into both the technical analyses and the public involvement in accordance with the USEPA and the Council on Environmental Quality guidance (CEQ, 1997). The CEQ guidance defines "minority" as individual(s) who are members of the following population groups: American Indian or Alaskan native, Asian or Pacific Islander, Black, not of Hispanic origin, and Hispanic (CEQ, 1997). The Council defines these groups as minority populations when either the minority population of the affected area exceeds 50 percent of the total population, or the percentage of minority population in the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographical analysis.

Low-income populations are identified using statistical poverty thresholds from the Bureau of the Census Current Population Reports, Series P-60 on Income and Poverty (U. S. Bureau of the Census, 2000). In identifying low-income populations, a community may be considered either as a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect. The threshold for the 2000 census was an

income of \$17,761 for a family of four (U.S. Bureau of the Census, 2000). This threshold is a weighted average based on family size and ages of the family members.

The EJ analysis for the proposed project follows the guidance and methodologies recommended in the Federal CEQ's Environmental Justice Guidance under the National Environmental Policy Act (December 1997). Executive Order 12898 Federal Actions To Address Environmental Justice in Minority Populations and Low Income Populations, issued in 1994, directs Federal and state agencies to incorporate environmental justice as part of their mission by identifying and addressing the effects of all programs, policies and activities on minority and low-income populations. The fundamental principles of EJ are as follows:

- Ensure the full and fair participation by all potentially affected communities in the decision-making process;
- Prevent the denial of, reduction in or significant delay in the receipt of benefits by minority and low-income populations; and
- Avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.

In addition to Executive Order 12898, the EJ analysis is being developed per requirements of "Department of Defense's Strategy on Environmental Justice" (March 24, 1995).

Per the previous directives, EJ analyses identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of the project on minority and low-income populations. The methodology to accomplish this includes identifying low-income and minority populations within the study area, as well as community outreach activities such as stakeholder meetings with the affected population. As the project planning process advances, EJ impacts will be analyzed further when additional project planning data become available. Aerial photos were utilized to confirm the presence of habitation in the various project areas, and to analyze potential EJ impacts.

Census Block Group statistics from the 2000 Census and Environmental Systems Research Institute (ESRI) estimates for year 2007 were utilized for EJ data analysis. The proposed actions and alternatives were evaluated for potential disproportionately high, environmental effects on minority or low-income populations.

3.4.1 Existing Conditions

The west bank of Jefferson Parish and St. Charles Parishes, which stretches from the Mississippi River south to the Gulf of Mexico, is a more diverse area than its northern counterpart (east bank). The west bank is home to an assorted mix of land uses, income groups, and ethnic communities. The northern section of both Parishes' west bank is a more developed residential and retail area, as well as host to several large hospitals. The southern section has a much more rural character, with a strong economic base tied to the fishing industry and oil support services.

Jefferson Parish and St. Charles Parish are diverse areas compared to Louisiana, with a substantial Hispanic and Asian population. Since 2000, the white population decreased while the Black/African-American population increased. This trend will likely not continue, and the current distribution of whites and Blacks/African Americans currently mirrors the state racial composition. Because this area is an EJ area outreach efforts are ongoing to explain the proposed 100-year level of construction activities to interested parties. The dates and times for these public meetings are being posted to the calendar at the website www.nolaenvironmental.gov. Table 3 presents the Parish-specific 2000 population by race and ethnicity.

Table 3. Population by Race and Ethnicity St. Charles and Jefferson Parishes, 2000

| | | White, Non- Hispanic | Black, Non- Hispanic | Hispanic and other | Totals |
|--------------------|-------------|----------------------------|----------------------------|--------------------------|-----------|
| St. Charles | Population | 34,238 | 12,161 | 1,673 | 48,072 |
| | % of Parish | 71.20% | 25.30% | 3.50% | |
| Jefferson | Population | 302,648 | 104,957 | 54,028 | 461,633 |
| | % of Parish | 66.40% | 23.00% | 11.90% | |
| Louisiana | Population | 2,856,161 | 1,451,944 | 160,871 | 4,468,976 |
| Source: FHWA, 2007 | | | | | |

3.4.2 Discussion of Impacts

3.4.2.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government’s approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to environmental justice would not differ from those described in IER #16.

3.4.2.2 Proposed Action

Direct, Indirect and Cumulative

Implementing the proposed actions would not require the taking of residences or businesses. No minority and low-income populations would be disproportionately impacted.

3.5 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

3.5.1 Existing Conditions

Under Engineering Regulation (ER) 1165-2-132 the reasonable identification and evaluation of Hazardous, Toxic and Radioactive Waste (HTRW) contamination within a proposed area of construction is required. ER 1165-2-13 identifies the policy to avoid the use of project funds for HTRW removal and remediation activities. Costs for necessary special handling or remediation of wastes (e.g., Resource Conservation and Recovery Act (RCRA) regulated), pollutants and other contaminants, which are not regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERLA), would be treated as project costs if the requirement is the result of a validly promulgated Federal, state or local regulation.

An ASTM E 1527-05 Phase I Environmental Site Assessment (ESA) was completed for the original project area on 15 October 2008. A copy of the Phase I ESA will be maintained on file at CEMVN. The Phase I ESA documented Recognized Environmental Conditions (RECs) for the original project area. Field investigations conducted in conjunction with the Phase I ESA identified fourteen Recognized Environmental Conditions (RECs) within the search area. However, none of the RECs were located within the project footprint. Since no RECs were identified in the project footprint, the probability of encountering HTRW in the project area is very low.

Since the Phase I study was completed additional changes in project design have occurred which have enlarged the proposed project footprint. Additional evaluation has been conducted to address the expanded project footprint. While RECs were identified in the expanded project footprint, these RECs are the oil and gas utilities that require relocation. There are no outstanding HTRW issues in the expanded project footprint. The RECs include pipelines belonging to United Gas, Shell Pipeline Company, LGS Gas, Evangeline Gas, and Gulf South and other utilities such as a fiber-optic cable laid by Qwest Communications. There is no evidence of HTRW problems associated with these pipelines, but due to the nature of these RECs the potential exists for problems to arise. No further study of HTRW is recommended for the relocations areas associated with the Western Tie-In project; however, if any problems arise during construction activities an appropriate response plan would be developed.

If a REC cannot be avoided, due to the necessity of construction requirements, the CEMVN may further investigate the REC to further confirm presence or absence of contaminants, actions to avoid possible contaminants, such as removing contaminated soils.

3.5.2 Discussion of Impacts

3.5.2.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to HTRW would not differ from those described in IER #16.

3.5.2.2 Proposed Action

Direct, Indirect, and Cumulative

Under the proposed action, the project modifications would be implemented and the 100-year level of risk reduction would be achieved. Because no specific HTRW concerns were identified from the previous site investigations, no direct, indirect or cumulative HTRW effects would be expected from implementing the proposed plan. The potential does exist to create HTRW materials during the construction process. The use of equipment and motor vehicles and their fueling or maintenance would be conducted in a manner that would minimize the potential to spill or release fluids. Fuel, lubricants, and oil would be managed and stored in accordance with Federal, state and local laws and regulations. Construction contractors would be required to develop a spill control plan.

Because relocation work would occur around oil and gas transmission pipelines, the potential exists for an unplanned discovery of HTRW materials during construction. If this occurs during construction activities the work that could affect the contaminated materials would be stopped and appropriate notification and coordination would be completed. Investigations would be conducted to characterize the nature and extent of the contamination and establish appropriate resolution.

3.6 NOISE

3.6.1 Existing Conditions

The project area includes commercial and residential areas with varying degrees of associated noise. Noise is described as unwanted sound. Changes in noise are typically represented in sound pressure levels in decibels (dB). The primary sources of noise in the project area are vehicular traffic along nearby roadways (typically between 65 and 70 dB at 50 feet) and in the

northern portion of the project area near the Mississippi River Levee rail traffic (between 65 and 70 dB at 60 feet). Additionally another source of noise in this area relates to construction activities that are already underway on the Western Tie-In project features that were evaluated under IER #16.

Noise effects to residences and businesses within the project area are dominated by transportation sources such as trucks and trains, garbage and construction trucks, private vehicles and emergency vehicles.

3.6.2 Discussion of Impacts

3.6.2.1 Discussion of Impacts

3.6.2.1.1 No Action

Direct, Indirect and Cumulative

Under the no action alternative, the Government's approved action as discussed in IER #16 would be constructed. Consequently, direct, indirect and cumulative impacts to noise would not differ from those described in IER #16. Temporary impacts to noise would occur at project construction locations and for the transportation of materials to the work site.

3.6.2.1.2 Proposed Action

Direct, Indirect, Cumulative

Because the proposed action adds additional construction activities and duration to the previously approved plan, additional direct noise impacts would occur. At the Hwy 18 ramp location specifically, the distance between construction activities and private residences on the eastern end of the proposed Hwy 18 ramp would be decreased from the previous floodgate plan. The limits of the construction ROW would be within 250 ft of a small group of residences located east of the Davis Pond Freshwater Diversion as opposed to 800 ft or more away from construction activities in the floodgate plan. Structures or residences located west of the ramp construction area are much more removed from the construction area with a more than 700 ft distance from the western work boundary. A general noise assessment for construction equipment identified possible increases in noise levels at the residences located east of the Davis Pond Freshwater Diversion since mobile equipment such as bulldozers and graders would be working within 250 ft of these residents. The calculated construction equipment noise level (Equivalent Level) Leq estimated an increase in construction noise from approximately 60 decibels (dBA) to 71 dBA at the eastern boundary of the ramp construction area (USFTA 2006). This possible increase in noise could exceed the 55 dBA day-night average sound level. The 55 dBA level is identified as the outdoor level in residential areas compatible with protection of public health and welfare. Noise levels above the 55 dBA have been identified to cause outdoor activity interference or annoyance to humans. The residences located east of the Davis Pond Freshwater Diversion Structure are located along Hwy 18 and are bordered to the south by two railroad lines. As a result these residences are routinely exposed to roadway and rail traffic noise between 65 and 70 dB. Additionally, continuous (24 hour per day) construction activities are not expected to occur at the project location or in the portion of the ROW located closest to the residences. Noise durations generated from stationary equipment such as pile-drivers would be reduced at the Hwy 18 ramp location because ramp and associated tie-in construction requires fewer piles than floodgate construction. Pile-driving activities would still occur at the two railroad floodgate sites, but would no longer occur at the previously approved Hwy 18 floodgate site. Since all construction related noise would be temporary and the proposed project changes are dispersed along the project alignment no cumulative impacts are anticipated.

4.0 CUMULATIVE IMPACTS

NEPA requires a Federal agency to consider not only the direct and indirect impacts of a proposed action, but also the cumulative impact of the action. A cumulative impact is defined as “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 (40 CFR§1508.7).” Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. These actions include on- or off-site projects conducted by government agencies, businesses, or individuals that are within the spatial and temporal boundaries of the actions considered in this IERS.

As indicated previously, in addition to this IERS, the CEMVN is preparing a draft CED that describes the work completed and the work remaining to be constructed. The purpose of the draft CED would be to document the work completed by the USACE on a system-wide scale. The draft CED would describe the integration of individual IERs into a systematic planning effort. Additionally, the draft CED would contain updated information for any IER that had incomplete or unavailable data at the time it was posted for public review. Overall cumulative impacts and future operation maintenance, repair, replacement and rehabilitation requirements would also be included. The discussion provided below describes an overview of other actions, projects, and occurrences that may contribute to the cumulative impacts previously discussed.

Providing the Western Tie-in reach of the WBV with the 100-year level of risk reduction would contribute to the protection of life and to the reduction of physical and environmental damage. Significant flooding often results in contamination of drinking water supplies, dispersion of HTRW, and dispersion of large quantities of solid waste that require clean up and disposal. Experience has shown that vast quantities of debris (e.g., homes, vehicles, mobile homes, etc.) and sediment must be collected and hauled away after a flooding event. Hauling the collected debris to a local municipal landfill requires significant transportation and involves large quantities of solid waste that fill available landfill space. Providing the 100-year level of risk reduction significantly reduces the probability that these environmental consequences of flooding would be incurred.

Negative effects associated with implementation of the proposed action that could contribute cumulatively with the effects of other projects include temporary construction-related increases in truck traffic, temporary road closures, noise and vibration, vehicle and equipment emissions, and localized degradation of water quality. Based on our method of evaluating a worse case or greater than worse case scenario, permanent loss of approximately 16.5 acres of aquatic habitat and 119 acres of wetlands would occur. The total loss of habitat related to the implementation of all actions under all of the IERs has not yet been compiled, but the current totals are presented in table 3. When available, the loss from IERS #16.a would be included in the total cumulative loss. The positive cumulative effects of implementing the proposed action include the temporary expansion of the local economy through the influx of construction-related expenditures.

The WBV project extends approximately 66 miles in length from the Western Tie-in to the Hero Canal Levee and Eastern Terminus in Belle Chasse. The LPV Project (IERS # 1-11) extends an even larger distance protecting the East Bank of New Orleans. The construction-related negative effects as well as the positive consequences (e.g., spending in the local economy) resulting from providing the 100-year level of hurricane damage risk reduction for these projects may potentially represent the largest cumulative environmental consequences in the New Orleans region for the next 4 years to 7 years.

Table 4. HSDRRS Impacts and Compensatory Mitigation to be Completed

| IER | Parish | | Non-wet BLH | | BLH (acres) | | BLH AAHUs | | Swamp | | Marsh | | Water Bottoms | |
|--|---------------------------------|----------------|-------------|-------|-------------|-------|-----------|-------|-------|--------|--------|-------|---------------|--------|
| | | | acres | AAHUs | acres | AAHUs | acres | AAHUs | acres | AAHUs | acres | AAHUs | acres | AAHUs |
| 1 LPV, La Branch Wetlands Levee | St. Charles | Protected Side | - | - | - | - | 73.23 | - | 39.53 | - | - | - | - | - |
| | | Flood Side | - | - | - | - | 38.48 | - | 29.73 | - | - | - | - | - |
| 1 Supplemental LPV, La Branch Wetlands Levee | St. Charles | Protected Side | - | - | - | - | - | - | - | - | - | - | - | - |
| | | Flood Side | - | - | - | - | - | - | - | - | - | - | - | - |
| 2 LPV, West Return Floodwall | St. Charles, Jefferson | Protected Side | - | - | - | - | - | - | - | 17.00 | 9.00 | - | - | - |
| | | Flood Side | - | - | - | - | - | - | - | 17.00 | 9.00 | - | - | - |
| 3 LPV, Jefferson Lakefront Levee | Jefferson | Protected Side | - | - | - | - | - | - | - | - | - | - | - | 26.40 |
| | | Flood Side | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 LPV, Orleans Lakefront Levee | Orleans | Protected Side | - | - | - | - | - | - | - | - | - | - | - | - |
| | | Flood Side | - | - | - | - | - | - | - | - | - | - | - | - |
| 5 LPV, Lakefront Pumping Stations | Jefferson, Orleans | Protected Side | - | - | - | - | - | - | - | - | - | - | - | 3.29 |
| | | Flood Side | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 LPV, Citrus Lands Levee | Orleans | Protected Side | - | - | - | - | - | - | - | - | - | - | - | 6.90 |
| | | Flood Side | - | - | - | - | - | - | - | 4.00 | - | - | - | - |
| 7 LPV, Lakefront Levee | Orleans | Protected Side | - | - | 151.70 | 79.30 | - | - | - | 100.40 | 36.80 | - | - | 106.00 |
| | | Flood Side | - | - | 30.00 | 11.90 | - | - | - | 70.00 | 37.20 | - | - | - |
| 8 LPV, Bayou Dupre Control Structure | St. Bernard | Protected Side | - | - | - | - | - | - | - | - | - | - | - | 0.30 |
| | | Flood Side | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 LPV, Chalumette Loop | St. Bernard | Protected Side | - | - | 38.32 | 16.44 | - | - | - | 106.55 | 57.31 | - | - | 95.00 |
| | | Flood Side | - | - | 35.31 | 15.22 | - | - | - | 323.04 | 209.94 | - | - | - |
| 11 Tier 2 Borgne IHNC | Orleans, St. Bernard | Protected Side | - | - | - | - | - | - | - | - | - | - | - | - |
| | | Flood Side | - | - | 15.00 | 2.59 | - | - | - | 122.00 | 24.33 | - | - | - |
| 12 GIWW Harvey, Algiers | Jefferson, Orleans, Plaquemines | Protected Side | - | - | 251.70 | 177.3 | - | - | - | - | - | - | - | - |
| | | Flood Side | - | - | 2.30 | 1.90 | 74.90 | 38.50 | - | - | - | - | - | - |

**West Bank and Vicinity,
Western Tie-in, Jefferson and St. Charles Parishes, Louisiana**

| IER | Parish | BLH (acres) | Non-wet BLH acres | Non-wet BLH AAHUs | BLH (acres) | BLH AAHUs | Swamp acres | Swamp AAHUs | Marsh acres | Marsh AAHUs | Water Bottoms acres |
|---|---|-------------|----------------------|----------------------|-------------|-----------|----------------|----------------|----------------|----------------|------------------------|
| | | | | | | | | | | | |
| 14 WBV, Westwego to Harvey Levee | Jefferson | 45.00 | - | - | 45.00 | 30.00 | - | - | - | - | - |
| | | | Flood Side | - | - | 45.50 | 37.17 | 29.75 | 17.02 | - | - |
| 14.a Supplemental WBV, Westwego to Harvey Levee | Jefferson | | - | - | | | - | - | - | - | - |
| | | | Flood Side | - | - | | 42 | 24 | - | - | - |
| 15 WBV, Lake Cataouatche Levee | Jefferson | 23.50 | - | - | 23.50 | 6.13 | - | - | - | - | - |
| | | | Flood Side | - | - | 3.60 | 1.35 | - | - | - | - |
| 16 WBV, Western Tie-In | Jefferson, St. Charles | | - | - | | | - | - | - | - | - |
| | | | Flood Side | - | - | 78.6 | 36.2 | - | 134.1 | 65.5 | - |
| 16.a Supplemental WBV, Western Tie-In | Jefferson, St. Charles | | - | - | | | - | - | - | - | - |
| | | | Flood Side | - | - | 79.1 | 37.26 | - | 14.1 | 9.0 | - |
| 17 WBV, Company Canal Floodwall | Jefferson | 5.50 | - | - | 5.50 | 2.69 | - | - | - | - | - |
| | | | Flood Side | - | - | | | 19.00 | 17.09 | - | - |
| 18 GFBM | Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles | | 379.30 | 152.32 | | | - | - | - | - | - |
| | | | Flood Side | - | - | | | - | - | - | - |
| 19 CFBM | Hancock County, MS; Iberville, Jefferson, Orleans, Plaquemines, St. Bernard | | - | - | | | - | - | - | - | - |
| | | | Flood Side | - | - | | | - | - | - | - |
| 22 GFBM | Jefferson, Plaquemines | | 244.69 | 118.54 | | | - | - | - | - | - |
| | | | Flood Side | - | - | | | - | - | - | - |
| 23 GFBM | Hancock County, MS; Plaquemines, St. Bernard, St. Charles | | - | - | | | - | - | - | - | - |
| | | | Flood Side | - | - | | | - | - | - | - |
| 25 GFBM | Jefferson, Orleans, Plaquemines | | 933.00 | 284.00 | | | - | - | - | - | - |
| | | | Flood Side | - | - | | | - | - | - | - |
| 26 CFBM | Jefferson, Plaquemines, St. | | - | - | | | - | - | - | - | - |
| | | | Protected Side | - | - | | | - | - | - | - |

**West Bank and Vicinity,
Western Tie-in, Jefferson and St. Charles Parishes, Louisiana**

| IER | Parish | Flood Side | Non-wet BLH | Non-wet BLH | BLH (acres) | BLH AAHUs | Swamp | Swamp | Marsh | Marsh | Water Bottoms |
|---------|--|----------------|-------------|-------------|-------------|-----------|--------|--------|--------|--------|---------------|
| | | | acres | AAHUs | acres | AAHUs | acres | AAHUs | acres | AAHUs | acres |
| 28 GFBM | John the Baptist, Hancock County, MS | Flood Side | 19.94 | 8.45 | - | - | - | - | - | - | - |
| | | Protected Side | - | - | - | - | - | - | - | - | - |
| | | Flood Side | - | - | - | - | - | - | - | - | - |
| 29 CFBM | Jefferson, Plaquemines, St. Bernard | Protected Side | 107.30 | 48.60 | - | - | - | - | - | - | - |
| | | Flood Side | - | - | - | - | - | - | - | - | - |
| 30 CFBM | Orleans, St. Tammany, St. John the Baptist | Protected Side | 225.00 | 189.40 | - | - | - | - | - | - | - |
| | | Flood Side | - | - | - | - | - | - | - | - | - |
| 32 CFBM | St. Bernard and St. James, Hancock, Ms | Protected Side | 202.1 | 97.43 | - | - | - | - | - | - | - |
| | | Flood Side | - | - | - | - | - | - | - | - | - |
| | | Both | 2111.33 | 898.94 | 805.13 | 455.45 | 277.36 | 165.87 | 908.19 | 458.08 | 237.89 |
| Totals | Ascension, Orleans, Plaquemines, St. Charles | Protected Side | 2111.33 | 898.94 | 515.72 | 311.86 | 73.23 | 39.53 | 223.95 | 103.11 | 00.00 |
| | | Flood Side | - | - | 289.41 | 143.59 | 204.13 | 126.34 | 684.24 | 354.97 | 237.89 |
| | | Both | 2111.33 | 898.94 | 805.13 | 455.45 | 277.36 | 165.87 | 908.19 | 458.08 | 237.89 |

- Not applicable to the IER or number impacted is 0
 GFBM: Government Furnished Borrow Material //
 CFBM: Contractor Furnished Borrow Material //

5.0 SELECTION RATIONALE

The modifications proposed in this IER Supplemental were developed to address changes to the original project that were either not fully evaluated as part of the original project scope or minor project features that provide engineering improvements to the Government's approved plan. The majority of the modifications proposed in this IER Supplemental address concerns raised by the public or state and local government officials or public servants related to specific project features. These changes include: modification of the flood control feature at Hwy 18 from a floodgate, which would be closed to traffic during a storm event, to a ramp; addition of erosion control at locations that were identified as being susceptible to wave wash; a revised plan for the Hwy 90 pump station; retaining access roads and the implementation of utility relocations along the IER #16 project area. Failing to construct utility relocations would result in physical gaps in the Government's approved plan for IER #16.

The CEQ regulations for implementing NEPA require that the Record of Decision (ROD) for an environmental impact statement specify "the alternative or alternatives which were considered to be environmentally preferable" (40 CFR §1505.2(b)). This alternative has generally been interpreted to mean the alternative that will promote the national environmental policy as expressed in NEPA's Section 101 (CEQ's "Forty Most-Asked Questions," 46 Federal Register, 18026, March 23, 1981). Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources.

The proposed modification to construct the ramp at Hwy 18 was evaluated via the Alternative Evaluation process. The construction of the ramp at Hwy 18, instead of the previously approved floodgate, presents an engineering-effective, cost-efficient, environmentally-preferable selection to the previously approved project feature. The ramp on Hwy 18 was selected over the Government's approved action at Hwy 18 (the floodgate) because it would have (1) lower risk and greater reliability, (2) a shorter construction duration and less constructability issues than a gate, and (3) have the less overall operations and maintenance considerations.

The other project modifications included in the proposed plan have been identified as engineering improvements to the Government's approved plan and did not undergo the Alternative Evaluation Process.

Utilities including large gas pipelines are located within the alignment of the Government's approved plan. Failing to construct utility relocations would result in physical gaps in the risk reduction system as set forth in Government's approved plan for IER #16 in particular at the Hwy 90 floodwall.

The recommendation to replace the Hwy 90 pump station is based on the current capacity of the pump station and the significant increase in the length of the discharge line (from 270 to 825 feet) to reach up and over the newly constructed Western Tie-in Levee. The existing pump station does not have the power to adequately pump water the distance required while maintaining the current flow capacity over the HSDRRS levee elevations. If the pumps at the existing pump station were upgraded to accommodate the increased length of the discharge line, the entire facility would need to be reconstructed.

The recommendation to add foreshore protection and erosion protection along the flood side of the Outer Cataouatche Canal Closure and at the permanent bridges would protect against erosion in areas, that after the original IER #16 was completed, were identified as being susceptible to wave wash from vessel traffic.

The recommendation to convert the temporary detour roads along Hwy 90 to a permanent access is intended to allow utility, maintenance and other necessary vehicles to access the levee and adjacent areas, which would not otherwise be easily accessible after the Hwy 90 Bridge

construction is complete. These detours were originally designed to be temporary, and would have been removed after construction of the Hwy 90 Bridge was completed.

The proposal to degrade an additional 2,400 linear feet of the Davis Pond East Guide Levee to improve water exchange to wetlands and provide borrow material for associated construction activities will not be included in the final plan. Due to objections received during the public comment period the proposed Davis Pond East Guide Levee degrade will not be implemented.

6.0 COORDINATION AND CONSULTATION

6.1 PUBLIC COORDINATION

Public involvement has been sought in preparation of this IERS. Project specific public meetings were held on April 27, June 9, and June 29 2010. Since this project includes unavoidable adverse impacts to jurisdictional wetlands under Section 404 of the Clean Water Act, a 404 public notice will be made available to the public and other interested parties on the www.nolaenvironmental.gov website. The 404 public notice was advertised for the 30-day period of 25 June - 24 July 2010.

Comments received during the April 27, 2010 public meeting endorsed the construction of a project feature that would leave Hwy 18 passable during a storm event. However, during the same meeting opposition was raised regarding any closures to Hwy 18 during construction activities based on concerns about travel times increasing for local traffic, and for students on school buses. Concerns were also raised about impacts to emergency vehicles use of Hwy 18. A second public meeting was held on June 9, 2010, similar concerns were raised about local traffic impacts. Some members of the audience supported the construction of a ramp at Hwy 18, but opposed traffic impacts.

At a Public meeting held on June 29, 2010, at Cytec's Tom Call Pavilion in Waggaman, LA. Meeting participants raised the following issues:

- Requested additional pumping capacity be provided for the Highway 90 pump station,
- Questioned if during future construction events would there be adequate room along Highway 18 for a two lane bypass,
- Raised concerns that the closure of Bayou Verret structure may impact local drainage,
- Raised concerns about traffic issues in local neighborhoods that may be used a route alternate to Highway 18 even though those streets would not be identified as the official detour, and
- Raised concerns about oversized trucks using the bypass

The draft IER Supplemental was distributed for the 30-day public review of 25 June to 24 July. A public meeting specific to the proposed action was held on 29 June 2010 during the public comment period. Any comments received during the comment period will be considered as part of the official record. After the 30-day comment period and public meeting, the CEMVN District Commander would review all comments received and would make a determination of whether the comments are substantive in nature. If the comments are determined to be substantive in nature, an addendum would be prepared and published for a 30-day public comment period. After the expiration of the public comment period, the CEMVN District Commander will make a decision on the proposed action. The decision would be documented in the form of an IER Decision Record.

6.2 AGENCY COORDINATION

Preparation of this IERS has been coordinated with appropriate Congressional, Federal, state, and local interests, as well as environmental groups and other interested parties. An interagency environmental team was established for this project in which Federal and state agency staff played an integral part in the project planning. Members of this team are listed in appendix D. This interagency environmental team was integrated with the CEMVN Project Delivery Team to assist in the planning of this project and to complete a mitigation determination of the potential direct and indirect impacts of the proposed action. Monthly meetings with resource agencies were also held concerning this and other CEMVN IER projects. Project specific discussions of the proposed IERS # 16 project took place during the September 7, 2009, October 5, 2009, December 7, 2009, March 1, 2010 and April 5, 2010 interagency environmental team meetings. The following agencies, as well as other interested parties, received copies of the draft IERS:

- U.S. Department of the Interior, Fish and Wildlife Service
- U.S. Department of the Interior, National Park Service
- U.S. Environmental Protection Agency, Region VI
- U.S. Department of Commerce, National Marine Fisheries Service
- U.S. Natural Resources Conservation Service, State Conservationist
- Advisory Council on Historic Preservation
- Governor's Executive Assistant for Coastal Activities
- Louisiana Department of Wildlife and Fisheries
- Louisiana Department of Natural Resources, Coastal Management Division
- Louisiana Department of Natural Resources, Coastal Restoration Division
- Louisiana Department of Environmental Quality
- Louisiana State Historic Preservation Officer

The USFWS has reviewed the proposed action and in their letter dated May 7, 2010, concurred with the USACE determination that the proposed action would have no effect on any known threatened or endangered species or their habitat. The National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) reviewed the proposed action to ensure compliance with Section 305 of the Magnuson-Stevens Fishery Conservation and Management Act. They concurred with our determination that the proposed action would have no impact on essential fish habitat by their letter dated April 15, 2010. During coordination for IER #16 the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) provided a list of 18 federally protected species under NMFS jurisdiction found in the state of Louisiana (NMFS 2007). The USACE made a no effect determination for the original IER #16 project and proposed modifications of the project for federally protected species under the jurisdiction of NOAA NMFS.

In compliance with the Coastal Zone Management Act, the CEMVN has coordinated with LDNR for consistency with the Louisiana Coastal Resource Program (LCRP) and the Consistency Determination was issued on June 4, 2010. A copy of the Consistency Determination is included in appendix F.

A Water Quality Certification has been received from the Louisiana Department of Environmental Quality (LDEQ) by letter dated April 14, 2010 (appendix F). An Air Quality certification is being coordinated with LDEQ through the 30-day public review period associated with IERS #16.a.

Section 106 of the National Historic Preservation Act, as amended, requires consultation with SHPO and Native American tribes. In letters sent to the SHPO and Indian Tribes dated April 20, 2010 and May 3, 2010, the CEMVN provided project documentation, evaluated cultural resources potential for the proposed action, and found that the proposed action would have no impact on cultural resources. All elements of the proposed action except for three Relocation of

Utilities areas were determined to be of low cultural resources potential and did not require further cultural resources survey in addition to the cultural resources survey completed for IER #16 (Wells 2008). A Phase I cultural resources survey (Wells 2010) was conducted for the three relocation of utilities areas and no cultural resources were located. The SHPO, the Alabama-Coushatta of Texas Tribe and the Choctaw Nation of Oklahoma concurred with our “no historic properties” findings on May 20, 2010, May 4, 2010, and May 10, 2010, respectively. In response to the May 3, 2010 letters, the SHPO and the Alabama-Coushatta of Texas Tribe concurred with our “no historic properties” findings on June 2, 2010 and May 28, 2010, respectively. No other Indian Tribes responded to our request for comments. Section 106 consultation for the proposed project is concluded. However, if any unrecorded cultural resources are determined to exist within the proposed project boundaries, then no work would proceed in the area containing these cultural resources until a CEMVN archaeologist has been notified and final coordination with the SHPO and Indian Tribes has been completed.

The USFWS reviewed the proposed action in accordance with the Fish and Wildlife Coordination Act and prepared a draft Coordination Act Report for IERS #16.a dated 1 June 2010. The final report was received 11 August 2010. All comments related to USFWS trust resources have been resolved. The USFWS also provided programmatic recommendations, in the “Draft Fish and Wildlife Coordination Act Report for the Individual Environmental Reports (IER), Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4)” in November 2007. The uncertainties in the design of several projects prohibited a complete evaluation of the impacts to fish and wildlife species and the reporting responsibilities under Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended: 16 U.S.C. 661 et seq.). Therefore, a subsequent final supplemental report will be provided by the USFWS at a later date. The draft (programmatic) Fish and Wildlife Coordination Act Report for the IERs dated November 2007 can be accessed through the www.nolaenvironmental.gov website.

The USFWS’ programmatic recommendations applicable to this project will be incorporated into project design studies to the extent practicable, consistent with engineering and public safety requirements. The USFWS’ programmatic recommendations, and the CEMVN’s response to them are incorporated by reference. They can be found in IER #16 and are available at nolaenvironmental.gov.

The USFWS’ project-specific recommendations in their draft FWCA report dated June 1, 2010 and the CEMVN’s response to them are listed below:

Recommendation 1: The Corps shall provide mitigation for impacts.

CEMVN Response 1: Mitigation for the impacts caused by this project will be coordinated through the mitigation IER.

Recommendation 2: Flood protection and ancillary features such as staging areas and access roads should be designed and positioned so that destruction of wetlands and non-wet bottomland hardwoods are avoided or minimized to the greatest extent possible.

CEMVN Response 2: Staging areas and access roads have been sighted to avoid a variety of features including existing structures, businesses, and canals. The size of the staging areas and access roads has been sized to minimize impacts of the features.

Recommendation 3: The enclosure of wetlands within new levee alignments should be minimized to the fullest extent. When enclosure of wetlands is unavoidable, non-developmental easements on enclosed wetlands should be acquired, and hydrologic connections with adjacent, un-enclosed wetlands should be maintained. Such actions will serve to minimize secondary impacts from development and hydrologic alteration.

CEMVN Response 3: USACE policy is that the CEMVN would mitigate, to the extent justified, for the adverse direct environmental impacts of projects. Indirect impacts such as land

development are subject to compliance with local and state permit and zoning requirements and therefore, local and state interests are responsible for defining the appropriate mitigation requirements for land development activities. (See IER #16 appendix G for a copy of USACE Headquarters Policy on Mitigation for Induced Development). As such, the recommended action of the purchase of non-development easements for wetlands enclosed by the project could not be purchased as part of the project because the conservation easement is not a part of the authorized purpose or need of the project that is flood damage reduction. At the time of the development those responsible for the development themselves, the developers, would be responsible for mitigating those impacts.

To minimize the impacts to 2,485 acres of wetlands located north of Hwy 90, the combined cross section at the perimeter of the project is sized to equal the combined cross section of the openings through Hwy 90 prior to project construction. The approximately 265 acres of wetlands located south of Hwy 90 would continue to have hydrologic connections, but with a reduced cross sectional area.

Recommendation 4: The Service recommends that the previous induced development study examine potential development over the period of analysis (i.e., 50 years) to be consistent with the planning process. Information about potential development of the area in question derived from this analysis would be used to determine mitigation requirements.

CEMVN Response 4: The St. Charles Parish Development Study acknowledges the potential for development to occur within the study area. The CEMVN believes the period of analysis for the induced development is appropriate. See CEMVN response to Recommendation 3 regarding the USACE policy on the mitigation of effects from induced development. Addressing the environmental effects of induced development, resulting from choices, decisions, and actions of others (such as states, communities, businesses, and individuals) becomes a non-Federal responsibility. Regulation of land development is under the purview of the local and state government; those entities retain the responsibility for managing development. The USACE does not mitigate for indirect impacts such as induced development, where local and state entities regulate and would be able to assign mitigation requirements directly to the developer. (See IER #16 appendix G).

Recommendation 5: Water control structures should be designed to allow rapid opening in the absence of an offsite power source after a storm passes and water levels return to pre-storm levels.

CEMVN Response 5: The plan for water control structures at Bayou Verret includes a sector gate and sluice gates. The sluice gates can be opened rapidly after a storm and can be opened manually without a power source.

Recommendation 6: Flood protection structures should include shoreline baffles and/or ramps (e.g., rock rubble, articulated contract mat) that slope up to the structure invert to enhance organism passage. Various ramp designs should be considered and coordination should continue with the natural resources agencies to ensure fish passage features are fully incorporated to the extent practicable.

CEMVN Response 6: A typical design for a closure structure includes rock or other erosion protection sloped down from the invert of the structure. Project designs would incorporate these attributes to the extent practicable.

Recommendation 7: Flood protection water control structures should remain fully open except during storm events, unless otherwise determined by the natural resource agencies.

CEMVN Response 7: The plan of operations for the water control structures would be outlined in the OMRR&R manual that would be developed by the CEMVN and given to the local sponsors. The structures are to remain open except during tropical events. Any changes to the

OMRR&R manual recommended by either the local sponsor or the resources agencies would have to be approved by the CEMVN.

Recommendation 8: Due to some of the proposed project features, the drainage capacity of the area between Hwy 90 and the proposed levee will be reduced. The Service is concerned about the potential for ponding in the area and subsequent impacts to wetlands vegetation and to Hwy 90. The service recommends that the Corps undertake additional hydrologic studies to determine the effects of those drainage capacity reductions.

CEMVN Response 8: As stated in IER #16, the 289 acre area below Hwy 90 which includes approximately 164 acres of wetlands would experience reduced water exchange. During rainfall, wave or wind driven events water may pond within this 289 acre area. However with the reduced combined cross sectional area into the 289 acre area the amount of water entering this area from the south would also be reduced. Hydrologic and hydraulic analyses were performed to evaluate water surface elevations that would occur in the project area with the proposed project in places verses with project construction. The H & H analysis was included in IER #16 in appendix F. This analysis specifically projected water surface elevations when the drainage structures would be closed. The water surface evaluation analyses indicate that increase in water surface elevations within the project area including the area between Hwy 90 and the levee alignment would be less than half a foot in smaller storm events and approximately a foot increase in extreme storm events. Potential impacts to Hwy 90 only would be likely during very extreme storm events. As stated in IER #16, CEMVN does not intend to perform additional hydrologic studies. As described in IER #16 water exchange and changes in water surface elevation during wave or tidally driven events would occur in the area located between Hwy 90 and the new levee.

Recommendation 9: Any proposed change in plan features or mitigation should be coordinated in advance with the Service, NMFS, LDWF, EPA and OCPD.

CEMVN Response 9: Mitigation for the impacts caused by this project would be coordinated through the mitigation IER.

Recommendation 10: If a proposed feature is changed significantly or is not implemented within one year of the date of our Endangered Species Act consultation letter, we recommend that the Corps reinstate coordination with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species of their habitat.

CEMVN Response 10: Concur.

In the USFWS' Final Coordination Act Report (CAR) dated 11 August 2010 one additional project-specific recommendation was included that had not been previous included in the draft CAR. The USFWS' recommendation and the CEMVN's response are listed below:

Recommendation 3: Avoid adverse impacts to wading bird colonies through careful design project features and timing on construction. Colonies that are not currently listed in the database maintained by the Louisiana Department of Wildlife and Fisheries may be present. The database is updated primarily by monitoring the colony sites that were previously surveyed during the 1980s. Until a new, comprehensive coast-wide survey is conducted to determine the location of newly-established nesting colonies, the Service recommends that a qualified biologist inspect the proposed work site for the presence of undocumented nesting colonies during the nesting season.

CEMVN Response 3: Concur

7.0 MITIGATION

Mitigation for unavoidable impacts to the human and natural environment described in this and other IERs will be addressed in separate mitigation IERs. The CEMVN has partnered with

Federal and state resource agencies to form an interagency mitigation team that is working to assess and verify these impacts, and to look for potential mitigation sites in the appropriate hydrologic basin. This effort is occurring concurrently with the IER planning process in an effort to complete mitigation work and construct mitigation projects expeditiously. As with the planning process of all other IERs, the public has had the opportunity to give input about the proposed work. Public meetings have been held as part of the scoping process for the mitigation IERs. These mitigation IERs will be available for a 30-day public review and comment period.

Quantitative analysis utilizing existing methodologies for water resource planning has identified the acreages and habitat type for the direct or indirect impacts of implementing the proposed action. 79.1 acres of wet bottomland hardwood forest and 14.1 acres of fresh marsh have been identified that would require compensatory mitigation in addition to the 78.6 acres of bottomland hardwood forest and 134.1 acres of fresh marsh previously identified in IER #16. The 79.1 acres represent the worst case scenario that includes the entire area that could be affected by the facilities relocations; the actual impacts are likely to be less and will not be known until the relocation plans are finalized.

On 16-17 January 2008, an interagency field trip was conducted to obtain raw field data for the IER #16 project. The methodology being utilized in determining appropriate mitigation, which would include no net loss of wetland values, is the interagency Wetland Value Assessment (WVA). The WVA computes the Average Annualized Habitat Units (AAHUs) lost by project implementation. The AAHUs are converted to acres needed to meet the nation's no-net-loss of wetlands policy once the mitigation site is selected. The information gathered during the January 2008 field trip was utilized by the USFWS to compute habitat impacts due to the proposed IERS #16.a.

Areas of bottomland hardwood wetland habitat directly impacted by the proposed project construction are above or adjacent to Hwy 90 and would be associated with utility relocations and retaining detour roads. The WVA model concluded mitigation for 37.26 AAHUs of wet bottomland hardwoods and 9.0 AAHUs of fresh marsh would be required for this area. The AAHUs will be included in the overall totals for the HSDRRS projects. Utility owners would also be required to obtain all permits necessary to comply with all Federal and State laws, rules and regulations including Section 404 permits through the CEMVN regulatory office. The Section 404 process focuses on minimizing impacts to wetlands.

Comprehensive mitigation IER or IERs will be prepared documenting and compiling these unavoidable impacts and those for all other proposed actions within the HSDRRS that are being analyzed through other IERs. Mitigation planning is being carried out for groups of IERs, rather than within each IER, so that large mitigation efforts could be taken rather than several smaller efforts, increasing the relative economic and ecological benefits of the mitigation effort. This forthcoming mitigation IER will implement compensatory mitigation as early as possible. All mitigation activities will be consistent with standards and policies established in appropriate Federal and state laws and USACE policies and regulations.

Table 4. shows the cumulative compensatory mitigation that would be completed by the CEMVN. This table will be updated as potential impacts are associated in forthcoming IERs.

8.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Construction of the proposed action would not commence until the proposed action achieves environmental compliance with all applicable laws and regulations, as described below.

Environmental compliance for the proposed action would be achieved upon coordination of this IER with appropriate agencies, organizations, and individuals for their review and comments;

USFWS and NMFS confirmation that the proposed action would not adversely affect any threatened or endangered species or require completion of Endangered Species Act Section 7 consultation; LDNR concurrence with the determination that the proposed action is consistent, to the maximum extent practicable, with the LCRP; receipt of a Water Quality Certification from the State of Louisiana; public review of the Section 404(b)(1) Public Notice and signature of the Section 404(b)(1) Evaluation; coordination with the Louisiana SHPO; receipt and acceptance or resolution of all Fish and Wildlife Coordination Act recommendations; and receipt and acceptance or resolution of all Essential Fish Habitat recommendations. The status of compliance for each law or regulation is summarized below.

Executive Order (E.O.) 11988. E.O. 11988, Floodplain Management, addresses minimizing or avoiding adverse impacts associated with the base floodplain unless there are no practicable alternatives. It also involves giving public notice of proposed actions that may affect the base floodplain. The proposed action would not accelerate development of the floodplain for the following reasons: development of the study area is more closely related to access routes and the need for affordable housing space than flooding potential and conditions conducive for development were established initially when the area was levied and forced drainage was initiated in the middle 1960s.

Executive Order 11990. E.O. 11990, Protection of Wetlands, has been important in project planning. It is acknowledged that large areas of wetlands have been assessed for utility relocations because these relocation plans have not been finalized. Relocations plans will be reviewed and impacts minimized where practicable. Actual impacts would be tracked and mitigated. The design flow capacity will be retained such that the construction of a new pump station would have no indirect effect on the rate of drainage from the area.

Consistency with Coastal Zone Management (CZM) Program. The CEMVN has determined that modifications associated with the construction and maintenance of 100-year level of risk reduction along the WBV, Western Tie-in is consistent, to the maximum extent practicable, with the guidelines of the State of Louisiana's approved Coastal Zone Management Program. A CZM consistency determination modification was prepared and provided to the LDNR. The consistency determination concurrence, C20080324 modification 2 was dated June 4, 2010. The consistency letter of concurrence from the LDNR completes the consistency requirements.

Clean Air Act. The original 1970 Clean Air Act (CAA) authorized the USEPA to establish National Ambient Air Quality Standards (NAAQS) to limit levels of pollutants in the air. USEPA has promulgated NAAQS for six criteria pollutants: sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), ozone, lead, and particulate matter (PM-10). All areas of the United States must maintain ambient levels of these pollutants below the ceilings established by the NAAQS; any area that does not meet these standards is considered a "non-attainment" area (NAA). The 1990 Amendments require that the boundaries of serious, severe, or extreme ozone or CO non-attainment areas located within Metropolitan Statistical Areas (MSAs) or Consolidated Metropolitan Statistical Areas (CMSAs) be expanded to include the entire MSA or CMSA unless the governor makes certain findings and the Administrator of the USEPA concurs. Consequently, all urban counties included in an affected MSA or CMSA, regardless of their attainment status, will become part of the NAA. The project is located in Jefferson Parish and St. Charles Parish, which are both classified as attainment areas; therefore NAAQS are not applicable to this project.

Clean Water Act. The Clean Water Act (CWA; 33 U.S.C. 1251-1387; Act of June 30, 1948, as amended) is a very broad statute with the goal of maintaining and restoring waters of the United States. The CWA authorizes water quality and pollution research, provides grants for sewage treatment facilities, sets pollution discharge and water quality standards, addresses oil and hazardous substances liability, and establishes permit programs for water quality, point source pollutant discharges, ocean pollution discharges, and dredging or filling of wetlands. The intent of the CWA's §404 program and its §404(b)(1) "Guidelines" is to prevent destruction of aquatic

ecosystems including wetlands, unless the action will not individually or cumulatively adversely affect the ecosystem.

Section 404(b)(1) guidelines were used to evaluate the discharge of dredged or fill material for adverse impacts to the aquatic ecosystem. The following actions would be taken to minimize the potential for adverse environmental impacts. Although a larger area is being evaluated in the IERS, utility and pipeline relocations plans will be coordinated with the CEMVN and actual areas impacted will be reviewed to ensure that impacts are reduced or minimized. The proposed project complies with the requirements of the guidelines. The LDEQ Water Quality Certification letter, WQC 090212-06/AI 163172/CER20100001, dated 14 April 2010, completes the certification process.

Endangered Species Act. The Endangered Species Act (16 U.S.C. 1531-1543; P.L. 93-205, as amended) was enacted in 1973 to provide for the conservation of species that are in danger of extinction throughout all or a significant portion of their range. "Species" is defined by the Act to mean either a species, a subspecies, or, for vertebrates (*i.e.*, fish, reptiles, mammals, etc.) only, a distinct population. No threatened or endangered species or their critical habitat would be impacted by the proposed action. The USFWS concurred with our determination in their letter dated 7 May 2010, and in the draft Coordination Act Report dated 1 June 2010.

Fish and Wildlife Coordination Act. The Fish and Wildlife Coordination Act (16 U.S.C. 661-666c; Act of March 10, 1934, as amended) requires that wildlife, including fish, receive equal consideration and be coordinated with other aspects of water resource development. This is accomplished by requiring consultation with the USFWS and NMFS whenever modifications are proposed to a body of water and a Federal permit or license is required. This consultation determines the possible harm to fish and wildlife resources, and the measures that are needed to both prevent the damage to and loss of these resources, and to develop and improve the resources, in connection with water resource development. NMFS submits comments and recommendations to Federal licensing and permitting agencies, and to Federal agencies conducting construction projects on the potential harm to living marine resources caused by proposed water development projects, and suggest recommendations to prevent harm. The USFWS provided the "Draft Fish and Wildlife Coordination Act Report for the Individual Environmental Reports (IER), Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4)" in November 2007 (USFWS, 2007). To fulfill the responsibilities of the Fish and Wildlife Coordination Act, the USFWS will provide a post-authorization final supplemental 2(b) report to the draft programmatic report. A draft project-specific Coordination Act Report was received from USFWS by letter dated 1 June 2010. A final report as received on 11 August 2010. All comments regarding USFWS trust resources have been resolved.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act of 1918 (MBTA) is the domestic law that affirms, or implements, the United States' commitment to four international conventions with Canada, Japan, Mexico, and Russia for the protection of shared migratory bird resources. The MBTA governs the taking, killing, possessing, transporting, and importing of migratory birds, their eggs, parts, and nests. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvest to be limited to levels that prevent over-utilization. Section 704 of the MBTA states that the Secretary of the Interior is authorized and directed to determine if, and by what means, the take of migratory birds should be allowed and to adopt suitable regulations permitting and governing take. The MBTA prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase or barter, of any migratory bird, their eggs, parts, and nests, except as authorized under a valid permit (50 CFR §21.11). The USFWS addressed compliance with this Act in the "Draft Fish and Wildlife Coordination Act Report for the IER, Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4)" in November 2007 (USFWS, 2007).

To fulfill the responsibilities of the Fish and Wildlife Coordination Act, the USFWS will provide a post-authorization final supplemental 2(b) report to the draft programmatic report.

National Environmental Policy Act. The National Environmental Policy Act (NEPA; 42 U.S.C. 4321-4347; Pub. L. 91-190, as amended) requires Federal agencies to analyze the potential effects of a proposed Federal action that would significantly affect historical, cultural, or natural aspects of the environment. It specifically requires agencies to use a systematic, interdisciplinary approach in planning and decision-making, to insure that environmental values may be given appropriate consideration, and to provide detailed statements on the environmental impacts of proposed actions including: (1) any adverse impacts; (2) alternatives to the proposed action; and (3) the relationship between short-term uses and long-term productivity. The agencies use the results of this analysis in their decision-making. The preparation of this IER Supplemental is a part of compliance with NEPA.

National Historic Preservation Act. Congress established the most comprehensive national policy on historic preservation with the passage of the National Historic Preservation Act of 1966 (NHPA). In this Act, historic preservation was defined to include "the protection, rehabilitation, restoration and reconstruction of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, or culture." The Act led to the creation of the National Register of Historic Places, a file of cultural resources of national, regional, state, and local significance. The act also established the Advisory Council on Historic Preservation (the Council), an independent Federal agency responsible for administering the protective provisions of the act. The major provisions of the NHPA are Sections 106 and 110. Both sections aim to ensure that historic properties are appropriately considered in planning Federal initiatives and actions. Section 106 is a specific, issue-related mandate to which Federal agencies must adhere. It is a reactive mechanism that is driven by a Federal action. Section 110, in contrast, sets out broad Federal agency responsibilities with respect to historic properties. It is a proactive mechanism with emphasis on ongoing management of historic preservation sites and activities at Federal facilities. A conclusion of no impacts to cultural resources in the proposed project areas was transmitted to the SHPO and Indian Tribes on April 20, 2010, and May 3, 2010. The SHPO, the Alabama-Coushatta of Texas Tribe and the Choctaw Nation of Oklahoma concurred with our "no historic properties" findings on May 20, 2010, May 4, 2010, and May 10, 2010, respectively. In response to the May 3, 2010 letters, the SHPO and the Alabama-Coushatta of Texas Tribe concurred with our "no historic properties" findings on June 2, 2010 and May 28, 2010, respectively. No other Indian Tribes responded to our request for comments. Section 106 consultation for the proposed project is concluded. However, if any unrecorded cultural resources are determined to exist within the proposed project boundaries, then no work would proceed in the area containing these cultural resources until a CEMVN archaeologist has been notified and final coordination with the SHPO and Indian Tribes has been completed.

9.0 CONCLUSION

9.1 FINAL DECISION

The proposed action would provide modifications to the previously approved plan to construct approximately 23,600 linear feet of levee, floodwall, and closure structures constructed to an elevation of +13.5 feet to +15.5 feet NAVD88.

- Reach 1 modifications include the demolition of the existing Hwy 90 pump station and construction of a new pump station and related features south of the existing pump station. The pump station pumping capacity would be retained. Bank stabilization would be placed on the flood side of the eastern Outer Cataouatche Canal Closure.

- Reach 2 modifications include the placement of bank stabilization on the protected side of the western Outer Cataouatche Canal Closure and the placement of riprap to provide scour protection below the permanent bridges located in this reach.
- Reach 3 modifications include the retention of temporary road detours after construction activities are completed to provide access for future Operations and Maintenance activities and land owners whose access would be impacted by the Hwy 90 floodwall construction. Utility relocations would also occur in Reach 3.
- Reach 5 modifications include the construction of a ramp at Hwy 18 instead of the previously approved floodgate. Utility relocations would also occur in Reach 5.

The CEMVN has assessed the environmental impacts of the proposed action and has determined that the proposed action would have the following impacts:

- Short-term impact to air quality from heavy equipment and trucks used during the utility relocation construction activities,
- Short-term direct impact to water quality in the Outer Cataouatche Canal from the placement of fill into the Outer Cataouatche Canal, for bank stabilization at closure and bridges and the construction of a scour pad at the outfall of the new Hwy 90 pump station,
- Short-term disturbance to residents and nearby habitat from construction noise generated during Hwy 18 ramp construction and utility relocations,
- Traffic delays and short-term closure of Hwy 18 to traffic. Impacts of Hwy18 closure would be reduced by two lane, two way bypass at Hwy 18 construction location,
- Permanent loss of 1 acres of forested habitat from Hwy 18 ramp construction,
- Permanent loss of up to 119 acres of vegetated wetlands (clearing, grubbing and filling and excavation),
- Permanent loss of up to 16.5 acres of aquatic habitat,
- Permanent loss of up to 34 acres of prime farmland.
- Permanent displacement of fish and temporary displacement of wading birds, waterfowl, or other wildlife within the footprint of construction, and
- Long term benefits of providing an alternate evacuation route to Hwy 90 at Hwy 18.

9.2 PREPARED BY

The point of contact and responsible manager for the preparation of this IERS is Beth Nord, CEMVN. The address of the preparers is: U.S. Army Corps of Engineers, New Orleans District; New Orleans Environmental Branch, CEMVN-PDR; P.O. Box 60267; New Orleans, Louisiana 70160-0267. Table 4 lists the preparers of the various sections and topics in this IER.

Table 5. IERS #16.a Preparation Team

| | |
|---------------------------|--|
| Environmental Team Leader | Sandra Stiles, CEMVN |
| Environmental Manager | Tammy Gilmore, CEMVN |
| Environmental Manager | Beth Nord, CEMVN |
| Sr. Project Manager | Julie Vignes, CEMVN |
| Project Manager | Jeff Williams, CEMVN |
| Project Manager | Matt Stewart, CEMVR |
| Project Engineer | Mark Anderson CEMVR |
| Review | Aven Bruser CEMVN – Office of Counsel |
| Review | Thomas Keevin, CEMVS - Independent Technical Review |
| HTRW | J. Christopher Brown, CEMVN |
| Cultural Resources | Paul Hughbanks, CEMVN |
| Recreational Resources | Andrew Perez, CEMVN |
| Aesthetic Resources | Richard Radford, CEMVN |
| Environmental Justice | Jerica Richardson CEMVN |
| Economics | Allen Hebert, CEMVN |
| Technical Editor | Jennifer Darville, CEMVN |

9.3 LITERATURE CITED

- Council on Environmental Quality (CEQ). 1997. Environmental Justice Guidance Under the National Environmental Policy Act. Executive Office of the President. Washington, D.C.
- Executive Office of the President (Executive Order). 1994. Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations. Executive Order 12898, 59 Fed. Reg. 7629.
- Louisiana Department of Transportation and Development (LADOTD). 2009. LADOTD Estimated Annual Average Daily Traffic Sites: St. Charles Parish, Station 224500. On line at: <http://www.dotd.la.gov/highways/tatv/default.asp>
- National Marine Fisheries Service (NMFS). 2007. IER 16 List of Federally Protected Species Letter from David Bernhart NMFS to Elizabeth Wiggins, CEMVN dated 8 November 2007.
- NoiseMeters, Inc., Decibel Calculator- dB Calculator Accessed June 9, 2010 from: <http://www.noisemeters.com/apps/db-calculator.asp>.
- _____. 2010. Transportation Report for the Construction of the 100-Year Hurricane and Storm Damage Risk Reduction System, Final Report.
- U.S. Bureau of the Census. 2000. U.S. Poverty Thresholds in 2000. On-line Resource at: <http://www.census.gov/hhes/poverty/threshld/thresh00.html>.
- U.S. Environmental Protection Agency (USEPA). 1993. Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule, 40 CFR Parts 6, 51, and 93. Federal Register 63213-63259, November 30, 1993.
- _____. 2007. Nonattainment for Each County by Year (Green Book). On-line Resource at: <http://www.epa.gov/oar/oaqps/greenbk/anay.html>
- U.S. Fish and Wildlife Service (USFWS). 2007. Draft Fish and Wildlife Coordination Act Report for the Individual Environmental Reports. Ecological Services, Lafayette Louisiana-Southeast Region.
- _____. 2009. Draft Fish and Wildlife Coordination Act Report for Individual Environmental Report # 16. Ecological Services, Lafayette Louisiana-Southeast Region.
- _____. 2010. Draft Fish and Wildlife Coordination Act Report for Individual Environmental Report Supplemental #16. Ecological Services, Lafayette Louisiana-Southeast Region.
- U.S. Federal Transit Administration (USFTA). 2006. Transit Noise and Vibration Impact Assessment . FTA Report FTA-VA-90-1003-06, May 2006.
- Wells, D. 2008. Management Summary: Reconnaissance Survey of the Western Tie-In Segment (IER #16), West Bank and Vicinity Hurricane Protection Levee, Jefferson and St. Charles Parishes, Louisiana. Coastal Environments, Inc., Baton Rouge. Submitted to CEMVN.
- Wells, D. 2010. Management Summary: Phase I Cultural Resources Survey of Proposed Utility Realignment, Western Tie-In Segment (IER #16), West Bank and Vicinity Hurricane Protection Levee, Jefferson and St. Charles Parishes, Louisiana. Coastal Environments, Inc., Baton Rouge. Submitted to CEMVN.

10.0 APPENDICES

APPENDIX A - LIST OF ACRONYMS AND DEFINITIONS OF COMMON TERMS

| | |
|--------|---|
| AAHUs | Annual Average Habitat Units |
| AD | Anno Domini |
| ASTM | American Society for Testing and Materials |
| BFI | Browning-Ferris Industries Landfill |
| BLH | Bottomland Hardwood Forest |
| BNSF | Burlington Northern Santa Fe |
| BOD | Biological Oxygen Demand |
| CED | Comprehensive Environmental Document |
| CEMVN | Corps of Engineers, Mississippi Valley Division, New Orleans District |
| CEQ | The President's Council on Environmental Quality |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CFS | Cubic Ft Per Second |
| CW | Civil Works Program |
| CWA | Clean Water Act |
| CY | Cubic Yard |
| CSMA | Consolidated Metropolitan Statistical Area |
| CZM | Coastal Zone Management |
| dBA | Decibels |
| EA | Environmental Assessment |
| EFH | Essential Fish Habitat |
| EIS | Environmental Impact Statement |
| EM | Engineering Manual |
| EO | Executive Order |
| EPW | Evaluation Of Planned Wetlands |
| ER | Engineering Regulation |
| ESA | Environmental Site Assessment |
| FCU | Functional Capacity Units |
| FCI | Functional Capacity Index |
| FEMA | Federal Emergency Management Agency |
| FONSI | Finding of No Significant Impact |
| FPPA | Farmland Protection Policy Act |
| FWCA | Fish and Wildlife Coordination Act |
| DPR | Detailed Project Report |
| DPR/EA | Detailed Project Report/Environmental Assessment |
| FHWA | Federal Highway Administration |
| FONSI | Finding of No Significant Impact |
| FPPA | Farmland Protection Policy Act |
| FTA | Federal Transit Administration |
| FWCA | Fish and Wildlife Coordination Act |
| HSDRRS | Greater New Orleans Hurricane and Storm Damage Risk Reduction System |
| HTRW | Hazardous, Toxic, and Radioactive Waste |
| HPS | Hurricane Protection System |
| IER | Individual Environmental Report |
| LCRP | Louisiana Coastal Resources Program |
| LDEQ | Louisiana Department of Environmental Quality |
| LDNR | Louisiana Department of Natural Resources |
| LDWF | Louisiana Department of Wildlife and Fisheries |
| LPV | Lake Pontchartrain and Vicinity |
| MBTA | Migratory Bird Treaty Act |

| | |
|--------|---|
| ML | Milliliters |
| MPH | Miles per Hour |
| MSA | Metropolitan Statistical Area |
| NAA | Non Attainment Area |
| NAAQS | National Ambient Air Quality Standards |
| NAVD | North American Vertical Datum of 1988 |
| NEPA | National Environmental Policy Act |
| NFIP | National Flood Insurance Program |
| NHP | Natural Heritage Program |
| NHPA | National Historic Preservation Act |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NPS | National Park Service |
| NRCS | National Resources Conservation Service |
| NWR | National Wildlife Refuge |
| O&M | Operations And Maintenance |
| OMRR&R | Operations, Maintenance, Repair, Replacement, & Rehabilitation |
| OSE | Other Social Effects |
| PA | Programmatic Agreement |
| PDT | Project Delivery Team |
| PL | Public Law |
| PPA | Project Partnering Agreements |
| PSI | Pounds Per Square Inch |
| P&G | Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies |
| RCRA | Resource Conservation and Recovery Act |
| REC | Recognized Environmental Condition |
| RED | Regional Economic Development |
| ROD | Record of Decision |
| ROW | Right-of-Way |
| SCORP | State Comprehensive Outdoor Recreation Plan |
| SHPO | State Historic Preservation Officer |
| SIP | State Implementation Plan |
| SPH | Standard Project Hurricane |
| TMDL | Total Maximum Daily Load |
| USACE | United States Army Corps Of Engineers |
| USDA | United States Department of Agriculture |
| USEPA | United States Environmental Protection Agency |
| USFWS | United States Fish And Wildlife Service |
| USGS | United States Geological Survey |
| VOC | Volatile Organic Compounds |
| WBV | West Bank and Vicinity |
| WRDA | Water Resources Development Act |
| WVA | Wetlands Value Assessment |

APPENDIX B - PUBLIC COMMENT AND RESPONSE SUMMARY

Neal and Mary Clulee
221 Evelyn Drive
Luling, LA 70070

July 2, 2010

Sandra Stiles
New Orleans District
U.S. Army Corps of Engineers
Fax 504-862-2088

Re: Comment—Public Notice IERS #16.a

Dear Ms. Stiles:

We object to the proposal to degrade the eastern Davis Pond Guide Levee by approximately 2400 feet and the removal of approximately 26,600 cubic yards of fill material. We own the property on both sides of Highway 90 at this location. This would put the remaining acreage on the south side of Hwy. 90 **inside** the ponding area of the Davis Pond Freshwater Diversion, subject to tidal flow and restricted from any further development. Our acreage on the north side of Hwy. 90 that is outside the Hurricane Protection Levee would also be subjected to increased tidal flow at the least, if not becoming completely submerged.

We would like to meet with the appropriate corps representatives to discuss this proposed action.

Sincerely,



Neal Clulee

Sent via fax only



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

JUL 16 2010

Regional Planning and
Environmental Division, South
New Orleans Environmental Branch

Mr. and Mrs. Neal Clulee
221 Evelyn Drive
Luling, Louisiana 70070

Dear Mr. and Mrs. Clulee:

Thank you for your July 2, 2010, letter concerning the draft Individual Environmental Report Supplemental (IERS) #16.a. In your letter you expressed concerns regarding the proposed degrading of a section of the Davis Pond East Guide Levee. Specifically you were concerned that your property located north and south of Highway 90, which would also be located outside of the Hurricane Protection Levee, would be subject to tidal flow or increased tidal flow and restricted from further development.

We agree that following the proposed levee degrade that your property located south and north of Hwy 90 would be hydrologically connected to the waters of the Davis Pond Diversion and water elevations over these lands would be subjected to changes in water elevation associated with the Davis Pond flow coupled with local tidal and wind driven events. Daily mean stream water elevations as measured at the Davis Pond Freshwater Diversion (USGS gage near Boutte, Louisiana) during the period between 2003 and 2009 ranged between 1.0 and 4.5 feet. Review of Light Detection and Ranging (LIDAR) topographic surveys for this area indicate that ground elevations both below and above Highway 90 are between 1 and 3 feet NAVD88 with the majority of lands with an elevation of less than 2 feet and only small areas of 3 feet NAVD88. As discussed in IER #16 the area below Highway 90 is comprised of open waters of the Outer Cataouatche Canal, swamp and wet Bottom Hardwood Forest. Although a formal jurisdictional wetland delineation has not been performed for the area, both the lands located north of and south of Highway 90 are vegetated with wetlands plants and trees.

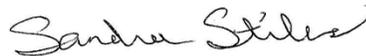
Prior to construction associated with the Western Tie-in, the areas you reference located above and below Highway 90 were connected to the Outer Cataouatche Canal through a culvert that passes below Highway 90 or via a ditch to the Outer Cataouatche Canal. The Outer Cataouatche Canal receives tidal influence through the Lake Cataouatche, via Lake Salvador, Bayou Perot and the Barataria Bay. With construction of the Western Tie-in project as described in IER #16 water exchange would be modified for these areas. Instead of water exchange via the Outer Cataouatche Canal the areas would connect to the Davis Pond Freshwater Diversion via the 50-foot cut in the Davis Pond Eastern Guide Levee. Alternatively, if the Davis Pond Guide Levee degrade occurs as proposed in the draft IERS #16.a, your property located north of Highway 90 would have water exchange from Davis Pond through the existing culvert. For all

three scenarios; conditions before Western Tie-in construction, conditions if the Western Tie-in as described in IER #16 were constructed or the conditions if the proposed IER Supplemental #16.a revisions were constructed the property you identify would be hydrologically connected to either the Outer Cataouatche Canal or the marshes located in the Davis Pond Freshwater Diversion Outfall area and fill or development of these areas would be regulated under Section 404 of the Clean Water Act. While some change in water levels may occur as a result of the proposed levee degrade, under all three scenarios fill or development of those areas would be regulated under Section 404 of the Clean Water Act. In short since these areas are wetlands and would remain wetlands, the ability to fill or develop these areas would not be changed because of potential water level changes.

Related to your comments regarding property development, as part of the future operation of the Hurricane Protection Levee a proactive flood control permits program would be implemented in conjunction with the local sponsor and Louisiana Department of Transportation and Development (LA DOTD). This program is implemented to protect the overall public interest and establishes an evaluation process for certain types of work that can adversely affect the structural integrity of federal levees and structures. For Hurricane Protection Levees proposed activities within 300 feet of the levee centerline are typically evaluated. Any work including new development that could potential interfere with levee stability should be coordinated with the levee district in conjunction with the LA DOTD and the New Orleans District, Operations Division.

Thank you for commenting on the draft IERS. If you have additional questions please contact Beth Nord at (504)862-2167.

Sincerely,



Sandra Stiles
Chief, Ecological Planning and
Restoration Section

07-23-10 10:12:40 PM SENATOR FOLMER, LEBANON

07/23/10

Dear Gordon Stiles!

Thank you for the IERS # 16.a,
What I think about this project is that a good
project however with the implementation
of one the Direct Proposed Actions on the section
3.1.1.1, 3.1.2, 3.2.1.1, 3.2.3.1, 3.2.5.1, 3
will be cause some damage.

Do it may cause problem with some
animal species but don't it is not even an option.

Thank you

Alberto Valverde
42 E Pine ST #3
Clermont PA 19042

-----Original Message-----

From: jeffnjara [mailto:jeffnjara@roux.org]
Sent: Friday, July 23, 2010 11:19 PM
To: Robles, Cheryn MVN-Contractor; 'VJ St. Pierre'; 'Shelley Tastet @ SCP'; 'Terry Authement'; 'Carolyn Schexnaydre'; 'Nuss, Dennis'; Poche, Rene G MVN; 'Greg Champagne'; 'Mary Bergeron'; mscallan@timespicayune.com; Manina Dubroca; David Arata; 'Sam Scholle'; 'Rob Brou'
Subject: FW: Comments on Western Tie-In IERS # 16a

Formal comments submitted to Corps. jeff

From: jeffnjara [mailto:jeffnjara@roux.org]
Sent: Friday, July 23, 2010 11:02 PM
To: 'mvnenvironmental@usace.army.mil'
Cc: 'sandra.e.stiles@usace.army.mil'
Subject: Comments on Western Tie-In IERS # 16a

I'm sending to this address, as the comment pull down at nolaenvironmental didn't address a specific IER.

General Comments on IERS # 16a

The new Hwy 90 Pump Station should be supplied with water from the Outer Cat Canal once the sector gates are closed. A culvert/water control structure could be installed in the present levee that terminates into Hwy 90 and a ditch (if not present) could feed the water to the suction area of the pump. Its height (culvert) could be a couple of feet above the nominal level in the canal. There is presently no pump to lower the level on the protected side of the levee. If the water on the protected side gets to the range of 6 ft, Hwy 90 will be impassable and the water may top the levee anyway.

1

This concern is also in USFWS' project-specific rec-8 page 51. I think the recent surge associated with IKE and the events this year with Alex and the other unnamed storm when the water level at Sellers canal reached almost 3 ft reflects where the water level might be on the protected side once the sector gate is closed and heavy rains are experienced. In 1995 with heavy rainfall in a short time some homes flooded in the back of Sellers Subdivision. Some of the houses presently on Kennedy street were not there. I just cannot believe the water level on the protected side will increase only a foot in extreme storms.

The ramp at LA 18 should be at a height of 13.5 ft. The earthen levee from the southern set of tracks (3000 ft) is at that height, so why construct the ramp to 12 ft?

Specific Comments

1. Relocation of Utilities --- There is a forced sewer line from Ama to the treatment plant in Luling and there is a waterline along LA 18 not accounted for.

2. Hwy 90 Crossing Temp Detour --- The Temp Detour which will remain would possibly conflict with I 49 (unfunded project). The present route and layout for this area has the elevated sections to the south and north of the present Hwy 90. Hwy 90 would become a 2 lane frontage road.

3. LA 18 --- In the supplement, there is a future lift stated for 2027 to an elevation of 15 ft. Via emails this lift is not funded/authorized and impacts will be considered if funded/authorized. The impacts to traffic are known and should be considered in the width of the ramp such that in the future 1 lane could be raised at a time (there may be enough room already in what is planned).

4. There are other projects that have appeared related to the Davis Pond Freshwater Diversion and the Western Tie In -- continuous operation (Oct 2009 meeting) and just recently an art in TP about exploring conversion to a sediment type of delivery vehicle by the LA Dept Nat Res Coastal Restoration Division. The second may have an impact on LA 18 and also the depth of the Davis Pond Diversion Canal.

5. USFWS' project-specific recs page 50 Rec -4 -- The CEMVN response is correct but the report states "nevertheless it appears that development is unlikely in the next 12 years ...". In April 2010 the St Charles Parish Council approved the rezoning of at least 2 parcels from wetlands to commercial use (C3). I do not know what permits have been issued by the Corps and mitigation of the lands. There were rumors that other landowners in the project area were investigating rezoning or proceeding with dormant plans.

Jeffrey Roux

2

10391 River Road

Ama La 70031



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

AUG 18 2010

Regional Planning and
Environmental Division, South
New Orleans Environmental Branch

Mr. Jeffrey Roux
10391 River Road
Ama, Louisiana 70031

Dear Mr. Roux:

Thank you for your July 23, 2010, e-mail concerning the draft Individual Environmental Report Supplemental (IERS) #16.a. In your e-mail, you provide specific and general comments about the draft IER document. Your comments are addressed below.

Comment: "The new Hwy 90 Pump Station should be supplied with water from the Outer Cat Canal once the section gates are closed. A culvert/water control structure could be installed in the present levee that terminates into Hwy 90 and a ditch (if not present) could feed the water to the suction area of the pump. Its height (culvert) could be a couple of feet above the nominal levee in the canal. There is presently no pump to lower the level on the protected side of the levee. If the water on the protected side gets to the range of 6 ft, Hwy 90 will be impassible and water may top the levee anyway.

This concern is also raised in the USFWS' project specific rec-8 page 51. I think the recent surge associated with IKE and the events this year with Alex and the other unnamed storm when the water level at Sellers canal reached almost 3 feet, reflects where the water level might be on the protected side once the sector gate is closed and heavy rains are experienced. In 1995 with heavy rainfall in a short time period, some homes flooded in the back of Sellers Subdivision. Some of the houses presently on Kennedy Street were not there. I just cannot believe the water level on the protected side will increase only a foot in extreme storms."

Response: The proposed Highway 90 (Hwy 90) Pump Station is designed to replace the function of the current Hwy 90 Pump Station whose discharge, if not relocated, would be within the levee system after construction of the Western Tie-In project is complete. Hydrologic and hydraulic (H&H) analysis was conducted in conjunction with the preparation of IER #16 and was included as Appendix F in the final IER #16. An addendum to the H&H analysis is enclosed and will be incorporated into the final IERS #16.a. The original H&H analysis evaluated water level changes assuming the starting elevation of water was 0.0 feet (ft) North America Vertical Datum (NAVD)88. The addendum evaluated water level changes with a starting water elevation of + 2.0 ft NAVD88 within the study area.

-2-

These analyses investigated ponding impacts that would be associated with Western Tie-In construction. The addendum also reported actual water level data from recent hurricane events. The approximately 2,700-acre area, between the levee alignment and the Union Pacific Railroad, has an available water storage capacity of approximately 12,000 acre-feet for water elevations of 6 ft. As part of the H&H analysis, various storm events were modeled to determine ponding impacts. For example, a 10-year, 24-hour storm event with rainfall of 9.1 inches over the area, from the Mississippi River to the east-west levee alignment, interior water levels would increase by approximately 1 ft from 2.0 ft to 3.0 ft NAVD88.

Comment: “The ramp at LA 18 should be at height of 13.5 ft. The earthen levee from the southern set of tracks (3000 ft) is at that height, so why construct the ramp at 12 ft?”

Response: Based on the site-specific soils data, construction to elevation 12.0 ft is sufficient to assure the 100-year level risk reduction is maintained for the 20-year (+/-) design life of the roadway, at which time the next lift would be constructed. The levee south of the tracks also uses site specific soils data and is being constructed to maintain the 100-year level of risk reduction until its next lift is constructed, which is likely to be sooner than the roadway. As described in the IERS and in e-mails to you, dated July 16 and July 20, 2010, future lifts would be necessary to provide risk reduction to the same level of protection in 2027 and beyond. When future lifts are authorized and funded, the impacts of those proposed designs will be assessed and evaluated, including traffic impacts.

Comment: “Relocation of Utilities—There is a forced sewer line from Amax to the treatment plant in Luling, and there is a waterline along LA 18 not accounted for.”

Response: The IERS reflects the utilities and relocations that were anticipated to be required and to require additional right-of-way (ROW) beyond ROW identified in IER #16. If additional relocation activities are required in conjunction with the Western Tie-In and would occur outside of the ROW previously identified in IER #16 or IERS #16.a, those relocations will be addressed in future evaluations.

Comment: “Hwy 90 Crossing Temp Detour---The Temp Detour which will remain would possibly conflict with I 49 (unfunded project). The present route and layout for this area has the evaluated sections to the south and north of the present Hwy 90. Hwy 90 would become a 2-lane frontage road.”

Response: The Louisiana Department of Transportation and Development (LDOTD) would be the local partner with the US Department of Transportation for future I-49 construction activities. The LDOTD initially proposed retaining the temporary detours along Hwy 90. The US Army Corps of Engineers (Corps) has coordinated the proposed detour road designs, as well

-3-

as other Western Tie-In construction activities with the LDOTD, throughout project development and during current construction activities.

Comment: “LA 18—In the supplement, there is a future lift stated for 2027 to an elevation of 15 ft. Via e-mails, this lift is not funded/authorized and impacts will be considered if funded/authorized. The impacts to traffic are known and should be considered in the width of the ramp such that in the future, 1 lane could be raised at a time (there may be enough room already in what is planned).”

Response: Since a design for a 2027 feature at Hwy 18 has not been completed, while an elevation for 2027 has been projected in the IERS, feature type, width, and final layout in relation to the existing Hwy 18 footprint are unknown; as such, any discussion of impacts, including traffic impacts for a future project design at Hwy 18 would be speculative. However, to comply with current LDOTD design standards, the new roadway section will be widened approximately 12 feet. This will provide a total width of 40 feet from the edge of shoulder to edge of shoulder, which provides greater flexibility in phasing construction than the existing 28-foot width.

Comment: “There are other projects that have appeared related to the Davis Pond Freshwater Diversion and the Western Tie-In—continuous operation (Oct 2009 meeting) and just recently an art in TP about exploring conversion to a sediment type of delivery vehicle by the LA Dept Nat Res Coastal Restoration Division. The second may have an impact on LA 18 and also the depth of the Davis Pond Diversion Canal.”

Response: Environmental laws and regulations apply to the construction of projects sponsored by the State of Louisiana, as well as projects that are constructed by the Corps. As such, the State of Louisiana would be required to complete a similar environmental compliance process, which would evaluate impacts to the natural and human environment, and existing federal projects in the area before they would be able to go forward with future construction activities.

Comment: “USFWS’ project-specific recs page 50 rec-4—The CEMVN response is correct but the report states that “nevertheless it appears that development is unlikely in the next 12 years...”. In April 2010 the St. Charles Parish Council approved the rezoning of at least 2 parcels from wetlands to commercial use (C3). I do not know what permits have been issued by the Corps and mitigation of the lands. There were rumors that other landowners in the project area were investigation rezoning or proceeding with dormant plans.”

Response: The St. Charles Parish Council has approved some rezoning south of Hwy 90 and north of the Western Tie-In levee alignment (St. Charles Parish Department of Planning and Zoning Land Use Report, Case Number: PZR-2010-01). While some rezoning approvals have

-4-

occurred, as highlighted in the rezoning document itself, the requirement remains that “Any future development on any of the lots encumbered with wetlands areas will be required to meet all permitting requirements through the US Army Corps of Engineers and the LA Department of Natural Resources.” The Corps Headquarters Policy on Mitigation for Induced Development can be found in Appendix G of IER #16. The policy states that land development is subject to local and state zoning and that the developers, those that benefit from the development, are responsible for any mitigation that would be required.

Thank you for your comments on the draft IERS. If you have additional questions, please contact Ms. Beth Nord at (504) 862-2167.

Sincerely,


Sandra Stiles
Chief, New Orleans
Restoration Section

Enclosure

APPENDIX C - INSTITUTIONAL, ECOLOGICAL, AND PUBLIC SIGNIFICANCE OF RESOURCES

SIGNIFICANCE OF RESOURCES

The National Environmental Policy Act (NEPA) requires Federal agencies to analyze the impacts of proposed actions on those resources that are considered “significant.” Table 6 provides a list of resources that are commonly found in the vicinity of the Lake Pontchartrain and Vicinity and West Bank and Vicinity Hurricane Protection Projects. In providing a list of some of the key laws and regulations governing these resources, as well as a short description of some of their ecological and human environment value, this table offers a rationale for why these resources are considered significant for the purposes of NEPA analysis.

Table 6. Institutional, Ecological, and Public Significance of Resources

| | GOVERNING LAWS AND REGULATIONS | ECOLOGICAL and HUMAN ENVIRONMENT VALUE |
|-----------------------|---|---|
| Agriculture | Farmland Protection Policy Act of 1981; Food Security Act of 1985; Prime and Unique Farmlands, 1980 CEQ Memorandum | Provision or potential for provision of forest products and human and livestock food products |
| Air | Clean Air Act of 1963, as amended; Deepwater Port Act of 1974 Louisiana Air Control Act; Louisiana Environmental Quality Act of 1983 National Ambient Air Quality Standards (NAAQS) | Clean air is important for human health and safety |
| Coastal Zones | Coastal Barrier Resources Act of 1982, 1990, as amended; Coastal Zone Management Act of 1972; Coastal Zone Protection Act of 1996; Deepwater Port Act of 1974 Federal Water Project Recreation Act of 1965; Outer Continental Shelf Lands Act of 1953; Submerged Land Act of 1953 | Barrier islands: Protect mainland and associated fish, wildlife, and other natural resources. Coastal zones: Protect wetlands*, floodplains*, estuaries*, beaches, dunes, barrier islands, reefs, bays, ponds, bayous, dunes, and fish and wildlife* and their habitats *See specific resources for additional regulations |
| Cultural and Historic | Abandoned Shipwreck Act of 1987; American Folklife Preservation Act of 1976; American Indian Religious Freedom Act of 1978; Antiquities Act of 1906 Archaeological Resources Protection Act of 1979; Archaeological and Historical Preservation Act of 1974; Consultation and Coordination with Indian Tribal Governments (EO 13175) of 2000; Historic Sites Act of 1935; Historic and Archaeological Data-Preservation of 1974; Indian Sacred Sites (EO 13007) of 1996 National Historic Preservation Act of 1966; Native American Graves Protection and Repatriation Act of 1990; Protection and Enhancement of the Cultural Environment (EO 11593) of 1971; Protection of Cultural Property (EO 12555) of 1986; Reclamation Projects Authorization and Adjustments Act of 1992 | Their association or linkage to past events, to historically important persons, and to design and/or construction values Their ability to yield important information about prehistory and history |

| | GOVERNING LAWS AND REGULATIONS | ECOLOGICAL and HUMAN ENVIRONMENT VALUE |
|-------------------------------|--|---|
| Economic Resources | Deepwater Port Act of 1974; Environmental Review of Trade Agreements (EO 13141) of 1999 | Strong economies enhance human standards of living and can allow for greater expendability of funds for the protection and enhancement of ecological resources Trade agreements and international trade can have both positive and negative environmental effects Positive effects can include greater cooperation between nation states in preserving species which cross political boundaries |
| Endangered/Threatened Species | Bald Eagle Protection Act of 1940; Endangered Species Act of 1973; Marine Mammal Protection Act of 1972 | The status of such species provides an indication of the overall health of an ecosystem. US Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), Louisiana Department of Wildlife and Fisheries (LDWF), and USACE cooperate to protect endangered and threatened species; Audubon Blue List recognizes rare species |
| Environmental Justice | American Indian Religious Freedom Act of 1978; Civil Rights Act of 1964; Consultation and Coordination with Indian Tribal Governments (EO 13175) of 2000; Executive Order 12898 of 1994; Federal Actions to Address Environmental Justice in Minority Populations & Low-Income Populations (EO 12898, 12948) of 1994, as amended | Ensuring the rights of minority and low-income populations can lead to greater sustainability through less burden on the environment in which these populations live, including better treatment of wastes and building processes |
| Essential Fish Habitat | Coastal Zone Management Act of 1972; Marine Protected Areas (EO 13158) of 2000; Magnuson-Stevens Fishery Conservation and Management Act of 1976 | Shallow intertidal waters provide essential fish habitat in the form of nursery, foraging, and grow out areas. National Marine Fisheries Service recognizes value of essential fish habitat as necessary for continued survival of fisheries resources |
| Estuaries | Coastal Zone Management Act of 1972; Deepwater Port Act of 1974; Estuaries and Clean Waters Act of 2000; Estuary Protection Act of 1968; Estuary Restoration Act of 2000 | Shallow intertidal waters provide essential fish habitat in the form of nursery, foraging, and grow out areas. Protect aquatic nurseries and oyster beds |

| | GOVERNING LAWS AND REGULATIONS | ECOLOGICAL and HUMAN ENVIRONMENT VALUE |
|--|---|---|
| Fisheries (Commercial and Recreational) | Anadromous Fish Conservation Act of 1965; Coastal Zone Management Act of 1972; Fish and Wildlife Conservation Act of 1980; Magnuson-Stevens Fishery Conservation and Management Act of 1976; Endangered Species Act of 1973 Federal Water Project Recreation Act of 1965; Fish and Wildlife Coordination Act of 1958; Recreational Fisheries (EO 12962) of 1995; Sustainable Fisheries Act of 1996 | Critical element of many valuable freshwater and marine habitats. Indicator of the health of various freshwater and marine habitats USFWS, NMFS, LDWF, Louisiana Department of Natural Resources (LDNR), and USACE recognize value of fisheries and good water quality. |
| Flood Control/ Hurricane Risk Reduction Levees | Floodplain Management (EO 11988) of 1977; River and Harbor and Flood Control Act of 1970; Watershed Protection & Flood Prevention Act of 1954 | Dewatering activities associated with urban floods result in discharge of floodwater potentially containing pollutants associated with residential, commercial, and industrial facilities |
| Floodplains | Coastal Zone Management Act of 1972; Floodplain Management (EO 11988) of 1977; River and Harbor and Flood Control Act of 1970 | Floodplains provide storage of floodwaters and habitat for forest-dwelling wildlife and plant species. The typically linear aspect of floodplains provide important travel routes for wildlife (including insects) and plant species |
| Forestry | Reservoir Areas – Forest Cover Act of 1960 | Managed forests provide cover and travel routes for forest-dwelling wildlife |
| Habitat (General) | Marine Protected Areas (EO 13158) of 2000; Oil Pollution Act of 1990 | Habitat provided for open, forest-dwelling, and aquatic wildlife. Provision or potential for provision of forest products and human and livestock food products |
| Hazards/ Wastes | Clean Air Act of 1963, as amended; Comprehensive Environmental Response, Compensation, and Liability Act of 1980; Emergency Planning and Community Right-to-Know Act of 1986; Federal Compliance with Pollution Control Standards (EO 12088) of 1978; Federal Facilities Compliance Act of 1992; Federal Insecticide, Fungicide, and Rodenticide Act of 1996; Oil Pollution Act of 1990; Pollution Prevention Act of 1990; Resource Conservation and Recovery Act of 1976; Toxic Substances Control Act of 1976 | Pollutants directly affect the health and viability of ecological habitats and all organisms living within them. Laws and regulations such as the Clean Air Act address problems such as acid rain, ground-level ozone, stratospheric ozone depletion, and air toxics. Laws such as the Pollution Prevention Act allow the government to focus on the sources of pollution rather than after-the-fact treatment |

| | GOVERNING LAWS AND REGULATIONS | ECOLOGICAL and HUMAN ENVIRONMENT VALUE |
|---|---|---|
| Invasive Species | Exotic Organisms (EO 11987) of 1977; Invasive Species (EO 13112) of 1999; National Invasive Species Act of 1996; Non-indigenous Aquatic Nuisance Prevention and Control Act of 1996 | Invasive species alter interactive relationships of plants and wildlife that have developed over long periods of time and can completely alter natural habitats. Control of the introduction of invasive species protects habitats by preserving these relationships. |
| Lake Pontchartrain | Clean Water Act of 1977; Federal Water Project Recreation Act of 1965 | Provides habitat for various species of wildlife, finfish, and shellfish. |
| Marine Areas | Abandoned Shipwreck Act of 1987; Coastal Zone Management Act of 1972; Federal Water Project Recreation Act of 1965; Marine Protected Areas (EO 13158) of 2000; Marine, Protection, Research, and Sanctuaries Act of 1972 | Provides habitat for aquatic plant and wildlife. |
| Navigable Waters | Clean Water Act of 1977; Federal Water Project Recreation Act of 1965; Rivers and Harbors Acts of 1899, 1956 (Sec. 10); Outer Continental Shelf Lands Act of 1953; Rivers and Harbors Acts of 1899, 1956; River and Harbor and Flood Control Act of 1970; Submerged Land Act of 1953 | Regulations and laws allow for protection of aquatic habitats from pollution and development. Regulations and laws maintain habitat for aquatic and water-dependent plants and wildlife. Maintained navigable waterways provide routes for shipping and recreational activity, protecting natural habitat from harmful intrusion. |
| Noise | Noise Control Act of 1972 | High levels can affect the quality of habitat for wildlife and humans. |
| Oil, Gas, and Utilities Pipelines/ Activities | Deepwater Port Act of 1974 | Regulations protect aquatic from pollution and development, including limiting turbidity which decreases aquatic plant growth. |
| Real Estate | Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646) | Regulations and laws assist in the acquisition of lands for conservation and preservation. |
| Recreation | Abandoned Shipwreck Act of 1987; Federal Water Project Recreation Act of 1965; Flood Control Act of 1944; Land and Water Conservation Fund Act of 1965; National Trails System Act of 1968; Reclamation Projects Authorization and Adjustments Act of 1992; Wild and Scenic River Act of 1968; Wilderness Act of 1964 | Potential for interacting with the natural world. High economic value of recreational activities and their contribution to local, state, and national economies. Many fishing and hunting person-days are logged. Various existing facilities satisfy numerous user-days of recreation annually |

| | GOVERNING LAWS AND REGULATIONS | ECOLOGICAL and HUMAN ENVIRONMENT VALUE |
|----------|---|--|
| Soils | Watershed Protection & Flood Prevention Act of 1954 | Provide the building blocks for habitat for plants and wildlife, including invertebrate species Regulation provides technical and financial assistance for watershed protection, flood mitigation, flood prevention, water quality improvement, soil erosion reduction, sediment control, fish and wildlife habitat enhancement, and wetland and wetland function creation and restoration |
| Water | Clean Water Act of 1977; Deepwater Port Act of 1974; Estuaries and Clean Waters Act of 2000; Federal Water Pollution Control Act of 1972; Federal Water Project Recreation Act of 1965; Flood Control Act of 1944; Safe Drinking Water Act of 1974; Water Resources Development Acts of 1976, 1986, 1990, and 1992; Water Resources Planning Act of 1965; Watershed Protection & Flood Prevention Act of 1954 | Allows for protection of aquatic habitats from pollution and development. Maintains habitat for aquatic and water-dependent plants and wildlife. Provides technical and financial assistance for watershed protection, flood mitigation, flood prevention, water quality improvement, soil erosion reduction, sediment control, fish and wildlife habitat enhancement, and wetland and wetland function creation and restoration |
| Wetlands | Coastal Wetlands Planning, Protection, and Restoration Act of 1990; Coastal Zone Management Act of 1972; Clean Water Act of 1977; Deepwater Port Act of 1974; Emergency Wetlands Restoration Act of 1986; Estuaries and Clean Waters Act of 2000; Estuary Protection Act of 1968; Estuary Restoration Act of 2000; Floodplain Management (EO 11988) of 1977; Louisiana State and Local Coastal Resources Management Act of 1978; "No Net Loss" Policy of 1988; North American Wetlands Conservation Act of 1989; Protection of Wetlands (EO 11990) of 1977; Rivers and Harbors Acts of 1899, 1956 (Sec. 10); Water Resources Development Acts of 1976, 1986, 1990, and 1992 (Sec. 906); *Wetland Value Assessment (WVA); *Habitat Suitability Index (HSI) | Provide habitat for a number of species of special emphasis (USFWS). Louisiana loses 30 square miles of wetland per year. Provide necessary habitat for various species of plants, fish, and wildlife, many of them commercially important. Serve as ground water recharge areas. Provide storage areas for storm and flood waters. Serve as natural water filtration areas. Provide protection from wave action, erosion, and storm damage. Important source of lumber and other commercial forest products (Bottomland Hardwood Forest). |

| | GOVERNING LAWS AND REGULATIONS | ECOLOGICAL and HUMAN ENVIRONMENT VALUE |
|-----------------|---|---|
| Wildlife & Fish | <p>Endangered Species Act of 1973; Federal Water Project Recreation Act of 1965; Fish and Wildlife Conservation Act of 1980; Fish and Wildlife Coordination Act of 1958; Fish and Wildlife Programs and Improvement and National Wildlife Refuge System Centennial Act of 2000; Migratory Bird Conservation Act of 1929; Migratory Bird Treaty Act of 1918; Migratory Bird Habitat Protection (EO 13186) of 2001; Neotropical Migratory Bird Conservation Act of 2000; Outer Continental Shelf Lands Act of 1953; Reclamation Projects Authorization and Adjustments Act of 1992 Submerged Land Act of 1953; Responsibilities of Federal Agencies to Protect Migratory Birds (EO 13186) of 2001; Wild and Scenic River Act of 1968; *Also see Endangered and Threatened Species, habitats</p> | <p>Habitat for a number of species of special emphasis (USFWS). Critical element of many valuable aquatic and terrestrial habitats. Indicator of the health of various aquatic and terrestrial habitats. Many species are important commercial resources. USFWS, NMFS, LDWF, LDNR, and USACE recognize value of wildlife.</p> |

APPENDIX D - MEMBERS OF INTERAGENCY ENVIRONMENTAL TEAM

| | |
|---------------------|---|
| Kyle Balkum | Louisiana Dept. of Wildlife and Fisheries |
| Catherine Breaux | U.S. Fish and Wildlife Service |
| Mike Carlross | Louisiana Dept. of Wildlife and Fisheries |
| David Castellanos | U.S. Fish and Wildlife Service |
| Frank Cole | Louisiana Department of Natural Resources |
| Greg Ducote | Louisiana Department of Natural Resources |
| John Ettinger | U.S. Environmental Protection Agency |
| David Felder | U.S. Fish and Wildlife Service |
| Michelle Fischer | U.S. Geologic Survey |
| Deborah Fuller | U.S. Fish and Wildlife Service |
| Mandy Green | Louisiana Department of Natural Resources |
| Jeffrey Harris | Louisiana Department of Natural Resources |
| Richard Hartman | NOAA National Marine Fisheries Service |
| Brian Heimann | Louisiana Dept. of Wildlife and Fisheries |
| Jeffrey Hill | NOAA National Marine Fisheries Service |
| Christina Hunnicutt | U.S. Geologic Survey |
| Barbara Keeler | U.S. Environmental Protection Agency |
| Kirk Kilgen | Louisiana Department of Natural Resources |
| Tim Killeen | Louisiana Department of Natural Resources |
| Brian Lezina | Louisiana Dept. of Wildlife and Fisheries |
| Brian Marks | Louisiana Dept. of Wildlife and Fisheries |
| Ismail Merhi | Louisiana Department of Natural Resources |
| David Muth | U.S. National Park Service |
| Clint Padgett | U.S. Geologic Survey |
| Jamie Phillippe | Louisiana Dept. of Environmental Quality |
| Molly Reif | U.S. Geologic Survey |
| Kevin Roy | U.S. Fish and Wildlife Service |
| Manuel Ruiz | Louisiana Dept. of Wildlife and Fisheries |
| Reneé Sanders | Louisiana Department of Natural Resources |
| Angela Trahan | U.S. Fish and Wildlife Service |
| Nancy Walters | U.S. Fish and Wildlife Service |
| David Walther | U.S. Fish and Wildlife Service |
| Patrick Williams | NOAA National Marine Fisheries Service |

**APPENDIX E - ENGINEERING EVALUATION OF DEGRADE OF
SECTION OF DAVIS POND EAST GUIDE LEVEE**

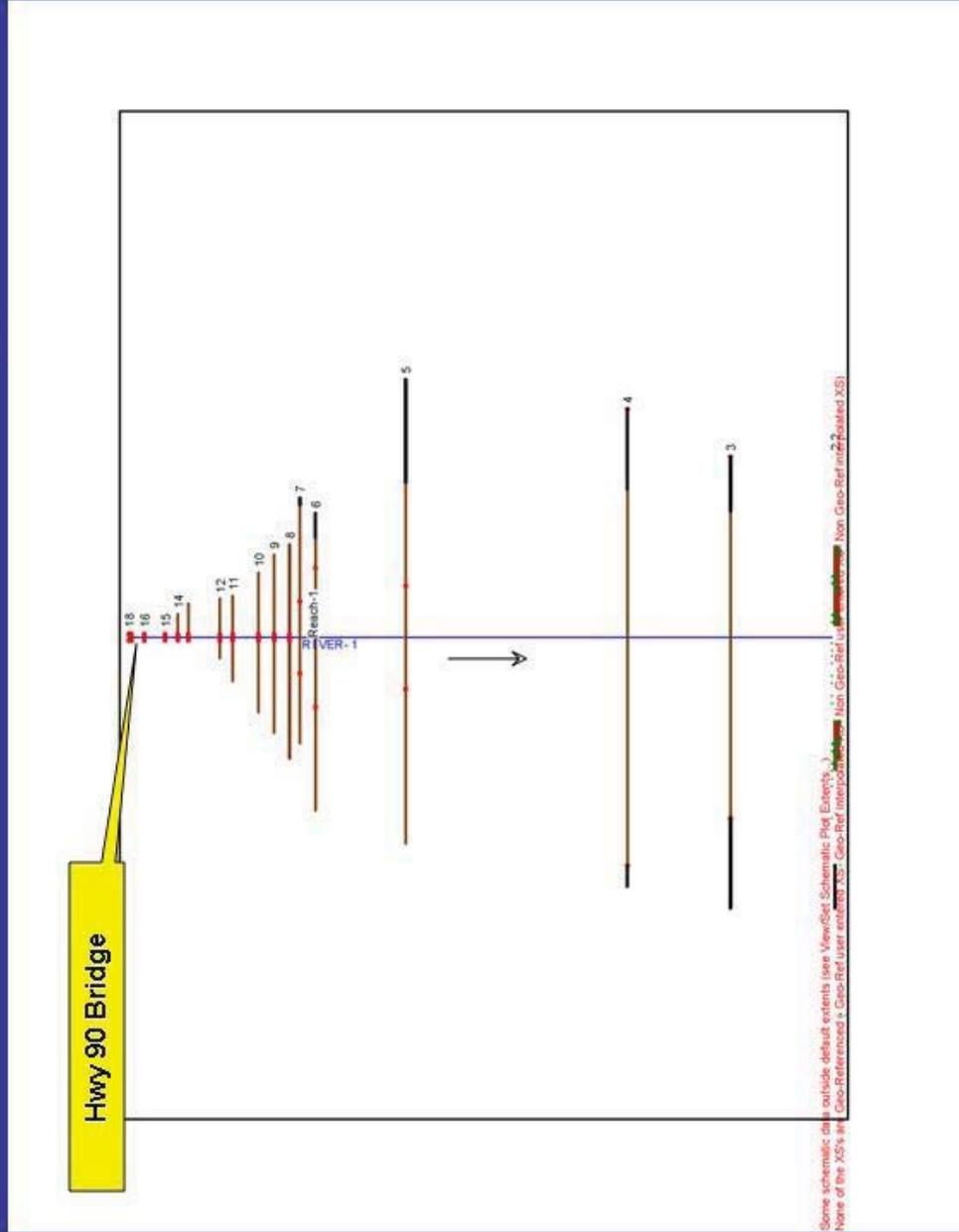
WBV-72 Removal of Davis Pond Guide Levee

- Use for fill elsewhere in Western Tie In
- Can the material be removed all the way up to Hwy 90 embankment?
 - Leave a short piece (maybe 100') to protect the embankment from erosion from Davis Pond Project flows
- Perform a 2D analysis to determine forces acting on Hwy 90 embankment
 - Riprap justified
 - To what extent
 - Leave a “stub dike” to aid in protecting the embankment

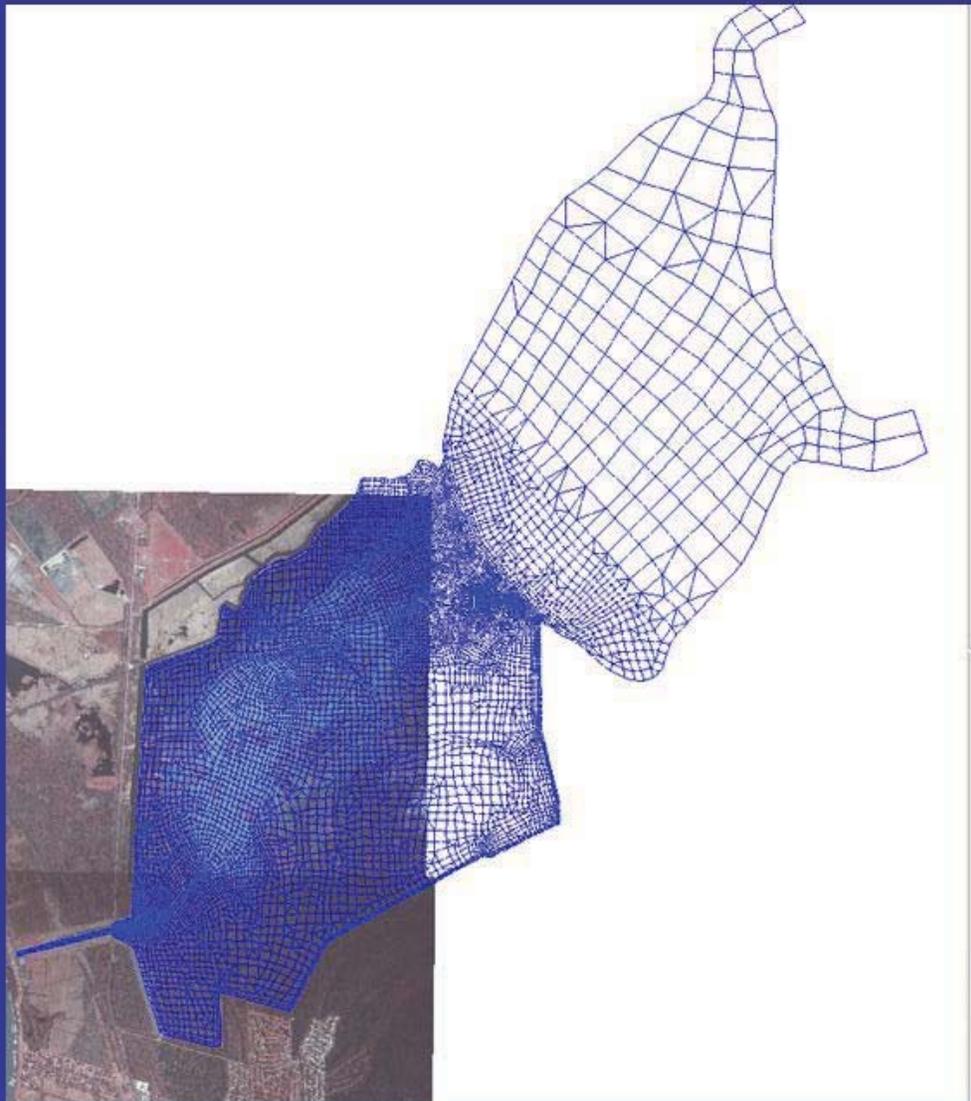
Corresponded with Don Alette, MVN-ED-H

- Don discussed with colleagues
 - No objection to removing guide levee
 - Leaving a short section of levee is recommended
 - Should protect embankment during operation of Davis Pond Project
- Provided HEC-RAS files of Davis Pond
- Provided link to Davis Pond USGS gage data
- Provided contact information with ERDC modelers – TABS model of the Davis Pond Project

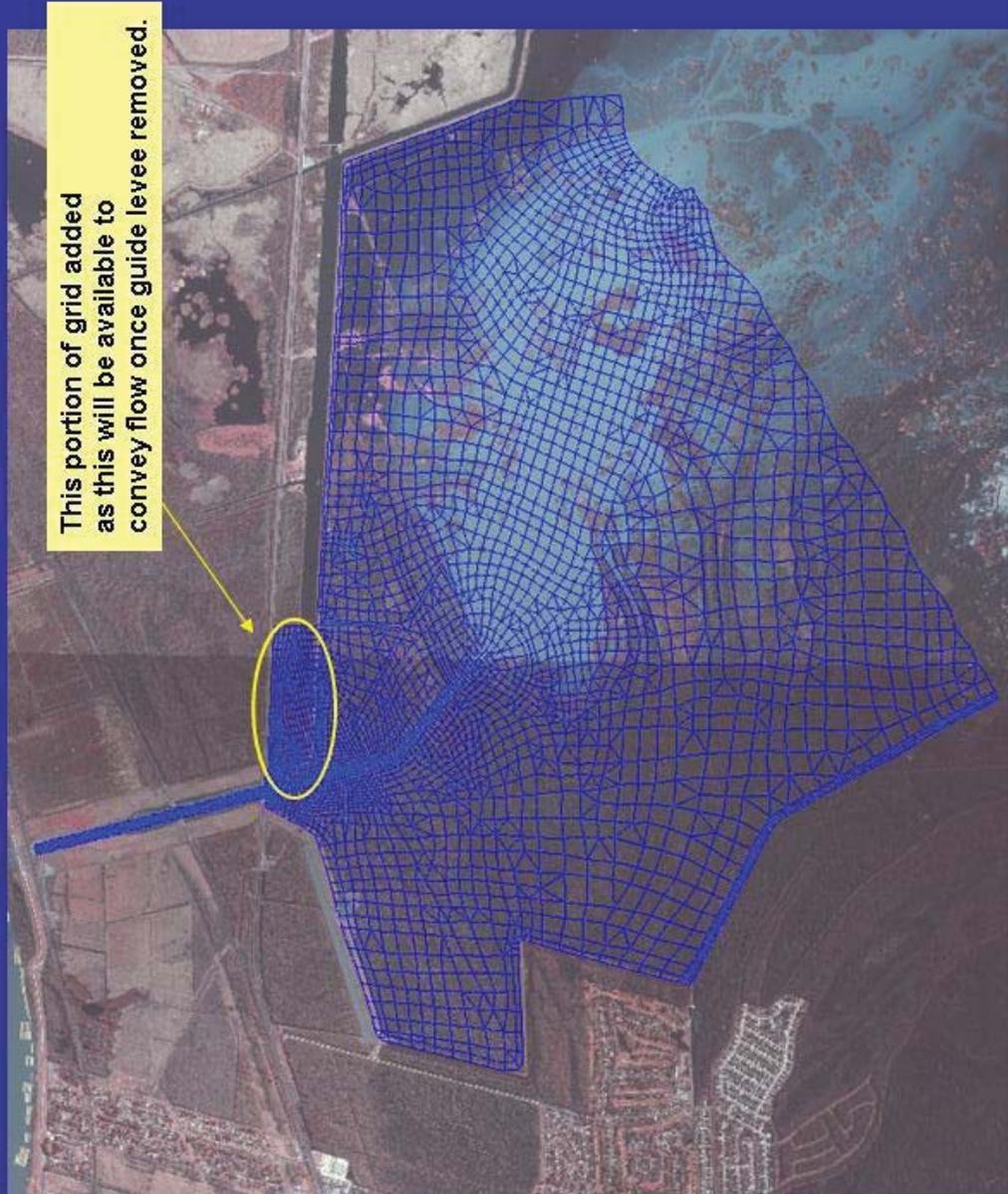
HEC-RAS Model (not Georeferenced)



ERDC Grid

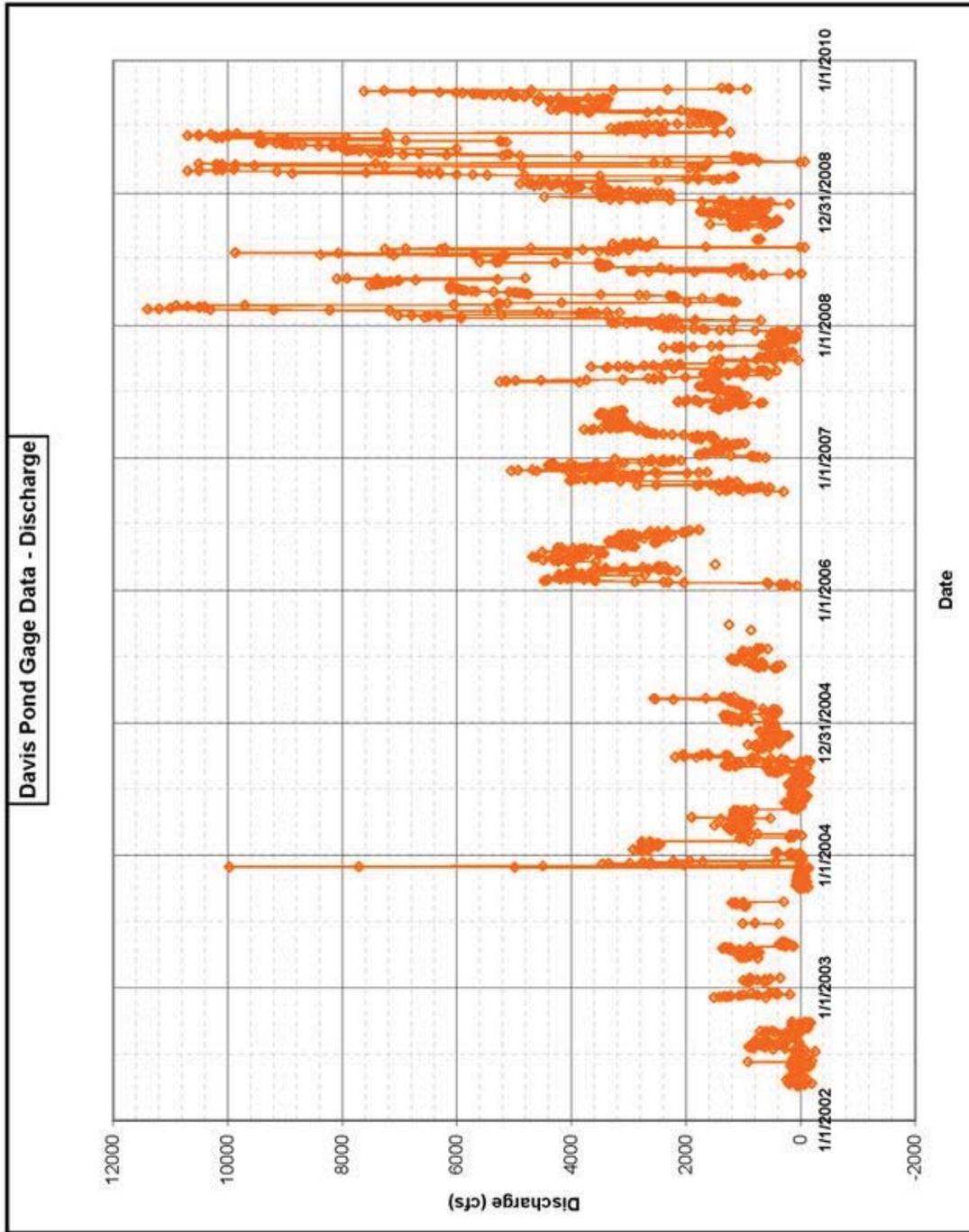


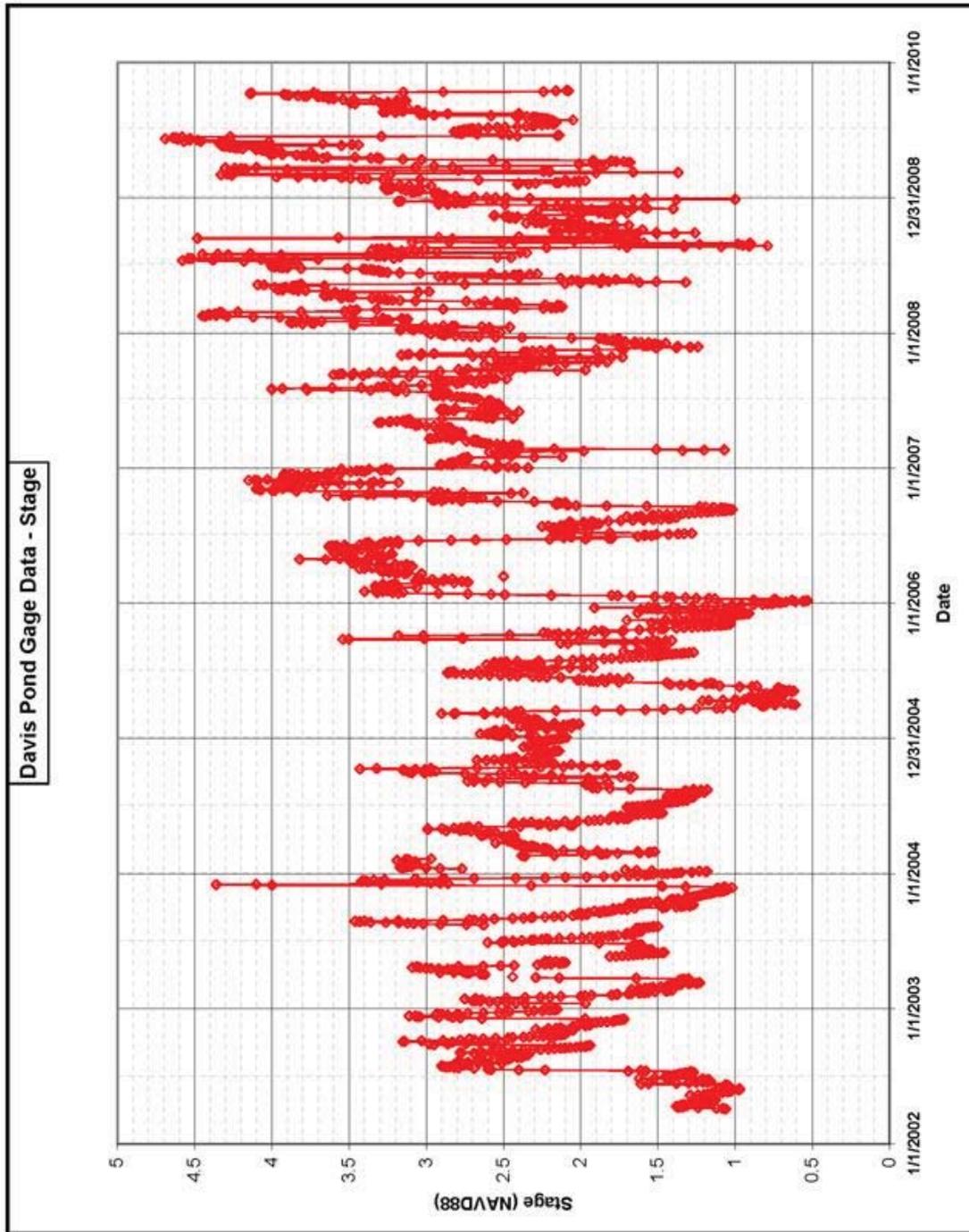
Grid Modified for this Application

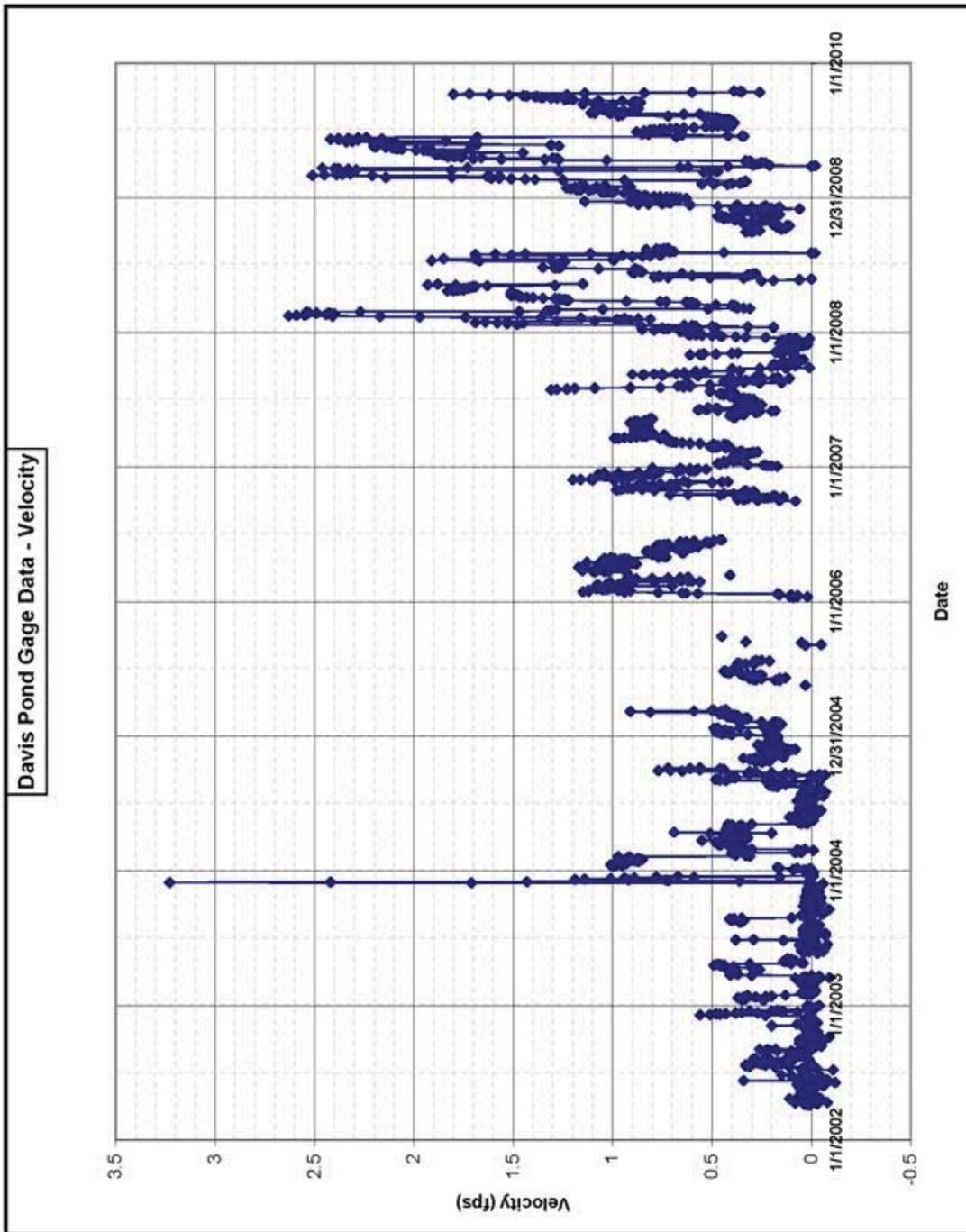


Conditions to Run in Model

- Summarize Gage Data (following plots)
- From these data, the following conditions will be modeled (assume that these will provide the most stress on the Hwy 90 embankment)
 - Flow = 11,400 cfs
 - Stage +4.0
 - Should result in velocities of approx 2.5 fps

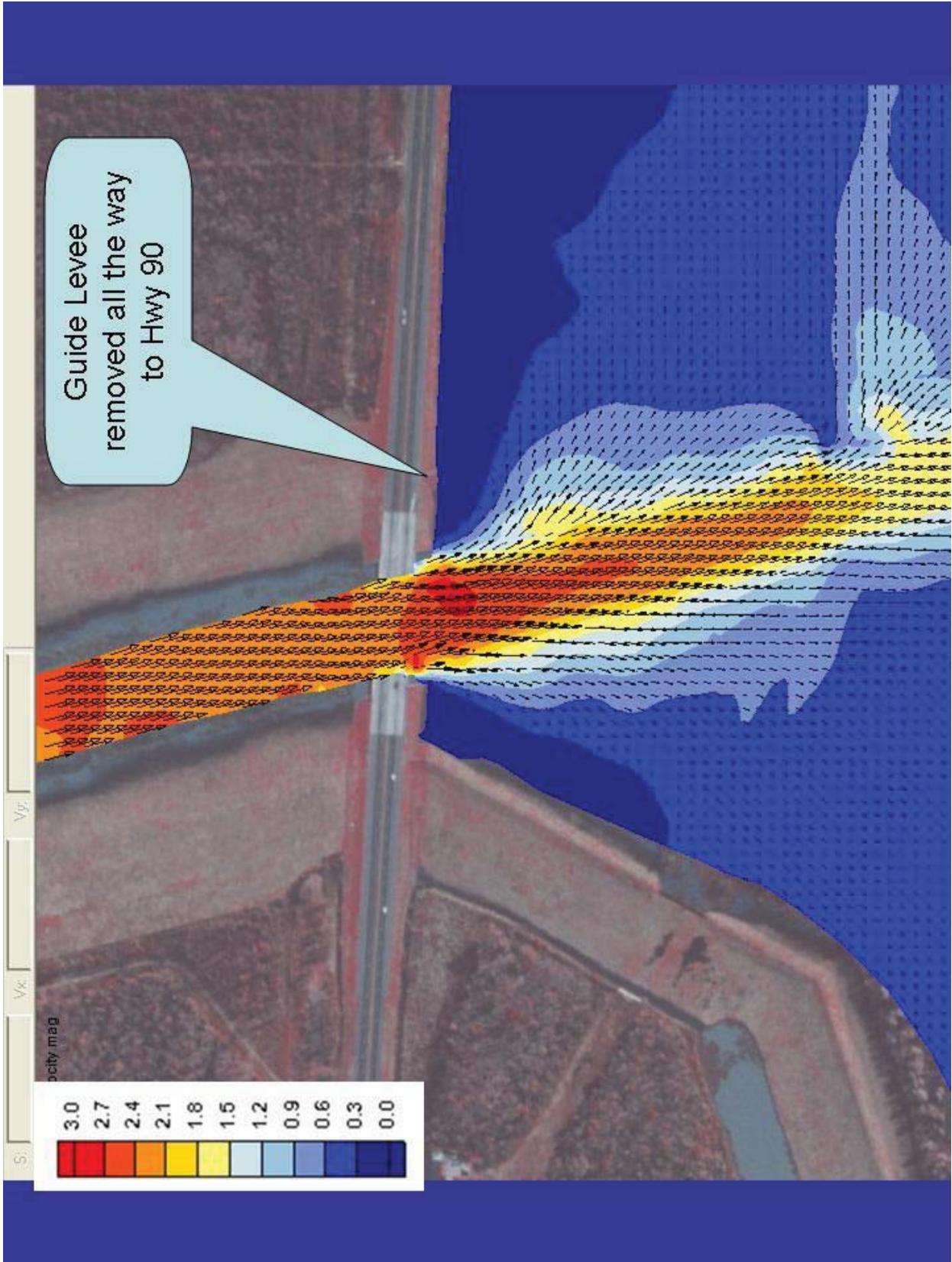


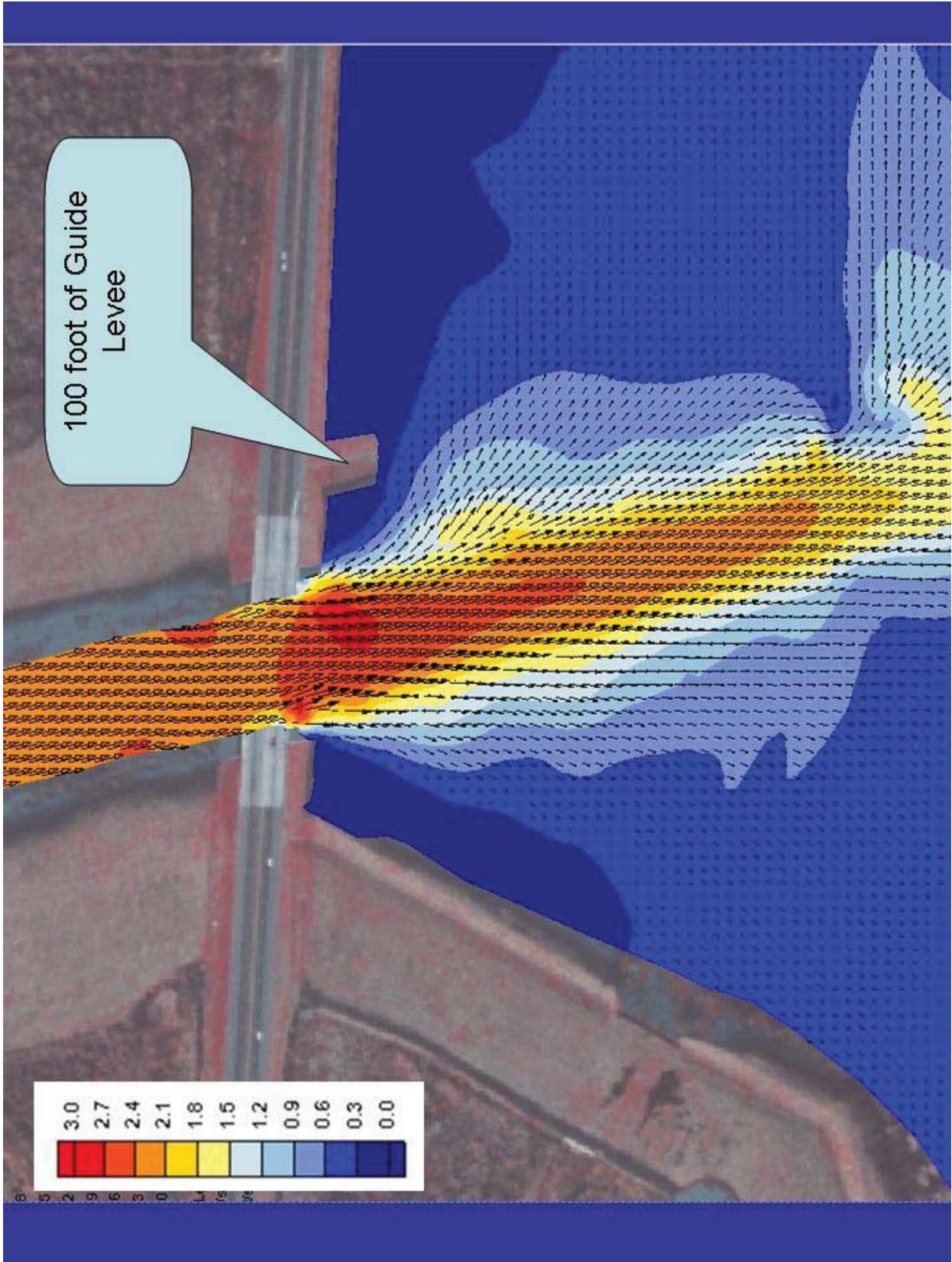


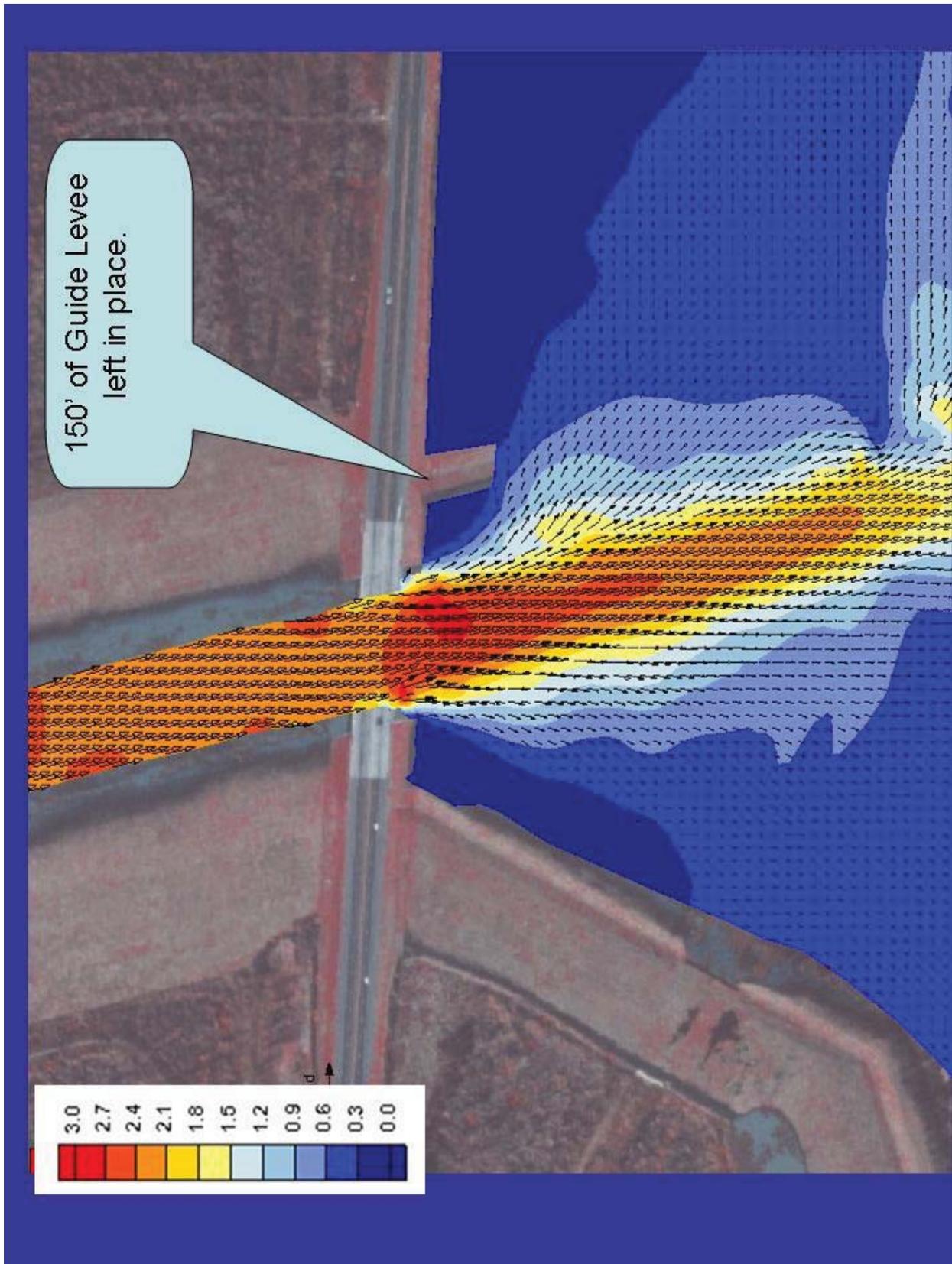


Model Results

- Model aforementioned flow and stage conditions for three project conditions
 - Remove levee all the way up to Hwy 90
 - Leave 100 feet of levee
 - Leave 150 feet of levee
- Plot model results
 - Flow velocity magnitude
 - Flow velocity direction (vectors)

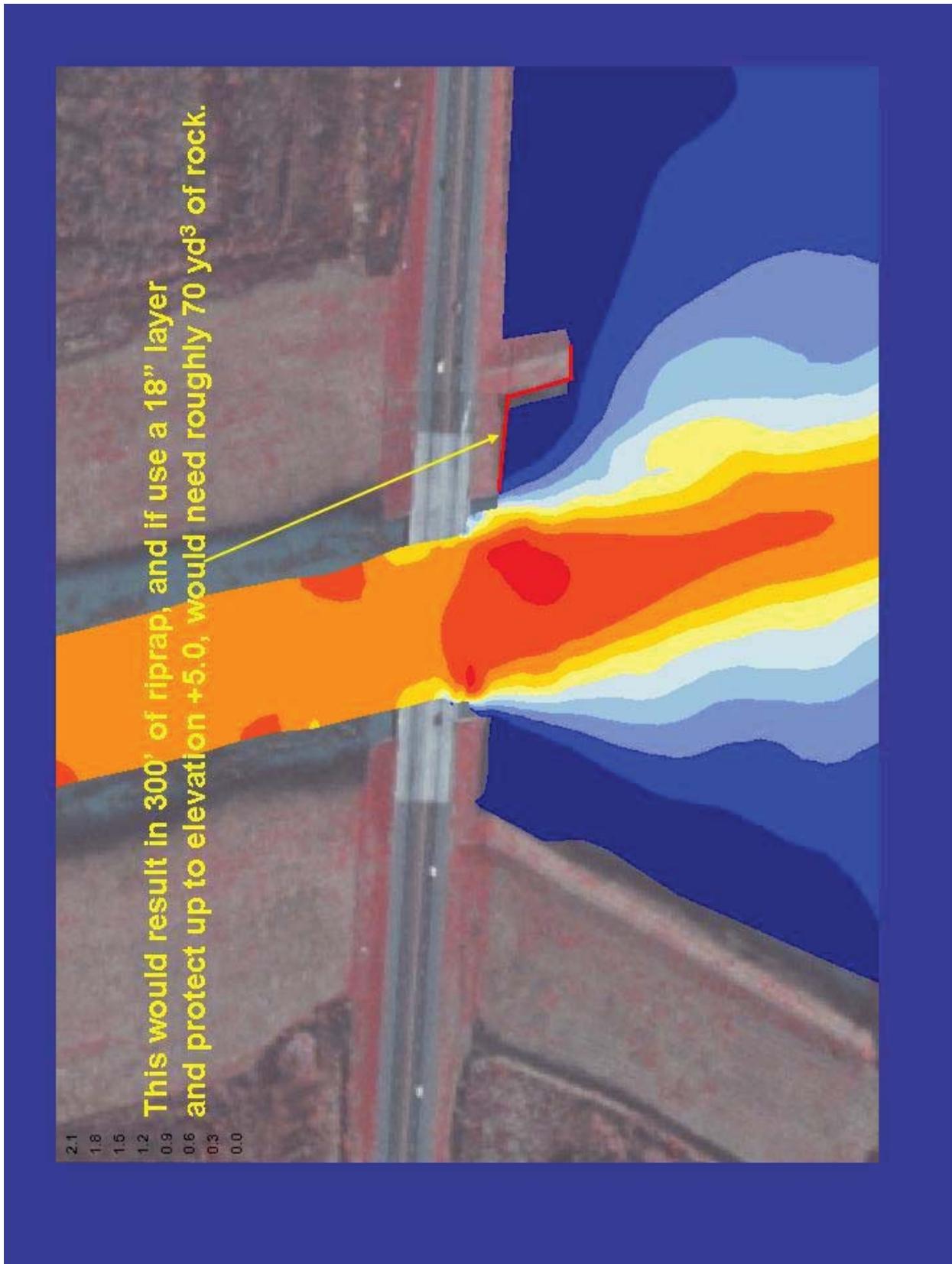






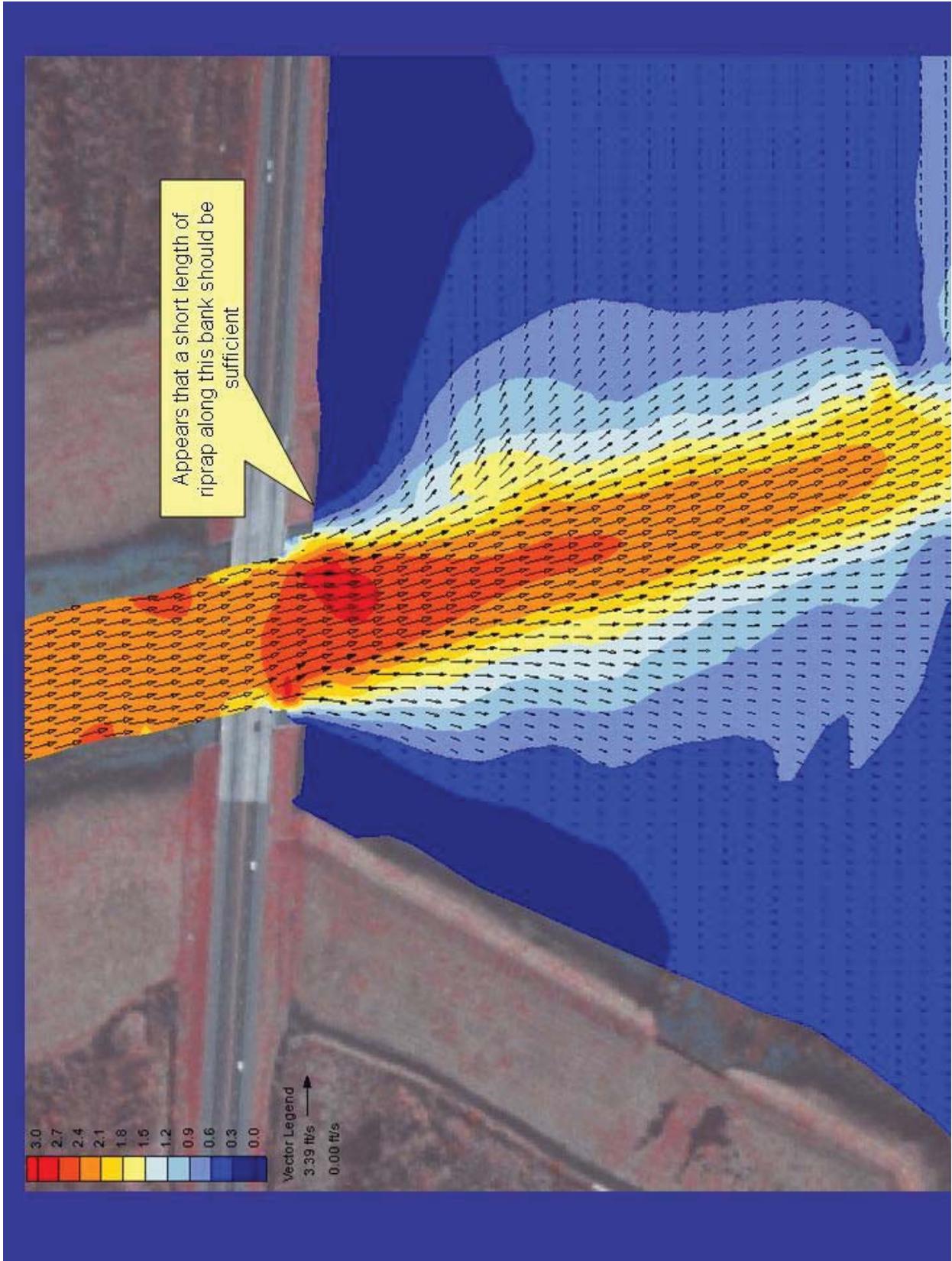
Discussion

- When starting the analysis, had assumed that a good solution would be to leave 100' of levee in place and protect with riprap

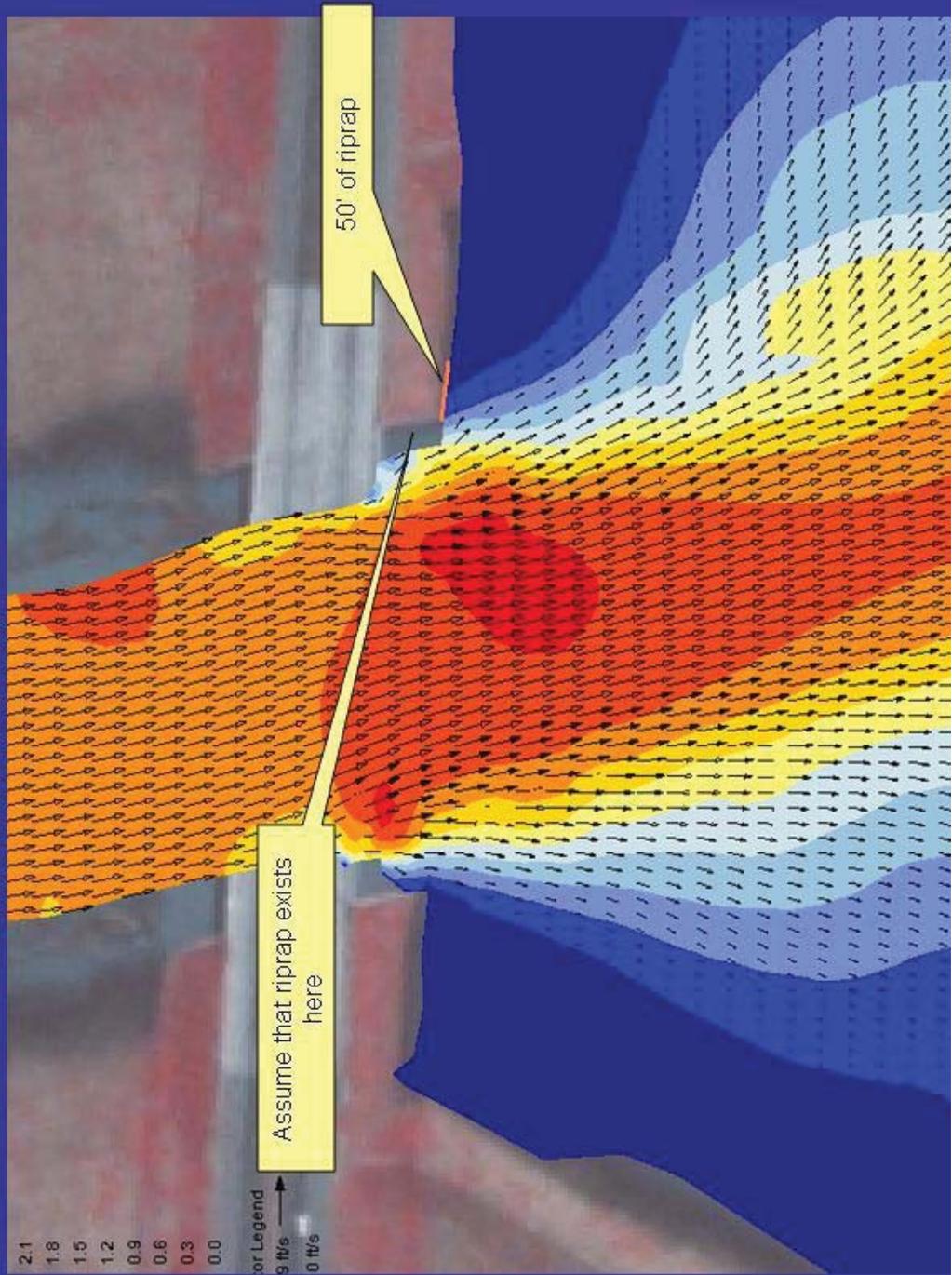


Discussion

- From model results
 - Appears that levee can be removed up to Hwy 90 embankment



Recommendation



Riprap Recommendation

- 50 ft long layer
- Top elevation +5.0
- Bottom elevation – ground – approx elev +1.5
- Thickness 18 inches
- Volume of Riprap = 10 yd³
- Gradation (same as existing riprap under Hwy 90 bridge)

| – | Percent lighter by weight | Limits of stone weight in lbs. |
|---|------------------------------|-----------------------------------|
| – | 100 | 25 - 100 |
| – | 50 | 10 - 5 |
| – | 15 | 5 - 2 |

**APPENDIX F – HYDRAULICS AND HYDROLOGIC ANALYSIS
ADDENDUM**

Hurricane and Storm Damage Risk Reduction System

Western Tie In

Hydraulics and Hydrologic Analysis

Addendum

27 January 2010

Table of Contents

| | |
|--|----|
| List of Figures | 3 |
| List of Tables | 5 |
| Background | 6 |
| Gage Data..... | 7 |
| Elevation Storage Curves..... | 25 |
| Hydraulic Analysis..... | 27 |
| Historic Hurricane Analysis: Ike (2008) and Isidore (2002) | 41 |

List of Figures

| | |
|---|----|
| Figure 1. Western Tie-In Project and Surrounding Area..... | 6 |
| Figure 2. Location of Stage and Rainfall Gages Relative to the Western Tie-In Project Area..... | 7 |
| Figure 3. Historical Record of Hourly Stage Data for Sellers Canal (8/25/1999 - 1/11/2010)..... | 8 |
| Figure 4. Historical Record of Hourly Stage Data for Bayou Segnette (8/25/1999 - 1/11/2010)..... | 8 |
| Figure 5. Historical Record of Hourly Stage Data for Lake Cataouatche at Whiskey Canal (11/7/2000 - 1/13/2010)..... | 9 |
| Figure 6. Historic Daily Rainfall at New Orleans International Airport (1/1/1999 - 11/30/2009)..... | 9 |
| Figure 7. Hourly Stage and Daily Rainfall for Hurricane Ike, Landfall 13 September 2008..... | 11 |
| Figure 8. Hourly Stage and Daily Rainfall for Hurricane Gustav, Landfall 1 September 2008..... | 12 |
| Figure 9. Hourly Stage and Daily Rainfall for Hurricane Humberto, Landfall 13 September 2007 | 13 |
| Figure 10. Hourly Stage and Daily Rainfall for Hurricane Rita, Landfall 24 September 2005..... | 14 |
| Figure 11. Hourly Stage and Daily Rainfall for Hurricane Katrina, Landfall 29 August 2005..... | 15 |
| Figure 12. Hourly Stage and Daily Rainfall for Hurricane Cindy, Landfall 5 July 2005 | 16 |
| Figure 13. Hourly Stage and Daily Rainfall for Hurricane Lili, Landfall 3 October 2002 | 17 |
| Figure 14. Hourly Stage and Daily Rainfall for Hurricane Isidore, Landfall 26 September 2002 | 18 |
| Figure 15. Hourly Stage and Daily Rainfall for Hurricane Allison, Landfall 5 June 2001 | 19 |
| Figure 16. Sellers Canal Hourly Stage, 2000 Hurricane Season | 20 |
| Figure 17. Sellers Canal Hourly Stage, 2002 Hurricane Season | 21 |
| Figure 18. Sellers Canal Hourly Stage, 2003 Hurricane Season | 21 |
| Figure 19. Sellers Canal Hourly Stage, 2004 Hurricane Season | 22 |
| Figure 20. Sellers Canal Hourly Stage, 2005 Hurricane Season | 22 |
| Figure 21. Sellers Canal Hourly Stage, 2006 Hurricane Season | 23 |
| Figure 22. Sellers Canal Hourly Stage, 2007 Hurricane Season | 23 |

| | |
|--|----|
| Figure 23. Sellers Canal Hourly Stage, 2008 Hurricane Season | 24 |
| Figure 24. Sellers Canal Hourly Stage, 2009 Hurricane Season | 24 |
| Figure 25. Western Tie-In Basin Areas 1 and 2..... | 25 |
| Figure 26. Elevation-Storage Relationship for Areas 1 and 2 | 26 |
| Figure 27. Western Tie-In Ponding Analysis; Separate Areas; 10-yr, 24-hr Rainfall Event; No Overtopping..... | 28 |
| Figure 28. Western Tie-In Ponding Analysis; Combined Areas; 10-yr, 24-hr Rainfall Event; No Overtopping..... | 29 |
| Figure 29. Western Tie-In Ponding Analysis; Separate Areas; 50-yr, 24-hr Rainfall Event; No Overtopping..... | 30 |
| Figure 30. Western Tie-In Ponding Analysis; Combined Areas; 50-yr, 24-hr Rainfall Event; No Overtopping..... | 31 |
| Figure 31. Western Tie-In Ponding Analysis; Separate Areas; 100-yr, 24-hr Rainfall Event; No Overtopping..... | 32 |
| Figure 32. Western Tie-In Ponding Analysis; Combined Areas; 100-yr, 24-hr Rainfall Event; No Overtopping..... | 33 |
| Figure 33. Western Tie-In Ponding Analysis; Separate Areas; 10-yr, 24-hr Rainfall Event; With Overtopping..... | 35 |
| Figure 34. Western Tie-In Ponding Analysis; Combined Areas; 10-yr, 24-hr Rainfall Event; With Overtopping..... | 36 |
| Figure 35. Western Tie-In Ponding Analysis; Separate Areas; 50-yr, 24-hr Rainfall Event; With Overtopping..... | 37 |
| Figure 36. Western Tie-In Ponding Analysis; Combined Areas; 50-yr, 24-hr Rainfall Event; With Overtopping..... | 38 |
| Figure 37. Western Tie-In Ponding Analysis; Separate Areas; 100-yr, 24-hr Rainfall Event; With Overtopping..... | 39 |
| Figure 38. Western Tie-In Ponding Analysis; Combined Areas; 100-yr, 24-hr Rainfall Event; With Overtopping..... | 40 |
| Figure 39. Hurricane Ike Western Tie-In Ponding Analysis, Separate Areas | 42 |
| Figure 40. Hurricane Ike Western Tie-In Ponding Analysis, Combined Areas | 43 |
| Figure 41. Hurricane Isidore Western Tie-In Ponding Analysis, Separate Areas | 44 |
| Figure 42. Hurricane Isidore Western Tie-In Ponding Analysis, Combined Areas | 45 |

List of Tables

| | |
|---|----|
| Table 1. Hurricane Season Statistics for Sellers Canal Gage (2000 - 2009) | 20 |
| Table 2. Input Parameters for Western Tie-In Levee Overtopping Analysis | 34 |
| Table 3. Comparison of Final Water Surface Elevation With and Without Overtopping for Combined and Separate Areas 1 and 2..... | 34 |
| Table 4. Historic Hurricane Model Inputs and Results..... | 41 |

Background

Comments received from Stakeholders on the original Hydraulic Report caused some reanalysis. Primarily the comments dealt with project impacts upon water surface levels in Ama.

This addendum describes the reanalysis. The original report (dated 28Apr09) will remain intact. Supplemental information / analysis contained in this document will supersede like material presented in the 28Apr09 report.

Figure 1 shows a map of the project area, including: roads, towns, parishes, existing levees and railroads.

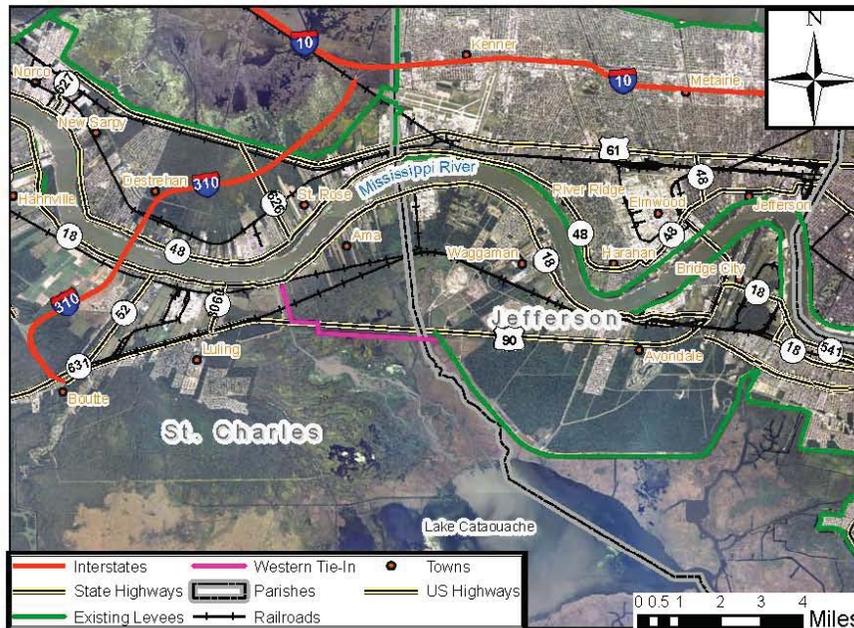


Figure 1. Western Tie-In Project and Surrounding Area

Gage Data

Data is presented in the form of hourly stage hydrographs and daily rainfall. Stage data were obtained from four gages, two operated by the US Army Corps of Engineers - New Orleans District (Sellers Canal and Bayou Segnette) and two operated by the US Geological Survey (Davis Pond and Lake Cataouatche). Daily rainfall data were obtained from the National Climatic Data Center (NCDC) for the weather station located at the New Orleans International Airport. Figure 2 shows the location of the stage and rain gages relative to the project area.

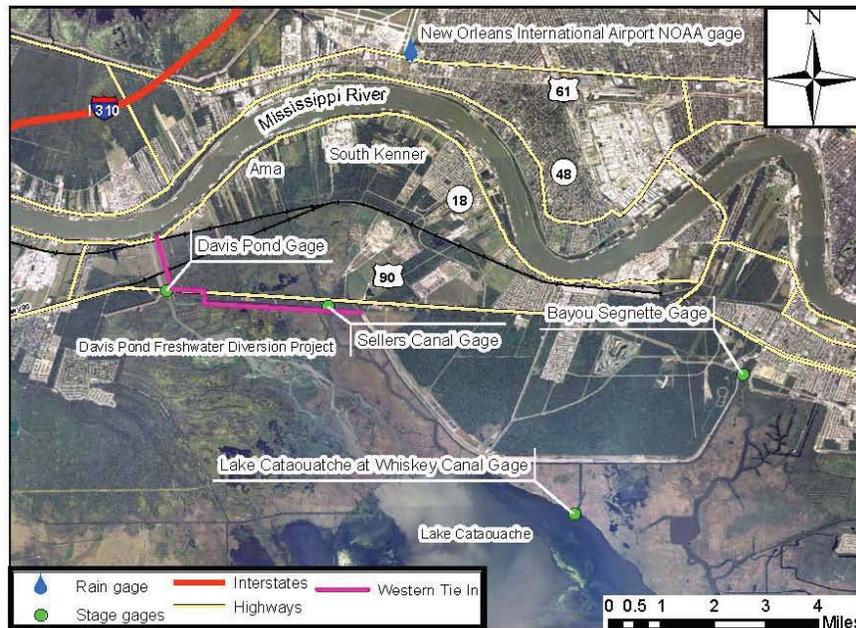


Figure 2. Location of Stage and Rainfall Gages Relative to the Western Tie-In Project Area

The historic record available on the internet is presented for three stage gages: Sellers Canal (8/25/1999 – 1/1/2010), Bayou Segnette (8/25/1999 – 1/1/2010), and Lake Cataouatche (11/7/2000 – 1/13/2010). Figure 3 through Figure 5 shows the entire record for the gages mentioned above. It is important to note the Sellers Canal stage has been adjusted (-0.82 ft) to the NAVD88 datum prior to 24 September 2007. Figure 6 shows the daily rainfall at the New Orleans International Airport for January 1999 to December 2009.

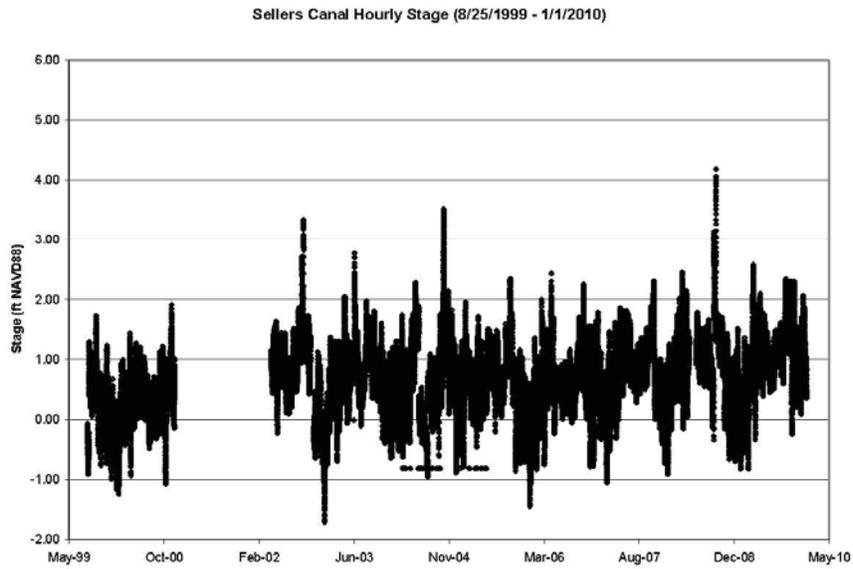


Figure 3. Historical Record of Hourly Stage Data for Sellers Canal (8/25/1999 - 1/11/2010)

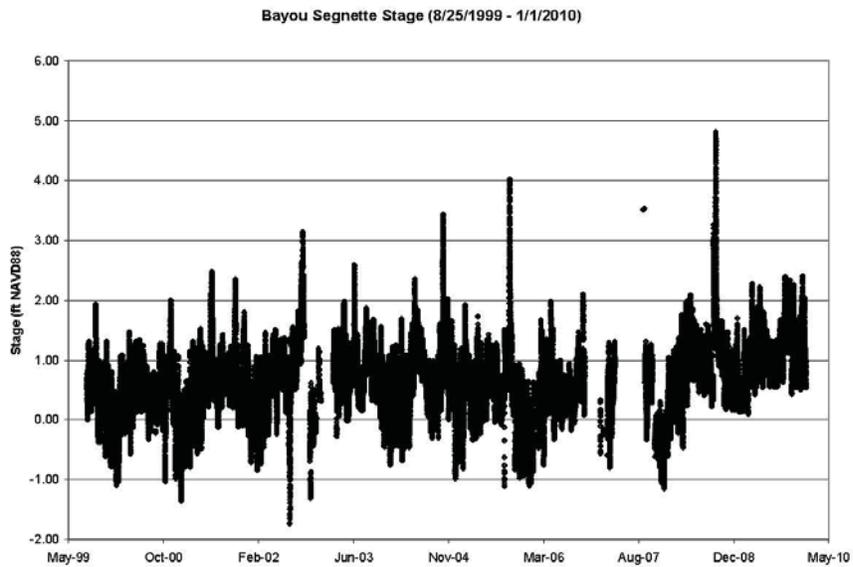


Figure 4. Historical Record of Hourly Stage Data for Bayou Segnette (8/25/1999 - 1/11/2010)

L. Cataouatche at Whiskey Canal Hourly Stage (11/7/2000 - 1/13/2010)

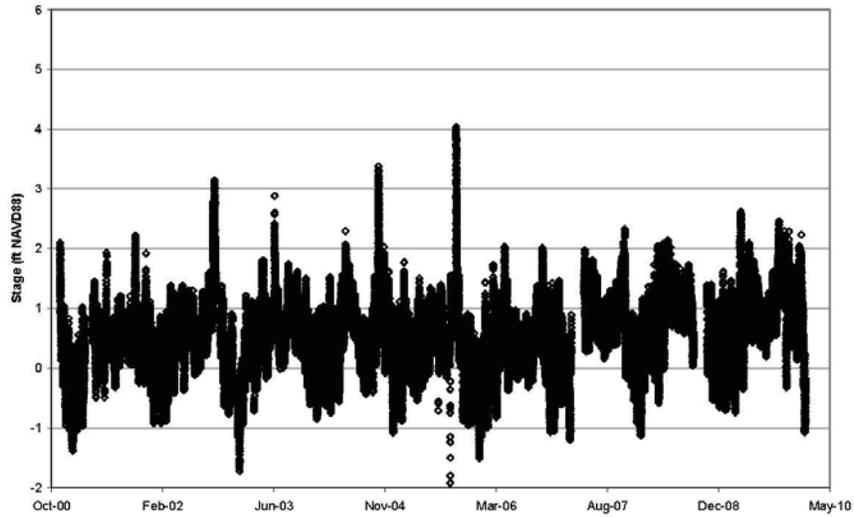


Figure 5. Historical Record of Hourly Stage Data for Lake Cataouatche at Whiskey Canal (11/7/2000 - 1/13/2010)

New Orleans International Airport Daily Rainfall (1/1/1999 - 11/30/2009)

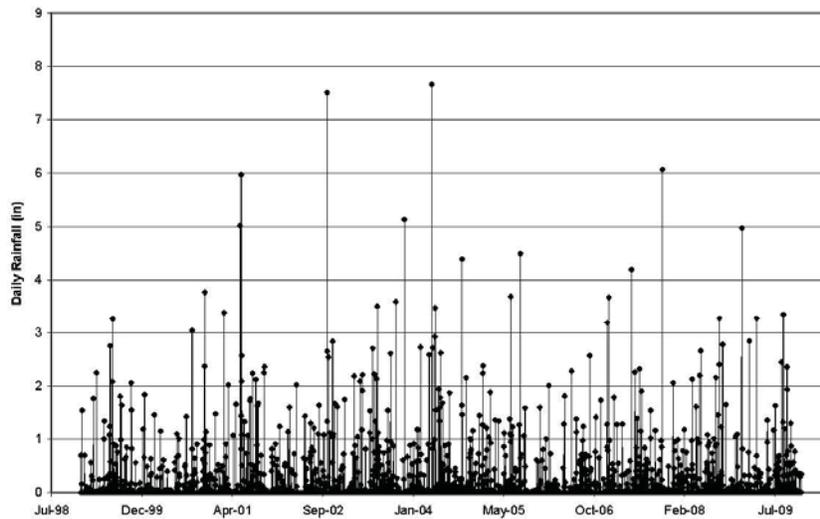


Figure 6. Historic Daily Rainfall at New Orleans International Airport (1/1/1999 - 11/30/2009)

Figure 7 through Figure 15 shows a comparison of hourly stage and daily rainfall for hurricanes affecting the project area. Also presented are the landfall date and location (represented by the vertical red line) and a line indicating the proposed Bayou Veret Sector Gate gate closure (represented by the vertical blue line). The vertical blue line represents the approximate time the proposed Sellers Canal sector gate would be closed; assuming that a closing 72 hours prior to predicted landfall is the recommended advance closure time.

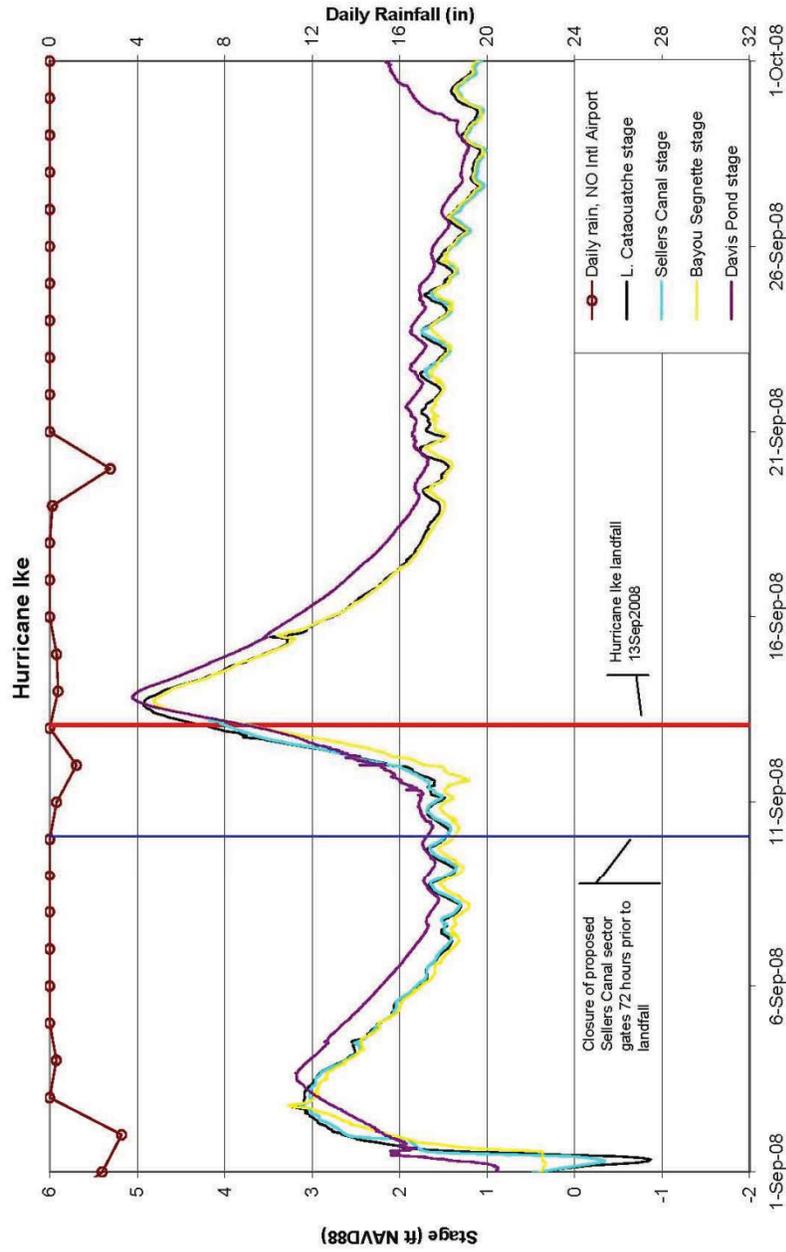


Figure 7. Hourly Stage and Daily Rainfall for Hurricane Ike, Landfall 13 September 2008

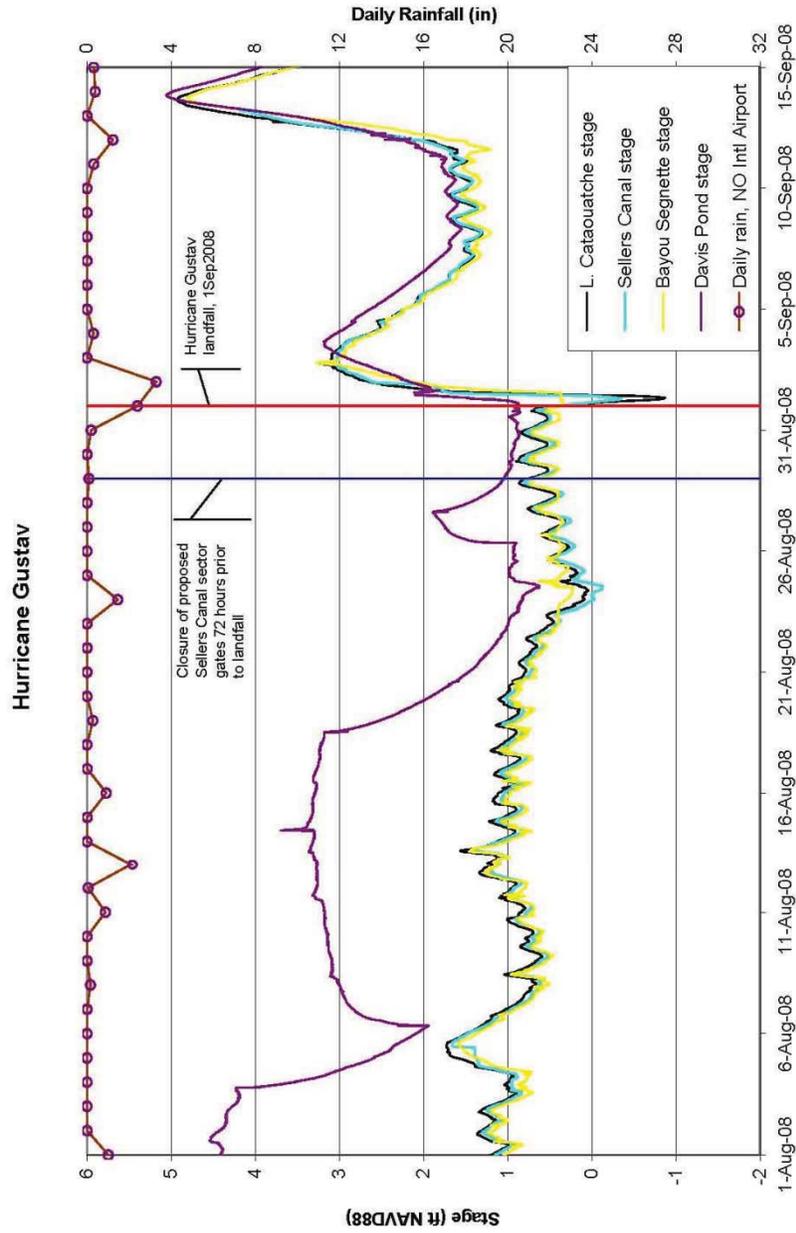


Figure 8. Hourly Stage and Daily Rainfall for Hurricane Gustav, Landfall 1 September 2008

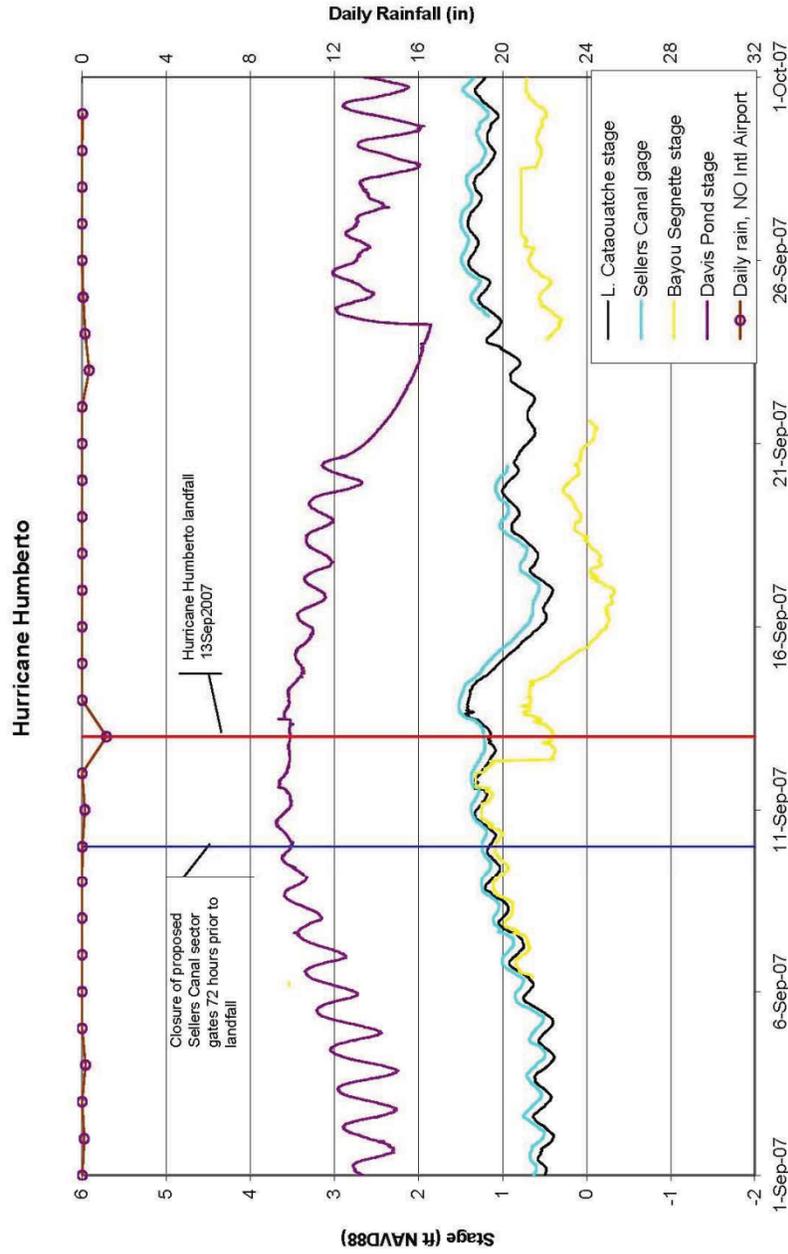


Figure 9. Hourly Stage and Daily Rainfall for Hurricane Humberto, Landfall 13 September 2007

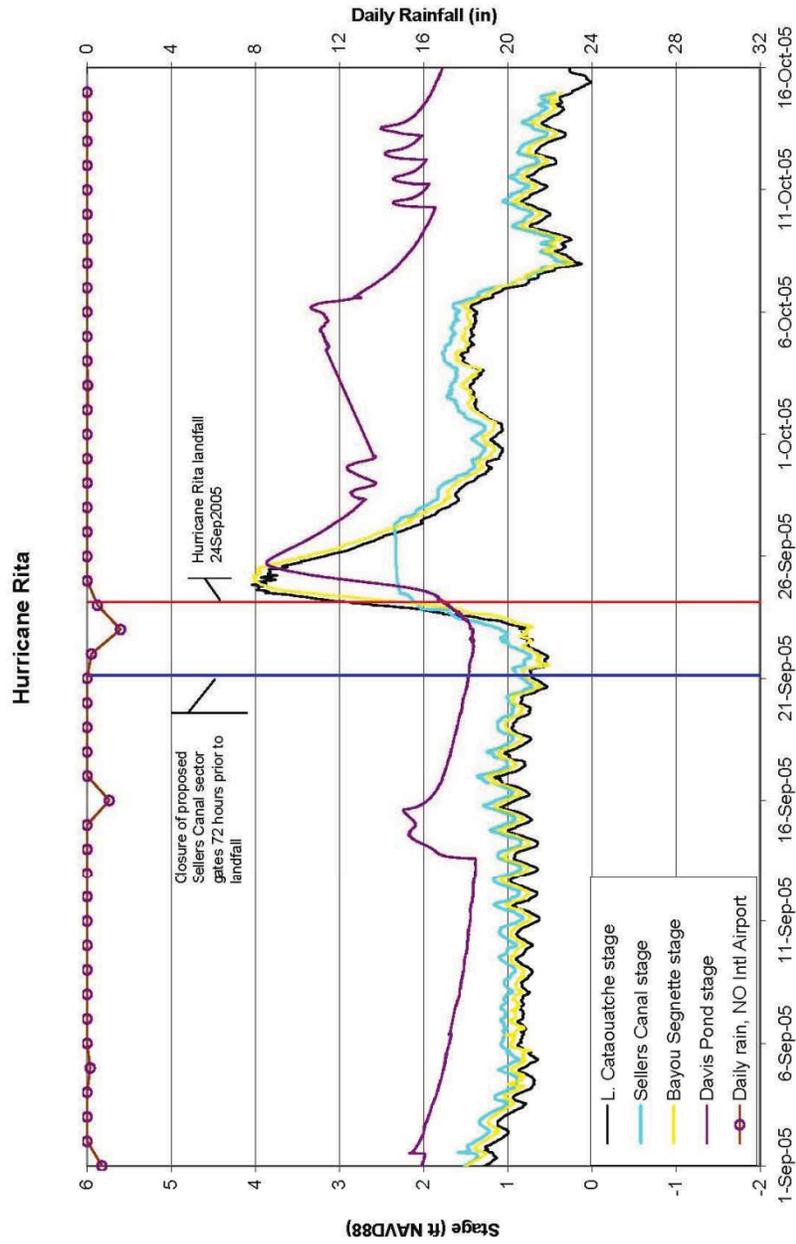


Figure 10. Hourly Stage and Daily Rainfall for Hurricane Rita, Landfall 24 September 2005

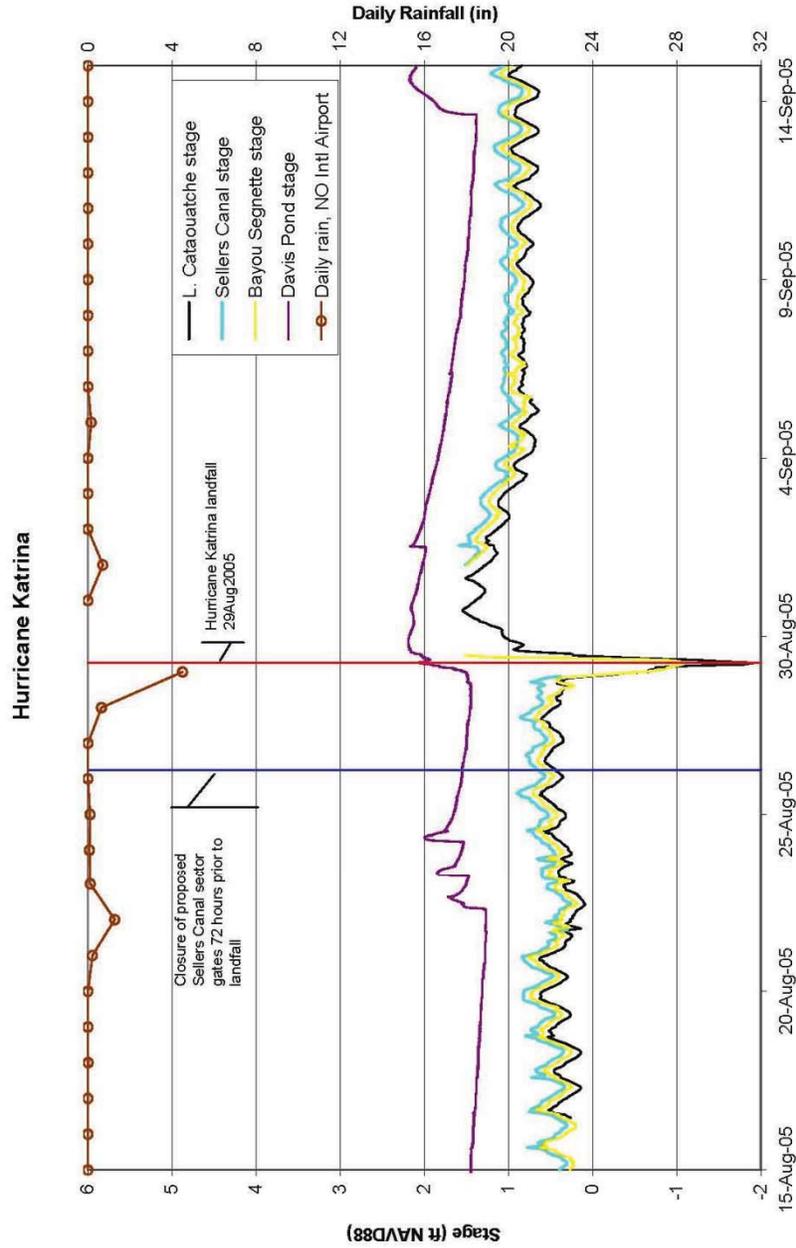


Figure 11. Hourly Stage and Daily Rainfall for Hurricane Katrina, Landfall 29 August 2005

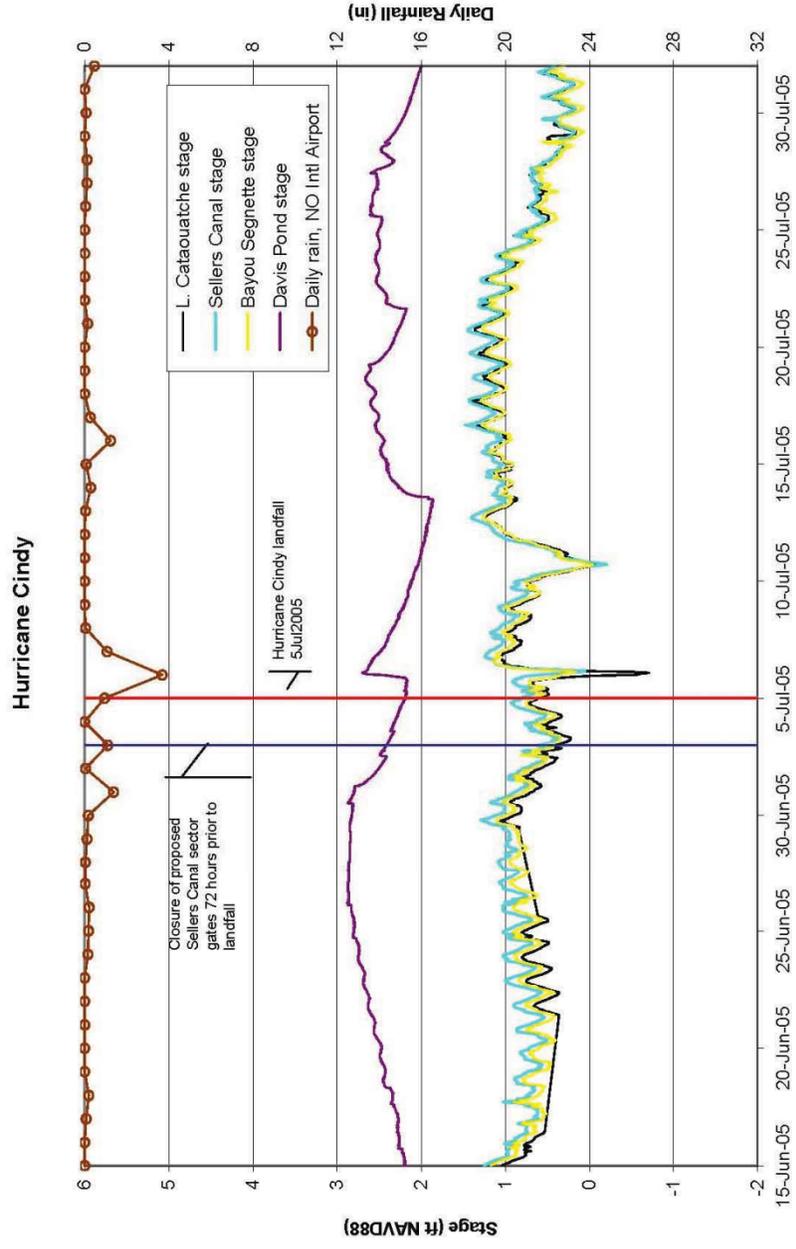


Figure 12. Hourly Stage and Daily Rainfall for Hurricane Cindy, Landfall 5 July 2005

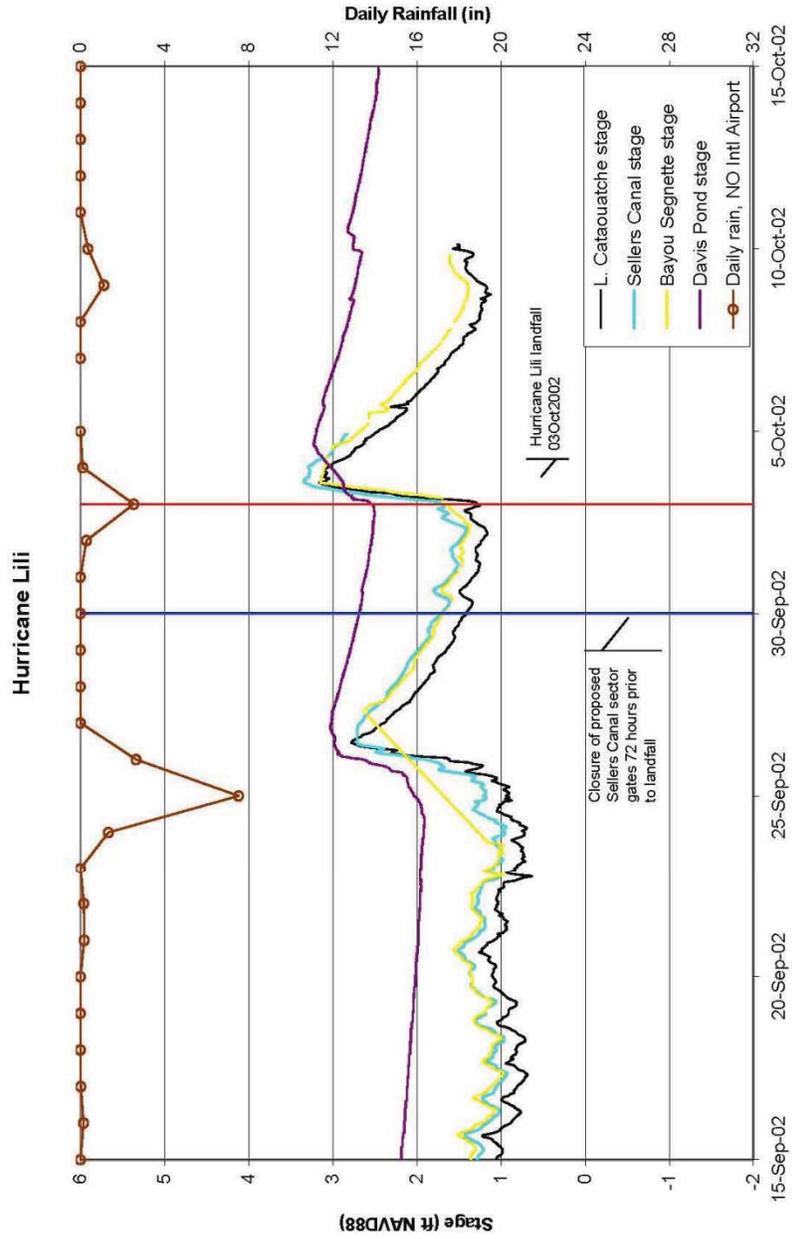


Figure 13. Hourly Stage and Daily Rainfall for Hurricane Lili, Landfall 3 October 2002

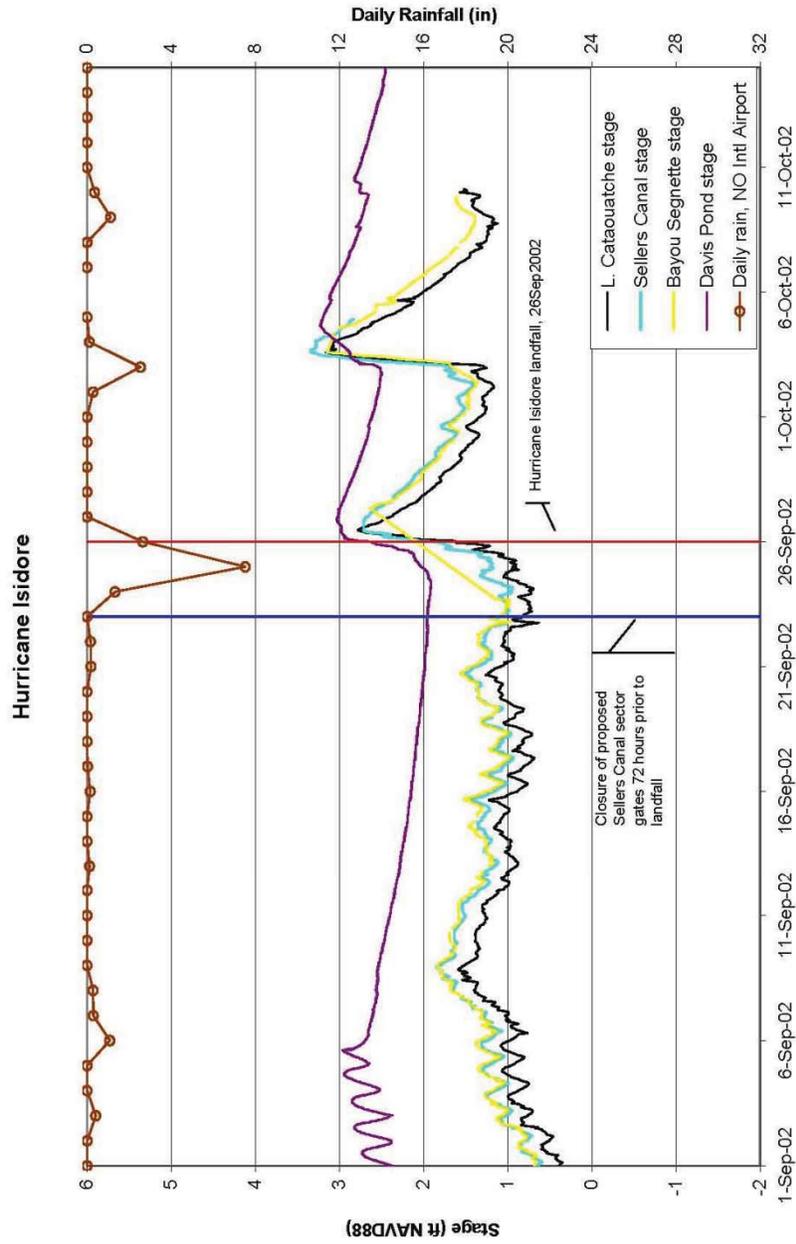


Figure 14. Hourly Stage and Daily Rainfall for Hurricane Isidore, Landfall 26 September 2002

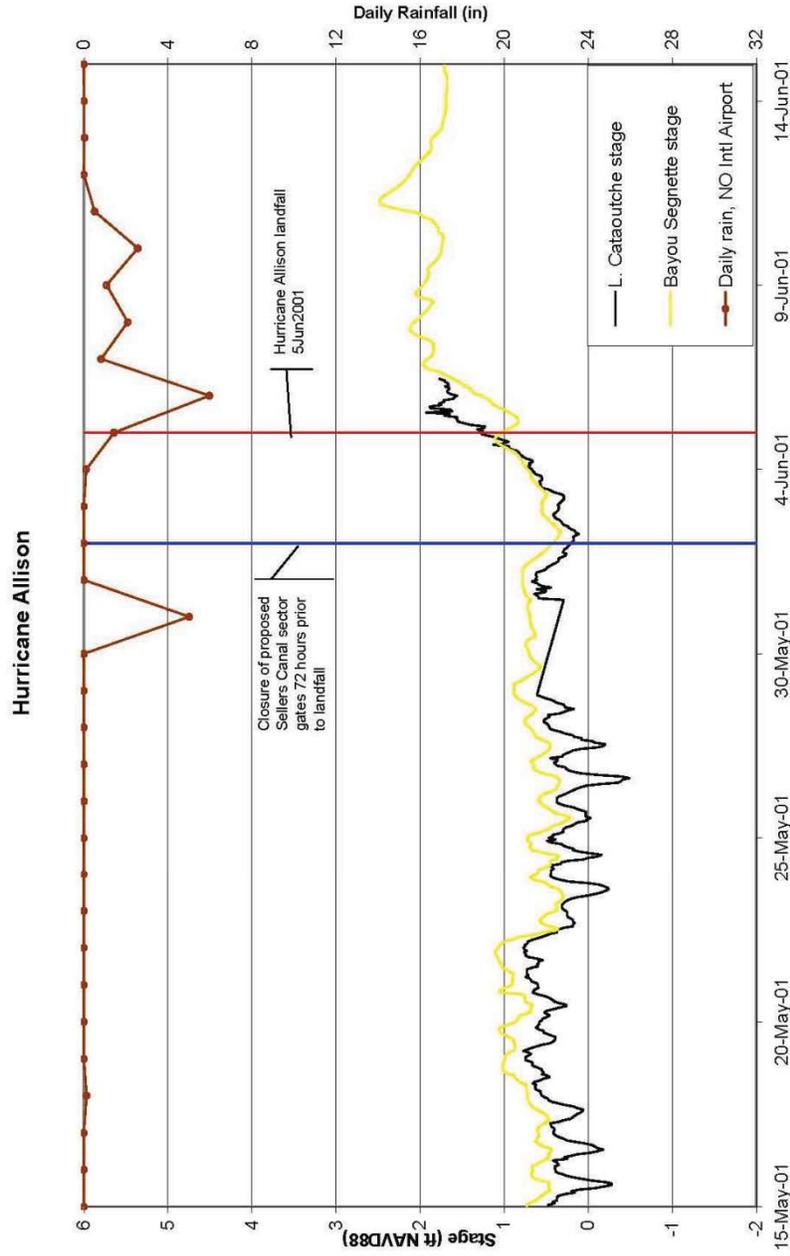


Figure 15. Hourly Stage and Daily Rainfall for Hurricane Allison, Landfall 5 June 2001

Table 1 shows statistics for the hourly stage data at the Sellers Canal gage for the hurricane season (1 June – 30 November) for the period of record (2000 – 2009). Note 2001 is omitted due to gage failure. Again, the data prior to 24 September 2007 has been adjusted to reflect the NAVD88 datum.

Table 1. Hurricane Season Statistics for Sellers Canal Gage (2000 - 2009)

| Year | 2000 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2000-2009 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|
| Maximum | 1.91 | 3.34 | 2.77 | 3.52 | 2.34 | 2.25 | 2.31 | 4.18 | 2.34 | 4.18 |
| Minimum | -1.08 | -0.49 | -0.33 | -0.96 | -0.86 | -0.82 | -0.16 | -0.67 | -0.25 | -1.08 |
| Mean | 0.41 | 1.01 | 0.87 | 0.61 | 0.73 | 0.64 | 0.94 | 1.01 | 1.17 | 0.82 |

Figure 16 through Figure 24 shows the stage hydrographs at the Sellers Canal gage for the hurricane seasons of 2000 through 2009.

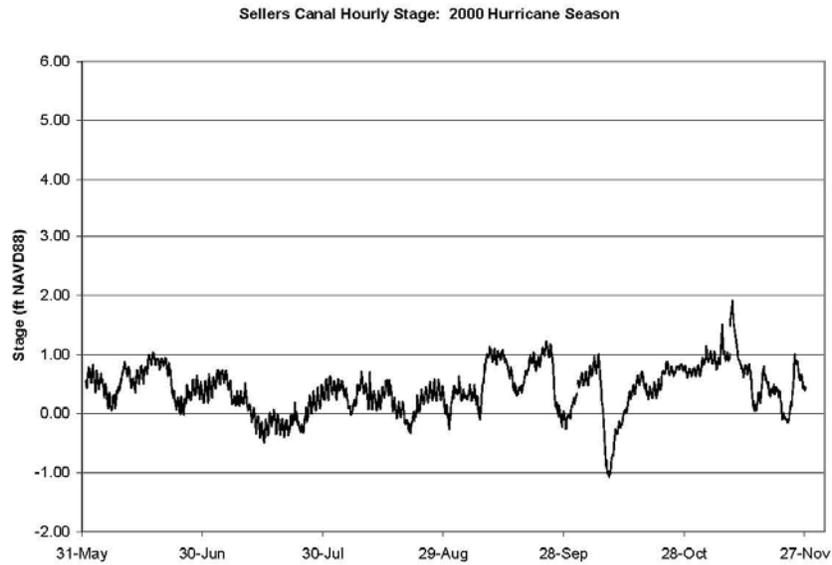


Figure 16. Sellers Canal Hourly Stage, 2000 Hurricane Season

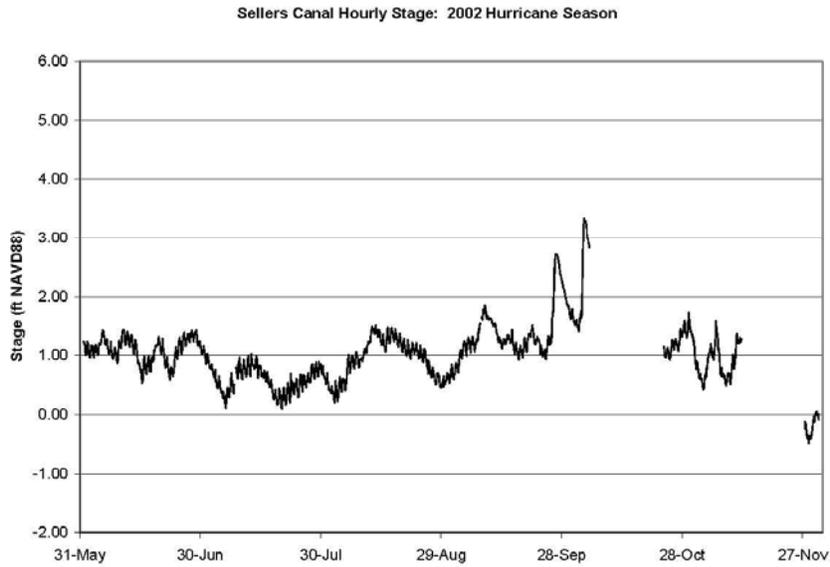


Figure 17. Sellers Canal Hourly Stage, 2002 Hurricane Season

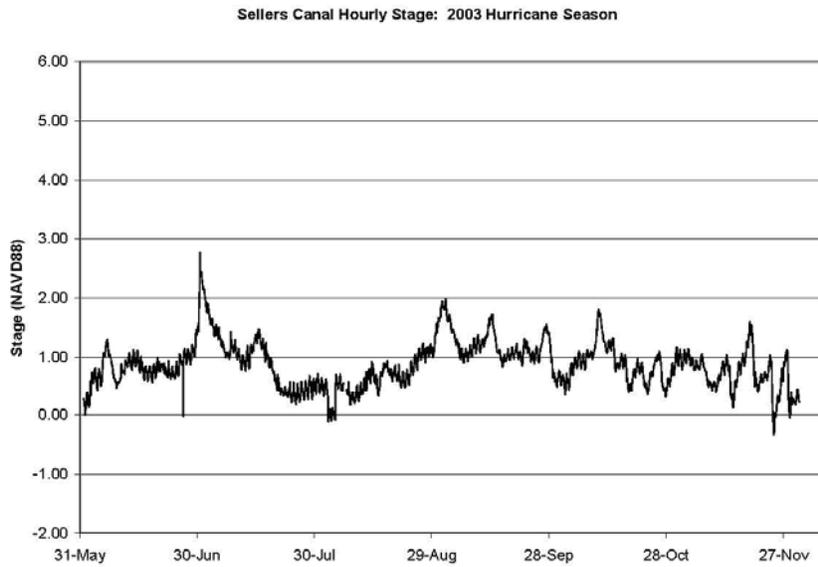


Figure 18. Sellers Canal Hourly Stage, 2003 Hurricane Season

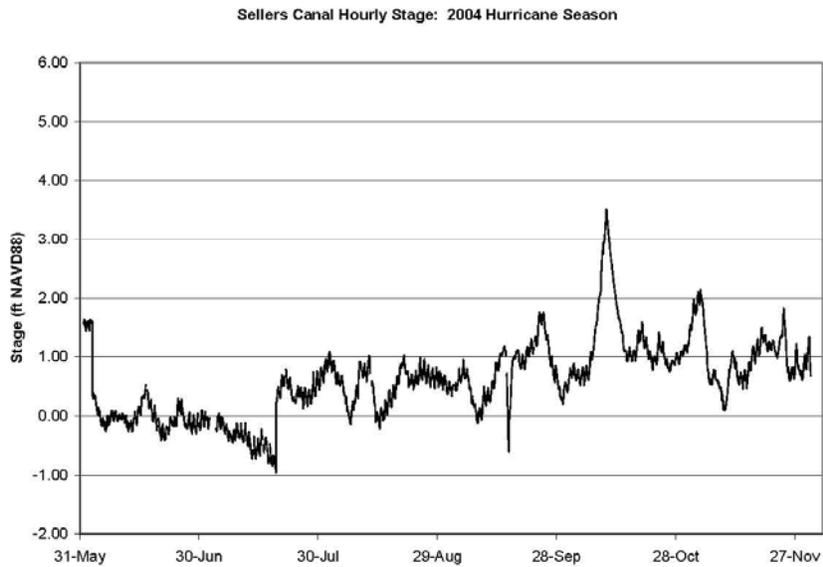


Figure 19. Sellers Canal Hourly Stage, 2004 Hurricane Season

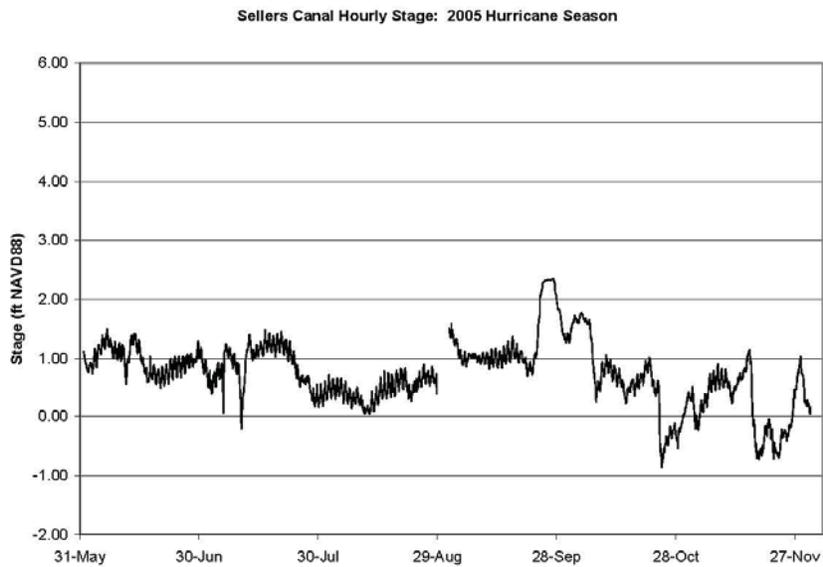


Figure 20. Sellers Canal Hourly Stage, 2005 Hurricane Season

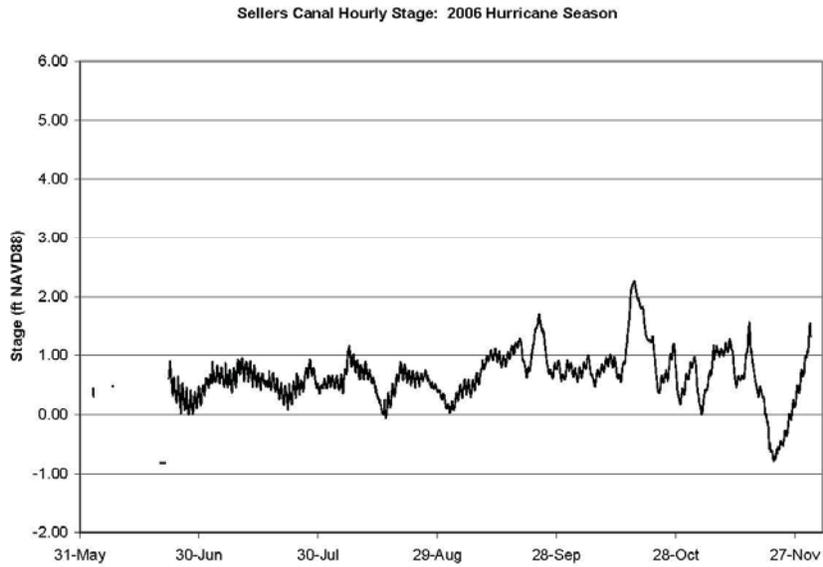


Figure 21. Sellers Canal Hourly Stage, 2006 Hurricane Season

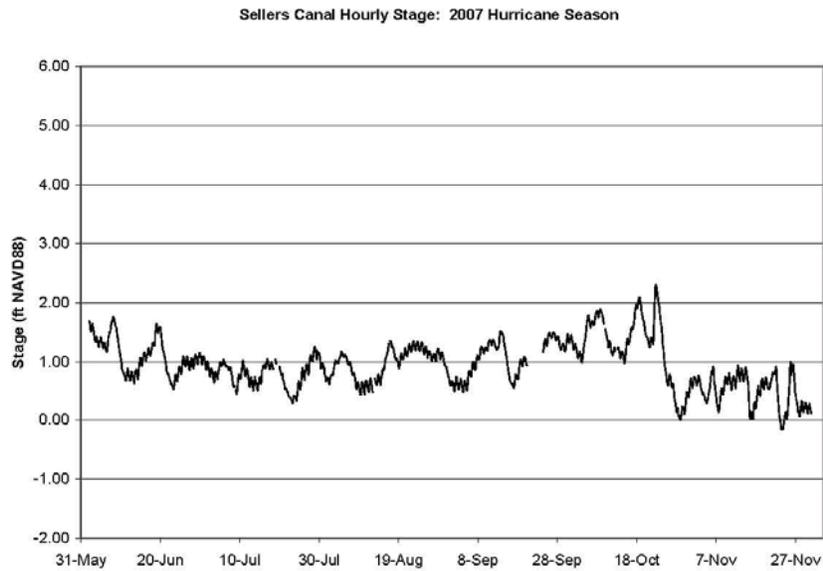


Figure 22. Sellers Canal Hourly Stage, 2007 Hurricane Season

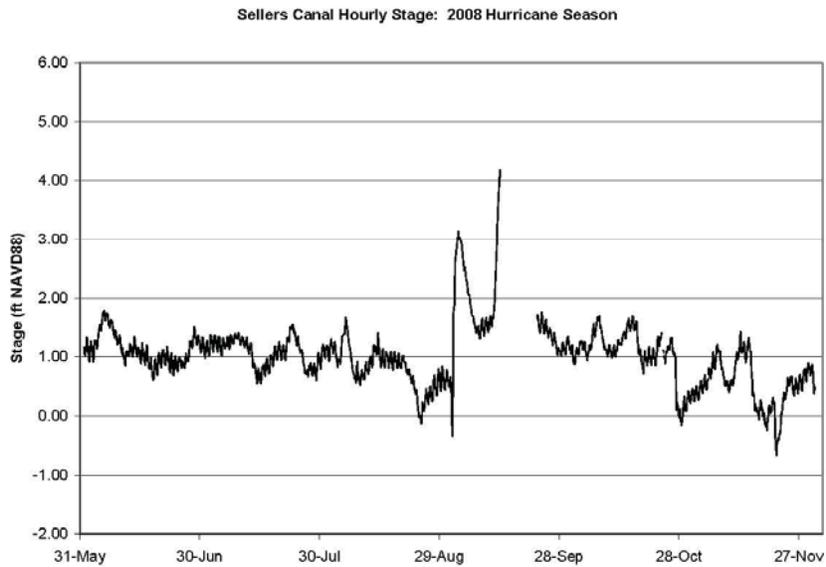


Figure 23. Sellers Canal Hourly Stage, 2008 Hurricane Season

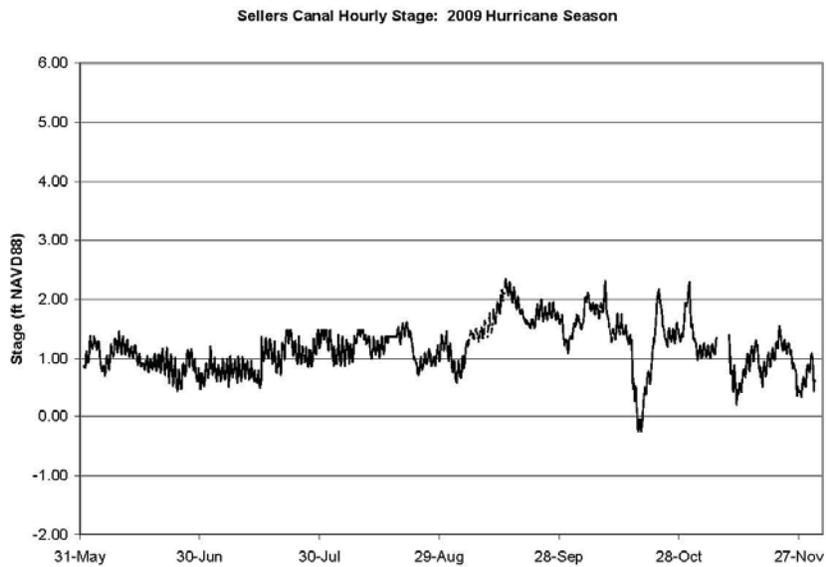


Figure 24. Sellers Canal Hourly Stage, 2009 Hurricane Season

Elevation Storage Curves

Elevation storage and elevation area relationships for Areas 1, 2, and 1 and 2 combined were established by MVN Engineering Control Branch. These were used in establishing inundation levels for the Western Tie In project area. Figure 25 shows the location of Areas 1 and 2. Figure 26 shows the Elevation Storage curves for Areas 1 and 2.

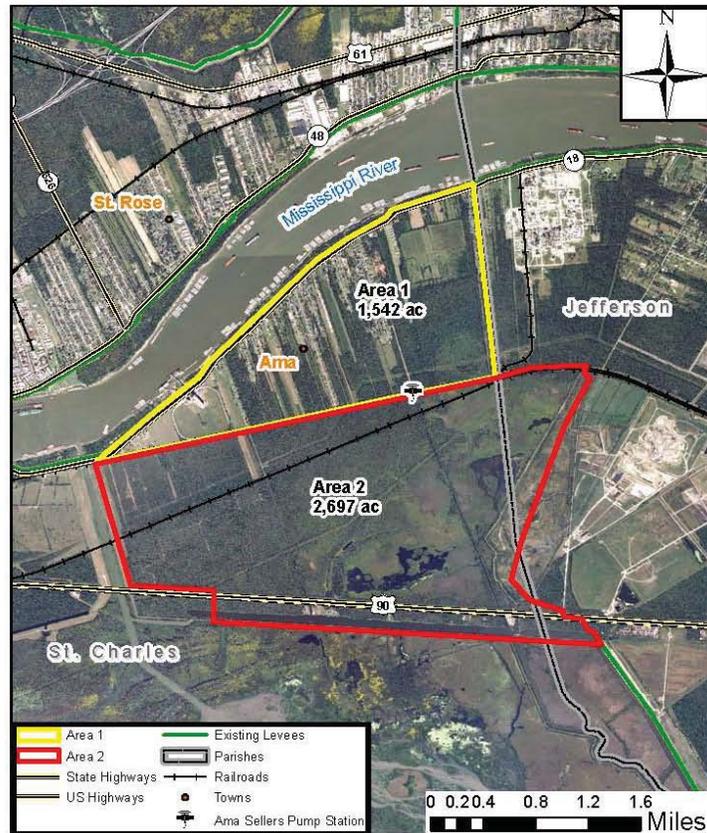


Figure 25. Western Tie-In Basin Areas 1 and 2

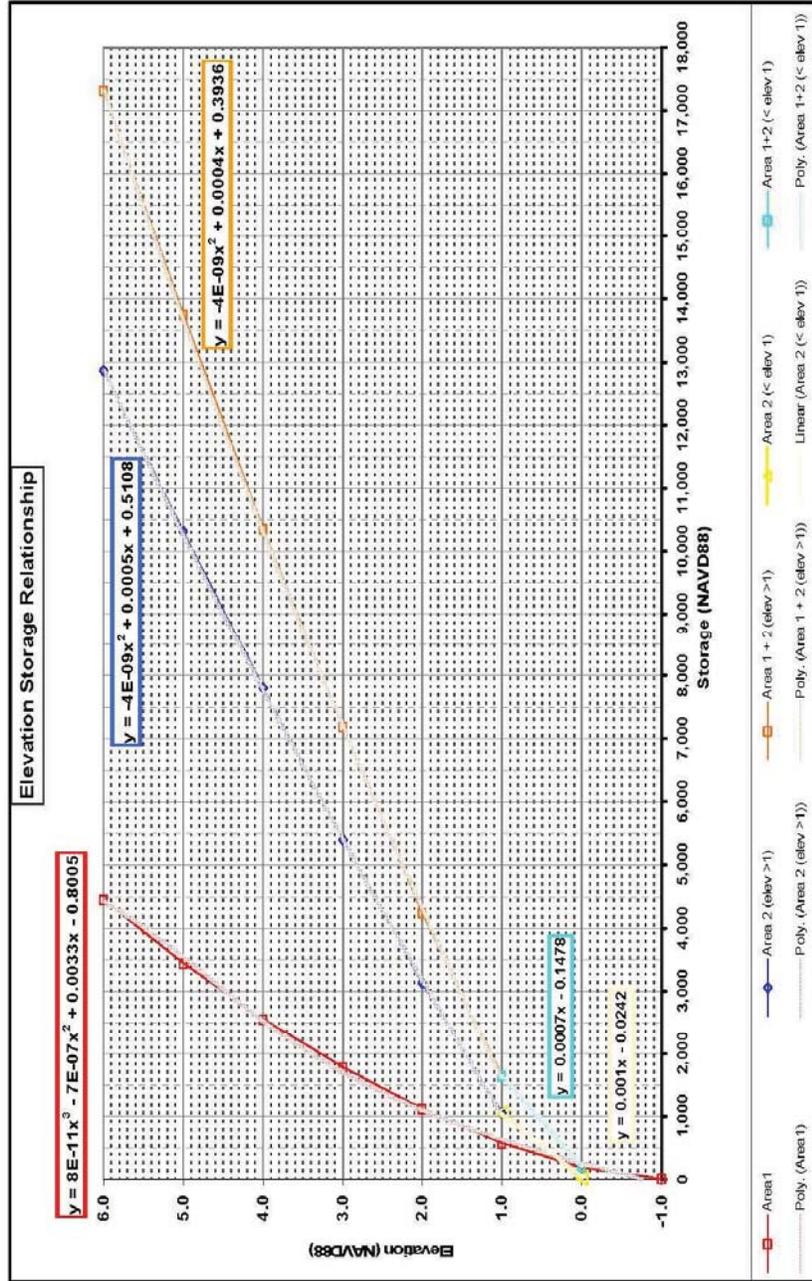


Figure 26. Elevation-Storage Relationship for Areas 1 and 2

Hydraulic Analysis

Determination of Design Storm

EM 1110-2-1413 (Hydrologic Analysis of Interior Areas)

A portion of that EM reads "If a local storm drainage system is in existence, then the minimum facility should pass the local system design event with essentially no increase in interior flooding".

Jefferson Parish, Orleans Parish are designed for the 10-yr, 24-hr rainfall event.

Based on this information, water surface elevation (WSEL) impacts to Western Tie In will be made using the 10-yr, 24-hr rainfall event.

Inundation Analysis

The inundation analysis presented in the original report used a starting water surface elevation of 0.0.

The "Gage Data" portion of this addendum presents stage hydrographs in advance of historical hurricanes. Based on this information, it is recommended that a maximum stage at Sellers Canal when sector gates will be closed in advance of hurricanes will be +2.0.

Adopting this recommendation, inundation analysis was redone using a starting water surface elevation of +2.0. The starting water surface elevation in Area 1 was assumed to be +0.0.

Project condition water surface levels were predicted by applying volumes of runoff to the Elevation Storage curves. This gives ponding elevations at the outlet under the project condition.

Two sets of curves are presented. The 10-yr, 50-yr, and 100-yr water surface elevations for the 24-yr rainfall event are shown with Areas 1 and 2 assumed separate. This assumes that the Ama pump is operating at full capacity and no seepage through the railroad berm is occurring. The second set of curves presented assumes that seepage through the railroad berm is significant and that the Ama pump is operational but is not able to keep up with seepage. In this case Areas 1 and 2 are combined and act as one system. This was the case during high water from Hurricane Ike. These plots can be seen in Figure 27 through Figure 32.

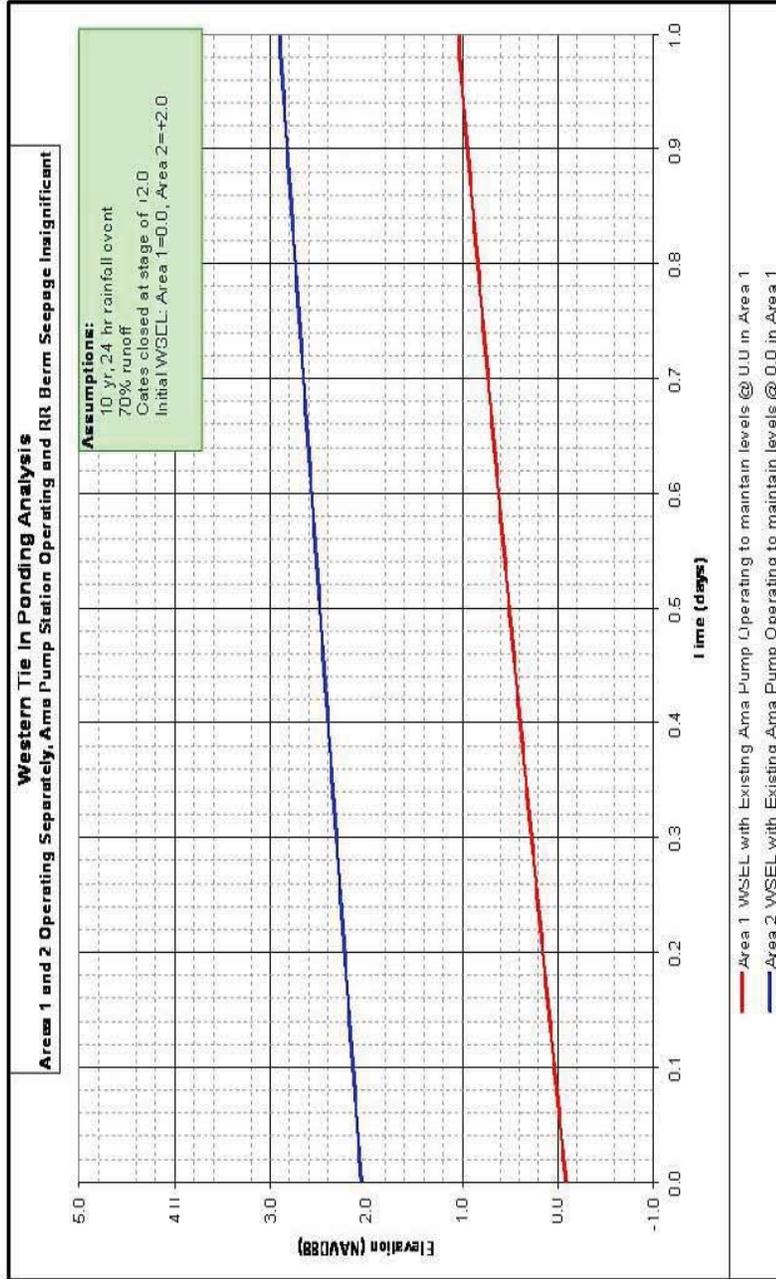


Figure 27. Western Tie-In Ponding Analysis; Separate Areas; 10-yr, 24-hr Rainfall Event; No Overtopping

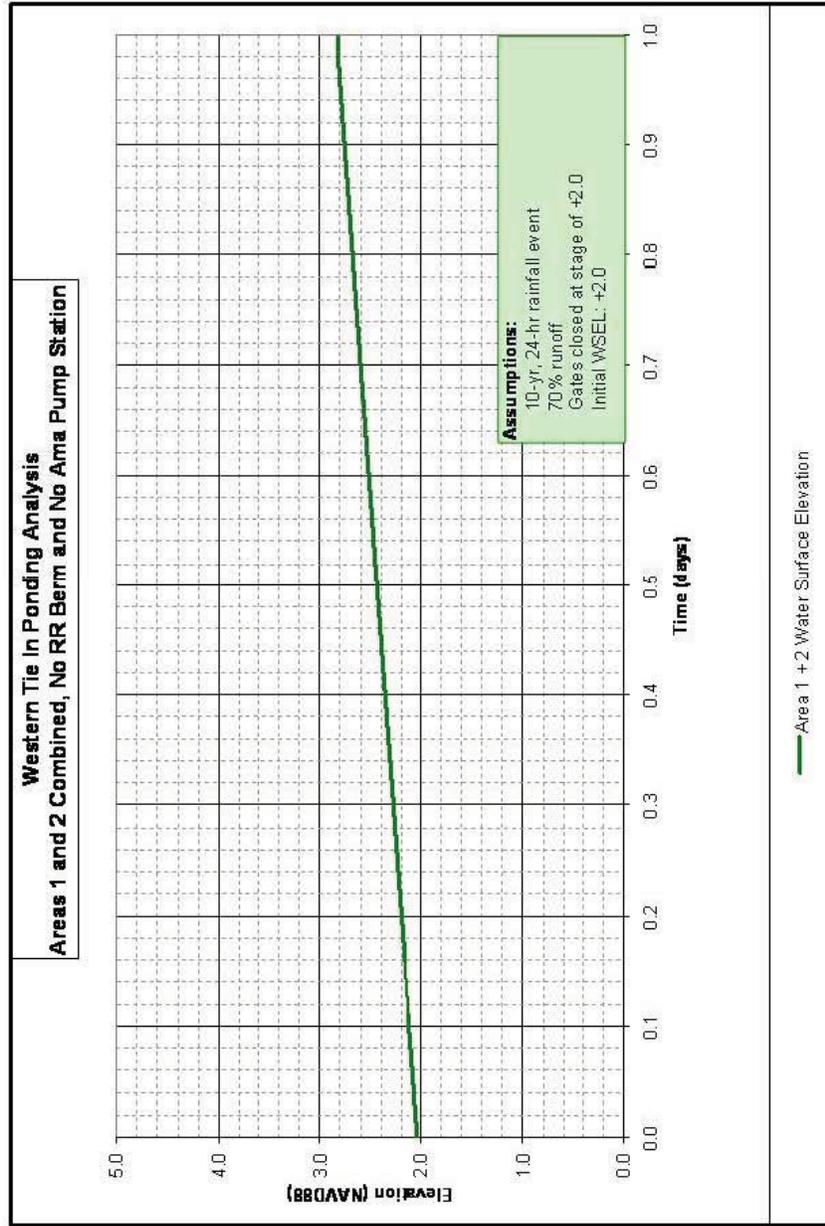


Figure 28. Western Tie-In Ponding Analysis; Combined Areas; 10-yr, 24-hr Rainfall Event; No Overtopping

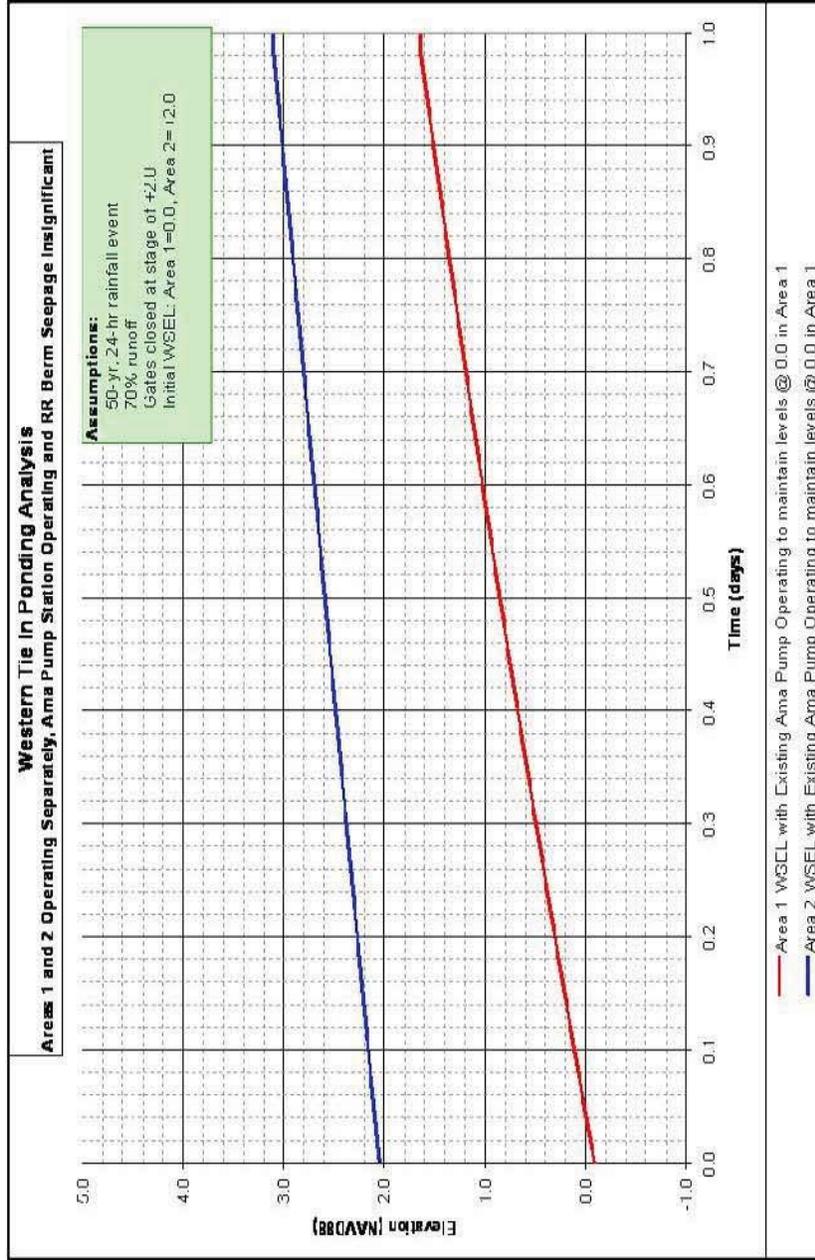


Figure 29. Western Tie-In Ponding Analysis; Separate Areas; 50-yr, 24-hr Rainfall Event; No Overtopping

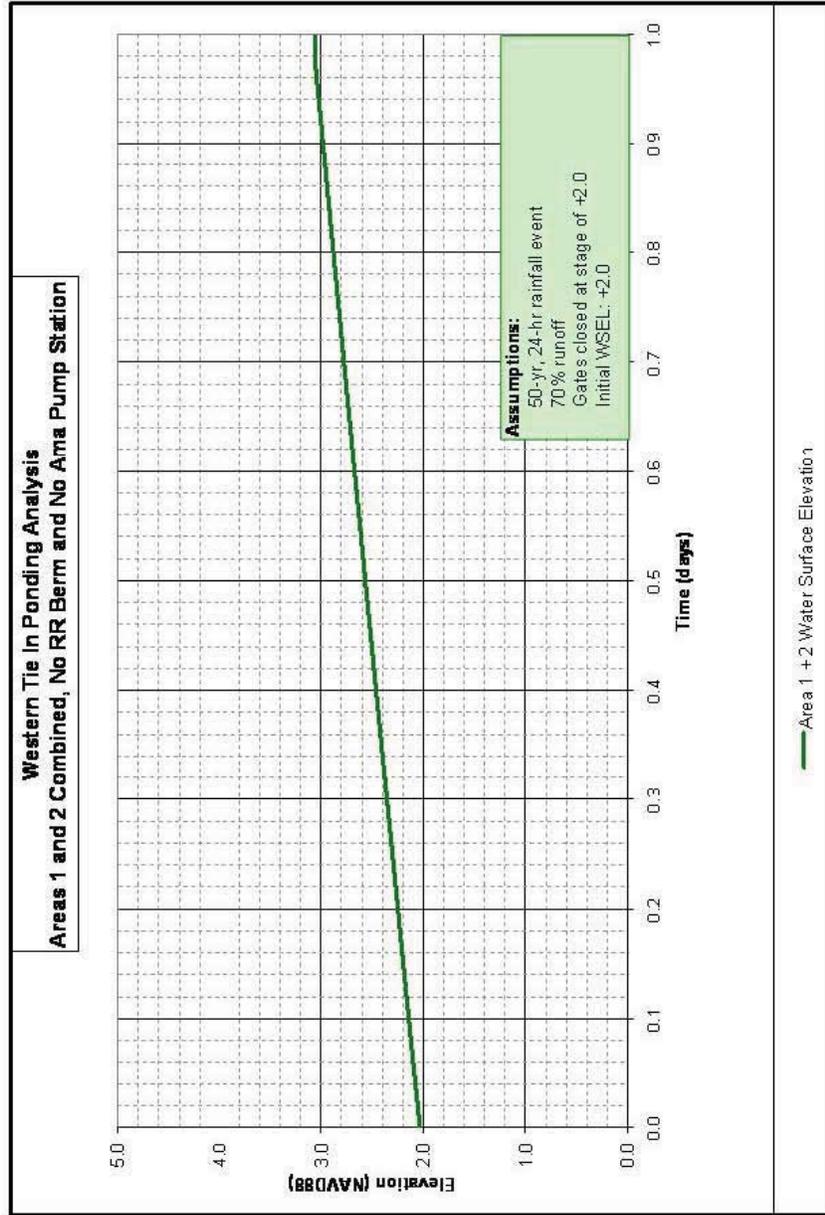
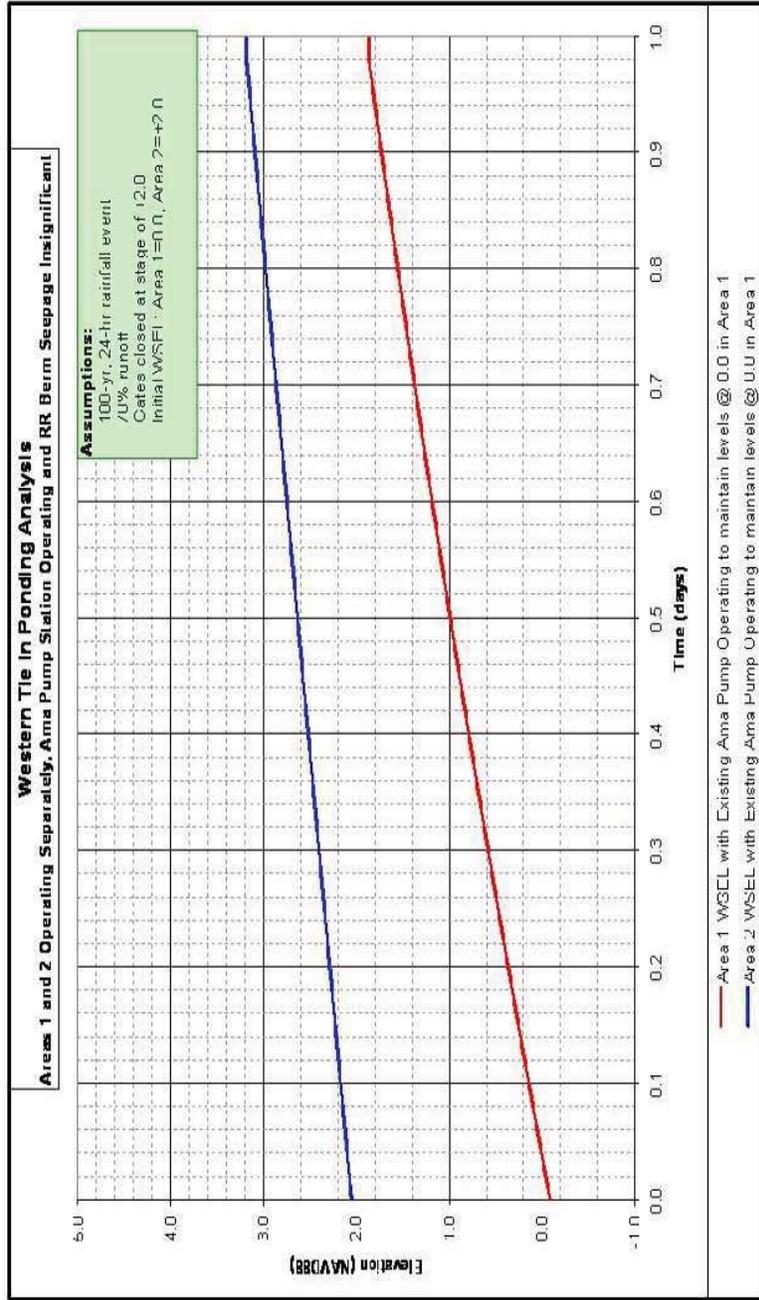


Figure 30. Western Tie-In Ponding Analysis; Combined Areas; 50-yr, 24-hr Rainfall Event; No Overtopping



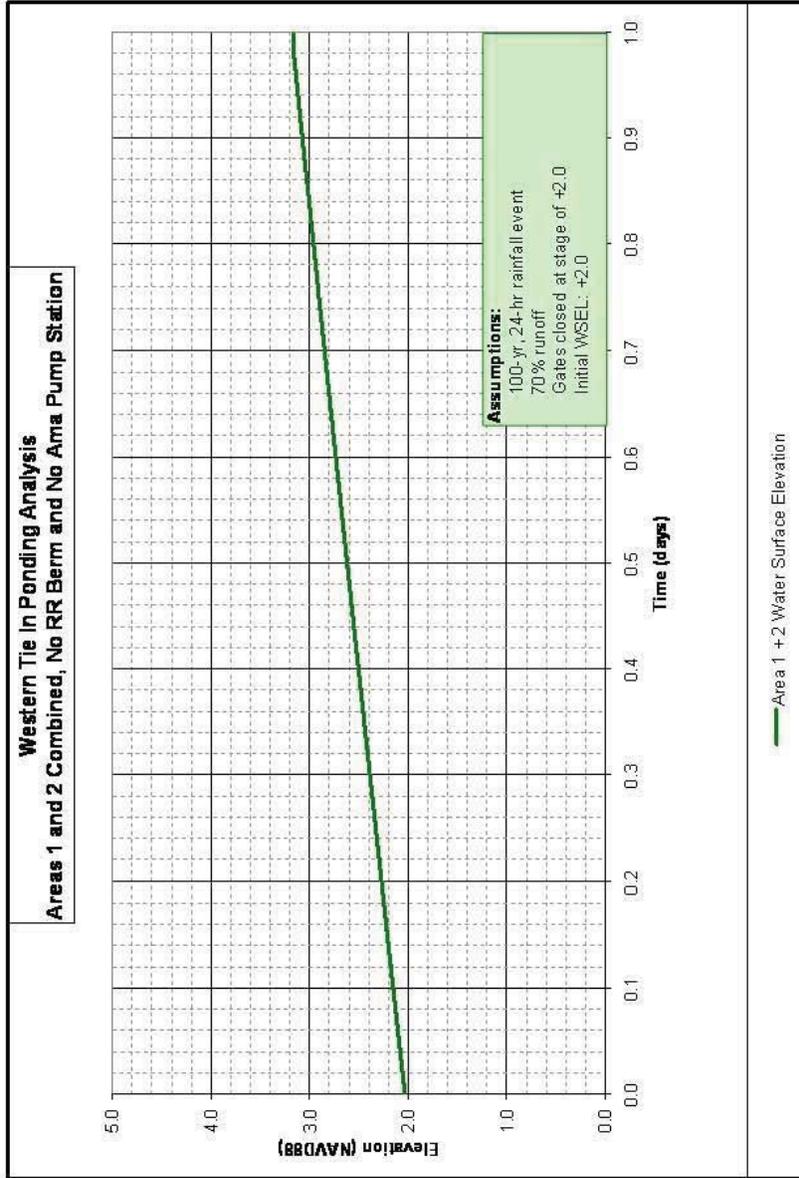


Figure 32. Western Tie-In Ponding Analysis; Combined Areas; 100-yr, 24-hr Rainfall Event; No Overtopping

Another improvement to this analysis was the addition of overtopping flow. Overtopping flow was added for the duration of the analysis. Overtopping flow rates were obtained from *Elevations for Design of Hurricane Protection Levees and Structures: Lake Pontchartrain, Louisiana and Vicinity Hurricane Protection Project*, prepared by US Army Corps of Engineers – New Orleans District, dated 9 October 2007. Two different overtopping flow rates were used in the analysis. Table 2 shows the input parameters for the overtopping analysis.

Table 2. Input Parameters for Western Tie-In Levee Overtopping Analysis

| Levee Section Name | | Levee Length | Q ₅₀ Levee Overtopping Rate | 24-hr Overtopping Volume |
|--------------------|---------|--------------|--|--------------------------|
| Old | Current | (ft) | (cfs/ft) | (AF) |
| WB-31 | WBV-71 | 8,915 | 0.003 | 53.06 |
| WB-01 | WBV-72 | 14,485 | 0.006 | 172.36 |
| Total | | 23,400 | | 225.42 |

Levee overtopping was assumed to be constant with time and was simulated by applying an additional water volume to the Elevation Storage curves for each time step. The overtopping volume was only added to Area 2 when the areas were analyzed separately. Table 3 shows a comparison of the final WSEL with and without overtopping, in feet NAVD88, for combined and separate Areas 1 and 2. Model results show the maximum interior WSEL for the design storm (10-yr, 24-hr) to be 3.00 ft NAVD88 in Area 2.

Table 3. Comparison of Final Water Surface Elevation With and Without Overtopping for Combined and Separate Areas 1 and 2

| Return Period | Final WSEL (ft NAVD88) | | | | | |
|---------------|------------------------|--------|-------------------|----------------|--------|-------------------|
| | With Overtopping | | | No Overtopping | | |
| | Area 1 | Area 2 | Combined Area 1+2 | Area 1 | Area 2 | Combined Area 1+2 |
| 10-yr | 1.03 | 3.00 | 2.90 | 1.03 | 2.89 | 2.82 |
| 50-yr | 1.63 | 3.20 | 3.14 | 1.63 | 3.10 | 3.06 |
| 100-yr | 1.86 | 3.28 | 3.24 | 1.86 | 3.18 | 3.16 |

Figure 33 through Figure 38 shows the WSEL with levee overtopping for the 10-yr, 50-yr, and 100-yr, 24-hr rainfall events for combined and separate Areas 1 and 2.

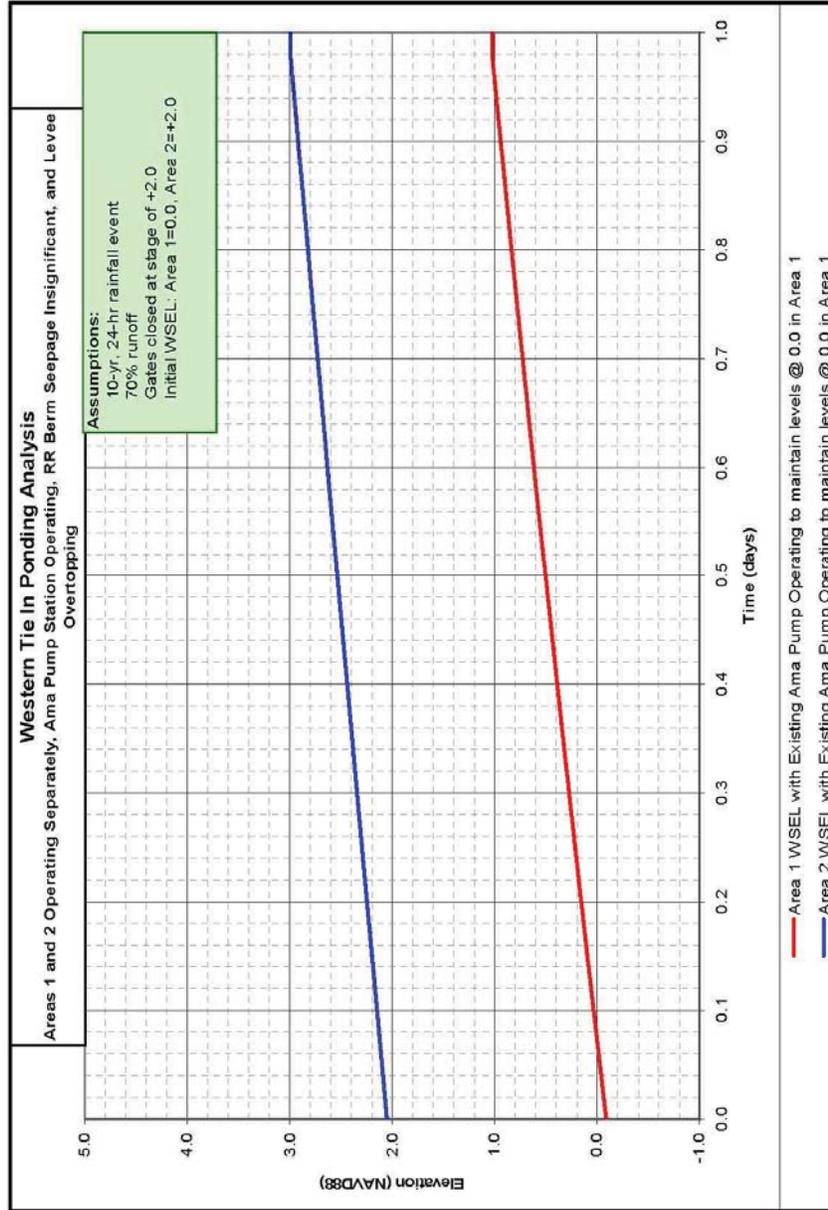


Figure 33. Western Tie-In Ponding Analysis; Separate Areas; 10-yr, 24-hr Rainfall Event; With Overtopping

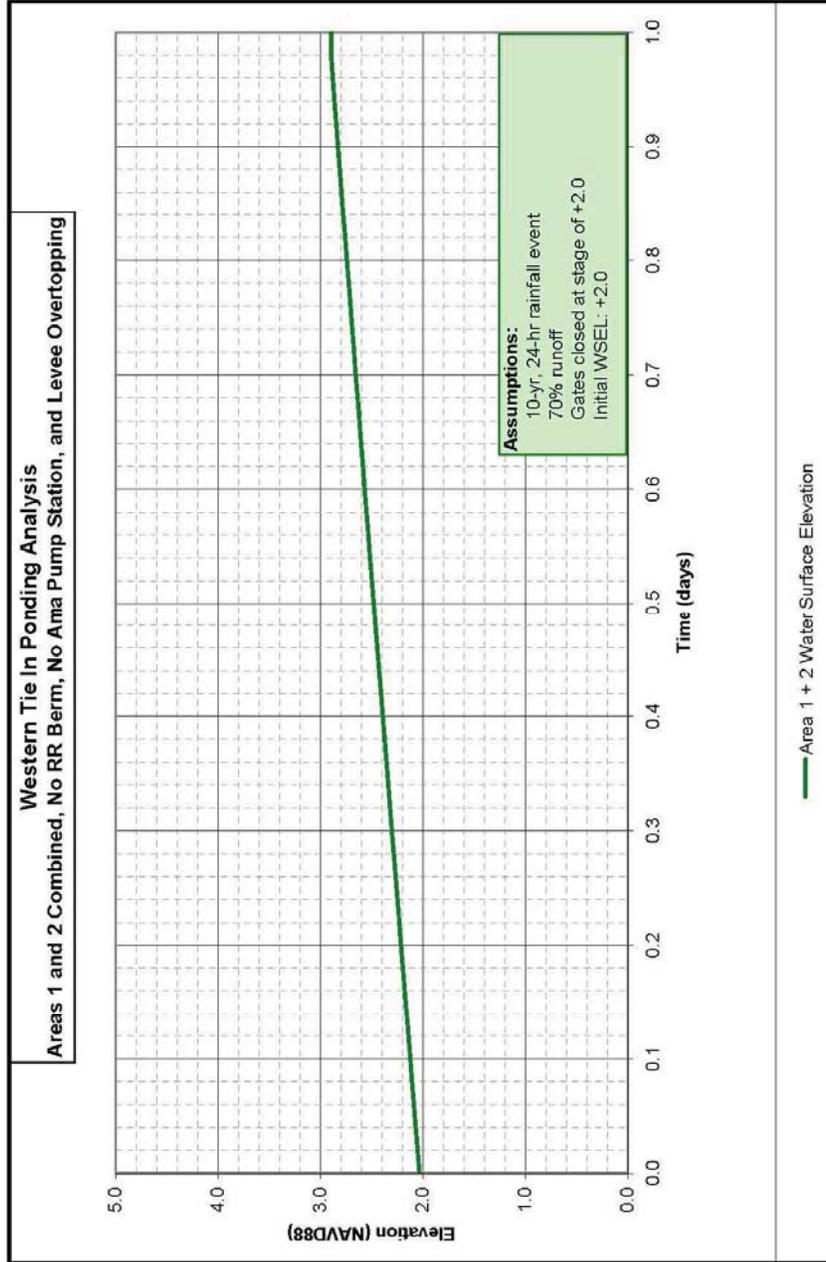
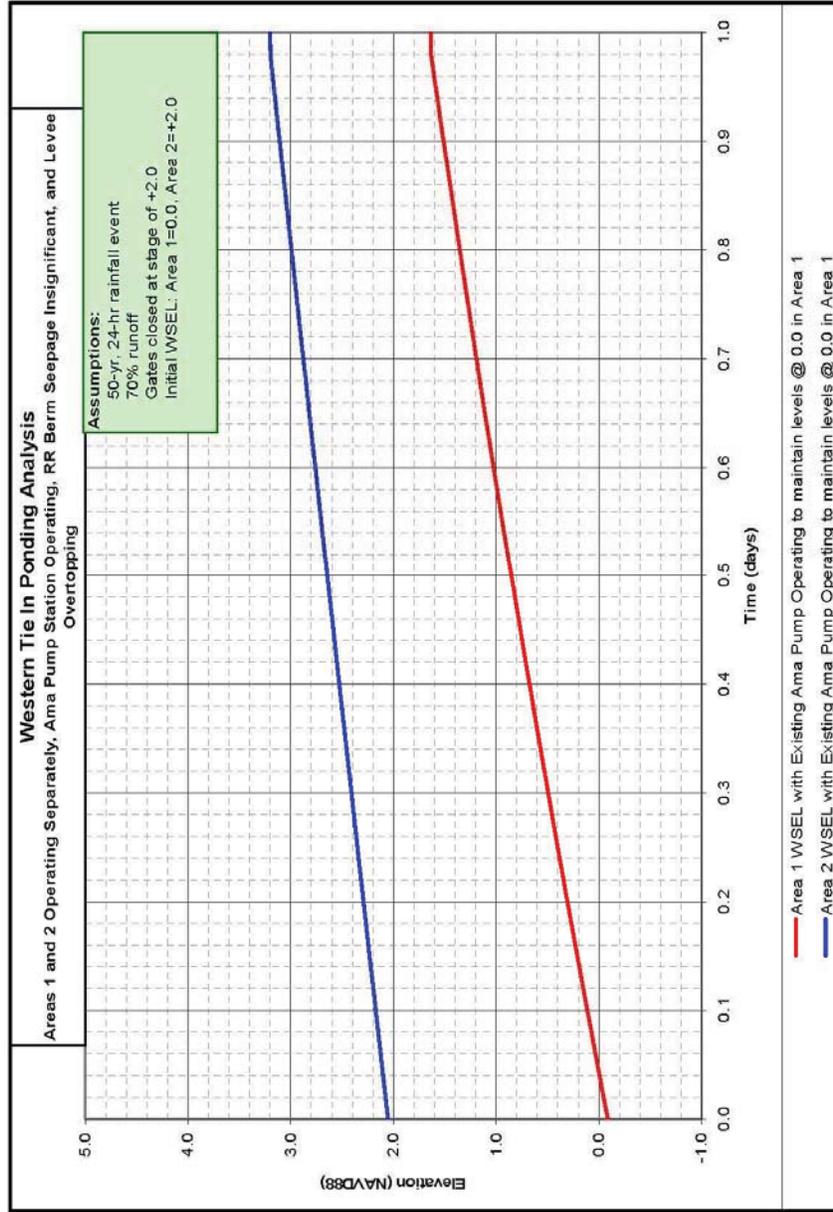


Figure 34. Western Tie-In Ponding Analysis; Combined Areas; 10-yr, 24-hr Rainfall Event; With Overtopping



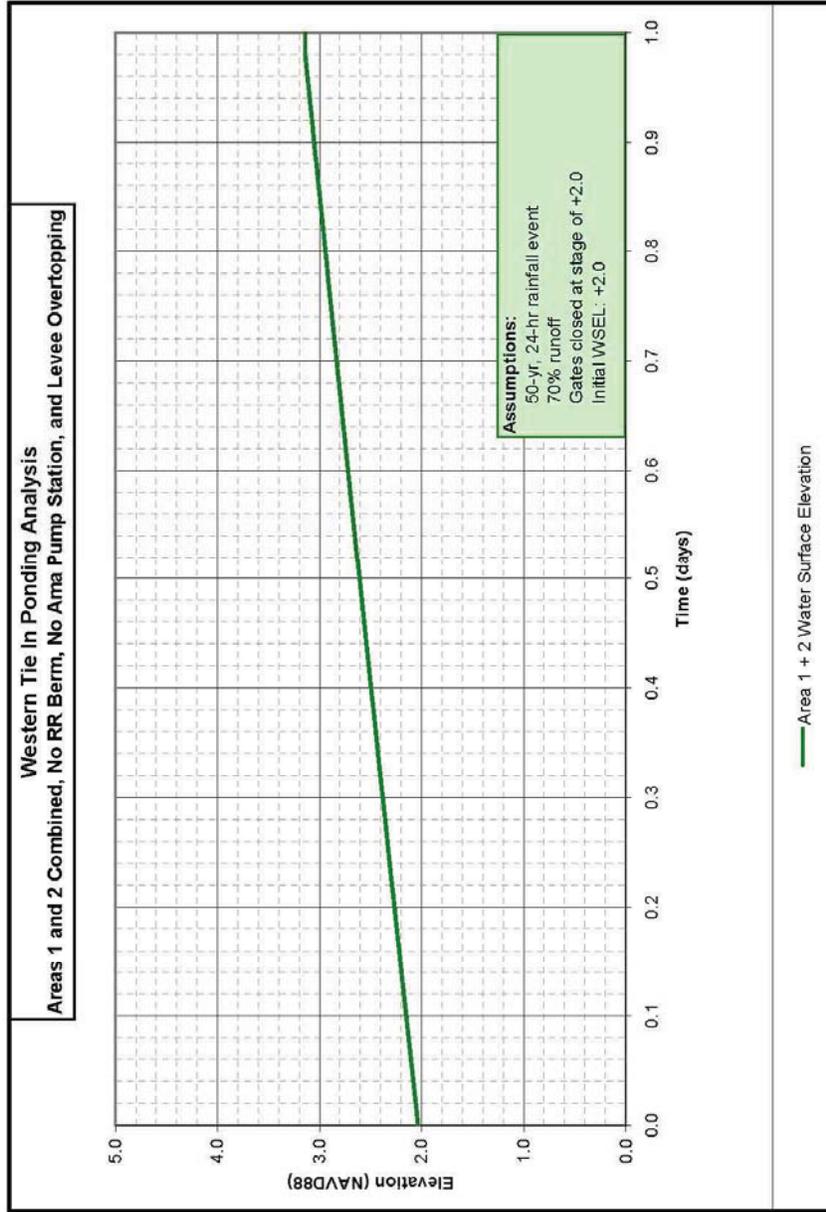


Figure 36. Western Tie-In Ponding Analysis; Combined Areas; 50-yr, 24-hr Rainfall Event; With Overtopping

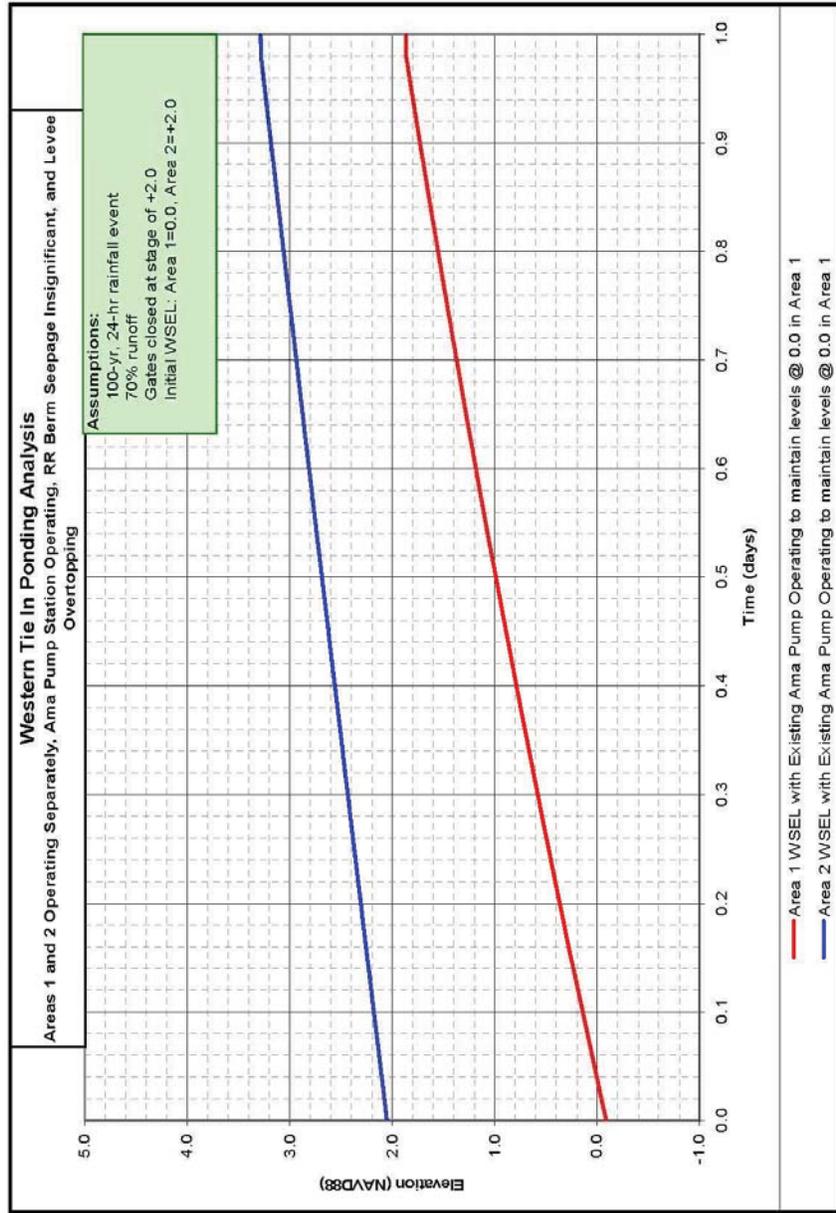


Figure 37. Western Tie-In Ponding Analysis; Separate Areas; 100-yr, 24-hr Rainfall Event; With Overtopping

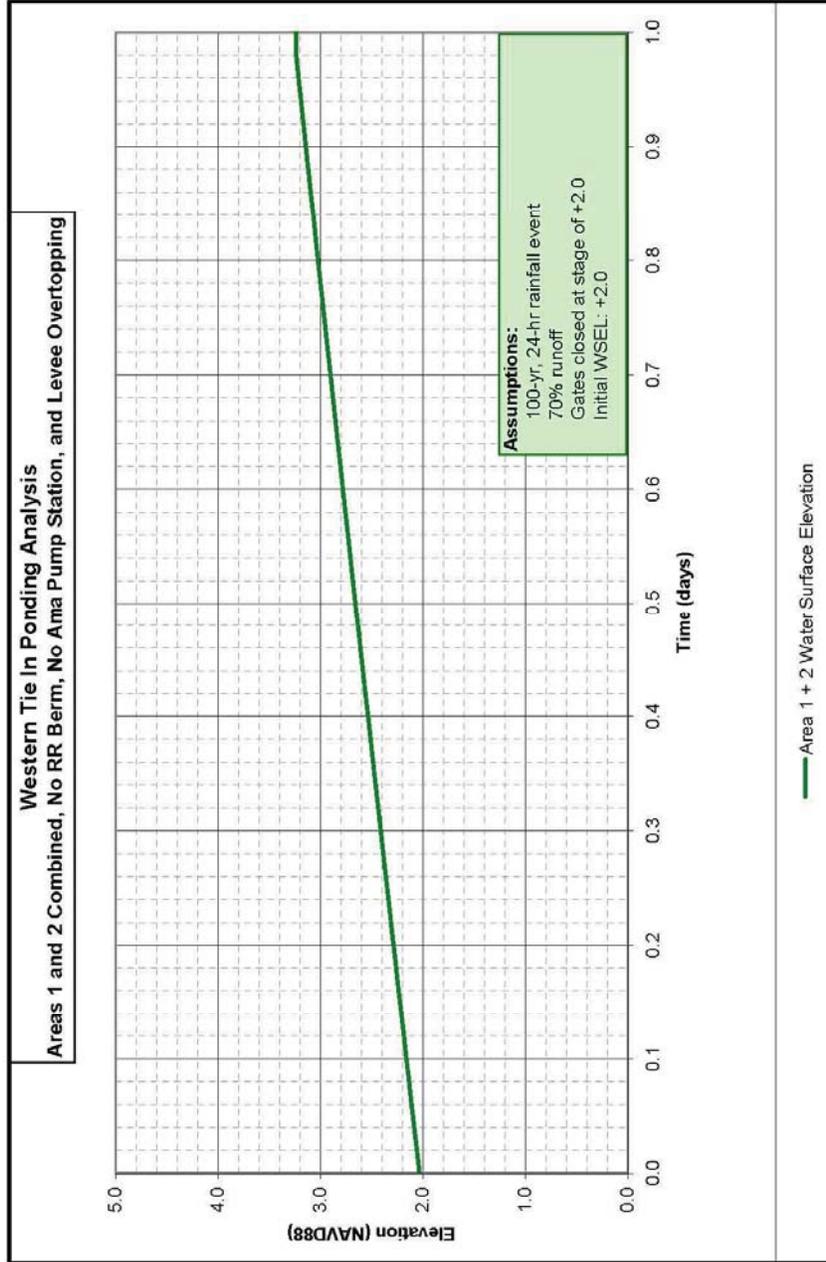


Figure 38. Western Tie-In Ponding Analysis; Combined Areas; 100-yr, 24-hr Rainfall Event; With Overtopping

Historic Hurricane Analysis: Ike (2008) and Isidore (2002)

Previous hurricanes were evaluated to estimate ponding levels had these storms occurred when the project was in place. Hurricane Ike was evaluated because it occurred recently, and high surge levels within the project area occurred. Hurricane Ike made landfall in the New Orleans and Vicinity (NOV) 13 September 2008 at 2:00. Hurricane Isidore was also evaluated because significant rainfall occurred during the gate closure period. Hurricane Isidore made landfall at NOV on 26 September 2002.

The analysis was performed by incorporating historic daily rainfall into the inundation model for the duration of the Sellers Canal sector gate closure. The duration of closure was defined as the time between 72 hours prior to landfall (gate closure) and when Sellers Canal stage dropped below +2.0 ft NAVD88 (gate open). It should be noted that overtopping of the levees was not included in the historic hurricane analysis. Table 4 shows model input parameters and final WSEL's for Hurricane Ike and Isidore. The results show the 204 cfs pump station has the capacity to keep the WSEL in Area 1 at 0.0 ft NAVD88. Also, the maximum interior WSEL comes from Hurricane Ike, even though Isidore produced larger rainfall. This is due to the larger storm surge associated with Ike and thus the higher initial interior WSEL.

Table 4. Historic Hurricane Model Inputs and Results

| Hurricane | Gate Closure (Start of Analysis) | Gate Open (End of Analysis) | Closure Duration | Rain Total (in) | Final WSEL (ft NAVD88) | | |
|-----------|--|-----------------------------------|---------------------|-----------------------|------------------------|--------|-------------|
| | | | | | Area 1 | Area 2 | Area 1+2 |
| Ike | 9/10/2008 | 9/17/2008 | 7 days | 2.26 | -0.09 | 1.55 | 1.54 |
| Isidore | 9/23/2002 | 9/29/2002 | 6 days | 11.51 | -0.09 | 1.3 | 1.26 |

Figure 39 through Figure 42 shows the WSEL for Hurricanes Ike and Isidore for the combined and separate areas.

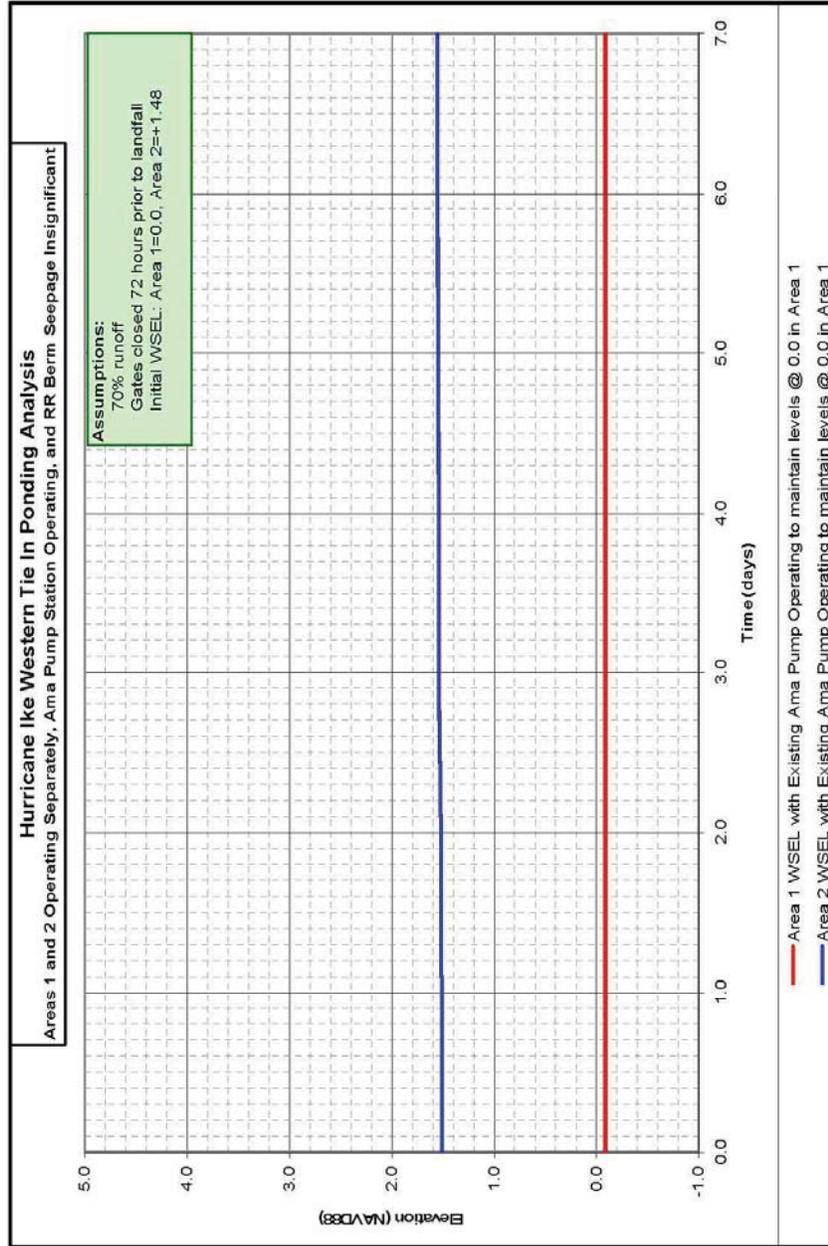


Figure 39: Hurricane Ike Western Tie-In Ponding Analysis, Separate Areas

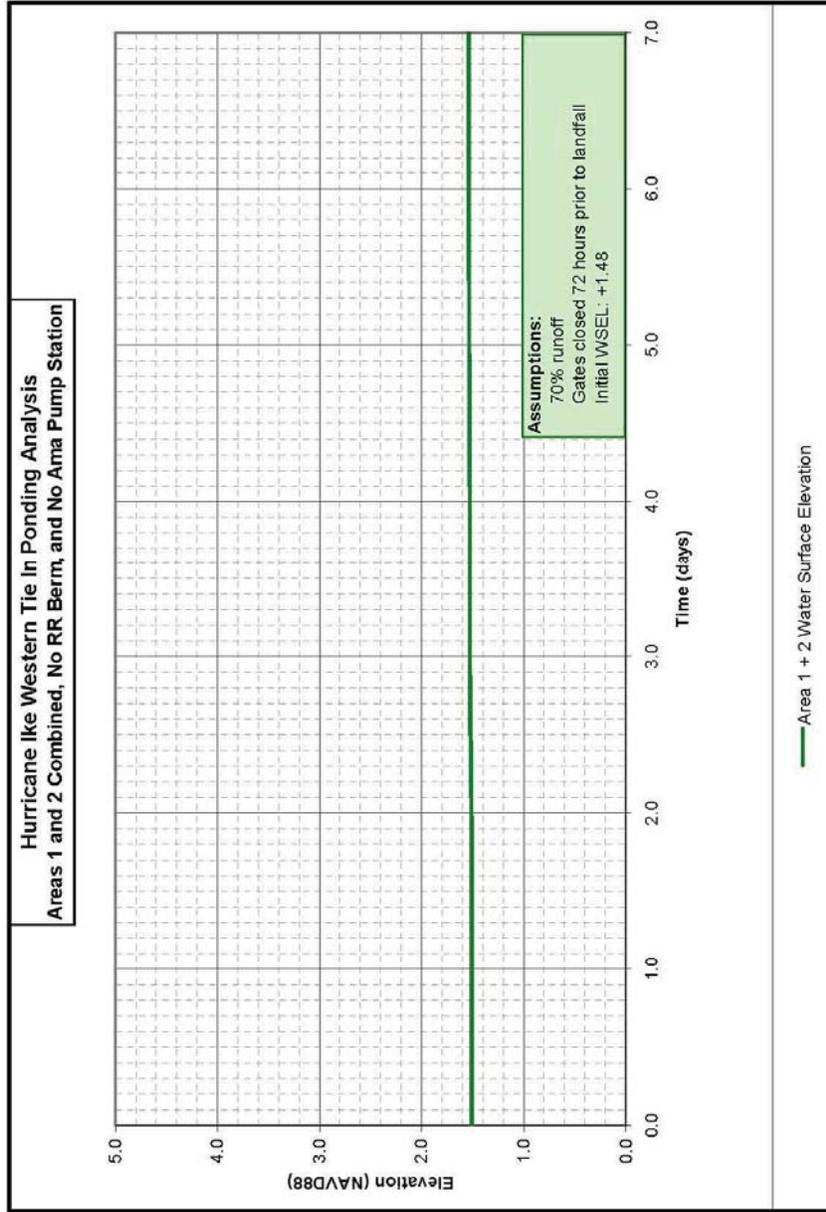
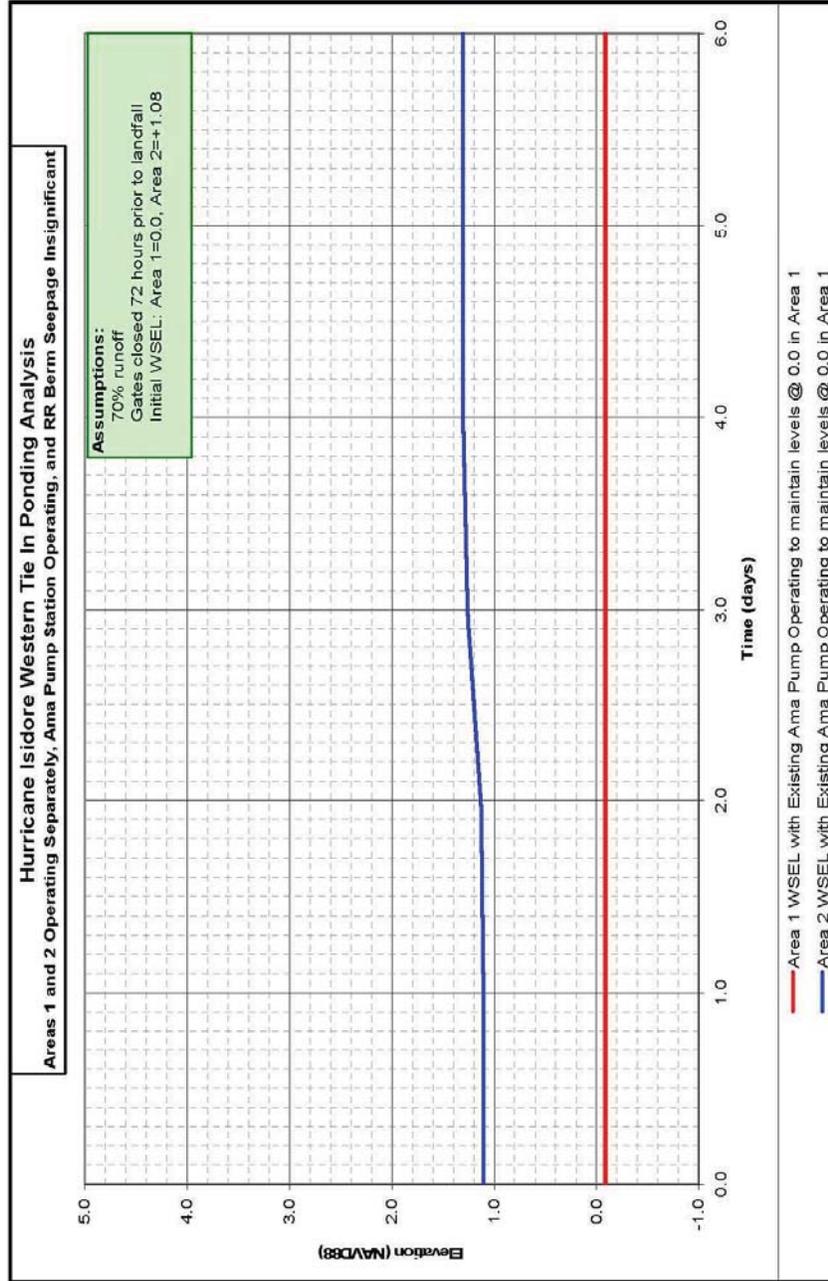


Figure 40. Hurricane Ike Western Tie-In Ponding Analysis, Combined Areas



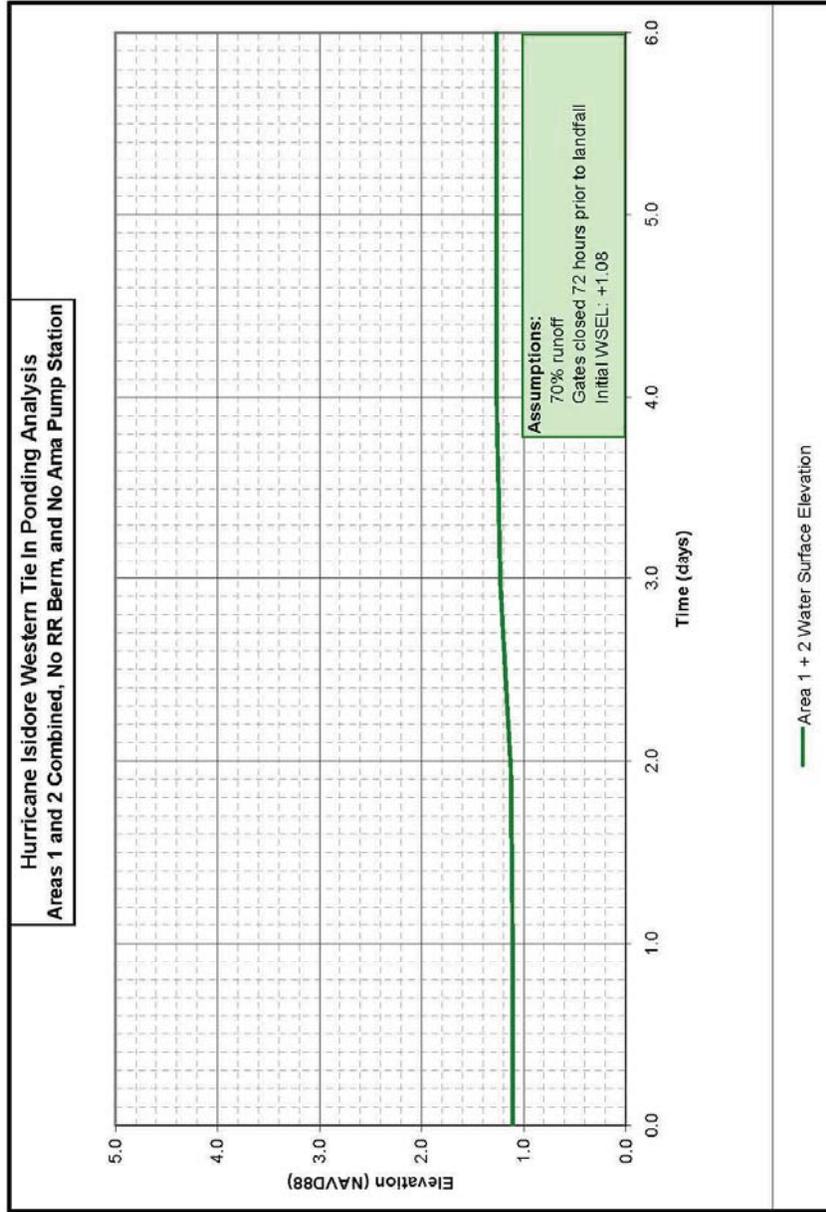


Figure 42. Hurricane Isidore Western Tie-In Ponding Analysis, Combined Areas

APPENDIX G - INTERAGENCY CORRESPONDENCE



**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Ave. South
St. Petersburg, FL 33701
(727) 824-5312, FAX (727) 824-5309
<http://sero.nmfs.noaa.gov>

NOV - 8 2007

F/SER3:TM

Ms. Elizabeth Wiggins
Chief, Environmental Planning and
Compliance Branch
Department of the Army
New Orleans District, Corps of Engineers
P. O. Box 60267
New Orleans, LA 70160-0267

Dear Ms. Wiggins:

This correspondence responds to the Department of the Army's letter dated October 26, 2007, regarding the proposed Levee and Floodwall Replacement Projects, IERs 15, 16, and 17 in St. Charles and Jefferson Parishes, Louisiana.

As requested, enclosed is a list of federally-protected species under the jurisdiction of the National Marine Fisheries Service for the state of Louisiana.

We look forward to continued cooperation with the Army in conserving our endangered and threatened resources. If you have any questions regarding the ESA consultation process, please contact Mr. Robert Hoffman, fishery biologist, at (727) 824-5312, or by e-mail at Robert.Hoffman@noaa.gov.

Sincerely,

A handwritten signature in cursive script, appearing to read "D. Bernhart".

David M. Bernhart
Assistant Regional Administrator
Protected Resources Division

Enclosure

File: 1514-22.F.1.LA





Endangered and Threatened Species and Critical Habitats
under the Jurisdiction of the NOAA Fisheries Service

Louisiana

| Listed Species | Scientific Name | Status | Date Listed |
|--------------------------|-------------------------------------|-------------------------|-------------|
| Marine Mammals | | | |
| blue whale | <i>Balaenoptera musculus</i> | Endangered | 12/02/70 |
| finback whale | <i>Balaenoptera physalus</i> | Endangered | 12/02/70 |
| humpback whale | <i>Megaptera novaeangliae</i> | Endangered | 12/02/70 |
| sei whale | <i>Balaenoptera borealis</i> | Endangered | 12/02/70 |
| sperm whale | <i>Physeter macrocephalus</i> | Endangered | 12/02/70 |
| Turtles | | | |
| green sea turtle | <i>Chelonia mydas</i> | Threatened ¹ | 07/28/78 |
| hawksbill sea turtle | <i>Eretmochelys imbricata</i> | Endangered | 06/02/70 |
| Kemp's ridley sea turtle | <i>Lepidochelys kempii</i> | Endangered | 12/02/70 |
| leatherback sea turtle | <i>Dermochelys coriacea</i> | Endangered | 06/02/70 |
| loggerhead sea turtle | <i>Caretta caretta</i> | Threatened | 07/28/78 |
| Fish | | | |
| Gulf sturgeon | <i>Acipenser oxyrinchus desotoi</i> | Threatened | 09/30/91 |

Designated Critical Habitat

Gulf Sturgeon: A final rule designating Gulf sturgeon critical habitat was published on March 19, 2003 (68 FR 13370) and 14 geographic areas (units) among the Gulf of Mexico rivers and tributaries were identified. Maps and details regarding the final rule can be found at alabama.fws.gov/gs

Species Proposed for Listing

None

Proposed Critical Habitat

None

¹ Green turtles are listed as threatened, except for breeding populations of green turtles in Florida and on the Pacific Coast of Mexico, which are listed as endangered.



Louisiana

| Candidate Species ² | Scientific Name |
|--------------------------------|-----------------|
| None | |

| Species of Concern ³ | Scientific Name |
|---------------------------------|---------------------------------|
| Fish | |
| dusky shark | <i>Carcharhinus obscurus</i> |
| night shark | <i>Carcharhinus signatus</i> |
| saltmarsh topminnow | <i>Fundulus jenkinsi</i> |
| sand tiger shark | <i>Carcharias taurus</i> |
| speckled hind | <i>Epinephelus drummondhayi</i> |
| Warsaw grouper | <i>Epinephelus nigritus</i> |
| white marlin | <i>Tetrapturus albidus</i> |
| Invertebrates | |
| ivory bush coral | <i>Oculina varicosa</i> |

² The Candidate Species List has been renamed the Species of Concern List. The term "candidate species" is limited to species that are the subject of a petition to list and for which NOAA Fisheries Service has determined that listing may be warranted (69 FR 19975).

³ Species of Concern are not protected under the Endangered Species Act, but concerns about their status indicate that they may warrant listing in the future. Federal agencies and the public are encouraged to consider these species during project planning so that future listings may be avoided.

BOBBY JINDAL
GOVERNOR



PEGGY M. HATCH
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

APR 14 2010

U.S. Army Corps of Engineers- New Orleans District
CEMVN-PDR-RS
P.O. Box 60267
New Orleans, LA 70160-0267

Attention: Beth Nord

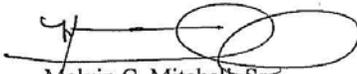
RE: Water Quality Certification (WQC 090212-06/AI 163172/CER 20100001)
Individual Environmental Report (IER) #16
West Bank & Vicinity, Western Tie-In
Jefferson & St. Charles Parishes

Dear Ms. Nord:

The Department has reviewed your revised application for the construction of the West Bank & Vicinity, Western Tie-In project (IER #16), in the vicinity of Ama, Louisiana. This revision concerns the replacement of the US Hwy. 90 pump station, the construction of a ramp at LA Hwy. 18, the degradation of a section of the Davis Pond Guide Levee, the placement of additional rip rap for bankline stabilization at various locations, the maintenance of several access roads along US Hwy. 90, and the relocation of several utility lines.

Based on the information provided in the application, the Department made a determination that the requirements for a Water Quality Certification have been met and concludes that the placement of the fill material will not violate water quality standards of Louisiana as provided for in LAC 33:IX.Chapter 11. Therefore, the Department hereby issues a Water Quality Certification to the U.S. Army Corps of Engineers.

Sincerely,


Melvin C. Mitchell, Sr.
Administrator
Water Permits Division
MCM/jjp

Post Office Box 4313 • Baton Rouge, Louisiana 70821-4313 • Phone 225-219-3181 • Fax 225-219-3309
www.deq.louisiana.gov



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701

April 15, 2010

F/SER46/LA:jk
225/389-0508

Ms. Joan Exnicios
Environmental Planning and Compliance Branch
Planning, Programs, and Management Division
New Orleans District, U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Ms. Exnicios:

NOAA's National Marine Fisheries Service (NMFS) has received your letter dated April 12, 2010, re-initiating coordination under the Magnuson-Stevens Fishery Conservation and Management Act for revisions to the Individual Environmental Report (IER) #16 project. Your letter transmitted a document describing recent revisions being proposed to this flood control project. Those revisions include degrading a section of the eastern Davis Pond guide levee, constructing temporary detours on Louisiana Highway 90, adding bank stabilization to closures on the Outer Cataouatche Canal, and relocation of some utilities.

In our review of the file for this project, we find that we have never indicated to the New Orleans District that the project area was categorized as essential fish habitat. As such, re-initiating coordination under the Magnuson-Stevens Fishery Conservation and Management Act is not necessary. Based on our review of the document transmitted with your letter, it appears the proposed revisions would increase the acreage of wetlands impacted by construction activities. It is our understanding that we will be able to review and comment on the proposed project revisions in a supplemental IER #16 document to be provided in the future. As such, NMFS will review, and if necessary, provide comments on those revisions upon receipt of the supplemental IER #16 report.

We appreciate the coordination effort on this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Myles M. Croom".

for Myles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

c:
FWS, Lafayette, Holland
EPA, Dallas, Mick
LA DWF, Balkum
LA DNR, Pecot
F/SER46, Swafford
F/SER4, Dale
Files



United States Department of Agriculture



Natural Resources Conservation Service
14246 US Hwy. 90
P. O. Box 531
Boutte, LA 70039
985-758-2162 Ext. 3

April 22, 2010

Tammy Gilmore
Biologist
504-862-1002
New Orleans District
U.S. Army Corps of Engineers

RE: Prime Farmland Determination for the IERS 16 WBV Western Tie-In in St. Charles and Jefferson Parishes, Louisiana

Dear Tammy,

Please find attached Form AD-1006, Farmland Conversion Impact Rating form for the IERS 16 WBV Western Tie-In in St. Charles and Jefferson Parishes, Louisiana.

This site is located in an area that has prime farmlands. The soil located on this site is Cancienne silt loam (Cc), Schriever silty clay loam (Sa) and Cancienne silty clay loam. I have documented on the AD-1006 that farmlands will be impacted from the IERS 16 WBV Western Tie-In in St. Charles and Jefferson Parishes, Louisiana.

If I can be of any further assistance, please do not hesitate to call me at 985-758-2162 x=3.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Trusclair".

Michael Trusclair
District Conservationist
New Orleans Field Office

The Natural Resources Conservation Service provides leadership in a partnership effort to help people

U.S. Department of Agriculture
FARMLAND CONVERSION IMPACT RATING

| | | | |
|---|---|--|---------------------|
| PART I (To be completed by Federal Agency) | | Date Of Land Evaluation Request 4/16/10 | |
| Name Of Project IERS 16 WBV Western Tie-in | | Federal Agency Involved US Army Corps of Engineers | |
| Proposed Land Use Hurricane Storm Damage Risk Reduction System | | County And State Jefferson and St. Charles Parishes | |
| PART II (To be completed by NRCS) | | Date Request Received By NRCS 4/15/2010 | |
| Does the site 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 checked="" type="checkbox"/> No <input type="checkbox"/> | Acres irrigated 671 |
| Major Crop(s) Soybeans, Sugarcane | Farmable Land In Govt. Jurisdiction Acres: 32,539 % 16.9 | Amount Of Farmland As Defined In FPPA Acres: 32,539 % 16.9 | |
| Name Of Land Evaluation System Used Soil Survey | Name Of Local Site Assessment System none | Date Land Evaluation Returned By NRCS 4/19/2010 | |
| PART III (To be completed by Federal Agency) | | Alternative Site Rating | |
| | | Site A | Site B |
| A. Total Acres To Be Converted Directly | 30.0 | | |
| B. Total Acres To Be Converted Indirectly | | | |
| C. Total Acres In Site | 30.0 | 0.0 | 0.0 |
| PART IV (To be completed by NRCS) Land Evaluation Information | | | |
| A. Total Acres Prime And Unique Farmland | 30.0 | | |
| B. Total Acres Statewide And Local Important Farmland | 0 | | |
| C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted | .00092 | | |
| D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value | 100 | | |
| PART V (To be completed by NRCS) Land Evaluation Criterion | | | |
| Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points) | 85 | 0 | 0 |
| PART VI (To be completed by Federal Agency) | | | |
| Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(o)) | Maximum Points | | |
| 1. Area In Nonurban Use | | | |
| 2. Perimeter In Nonurban Use | | | |
| 3. Percent Of Site Being Farmed | | | |
| 4. Protection Provided By State And Local Government | | | |
| 5. Distance From Urban Builtup Area | | | |
| 6. Distance To Urban Support Services | | | |
| 7. Size Of Present Farm Unit Compared To Average | | | |
| 8. Creation Of Nonfarmable Farmland | | | |
| 9. Availability Of Farm Support Services | | | |
| 10. On-Farm Investments | | | |
| 11. Effects Of Conversion On Farm Support Services | | | |
| 12. Compatibility With Existing Agricultural Use | | | |
| TOTAL SITE ASSESSMENT POINTS | 160 | 0 | 0 |
| PART VII (To be completed by Federal Agency) | | | |
| Relative Value Of Farmland (From Part V) | 100 | 0 | 0 |
| Total Site Assessment (From Part VI above or a local site assessment) | 160 | 0 | 0 |
| TOTAL POINTS (Total of above 2 lines) | 260 | 0 | 0 |
| Site Selected: | Date Of Selection | Was A Local Site Assessment Used? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |
| Reason For Selection: | | | |

(See Instructions on reverse side)
This form was electronically produced by National Production Services Staff

Form AD-1006 (10-83)

Farmland Classification—St. Charles Parish, Louisiana

IERS 16 WBV Western Tie In

Farmland Classification

| Farmland Classification— Summary by Map Unit — St. Charles Parish, Louisiana | | | | |
|--|---------------------------|------------------------------|--------------|----------------|
| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
| Cc | Cancienne silt loam | All areas are prime farmland | 0.8 | 2.9% |
| Cm | Cancienne silty clay loam | All areas are prime farmland | 2.6 | 9.1% |
| Sa | Schriever silty clay loam | All areas are prime farmland | 25.0 | 88.0% |
| Totals for Area of Interest | | | 28.4 | 100.0% |

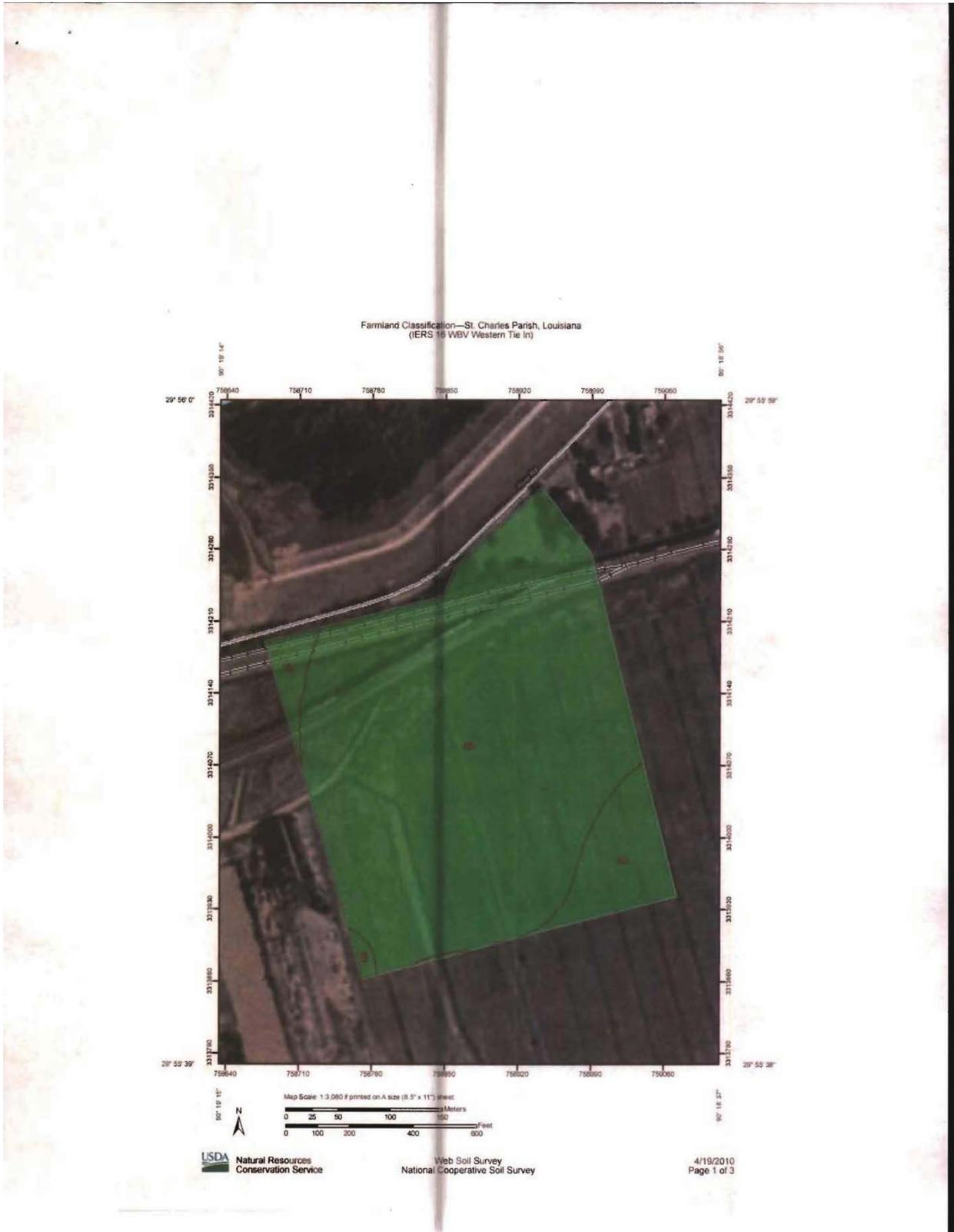
Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower



Farmland Classification—St. Charles Parish, Louisiana

IERS 16 WBV Western Tie-In

Farmland Classification

| Farmland Classification— Summary by Map Unit — St. Charles Parish, Louisiana | | | | |
|--|---------------------|------------------------------|--------------|----------------|
| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
| Cc | Canclenne silt loam | All areas are prime farmland | 5.1 | 100.0% |
| Totals for Area of Interest | | | 5.1 | 100.0% |

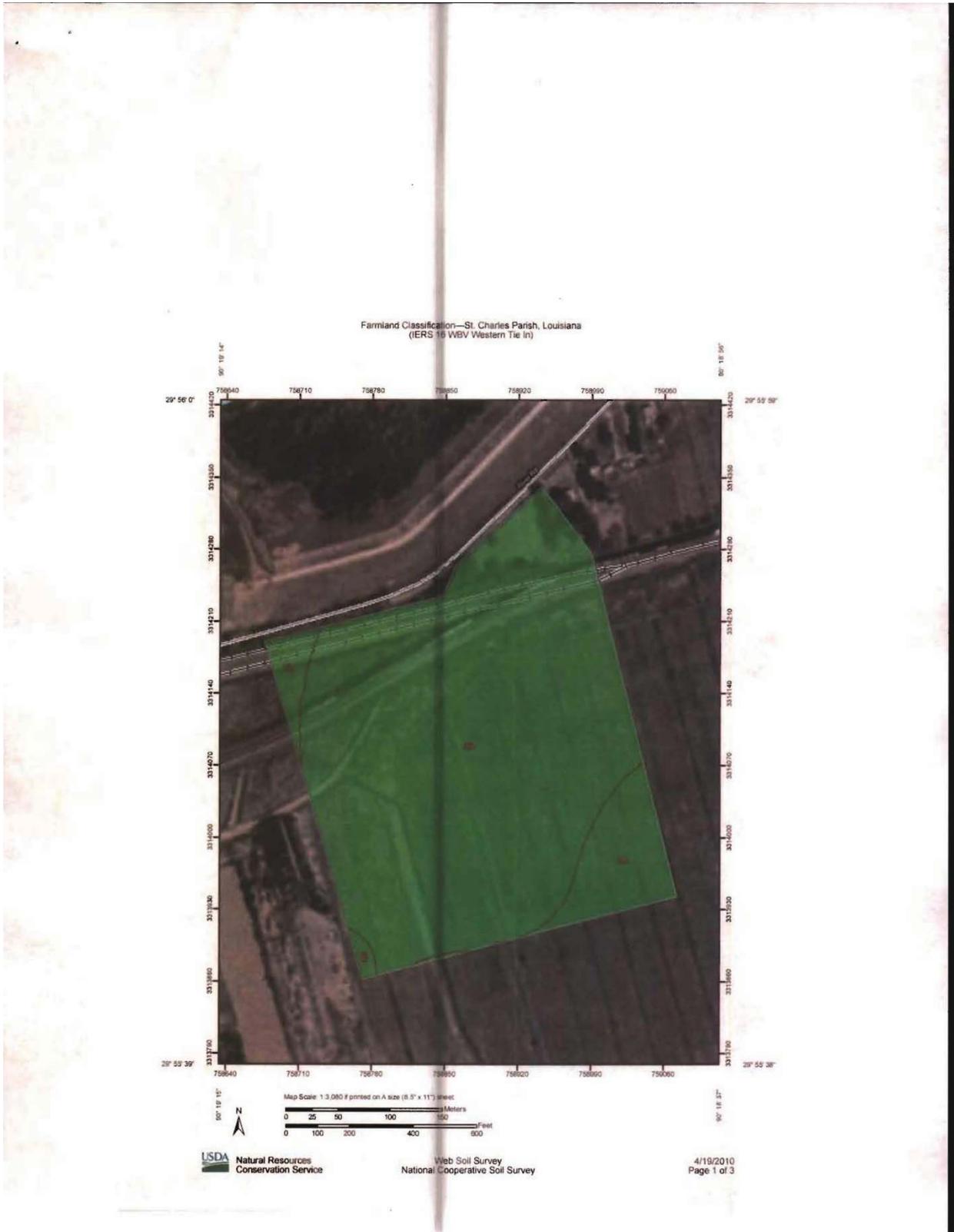
Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower





ALABAMA-COUSHATTA TRIBE OF TEXAS

571 State Park Rd 56 • Livingston, Texas 77351 • (936) 563-1100

May 4, 2010

Michael Swanda
New Orleans District, Corps of Engineers
Attn: CEMVN-PM-R
P.O. Box 60267
New Orleans, LA 70160-0267

Dear Mr. Swanda:

On behalf of Mikko Oscola Clayton Sylestine and the Alabama-Coushatta Tribe, our appreciation is expressed on your efforts to consult us regarding Individual Environmental Report #16 Supplemental for Jefferson and St. Charles Parishes.

Our Tribe maintains ancestral associations within Louisiana despite the absence of written records to completely identify Tribal activities, villages, trails, or grave sites. However, it is our objective to ensure significances of Native American ancestry, especially of the Alabama-Coushatta Tribe, are administered with the utmost attention.

Upon review of your April 20, 2010 submission, no known impacts to religious, cultural, or historical assets of the Alabama-Coushatta Tribe of Texas are anticipated with this proposal and we concur with your "no historic properties affected" recommendation. In the event of inadvertent discovery of human remains and/or archaeological artifacts, activity in proximity to the location must cease and appropriate authorities, including our office, notified without delay.

Should you require additional assistance, please do not hesitate to contact us.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Bryant J. Celestine".

Bryant J. Celestine
Historic Preservation Officer

Telephone: 936 - 563 - 1181

celestine.bryant@actribe.org

Fax: 936 - 563 - 1183



United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506



May 7, 2010

Colonel Alvin B. Lee
District Engineer
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Lee,

Please reference an April 2 2010, letter, from Ms. Joan M. Exnicios, requesting our review of the U.S. Army Corps of Engineers' (Corps) proposed revisions to the 100 Year Hurricane Protection Project for Individual Environmental Report (IER) #16 in Jefferson and St. Charles Parishes, Louisiana. In that letter, the Corps requests the Service's concurrence with the Corps determination that there would be no adverse effects to any threatened or endangered species or their critical habitat due to those modifications. That project would involve work such as utility relocations, and construction of new ramp structures and permanent pump stations. These improvements are necessary to provide 100-year level flood protection for the New Orleans Metropolitan area. The U.S. Fish and Wildlife Service (Service) has reviewed the information provided, and offers the following comments in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), the Migratory Bird Treaty Act (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.), and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

According to the Corps' letter, several new features would be added to the existing construction plan including relocation of utilities, road detours, new road ramps, pump station relocation, and the degradation of a section of the Davis Pond Diversion eastern guide levee to restore natural hydrology. These modifications would affect levee, maintained right of way, and bottomland hardwood habitat. Impacts to fish and wildlife resources will be addressed in a supplemental Fish and Wildlife Coordination Act Report. The proposed modifications are located in near proximity to the proposed project features described in IER #16.

The Service is unaware of any known threatened or endangered species in the areas proposed for project modifications. Based on our review, the Service concurs with your determinations that the proposed modifications to project features in IER #16 will not adversely affect any threatened or endangered species or their critical habitat.

The proposed project would be located in an area where waterbird nesting colonies may occur. The Service recommends that a qualified biologist inspect the proposed work sites for the presence of undocumented waterbird nesting colonies during the nesting season (e.g. February through September depending on the species). If colonies exist, work should not be conducted within 1,000 feet of the colony during the nesting season

We appreciate the opportunity to review the proposed modifications to the 100 year hurricane protection plans for IER #16. If you need further assistance or have questions regarding this letter, please contact David Castellanos (337/291-3112) of this office.

Sincerely,



James F. Boggs
Supervisor
Louisiana Field Office

cc: EPA, Dallas, TX
NOAA, Baton Rouge, LA
LDWF, Natural Heritage, Baton Rouge, LA
LDNR, CMD, Baton Rouge, LA
OCPR, Baton Rouge, LA



Choctaw Nation of Oklahoma

P.O. Box 1210 • Durant, OK 74702-1210 • (580) 924-8280

Gregory E. Pyle
Chief

Gary Batton
Assistant Chief

May 10, 2010

Joan M. Exnicios
Dept of the Army
New Orleans Dist, Corp of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Joan M. Exnicios:

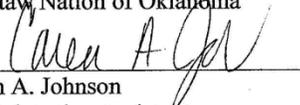
We have reviewed the following proposed project (s) as to its effect regarding religious and/or cultural significance to historic properties that may be affected by an undertaking of the projects area of potential effect.

Project Description: IER #16 Supplemental, Jefferson and St. Charles Parishes, Louisiana

Comments: After review of the above-mentioned project(s), to the best of our knowledge, it will have no adverse effect on any historic properties in the project's area of potential effect. However, should construction activities expose human remains, buried archaeological materials such as chipped stone, tools, pottery, bone, glass or metal items, or should it uncover evidence of buried historic building materials such as rock foundations, brick, or hand-poured concrete, this office should be contacted immediately at 1-800-522-6170 ext. 2137.

Sincerely,

Terry D. Cole
Tribal Historic Preservation Officer
Choctaw Nation of Oklahoma

By: 
Caren A. Johnson
Administrative Assistant
Choctaw Nation of Oklahoma

CAJ:vr



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:

April 20, 2010

Regional Planning and
Environmental Division, South
New Orleans Environmental Branch
Attn: CEMVN-PDR-RN

Mr. Scott Hutcheson
State Historic Preservation Officer
Office of Cultural Development
Department of Culture, Recreation, and Tourism
P.O. Box 44247
Baton Rouge, Louisiana 70804

No known historic properties will be affected by this undertaking. This effect determination could change should new information come to our attention.

Phil Boggan 5-20-10
Phil Boggan Date
Deputy State Historic Preservation Officer

RE: Request to Continue Consultation Under Section 106 of the National Historic Preservation Act for the West Bank and Vicinity Hurricane Protection Project, Western Tie-in, Individual Environmental Report #16 Supplemental, Jefferson and St. Charles Parishes, Louisiana.

Dear Mr. Hutcheson:

The U.S. Army Corps of Engineers, Mississippi Valley Division, New Orleans District (CEMVN), is amending the Area of Potential Effects (APE) for the project area currently being studied under Individual Environmental Report #16 Supplemental, West Bank and Vicinity Hurricane Protection Project, Western Tie-in, Jefferson and St. Charles Parishes, Louisiana (Enclosure #1). This amendment includes two additional areas that will be used to relocate existing utilities and pipelines. Area #1 is located immediately south of the BN&SF Railroad line and crosses the APE at the Davis Pond Freshwater Diversion Canal (Enclosure #2). Area #2 is located immediately adjacent to the APE north of U.S. Highway 90 (See Enclosure #3).

In our letter to your office dated March 10, 2008, the CEMVN provided project documentation, evaluated the results of the initial cultural resources investigation of the project area, including all three project alternative alignments (Wells 2008a), and prepared a finding of "no historic properties affected" for the Alternative Alignment 2 APE. Your office concurred with our effect determination in a letter dated March 24, 2008. In our second letter to your office dated October 20, 2008, the CEMVN amended the APE by eliminating Alternative Alignment 2 as the proposed action and replacing it with Alternative Alignment 3. Utilizing the results of Douglas Wells' 2008 study and additional field reconnaissance information obtained by CEMVN archaeologists, the CEMVN found that proposed construction in the Alternative Alignment 3 APE would have no impact on cultural resources. Your office concurred with our "no historic properties affected" finding in a stamped letter dated December 11, 2008.



ALABAMA-COUSHATTA TRIBE OF TEXAS

571 State Park Rd 56 • Livingston, Texas 77351 • (936) 563-1100

May 28, 2010

Michael Swanda
New Orleans District, Corps of Engineers
Attn: CEMVN-PM-R
P.O. Box 60267
New Orleans, LA 70160-0267

Dear Mr. Swanda:

On behalf of Mikko Oscola Clayton Sylestine and the Alabama-Coushatta Tribe, our appreciation is expressed on your efforts to consult us regarding Individual Environmental Report #16 Supplemental (temporary bypass and utilities relocation) for Jefferson and St. Charles Parishes.

Our Tribe maintains ancestral associations within Louisiana despite the absence of written records to completely identify Tribal activities, villages, trails, or grave sites. However, it is our objective to ensure significances of Native American ancestry, especially of the Alabama-Coushatta Tribe, are administered with the utmost attention.

Upon review of your May 3, 2010 submission, no known impacts to religious, cultural, or historical assets of the Alabama-Coushatta Tribe of Texas are anticipated with this proposal and we concur with your "no historic properties affected" recommendation. In the event of inadvertent discovery of human remains and/or archaeological artifacts, activity in proximity to the location must cease and appropriate authorities, including our office, notified without delay.

Should you require additional assistance, please do not hesitate to contact us.

Respectfully submitted,


Bryant J. Celestine
Historic Preservation Officer

Telephone: 936 - 563 - 1181

celestine.bryant@actribe.org

Fax: 936 - 563 - 1183



United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506
June 1, 2010



Colonel Alvin B. Lee
District Engineer
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Lee:

Please reference the Individual Environmental Report #16 (IER #16) "Westbank and Vicinity, Western Tie-in, Jefferson and St. Charles Parishes, Louisiana", and the draft supplemental report IERS #16. Those studies were conducted in response to Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4) which instructed the Corps of Engineers (Corps) to proceed with engineering, design, and modification (and construction where necessary) of the Lake Pontchartrain and Vicinity (LPV) and the West Bank and Vicinity (WBV) Hurricane Protection Projects so those projects would provide 100-year hurricane protection. This report contains a description of the existing fish and wildlife resources of the project area, discusses future with and without project habitat conditions, identifies fish and wildlife-related impacts of the proposed project, and provides recommendations to avoid, reduce, or compensate for impacts to fish and wildlife resources.

Procedurally, project construction has been authorized in the absence of the report of the Secretary of the Interior that is required by Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). In this case, the authorization process has prevented our agencies from following the normal procedures for fully complying with the FWCA. The FWCA requires that our Section 2(b) report be made an integral part of any report supporting further project authorization or administrative approval. Therefore, to fulfill the coordination and reporting requirements of the FWCA, the Service will be providing a 2(b) report for each IER. This report addresses IER 16 and IERS 16 which are the plan and supplemental plan, respectively, for the western terminus of the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS).

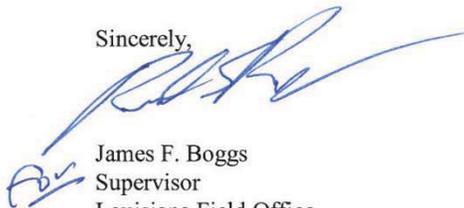
This draft report incorporates and supplements our Fish and Wildlife Coordination Act (FWCA) Reports that addressed impacts and mitigation features for the WBV Hurricane Protection Project (November 10, 1986, August 22, 1994, November 15, 1996, and June 20, 2005) and the November 26, 2007 draft programmatic FWCA Report that addresses the hurricane protection

improvements authorized in Supplemental 4.

This report does not constitute the report of the Secretary of the Interior as required by Section 2(b) of the FWCA. This draft report has been provided to the Louisiana Department of Wildlife and Fisheries and the National Marine Fisheries Service for their review and comments.

If you or your staff has any questions regarding our comments, please contact David Castellanos (337-291-3112) of this office.

Sincerely,



James F. Boggs
Supervisor
Louisiana Field Office

cc: Ms. Beth Nord, USACE, NOD
EPA, Dallas, TX
NMFS, Baton Rouge, LA
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA
Office of Coastal Protection and Restoration, Baton Rouge, LA
LADNR (CMD), Baton Rouge, LA

Draft
Supplemental Fish and Wildlife Coordination Act Report
for
Individual Environmental Report 16(IER 16) and Supplemental IERS 16

Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the
Global War on Terror, and Hurricane Recovery, 2006 (Supplemental4)



PROVIDED TO
NEW ORLEANS DISTRICT
U.S. ARMY CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

PREPARED BY
DAVID CASTELLANOS
FISH AND WILDLIFE BIOLOGIST

U.S. FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
LAFAYETTE, LOUISIANA
June 2010

U.S. FISH AND WILDLIFE SERVICE – SOUTHEAST REGION

Executive Summary

The proposed project was authorized by Supplemental 4 which instructed the Corps of Engineers (Corps) to proceed with engineering, design, and modification (and construction where necessary) of the Lake Pontchartrain and Vicinity (LPV) and the West Bank and Vicinity (WBV) Hurricane Protection Projects so those projects would provide 100-year hurricane protection. This report addresses Individual Environmental Report (IER) 16, and IERS 16 which are the plan and supplemental plan, respectively, for the western terminus of the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS). Our report contains a description of the existing fish and wildlife resources of the project area, discusses future with and without project habitat conditions, identifies fish and wildlife-related impacts of the proposed project, and provides recommendations to avoid, reduce, or compensate for impacts to fish and wildlife resources. This report incorporates and supplements our Fish and Wildlife Coordination Act (FWCA) Reports that addressed impacts and mitigation features for the WBV Hurricane Protection Project (November 10, 1986, August 22, 1994, November 15, 1996, and June 20, 2005) and the November 26, 2007 draft programmatic FWCA Report that addresses the hurricane protection improvements authorized in Supplemental 4.

The approximate project-area boundaries are South Kenner Road on the east (Jefferson Parish); the Davis Pond Freshwater Diversion Project Canal on the west (St. Charles Parish); South Kenner Road at the Union Pacific and Burlington Northern Santa Fe (BNSF) Railroad Lines and the Mississippi River on the north, and the Outer Cataouatche Canal and the Davis Pond Freshwater Diversion Project to the south.

The project area is composed of mostly bottomland hardwood and freshwater marsh habitats. These habitats support a variety of birds, mammals, and fishes, including various waterfowl, wading birds, furbearers, and sport and commercial fish.

Various alternative alignments and structures (i.e., floodwalls and levees) were evaluated for the protection needed. The Corps' selection of the proposed project was based upon a detailed analysis that included evaluating risk and reliability, construction schedule, cost, right-of-way requirements, environmental impacts and operations and maintenance needs.

The proposed project (Alternative 3) is the South of Outer Cataouatche Canal to Davis Pond Tie-In. This alternative would consist of approximately 23,600 linear feet of levee, floodwall, and closure structures constructed to elevations of +13.5 to +15.5 feet North American Vertical Datum 88 (NAVD88).

The Service evaluated the three alternatives proposed for study and recommends the selection of Alternative 1 because its direct impacts are less than the proposed project (Alternative 3) in terms of AAHUs, and it does not have the potential long term indirect development impacts of Alternative 2 or Alternative 3 (proposed plan). However, construction of the flood protection levee even as proposed would provide flood protection to meet the Supplemental 4 authorization; therefore, the Service does not object to the construction of the proposed project provided the

following fish and wildlife conservation recommendations are implemented concurrently with project implementation:

1. The Corps shall provide mitigation for impacts to BLH and fresh marsh habitat to the extent determined for the project plan ultimately selected. With construction of the proposed project 157.7 acres of BLH and 134.1 acres of fresh marsh would be impacted requiring mitigation for 70.38 AAHUs of BLH and 65.5 AAHUs of fresh marsh.
2. Flood protection and ancillary features such as staging areas and access roads should be designed and positioned so that destruction of wetlands and non-wet bottomland hardwoods are avoided or minimized to the greatest extent possible.
3. The enclosure of wetlands within new levee alignments should be minimized to the fullest extent. When enclosure of wetlands is unavoidable, non-development easements on enclosed wetlands should be acquired, and hydrologic connections with adjacent, unenclosed wetlands should be maintained. Such actions will serve to minimize secondary impacts from development and hydrologic alteration.
4. The Service recommends that the previous induced development study examine potential development over the period of analysis (i.e. 50 years) to be consistent with the Principles and Guidelines. Information about potential development of the area in question derived from this analysis would be used to determine mitigation requirements.
5. Water control structures should be designed to allow rapid opening in the absence of an offsite power source after a storm passes and water levels return to pre-storm levels.
6. Flood protection structures should include shoreline baffles and/or ramps (e.g., rock rubble, articulated concrete mat) that slope up to the structure invert to enhance organism passage. Various ramp designs should be considered, and coordination should continue with the natural resource agencies to ensure fish passage features are fully incorporated to the extent practicable.
7. Flood protection water control structures should remain fully open except during storm events, unless otherwise determined by the natural resource agencies.
8. Due to some of the proposed project features, the drainage capacity of the area between U.S. Highway 90 (U.S. 90) and the proposed levee will be reduced. The Service is concerned about the potential for ponding in the area and subsequent impacts to wetland vegetation and to U.S. 90. The Service recommends that the Corps undertake additional hydrologic studies to determine the effects of those drainage capacity reductions.

9. Any proposed change in plan features or mitigation should be coordinated in advance with the Service, the National Marine Fisheries Service (NMFS), the Louisiana Department of Wildlife and Fisheries (LDWF), the Environmental Protection Agency (EPA) and the Office of Coastal Protection and Restoration (OCPR).
10. If a proposed project feature is changed significantly or is not implemented within one year of the date of our Endangered Species Act consultation letter, we recommend that the Corps reinitiate coordination with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.

TABLE OF CONTENTS

| | |
|--|-----------|
| INTRODUCTION..... | 1 |
| DESCRIPTION OF THE STUDY AREA..... | 1 |
| FISH AND WILDLIFE RESOURCES..... | 2 |
| FUTURE FISH AND WILDLIFE RESOURCES..... | 2 |
| THREATENED AND ENDANGERED SPECIES..... | 2 |
| DESCRIPTION OF SELECTED PLAN..... | 2 |
| ALTERNATIVES UNDER CONSIDERATION | 5 |
| NO ACTION..... | 5 |
| ALTERNATIVE 1..... | 5 |
| ALTERNATIVE 2..... | 5 |
| DESCRIPTION OF SUPPLEMENTAL MODIFICATIONS..... | 5 |
| LOUISIANA HIGHWAY 18 RAMP..... | 5 |
| EASTERN DAVIS POND GUIDE LEVEE DEGRADATION..... | 9 |
| BANK STABILIZATION FOR OUTER CATAOUATCHE CANAL CLOSURES..... | 9 |
| TEMPORARY DETOUR AS PERMANENT ACCESS FOR HWY 90..... | 10 |
| RELOCATION OF UTILITIES..... | 10 |
| PUMP STATION DEMOLITION AND CONSTRUCTION..... | 10 |
| EVALUATION METHODS FOR SELECTED PLAN AND ALTERNATIVES | 11 |
| IMPACTS OF SELECTED PLAN AND SUPPLEMENTAL MODIFICATIONS | 11 |
| SELECTED PLAN..... | 11 |
| SUPPLEMENTAL MODIFICATIONS..... | 12 |
| FISH AND WILDLIFE CONSERVATION MEASURES | 13 |
| COMPENSATORY MITIGATION MEASURES | 13 |
| SERVICE POSITION AND RECOMMENDATIONS..... | 14 |
| LITERATURE CITED | 16 |

INTRODUCTION

The proposed project was authorized by Supplemental 4 which instructed the Corps of Engineers (Corps) to proceed with engineering, design, and modification (and construction where necessary) of the Lake Pontchartrain and Vicinity (LPV) and the West Bank and Vicinity (WBV) Hurricane Protection Projects so those projects would provide 100-year hurricane protection. Procedurally, project construction has been authorized in the absence of the report of the Secretary of the Interior that is required by Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). In this case, the authorization process has prevented our agencies from following the normal procedures for fully complying with the FWCA. The FWCA requires that our Section 2(b) report be made an integral part of any report supporting further project authorization or administrative approval. Therefore, to fulfill the coordination and reporting requirements of the FWCA, the Service will be providing a 2(b) report for each IER. This report addresses Individual Environmental Report (IER) 16, and IERS 16 which are the plan and supplemental plan, respectively, for the western terminus of the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS). Our report contains a description of the existing fish and wildlife resources of the project area, discusses future with and without project habitat conditions, identifies fish and wildlife-related impacts of the proposed project, and provides recommendations to avoid, reduce, or compensate for impacts to fish and wildlife resources. This report incorporates and supplements our Fish and Wildlife Coordination Act (FWCA) Reports that addressed impacts and mitigation features for the WBV Hurricane Protection Project (November 10, 1986, August 22, 1994, November 15, 1996, and June 20, 2005) and the November 26, 2007 draft programmatic FWCA Report that addresses the hurricane protection improvements authorized in Supplemental 4.

This report does not constitute the report of the Secretary of the Interior as required by Section 2(b) of the FWCA; it will be submitted to the Louisiana Department of Wildlife and Fisheries and the National Marine Fisheries Service and their comments will be incorporated into the final report.

DESCRIPTION OF THE STUDY AREA

The approximate project-area boundaries are South Kenner Road on the east (Jefferson Parish); the Davis Pond Freshwater Diversion Project Canal on the west (St. Charles Parish); South Kenner Road at the Union Pacific and Burlington Northern Santa Fe (BNSF) Railroad Lines and the Mississippi River on the north, and the Outer Cataouatche Canal and the Davis Pond Freshwater Diversion Project to the south. Communities near the project area include Avondale and Waggaman to the east and South Kenner to the north. With the exception of landfills on the eastern portion of the project area and some development between U.S. Highway 90 (U.S. 90) and the Outer Cataouatche Canal, much of the study area remains undeveloped. These undeveloped areas consist of mostly bottomland hardwood (BLH) forests, freshwater marsh, scrub shrub, and mowed pasture.

FISH AND WILDLIFE RESOURCES

The Service provided a draft programmatic FWCA report on November 26, 2007, that contains a thorough discussion of the significant fish and wildlife resources (including habitats) that occur within the entire 100 year levee protection study area. For brevity, that discussion is incorporated by reference herein.

Mammals known to occur in the project-area bottomland hardwoods and marshes include mink, raccoon, swamp rabbit, nutria, river otter, and muskrat. Those habitats also support a variety of birds including herons, egrets, ibises, least bittern, rails, gallinules and various waterfowl. Forested and scrub-shrub habitats within the study area also provide habitat for many resident passerine birds and essential resting areas for many migratory songbirds including warblers, orioles, thrushes, vireos, tanagers, grosbeaks, buntings, flycatchers, and cuckoos (Lowery 1974).

Freshwater sport fishes present in the project area include largemouth bass, crappie, bluegill, redear sunfish, warmouth, channel catfish, and blue catfish. Other fishes likely to be present include yellow bullhead, freshwater drum, bowfin, carp, buffalo, and gar.

FUTURE FISH AND WILDLIFE RESOURCES

Although the area is experiencing subsidence like most of Louisiana's deltaic plain, it is expected that for the 50 year period of analysis most of the BLH will remain, with some shift toward more water tolerant BLH species (e.g. red maple) and also some conversion to swamp habitat. Fresh marsh is expected to remain and possibly increase in area. The Davis Pond Freshwater Diversion Project provides freshwater and sediment input to this area. These areas are expected to support fish and wildlife resources for the project life and beyond. With the construction of the proposed project or either of the alternatives, fish and wildlife habitat will be impacted permanently.

THREATENED AND ENDANGERED SPECIES

The Service is unaware of any known threatened or endangered species in the proposed project area and provided recommendations to ensure fish and wildlife resources received equal consideration during the planning phase. The project area is located where colonial-nesting waterbirds and bald eagles may be present. In a November 28, 2007 letter, the Service provided recommendations to avoid potential impacts to these wildlife resources.

DESCRIPTION OF SELECTED PLAN

The purpose of the proposed plan is to provide the 100-year level of protection for the HSDRRS. The term "100-year level of risk reduction," as it is used throughout this document, refers to a level of protection which reduces the risk of hurricane surge and wave driven flooding that the New Orleans Metropolitan area has a 1 percent chance of experiencing each year.

The proposed plan resulted from a defined need to reduce flood risk and storm damage to

residences, businesses, and other infrastructure from hurricanes and other high water events (i.e., 100-year storm events). The completed HSDRRS would lower the risk of harm to citizens and damage to infrastructure during a storm event.

Various alternative alignments and structures (i.e., floodwalls and levees) were evaluated for the protection needed. Based upon a detailed analysis that included evaluating risk and reliability; construction schedule; cost; right-of-way (ROW) requirements; environmental impacts; and operations and maintenance needs, the following alignments and structures were chosen as the proposed project for IER 16.

The proposed project (Alternative 3) is the South of Outer Cataouatche Canal to Davis Pond Tie-In (Figure 1). This alternative would consist of approximately 23,600 linear feet of levee, floodwall, and closure structures constructed to elevations of +13.5 to +15.5 feet NAVD88. Originating approximately 500 feet further south than Alternatives 1 and 2 on the western end of the Lake Cataouatche Levee, the alignment would begin as an earthen closure of the Outer Cataouatche Canal. Discharge lines from the U.S. 90 Pump Station would be extended and cross over the closure so that the pump station discharge would be on the flood side of the alignment. Proceeding westward, the alignment would continue as a levee south of, and parallel to, the Outer Cataouatche Canal for approximately 2,400 feet. On the eastern side of Bayou Verret, the levee would transition to an approximately 300 feet-long floodwall before transitioning to a closure structure on Bayou Verret. The closure structure would preserve navigation and drainage through the Outer Cataouatche Canal and Bayou Verret.

On the western side of the closure structure, the alignment would transition back to a 300-foot long reach of floodwall and then transition to earthen levee continuing in a western direction for approximately 9,600 feet long to a point approximately 850 feet east of the western end of the Outer Cataouatche Canal. In that vicinity, the levee would then turn north, cross, and close the Outer Cataouatche Canal. Between the Outer Cataouatche Canal and U.S. 90 the levee would transition to a floodwall prior to crossing U.S. 90. The intersection of the highway and floodwall would be built by raising the highway approaches over the +15.5 foot NAVD88 profile of the floodwall similar to the crossings described for Alternatives 1 and 2.

Similar to Alternative 2, on the north side of U.S. 90, the floodwall would continue for approximately 400 feet in a northern direction before turning to the west and transitioning to a levee on a west northwestern direction for approximately 2,700 feet to the Davis Pond Freshwater Diversion Canal's eastern construction ROW.

An existing drainage canal that extends from the Outer Cataouatche Canal, north under U.S. 90, and further north would be widened from approximately 20 feet to approximately 100 feet and deepened to 10 feet. The existing culvert under U.S. 90 may be replaced. Where the alignment transitions from floodwall to levee and extends to the Davis Pond Freshwater Diversion Canal's eastern construction ROW, new drainage canal would be constructed parallel the 2,700 feet length of levee.

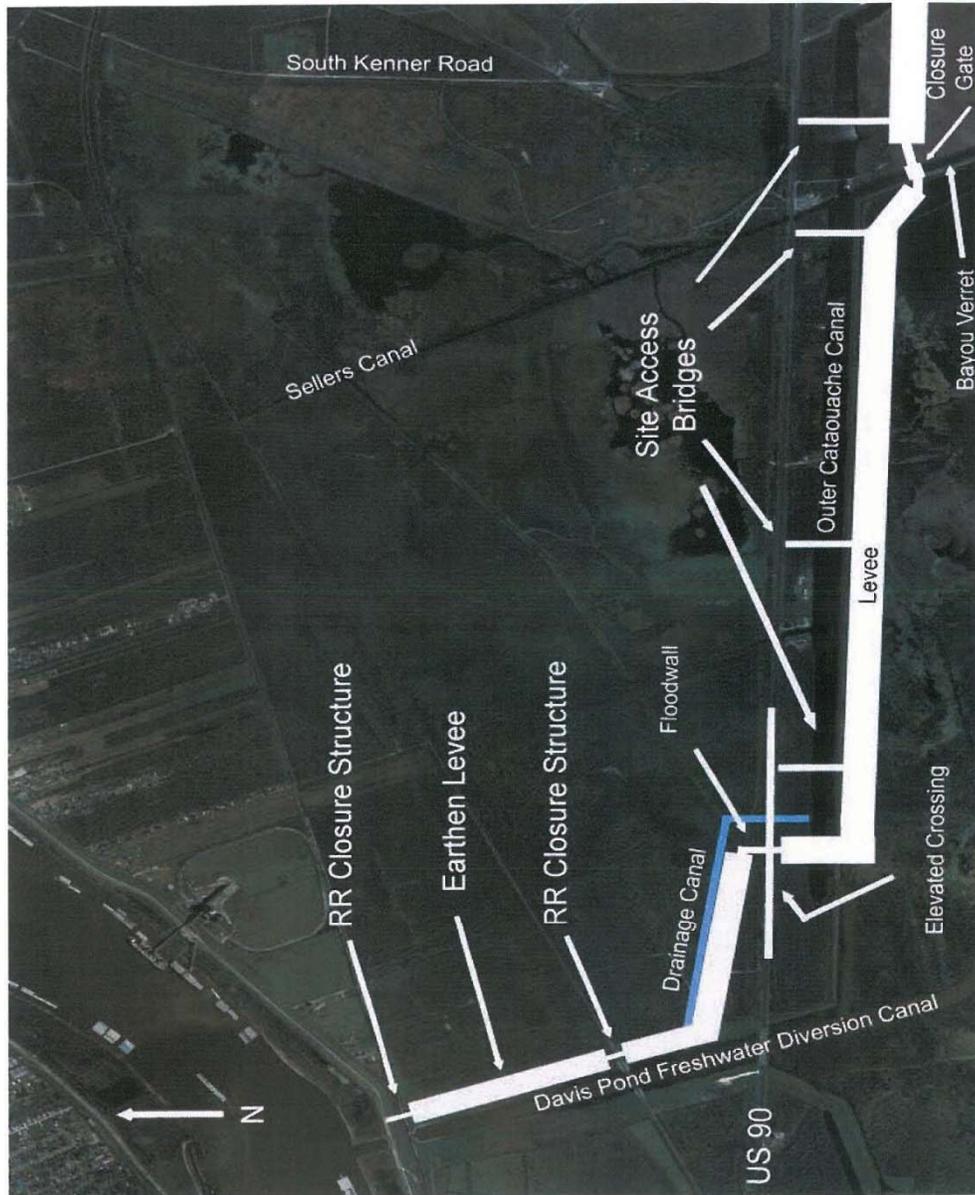


Figure 1. Proposed plan (Alternative 3) for IER 16.

At the Davis Pond Freshwater Diversion Canal's eastern construction ROW, the levee would turn north, incorporating the existing Davis Pond Diversion Project's Main East Guide Levee into the new levee while continuing to the BNSF Railroad. The levee alignment would continue to the north and terminate into high ground at the Mississippi River Levee. Between the BNSF Railroad and high ground of the Mississippi River Levee, the alignment would alternate between floodwall (to accommodate closure structures for the two railroad crossings and the River Road crossing) and levee.

ALTERNATIVES CONSIDERED

NO ACTION

Under the no action alternative, the proposed 100-year level of hurricane and storm damage reduction would not be constructed by the Corps in this portion of the WBV Project. The authorized completion of the Western Tie-in of the WBV has never been constructed. Taking no action along this reach of the WBV would result in a significant gap in the WBV project and the benefits for projects constructed to the east of the western tie-in would not be achieved if the tie-in were not completed.

ALTERNATIVE 1

The South Kenner Road Floodwall and West Railroad Tie-In Levee Alignment would be comprised of approximately 17,700 linear feet of levee, 12,050 linear feet of floodwall, and closure structures constructed to an elevation of +13.5 to +15.5 feet NAVD88 (Figure 2).

ALTERNATIVE 2

The North of Outer Cataouatche Canal to Mississippi River Levee alignment consists of approximately 23,000 linear feet of levee, floodwall, drainage control, and closure structures built to +13.5 to +15.5 feet NAVD88 (Figure 3).

DESCRIPTION OF SUPPLEMENTAL MODIFICATIONS

Additions and changes to the design of ancillary features of the Western Tie-In Levee project have been proposed since the project was originally designed. These modifications include access roads, ramps, relocations of utilities and pumps, and levee degradation (Figure 4). The following is a detailed description of the proposed modifications.

LOUISIANA HIGHWAY 18 RAMP

The initially selected swing gate and floodwall alternative for the Louisiana Highway 18 (LA 18) crossing was re-evaluated via the alternative evaluation process. A ramp was selected over the floodgate because of risk/reliability, shorter project duration and lower Operations and

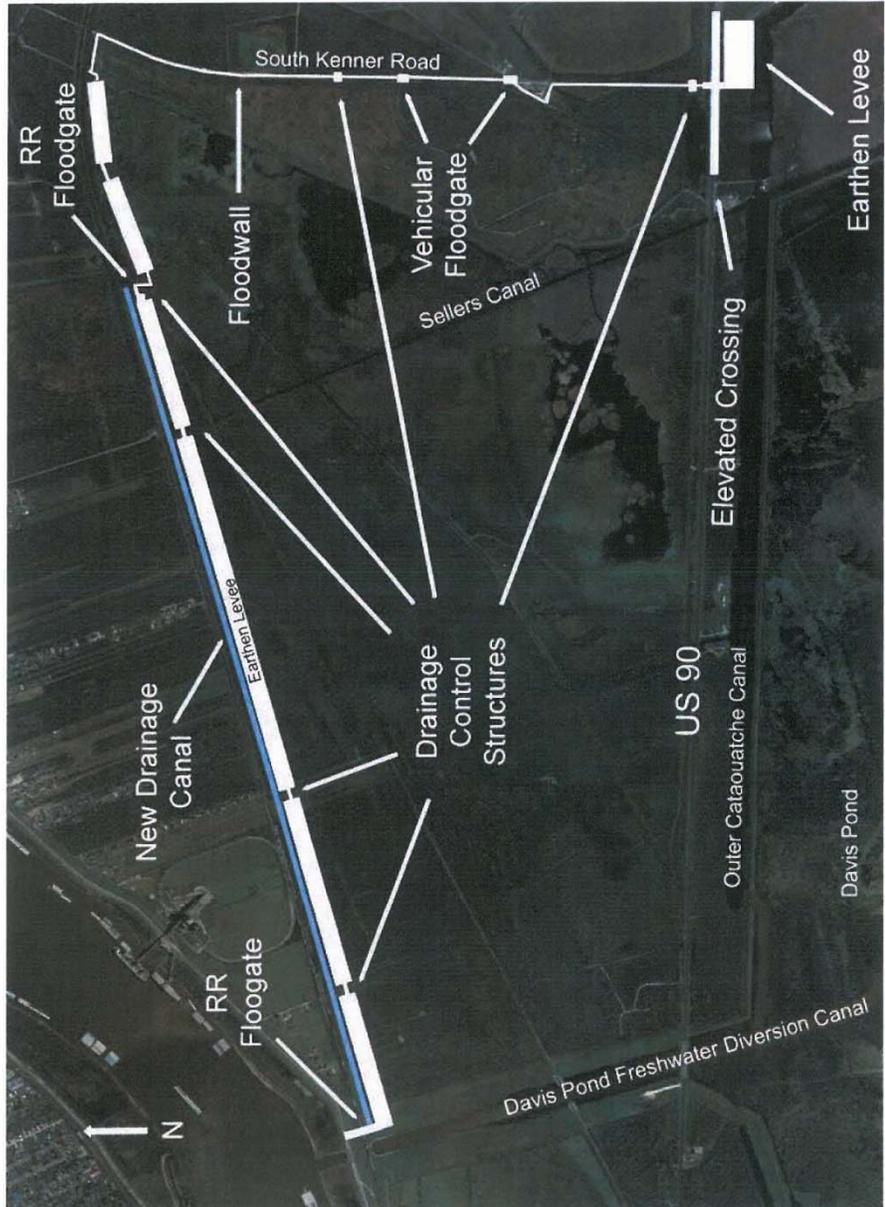


Figure 2. Alternative 1 project plan (from Corps NOD).

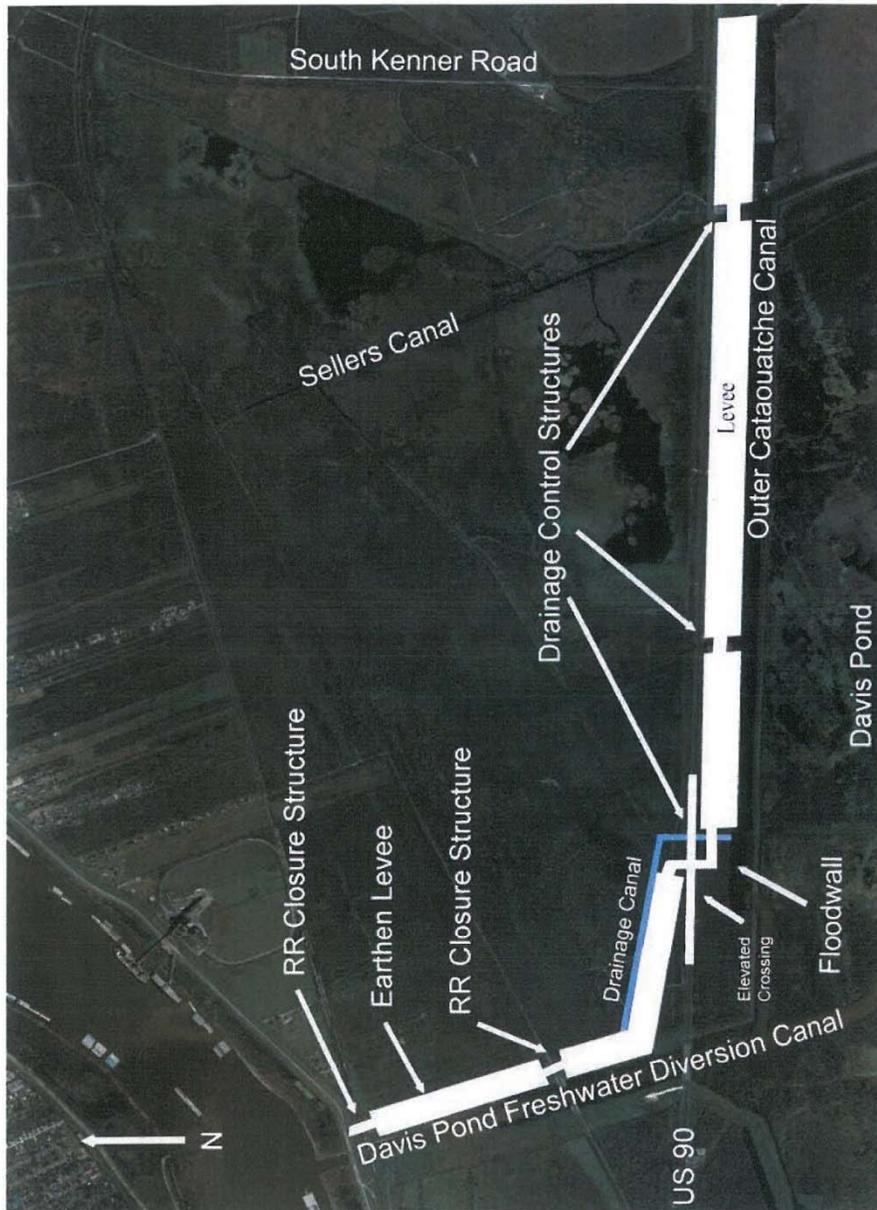


Figure 3. Alternative 2 project plan (from Corps NOD)

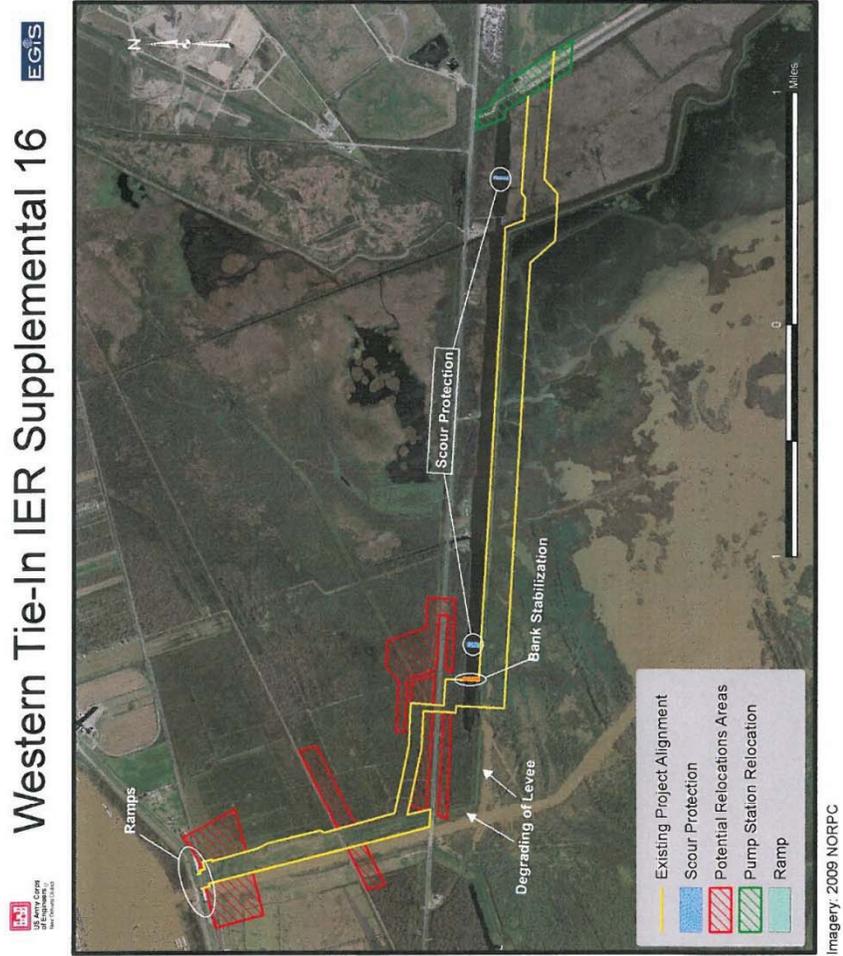


Figure 4. Proposed modifications to IER 16 design (from Corps NOD).

Maintenance requirements. A ramp would also allow traffic to continue over the levee on LA 18 during a storm event evacuation.

The ramp would span approximately 1,200 feet east to west; the initial crest elevation at the year 2011 would be +12.0 NAVD88 and a lift during the year 2027 would raise the crest elevation to +15.0 NAVD88. The one-lane emergency vehicle detour would run parallel to the ramp along the south, and would have a width of 11 feet and a 3 feet shoulder on each side. The hurricane protection levee in this area would transition to a floodwall and closure structure to cross the Union-Pacific Railroad track and then be tied into the proposed LA 18 ramp. Less than 0.25 acres would be graded, filled with earthen material, and surfaced with asphalt to construct the traffic detour on the south side of River Road.

The levee would terminate on the north side of the ramp by tying into high ground at the Mississippi River Levee in St. Charles Parish. This section would require approximately 30,000 feet square of construction ROW west of the Davis Pond Diversion Structure and approximately 40,000 feet square of additional ROW east of the structure. The impacts would be within the previously disturbed areas including Davis Pond Levee, Mississippi River Levee, Louisiana Department of Transportation and Development (LADOTD) and public and private utilities ROW. Construction of the ramp and emergency detour would require additional ROW: 2.6 acres for the east end of the ramp and detour, and 0.7 acres for the west end. To minimize erosion and runoff of exposed solids at the road construction sites a combination of sod, erosion control, and soil stabilizing mats and seeding would be utilized.

EASTERN DAVIS POND GUIDE LEVEE DEGRADATION

Construction of the Outer Cataouatche Canal western closure associated with the Western Tie-In levee would isolate forested wetlands from their current hydrologic connection to the Outer Cataouatche Canal and surrounding wetlands. To reconnect these forested wetlands, approximately 2,400 linear feet of the existing Davis Pond eastern guide levee would be degraded along its existing alignment. The new Western Tie-In Levee would replace the function served by the guide levee; therefore, the guide levee can be removed without affecting the HSDRRS. Additional hydrologic evaluation was conducted to ensure that degrading the guide levee would not impact the reach of U.S. 90 outside of the new HSDRRS and east of the Davis Pond Diversion canal. A short length of levee will remain in place at its northern intersection with US 90 and will be capped with rip rap to ensure the outfall of the diversion does not erode U.S. 90.

BANK STABILIZATION FOR OUTER CATAOUATCHE CANAL CLOSURES

Foreshore protection would be provided along the protected-side of the west closure levee, and along the flood-side of the east closure levee by installing an 18" layer of riprap over a layer of Geotextile Separator Fabric (Figure 4). Riprap and Geotextile Separator Fabric would also be used to provide scour protection underneath the bridges along this levee.

TEMPORARY DETOUR AS PERMANENT ACCESS FOR HWY 90

Converting the temporary detour along U.S. 90 to a permanent access would allow utility, maintenance, and other necessary vehicles to access the levee and adjacent areas, which would not otherwise be easily accessible after the U.S. 90 Bridge construction is complete. These detours were originally designed to be temporary, and would have been removed after construction of U.S. 90 Bridge was completed and traffic was restored back to the highway. By utilizing the temporary detours for permanent access, some cost savings are realized over constructing a stand-alone permanent access. Construction of the detour roads was described in IER 16. The construction activities will occur within existing LADOTD ROW that consists of both maintained road shoulder and wetlands.

RELOCATION OF UTILITIES

Utilities within the limits of the work, such as pipelines, communication lines, power lines, etc., would be required to be moved because their existing location interferes with HSDRRS construction; therefore, the government is responsible for reimbursing the utility owner for the removal, modification or relocation. These relocations are necessary for ensuring the reliability of the overall Western Tie-In hurricane protection system, the safety of the workers during project construction and to ensure uninterrupted operations of the utility companies.

Five gas lines, one waterline, one power line, three overhead communication lines and three oil and gas pipelines would require relocation. Possible relocation techniques are directional drill or sleeve through the floodwall. Both of these relocation methods would require staging and construction areas located outside of the previously cleared project ROW. Each utility owner would prepare a separate relocation plan. Because specific relocation plans have not been completed for these utilities, an area within which all the relocation activities are anticipated to occur was identified (general project area) to develop a discussion of these impacts. Previous proposals for directional drill pipeline relocations identified the need to construct temporary work pads for pushing and pulling the pipeline on either side of the directional drill under the HSDRRS project feature. In those cases, in addition to re-impacting the existing pipeline corridor, additional ROW of approximately 5 acres was needed to construct temporary work locations. Impacts for features such as overhead power lines would be less as the equipment and utility footprints are smaller.

PUMP STATION DEMOLITION AND CONSTRUCTION

The initially selected alternative for the U.S. 90 pump station (to extend the existing U.S. 90 pump station discharge lines across the new levee alignment) was re-evaluated. Construction of the Western Tie-In Levee would isolate the Pump Station within the newly constructed levee system and render the Pump Station ineffective in retaining interior drainage for Jefferson Parish could affect the wetlands located above U.S. 90. Additional design analysis conducted following preparation of IER 16 determined that modifying the existing pump stations would be inadequate and a replacement pump station of the same capacity (145 cubic feet per second) would be

needed for the HSDRRS to maintain the pumping capacity for the protected area.

The existing U.S. 90 pump station is located on previously disturbed habitat adjacent to WBV - 17.b.2 levee with discharge lines over the levee crown. The exact location of the new pump station has not been identified. An approximately 2,500 feet square riprap discharge pad would be required at the out fall of the discharge lines and placed in the Outer Cataouache Canal. An access road and ramps would be constructed within the existing WBV-17.b.2 levee ROW to provide access from U.S. 90 to the new pump station.

EVALUATION METHODS FOR SELECTED PLAN AND ALTERNATIVES

The Service used the Habitat Assessment Methodology (HAM) to quantify the benefits of anticipated mitigation measures for forested habitats. The habitat assessment models for swamps and bottomland hardwoods (BLH) within the Louisiana Coastal Zone utilized in this evaluation are modified from those developed in the Service's Habitat Evaluation Procedures (HEP). For each habitat type, those models define an assemblage of variables considered important to the suitability of an area to support a diversity of fish and wildlife species (Louisiana Department of Natural Resources 1994; U.S. Fish and Wildlife Service 1980). The HAM, however, is a community-level evaluation instead of the species-based approach used with HEP. Further explanation of how impacts/benefits are assessed with HAM and an explanation of the assumptions affecting habitat suitability (i.e., quality) index (HIS) values for each target year are available for review at Service's Lafayette, Louisiana, field office. The Fresh-Intermediate Coastal Marsh Model of the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) Wetland Value Assessment (WVA) Methodology was used to quantify the impacts to the fresh marsh habitat in the project area.

The IER 16 supplemental modifications would include impacts to forested wetlands not previously identified in IER 16. The habitats surveyed and analyzed for IER 16 are near those that would be impacted by the supplemental modifications, and we have used that data to determine habitat value losses for this report. Prior to the finalization of the FWCAR, however, the Service intends to investigate these newly identified areas that would be impacted to ensure the accurate characterization of the habitat and a more precise determination of the AAHU value that would be lost by project implementation.

IMPACTS OF SELECTED PLAN AND SUPPLEMENTAL MODIFICATIONS

SELECTED PLAN

The proposed project (Alternative 3) would impact moderate quality BLH and fresh marsh south of the Outer Cataouatche Canal. Wetlands would be enclosed with this alternative with levees to the south and west. However, this land is already bounded by roadways, a levee and a railroad, and if drainage structures are constructed to provide at least the same drainage capacity as currently exists, then any hydrologic impacts due to enclosure could be avoided. Construction of the proposed project would enclose a section of wetlands and block their existing hydrologic

connection to the west end of the Outer Cataouatche Canal. These wetlands are south of U.S. 90 and bounded on the west by the Davis Pond Freshwater Diversion Project east main guide levee and to the south by the Davis Pond Freshwater Diversion Project east guide levee. The Corps has proposed to cut an opening into the Davis Pond Freshwater Diversion Project east guide levee approximately 50 feet wide to a depth of 0 NAVD88 to allow water exchange with the Davis Pond Freshwater Diversion Project outfall canal and nearby marshes. Construction of the originally proposed project only would directly impact approximately 78.6 acres of BLH and 134.1 acres of fresh marsh, resulting in the loss of 36.2 AAHUs and 65.5 AAHUs respectively (Table 1).

SUPPLEMENTAL MODIFICATIONS

LA 18 ramp

Approximately 3.3 acres of maintained levee toe and maintained road shoulder would be impacted by construction of the ramp.

Davis Pond Freshwater Diversion Project east guide levee degradation

The existing levee is mowed pasture and contains no marsh or BLH forest habitat. Degradation of this section of the Davis Pond guide levee would allow water exchange to a wetland area that would be otherwise hydrologically isolated by the Outer Cataouatche Canal closures .

Bank stabilization for canal closures

The impacted area of this action is in unvegetated open water (drainage canal).

Temporary detour conversion to permanent U.S. 90 access

In IER 16 the impacts are described to be within the LADOTD ROW, however with more specific designs completed, it became apparent that the LADOTD ROW was not comprised entirely of maintained mowed shoulder but in some locations the full LADOTD ROW was not cleared and filled. Some of the area within this ROW is wetlands. Approximately 6 acres of wetlands within the LADOTD ROW would be impacted due to this action. These impacts were not identified as wetland impacts in IER 16.

Utility relocation

The general project area is comprised of 160 acres, not previously described in IER 16. Approximately 73.1 acres of BLH would be impacted by the relocation of utilities (Table 1).

Pump station relocation

The total area of impact due to demolition of the old pump station and discharge pipes is approximately 0.2 acres. The material generated would be re-cycled and/or placed in a solid waste land fill. This area is located within an area previously environmentally cleared for the IER 15 levee alignment and impacts will be mitigated through the analysis in that report.

Table 1. Project impacts of the plan proposed in IER 16 and additional impacts of IERS 16.

| | Proposed IER 16 | Supplemental IERS 16 | Total Impacts |
|---------------------------|-----------------|----------------------|-----------------------|
| BLH (acres/AAHUs) | 78.6 / 36.2 | 79.1 / 34.18 | 157.7 / 70.38 |
| Fresh marsh (acres/AAHUs) | 134.1 / 65.5 | 0 / 0 | 134.1 / 65.5 |
| Total | 212.7 / 101.7 | 79.1 / 34.18 | 291.8 / 135.88 |

FISH AND WILDLIFE CONSERVATION MEASURES

Where practicable, the use of floodwalls instead of levees would reduce the area impacted and help conserve important fish and wildlife habitat (i.e., bottomland hardwoods, cypress swamps, fresh and estuarine marsh and associated shallow open water habitats). Clearing and grubbing should be limited to only what is necessary at the time of construction. The plans for the supplemental work have not been finalized. The Corps should coordinate with the Service regarding these final plans to avoid or minimize impacts to fish and wildlife resources. The Corps should also acquire non-development easements on those wetlands that would be on the protected side of the new levee. If bald eagle nesting locations and wading bird colonies are found in the project area before or during construction, adverse impacts may be avoided by timing of construction and further consultation with the Service.

COMPENSATORY MITIGATION MEASURES

The President's Council on Environmental Quality defined the term "mitigation" in the National Environmental Policy Act regulations to include:

- (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments.

The Service supports and adopts this definition of mitigation and considers its specific elements to represent the desirable sequence of steps in the mitigation planning process.

The Service's Mitigation Policy (Federal Register, Volume 46, No. 15, January 23, 1981) identifies four resource categories that are used to ensure that the level of mitigation recommended by Service biologists will be consistent with the fish and wildlife resource values involved. Considering the high value of forested and marsh wetlands for fish and wildlife and the relative scarcity of that habitat type, those wetlands are usually designated as Resource Category 2 habitats, the mitigation goal for which is no net loss of in-kind habitat value. Because the "no action" alternative was not selected, avoiding the project impacts altogether is not feasible. Therefore, remaining project impacts should be mitigated via compensatory

replacement of the habitat values lost.

Based on our analysis for the proposed levee alignment, the Corps shall provide mitigation in-kind for 70.38 AAHUs of BLH and 65.5 AAHUs of fresh marsh. Impacts should be considered as “flood side” regarding designation in the separate IER that will provide for the implementation of mitigation measures for the entire 100 year protection levee system impacts.

SERVICE POSITION AND RECOMMENDATIONS

The Service recommended the selection of Alternative 1 because its direct impacts are less than the proposed project (alignment 3) in terms of AAHUs, and it does not have the potential long term indirect development impacts of Alternatives 2 and 3. However, construction of the flood protection levee even as proposed would provide flood protection to meet the Supplemental 4 authorization; therefore, the Service did not object to the construction of the proposed project provided the following fish and wildlife conservation recommendations are implemented concurrently with project implementation:

1. The Corps shall provide mitigation for impacts to BLH and fresh marsh habitat to the extent determined for the project plan ultimately selected. With construction of the proposed project and supplemental features, 157.7 acres of BLH and 134.1 acres of fresh marsh would be impacted requiring mitigation for 70.38 AAHUs of BLH and 65.5 AAHUs of fresh marsh.
2. Flood protection and ancillary features such as staging areas and access roads should be designed and positioned so that destruction of wetlands and non-wet bottomland hardwoods are avoided or minimized to the greatest extent possible.
3. The enclosure of wetlands within new levee alignments should be minimized to the fullest extent. When enclosure of wetlands is unavoidable, non-development easements on enclosed wetlands should be acquired, and hydrologic connections with adjacent, unenclosed wetlands should be maintained. Such actions will serve to minimize secondary impacts from development and hydrologic alteration.
4. The Service recommends that the previous induced development study examine potential development over the period of analysis (i.e. 50 years) to be consistent with the Principles and Guidelines. Information about potential development of the area in question derived from this analysis would be used to determine mitigation requirements.
5. Water control structures should be designed to allow rapid opening in the absence of an offsite power source after a storm passes and water levels return to pre-storm levels.
6. Flood protection structures should include shoreline baffles and/or ramps (e.g., rock rubble, articulated concrete mat) that slope up to the structure invert to enhance organism passage. Various ramp designs should be considered, and coordination should continue

with the natural resource agencies to ensure fish passage features are fully incorporated to the extent practicable.

7. Flood protection water control structures should remain fully open except during storm events, unless otherwise determined by the natural resource agencies.
8. Due to some of the proposed project features, the drainage capacity of the area between Hwy 90 and the proposed levee will be reduced. The Service is concerned about the potential for ponding in the area and subsequent impacts to wetland vegetation and to Hwy 90. The Service recommends that the Corps undertake additional hydrologic studies to determine the effects of those drainage capacity reductions.
9. Any proposed change in plan features or mitigation (i.e. supplemental modifications) should be coordinated in advance with the Service, NMFS, LDWF, EPA and OCPR.
10. If a proposed project feature is changed significantly or is not implemented within one year of the date of our Endangered Species Act consultation letter, we recommend that the Corps reinitiate coordination with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.

LITERATURE CITED

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, Division of Biological Services, Washington, D.C. FWS/OBS-79/31. 108 pp.
- Lowery, A.H. 1974. Louisiana birds. La. State Univ. Press. 651 pp.



SCOTT A. ANGELLE
LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT

PAM BREAU
SECRETARY

2 June 2010

Joan Exnicios
Regional Planning and Environmental Division, South
New Orleans Environmental Branch
ATTN: CEMVN-PDR-RN
US Army Corps of Engineers
PO Box 60267
New Orleans, La. 70160-0267

Re: Management Summary: Phase I Cultural Resources Survey of
Proposed Utility Realignment, Western Tie-In Segment (IER 16)
West Bank and Vicinity Hurricane Protection Levee, St. Charles, Louisiana
Report 22-3469

Joan Exnicios,

We have received your letter dated 3 May 2010 and two copies of the above-referenced report. This report does not meet our standards for a Management Summary report as it is lacking an Abstract, Table of Contents, List of Figures and Tables, and a Curation statement. A curation statement is still required to address the disposition of associated records, even though no artifacts were found during this project. However, the information provided is sufficient for our office to concur that No Historic Properties will be Affected by this project.

We look forward to receiving two bound copies of the final Negative Findings report, along with a pdf version of the report. If you have any questions or comments, contact Chip McGimsey at cmcgimsey@crt.state.la.us or 225-219-4598.

Sincerely,

Handwritten signature of Phil Boggan in black ink.

Phil Boggan
Deputy State Historic Preservation Officer

BOBBY JINDAL
GOVERNOR



ROBERT D. HARPER
SECRETARY

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL MANAGEMENT
June 4, 2010

Joan M. Exnicios
Chief, Environmental Planning and Compliance Branch
U. S. Army Corps of Engineers, New Orleans District
P. O. Box 60267
New Orleans, Louisiana 70160-0267

RE: **C20080324**, Coastal Zone Consistency Modification 2
U. S. Army Corps of Engineers, New Orleans District
Direct Federal Action
IER #16, West Bank and Vicinity, Western Tie-In; modifications to include utility line relocations, construction of a ramp vs. a floodgate at Hwy. 18, Hwy. 90 pumps station replacement, degradation of a portion of the Davis Pond Guide Levee, provide permanent access for Hwy. 90 by use of the temporary detours, and bank stabilization at the Outer Cataouatchie Canal, **St. Charles and Jefferson Parishes, Louisiana**

Dear Ms. Exnicios:

The above referenced modification has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The modification, as proposed in the Corps submittal of April 16, 2009, is consistent with the LCRP

If you have any questions concerning this determination please contact Brian Marcks of the Consistency Section at (225) 342-7939 or 1-800-267-4019.

Sincerely yours,

A handwritten signature in blue ink, appearing to read "Gregory J. DuCote".

Gregory J. DuCote
Administrator
Interagency Affairs/Field Services Division

GJD/JDH/bgm

cc: Dave Butler, LDWF
Frank Cole, CMD, FI
Earl Matherne, St. Charles Parish
Elizabeth Davoli, OCPR
Marnie Winter, Jefferson Parish
Richard Hartman, NMFS
Beth Nord, COE
David Walther USFWS

Post Office Box 44487 • Baton Rouge, Louisiana 70804-4487
617 North Third Street • 10th Floor • Suite 1078 • Baton Rouge, Louisiana 70802
(225) 342-7591 • Fax (225) 342-9439 • <http://www.dnr.louisiana.gov>
An Equal Opportunity Employer



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701

July 1, 2010

F/SER46/RH:jk
225/389-0508

Ms. Joan Exnicios
Environmental Planning and Compliance Branch
Planning, Programs, and Management Division
New Orleans District, U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Ms. Exnicios:

NOAA's National Marine Fisheries Service (NMFS) has received the draft **Individual Environmental Report (IER) Supplemental #16.a** transmitted by your letter dated June 25, 2010. The draft Supplemental IER evaluates and quantifies the impacts associated with providing 100-year level of hurricane protection in an area just to the east of the Davis Pond Freshwater Diversion Guide Levee in Jefferson and St. Charles Parishes, Louisiana. Proposed revisions to the project since issuance of the original IER #16 document includes degrading a section of the Davis Pond Guide Levee, replacement of a pump station, adding bank stabilization to some areas, and construction of a ramp on Louisiana Highway 18.

Based on our review of the IER, NMFS finds that both the description of resources of concern and the evaluation of likely impacts to those resources to be sufficient. As such, NMFS has no revisions to recommend to the document.

We appreciate the opportunity to review and comment on the draft Supplemental IER.

Sincerely,


for Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

c:
FWS, Lafayette, Walther
EPA, Dallas, Mick
LA DNR, Consistency, Ducote
F/SER46, Swafford
Files



-----Original Message-----

From: Diane Hewitt [mailto:Diane.Hewitt@LA.GOV]
Sent: Tuesday, July 06, 2010 3:50 PM
To: MVN Environmental
Subject: DEQ SOV: 100629/1225 USACE - IERS #16.a

July 6, 2010

Sandra Stiles - USACE

CEMVN-PM-RS

P.O. Box 60267

New Orleans, LA 70160-0267

mvnenvironmental@usace.army.mil <<mailto:mvnenvironmental@usace.army.mil>>

RE:

100629/1225

USACE - IERS #16.a

NOTICE OF AVAILABILITY

Jefferson and St. Charles Parishes

Dear Ms. Stiles:

The Department of Environmental Quality (LDEQ), Offices of Environmental Services and Environmental Compliance have received your request for comments on the above referenced project. Please take any necessary steps to obtain and/or update all necessary approvals and environmental permits regarding this proposed project.

There were no objections based on the information in the document submitted to us. However, the following comments have been included below. Should you encounter a problem during the

1

implementation of this project, please notify LDEQ's Single-Point-of-contact (SPOC) at (225) 219-3640.

The Office of Environmental Services/Permits Division recommends that you investigate the following requirements that may influence your proposed project:

- * If your project results in a discharge to waters of the state, submittal of a Louisiana Pollutant Discharge Elimination System (LPDES) application may be necessary.
- * If 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.
- * LDEQ has stormwater general permits for construction areas equal to or greater than one acre. It is recommended that you contact the LDEQ Water Permit Division at (225) 219-3181 to determine if your proposed improvements require one of these permits.
- * All precautions should be observed to control nonpoint source pollution from construction activities.
- * If any of the proposed work is located in wetlands or other areas subject to the jurisdiction of the U.S. Army Corps of Engineers, you should contact the Corps directly to inquire about the possible necessity for permits. If a Corps permit is required, part of the application process may involve a water quality certification from LDEQ.
- * All precautions should be observed to protect the groundwater of the region.
- * Please be advised that water softeners generate wastewaters that may require special limitations 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, Jefferson and St. Charles Parishes are classified as attainment parishes with the National Ambient Air Quality Standards.

Please forward all future requests to Ms. Diane Hewitt, LDEQ/Performance Management/ P.O. Box 4301, Baton Rouge, LA 70821-4301, and your request will be processed as quickly as possible.

If you have any questions, please feel free to contact me at (225) 219-4079 or by email at diane.hewitt@la.gov <<mailto:diane.hewitt@la.gov>> . Permitting questions should be directed to the Office of Environmental Services at (225) 219-3181.

Sincerely,

Diane Hewitt

Performance Management

LDEQ/Community and Industry Relations

Business and Community Outreach Division

Office of the Secretary

P.O. Box 4301 (602 N. 5th Street)

Baton Rouge, LA 70821-4301

Phone: 225-219-4079

Fx: 225-325-8208

E-mail: diane.hewitt@la.gov

07/27/2010 08:59 2257652625

DAVE BUTLER

PAGE 01/01



BOBBY JINDAL
GOVERNOR

State of Louisiana

DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

ROBERT J. BARHAM
SECRETARY

JIMMY L. ANTHONY
ASSISTANT SECRETARY

July 22, 2010

Attn: Joan M. Exnicios
Planning, Programs, and Project Management Division
Environmental Planning and Compliance Branch
United States Army Corps of Engineers
P. O. Box 60267
New Orleans, LA 70160-0267

RE: *Application Number: Individual Environmental Report Supplemental #16.a (IERS #16a)*
Applicant: U. S. Army Corps of Engineers – New Orleans District
Public Notice Date: June 25, 2010

Dear Ms. Exnicios:

The professional staff of the Louisiana Department of Wildlife and Fisheries (LDWF) has reviewed the above referenced, modified Public Notice. Based upon this review, the following has been determined:

LDWF has no objection to the modifications referenced to the proposed activity, provided that previous recommendations made by this department are incorporated into the new permit as standard conditions.

The Corps of Engineers shall also develop a mitigation plan designed to off-set impacts to fish and wildlife resources. The mitigation plan shall be approved by the resource and regulatory agencies. The approved mitigation plan shall be incorporated as part of the permit conditions.

The Louisiana Department of Wildlife and Fisheries appreciates the opportunity to review and provide recommendations to you regarding this proposed activity. Please do not hesitate to contact Habitat Section biologist Chris Davis at 225-765-2642 should you need further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Jimmy L. Anthony".

Jimmy L. Anthony
Assistant Secretary

cd

c: Chris Davis, Biologist
EPA Marine & Wetlands Section
USFWS Ecological Services

P.O. BOX 98000 • BATON ROUGE, LOUISIANA 70898-98000 • PHONE (225) 765-2800
AN EQUAL OPPORTUNITY EMPLOYER

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC
PRESERVATION OFFICE
SEMINOLE TRIBE OF FLORIDA
AH-TAH-THI-KI MUSEUM
34725 WEST BOUNDARY ROAD
CLEWISTON, FL 33440
PHONE: (863) 983-6549
FAX: (863) 902-1117



TRIBAL OFFICERS
CHAIRMAN
MITCHELL CYPRESS
VICE CHAIRMAN
RICHARD BOWERS JR.
SECRETARY
PRISCILLA D. SAYEN
TREASURER
MICHAEL D. TIGER

U.S. Army Corps of Engineers
Regional Planning and Environmental Division South
New Orleans Environmental Branch
CEMVN-PDR-RS
P.O. Box 60267
New Orleans, LA 70160
Attn: Sandra Stiles

THPO#: 003425A

July 22, 2010

Subject: IERS #16.a West Bank and Vicinity, Western Tie-in, Jefferson and St. Charles Parishes, Louisiana

Dear Ms. Stiles,

The Seminole Tribe of Florida's Tribal Historic Preservation Office (STOF-THPO) has received the **New Orleans District Corps of Engineers'** correspondence concerning the aforementioned project. The STOF-THPO has no objection to your findings at this time. However, the STOF-THPO would like to be informed if cultural resources that are potentially ancestral or historically relevant to the Seminole Tribe of Florida are inadvertently discovered during the construction process. We thank you for the opportunity to review the information that has been sent to date regarding this project. Please reference **THPO-003425A** for any related issues.

We look forward to working with you in the future.

Sincerely,

Direct routine inquiries to:

Willard Steele,
Tribal Historic Preservation Officer
Seminole Tribe of Florida

Anne Mullins
Compliance Review Supervisor
annemullins@semtribe.com

JLP:am



United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506
July 23, 2010



Colonel Alvin B. Lee
District Engineer
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Lee:

The U.S. Fish and Wildlife Service (Service) has reviewed the June 25, 2010, Draft Individual Environmental Report Supplemental #16.a (IERS #16.a), titled, "West Bank and Vicinity, Western Tie-in, Jefferson and St. Charles Parishes, Louisiana, Supplemental", transmitted to our office via a letter from Ms. Joan M. Exnicios, Chief of your New Orleans Environmental Branch.

That study addresses impacts resulting from the modification of levee improvement and repair plans to increase hurricane protection within the Greater New Orleans area located in southeast Louisiana. Work associated with that IERS is being conducted in response to Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4). That law authorized the U.S. Army Corps of Engineers (Corps) to upgrade two existing hurricane protection projects (i.e., Westbank and Vicinity of New Orleans and Lake Pontchartrain and Vicinity) in the Greater New Orleans area to provide protection against a 100-year hurricane event. The Service submits the following comments in accordance with provisions of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the National Environmental Policy Act of 1969 (83 Stat. 852, as amended; 42 U.S.C. 4321- 4347).

General Comments

The IERS #16.a is well written and provides a good description of fish and wildlife resources in the project area and project impacts on those resources. Wetlands in the project area provide important habitat for several Federal trust species including wading birds, neotropical migrants, and resident and migratory waterfowl. The proposed project modifications would impact approximately 79 acres of forested and fresh marsh wetlands; however, the Corps has indicated that mitigation for all impacts will be implemented.

Specific Comments

Page 43, Section 4 Cumulative Impacts, Table 4

We recommend that the impacts and required compensatory mitigation values due to IERS #16.a

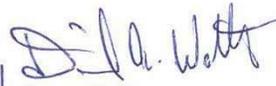
be added to "Table 4. HSDRRS Impacts and Compensatory Mitigation to be Completed."

Page 52, Sec. 7 Mitigation, Paragraph 6

The first sentence incorrectly refers to Table 3 for cumulative compensatory mitigation information. That information is actually contained in Table 4.

The Service thus far does not object to the proposed features in IERS #16.a. The Service believes that the recommendations provided in our June, 2010, draft Supplemental FWCA Report continue to remain valid and applicable to IERS #16.a. Thank you for the opportunity to provide comments on the draft IERS. If you or your staff has any questions regarding our comments, please contact David Castellanos at (337) 291-3112.

Sincerely,


James F. Boggs
Supervisor
Louisiana Field Office

cc: EPA, Dallas, TX
NMFS, Baton Rouge, LA
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA
LA Dept. of Natural Resources (CMD), Baton Rouge, LA
OCPR, Baton Rouge, LA



United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506
August 11, 2010



Colonel Edward R. Fleming
District Commander
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Fleming:

Please reference the Individual Environmental Report #16 (IER #16) "Westbank and Vicinity, Western Tie-in, Jefferson and St. Charles Parishes, Louisiana", and the final supplemental report IERS #16. Those studies were conducted in response to Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4) which instructed the Corps of Engineers (Corps) to proceed with engineering, design, and modification (and construction where necessary) of the Lake Pontchartrain and Vicinity (LPV) and the West Bank and Vicinity (WBV) Hurricane Protection Projects so those projects would provide 100-year hurricane protection. This report contains a description of the existing fish and wildlife resources of the project area, discusses future with and without project habitat conditions, identifies fish and wildlife-related impacts of the proposed project, and provides recommendations to avoid, reduce, or compensate for impacts to fish and wildlife resources.

Procedurally, project construction has been authorized in the absence of the report of the Secretary of the Interior that is required by Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). In this case, the authorization process has prevented our agencies from following the normal procedures for fully complying with the FWCA. The FWCA requires that our Section 2(b) report be made an integral part of any report supporting further project authorization or administrative approval. Therefore, to fulfill the coordination and reporting requirements of the FWCA, the Service will be providing a 2(b) report for each IER. This report addresses IER 16 and IERS 16 which are the plan and supplemental plan, respectively, for the western terminus of the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS).

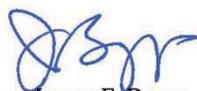
This draft report incorporates and supplements our Fish and Wildlife Coordination Act (FWCA) Reports that addressed impacts and mitigation features for the WBV Hurricane Protection Project (November 10, 1986, August 22, 1994, November 15, 1996, and June 20, 2005) and the November 26, 2007 draft programmatic FWCA Report that addresses the hurricane protection

improvements authorized in Supplemental 4.

This report constitutes the report of the Secretary of the Interior as required by Section 2(b) of the FWCA. This report has been provided to the Louisiana Department of Wildlife and Fisheries and the National Marine Fisheries Service for their review, and their comments have been incorporated into this final report.

If you or your staff has any questions regarding our comments, please contact David Castellanos (337-291-3112) of this office.

Sincerely,



James F. Boggs
Supervisor
Louisiana Field Office

cc: Ms. Beth Nord, USACE, NOD
EPA, Dallas, TX
NMFS, Baton Rouge, LA
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA
Office of Coastal Protection and Restoration, Baton Rouge, LA
LADNR (CMD), Baton Rouge, LA

**Final
Supplemental Fish and Wildlife Coordination Act Report
for
Individual Environmental Report 16 (IER 16) and Supplemental IERS 16**

Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the
Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4)



PROVIDED TO
NEW ORLEANS DISTRICT
U.S. ARMY CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

PREPARED BY
DAVID CASTELLANOS
FISH AND WILDLIFE BIOLOGIST

U.S. FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
LAFAYETTE, LOUISIANA
August 2010

U.S. FISH AND WILDLIFE SERVICE – SOUTHEAST REGION

Executive Summary

The proposed project was authorized by Supplemental 4 which instructed the Corps of Engineers (Corps) to proceed with engineering, design, and modification (and construction where necessary) of the Lake Pontchartrain and Vicinity (LPV) and the West Bank and Vicinity (WBV) Hurricane Protection Projects so those projects would provide 100-year hurricane protection. This report addresses Individual Environmental Report (IER) 16, and IERS 16 which are the plan and supplemental plan, respectively, for the western terminus of the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS). Our report contains a description of the existing fish and wildlife resources of the project area, discusses future with and without project habitat conditions, identifies fish and wildlife-related impacts of the proposed project, and provides recommendations to avoid, reduce, or compensate for impacts to fish and wildlife resources. This report incorporates and supplements our Fish and Wildlife Coordination Act (FWCA) Reports that addressed impacts and mitigation features for the WBV Hurricane Protection Project (November 10, 1986, August 22, 1994, November 15, 1996, and June 20, 2005) and the November 26, 2007 draft programmatic FWCA Report that addresses the hurricane protection improvements authorized in Supplemental 4.

The approximate project-area boundaries are South Kenner Road on the east (Jefferson Parish); the Davis Pond Freshwater Diversion Project Canal on the west (St. Charles Parish); South Kenner Road at the Union Pacific and Burlington Northern Santa Fe (BNSF) Railroad Lines and the Mississippi River on the north, and the Outer Cataouatche Canal and the Davis Pond Freshwater Diversion Project to the south.

The project area is composed of mostly bottomland hardwood and freshwater marsh habitats. These habitats support a variety of birds, mammals, and fishes, including various waterfowl, wading birds, furbearers, and sport and commercial fish.

Various alternative alignments and structures (i.e., floodwalls and levees) were evaluated for the protection needed. The Corps' selection of the proposed project was based upon a detailed analysis that included evaluating risk and reliability, construction schedule, cost, right-of-way requirements, environmental impacts and operations and maintenance needs.

The proposed project (Alternative 3) is the South of Outer Cataouatche Canal to Davis Pond Tie-In. This alternative would consist of approximately 23,600 linear feet of levee, floodwall, and closure structures constructed to elevations of +13.5 to +15.5 feet North American Vertical Datum 88 (NAVD88).

The Service evaluated the three alternatives proposed for study and recommends the selection of Alternative 1 because its direct impacts are less than the proposed project (Alternative 3) in terms of AAHUs, and it does not have the potential long term indirect development impacts of Alternative 2 or Alternative 3 (proposed plan). However, construction of the flood protection levee even as proposed would provide flood protection to meet the Supplemental 4 authorization; therefore, the Service does not object to the construction of the proposed project provided the

following fish and wildlife conservation recommendations are implemented concurrently with project implementation:

1. The Corps shall provide mitigation for impacts to BLH and fresh marsh habitat to the extent determined for the project plan ultimately selected. With construction of the proposed project 157.7 acres of BLH and 148.2 acres of fresh marsh would be impacted requiring mitigation for 73.46 AAHUs of BLH and 74.5 AAHUs of fresh marsh.
2. Flood protection and ancillary features such as staging areas and access roads should be designed and positioned so that destruction of wetlands and non-wet bottomland hardwoods are avoided or minimized to the greatest extent possible.
3. Avoid adverse impacts to wading bird colonies through careful design project features and timing of construction. Colonies that are not currently listed in the database maintained by the Louisiana Department of Wildlife and Fisheries may be present. That database is updated primarily by monitoring the colony sites that were previously surveyed during the 1980s. Until a new, comprehensive coast-wide survey is conducted to determine the location of newly-established nesting colonies, the Service recommends that a qualified biologist inspect the proposed work site for the presence of undocumented nesting colonies during the nesting season.
4. The enclosure of wetlands within new levee alignments should be minimized to the fullest extent. When enclosure of wetlands is unavoidable, non-development easements on enclosed wetlands should be acquired, and hydrologic connections with adjacent, unenclosed wetlands should be maintained. Such actions will serve to minimize secondary impacts from development and hydrologic alteration.
5. The Service recommends that the previous induced development study examine potential development over the period of analysis (i.e. 50 years) to be consistent with the Principles and Guidelines. Information about potential development of the area in question derived from this analysis would be used to determine mitigation requirements.
6. Water control structures should be designed to allow rapid opening in the absence of an offsite power source after a storm passes and water levels return to pre-storm levels.
7. Flood protection structures should include shoreline baffles and/or ramps (e.g., rock rubble, articulated concrete mat) that slope up to the structure invert to enhance organism passage. Various ramp designs should be considered, and coordination should continue with the natural resource agencies to ensure fish passage features are fully incorporated to the extent practicable.
8. Flood protection water control structures should remain fully open except during storm

events, unless otherwise determined by the natural resource agencies.

9. Due to some of the proposed project features, the drainage capacity of the area between U.S. Highway 90 (U.S. 90) and the proposed levee will be reduced. The Service is concerned about the potential for ponding in the area and subsequent impacts to wetland vegetation and to U.S. 90. The Service recommends that the Corps undertake additional hydrologic studies to determine the effects of those drainage capacity reductions.
10. Any proposed change in plan features or mitigation should be coordinated in advance with the Service, the National Marine Fisheries Service (NMFS), the Louisiana Department of Wildlife and Fisheries (LDWF), the Environmental Protection Agency (EPA) and the Office of Coastal Protection and Restoration (OCPR).
11. If a proposed project feature is changed significantly or is not implemented within one year of the date of our Endangered Species Act consultation letter, we recommend that the Corps reinitiate coordination with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.

TABLE OF CONTENTS

| | |
|--|----|
| INTRODUCTION | 1 |
| DESCRIPTION OF THE STUDY AREA | 1 |
| FISH AND WILDLIFE RESOURCES..... | 2 |
| FUTURE FISH AND WILDLIFE RESOURCES..... | 2 |
| THREATENED AND ENDANGERED SPECIES..... | 2 |
| DESCRIPTION OF SELECTED PLAN | 2 |
| ALTERNATIVES UNDER CONSIDERATION | 5 |
| NO ACTION..... | 5 |
| ALTERNATIVE 1..... | 5 |
| ALTERNATIVE 2..... | 5 |
| DESCRIPTION OF SUPPLEMENTAL MODIFICATIONS | 5 |
| LOUISIANA HIGHWAY 18 RAMP..... | 5 |
| BANK STABILIZATION FOR OUTER CATAOUATCHE CANAL CLOSURES..... | 9 |
| TEMPORARY DETOUR AS PERMANENT ACCESS FOR HWY 90..... | 9 |
| RELOCATION OF UTILITIES..... | 10 |
| PUMP STATION DEMOLITION AND CONSTRUCTION..... | 10 |
| EVALUATION METHODS FOR SELECTED PLAN AND ALTERNATIVES | 10 |
| IMPACTS OF SELECTED PLAN AND SUPPLEMENTAL MODIFICATIONS | 11 |
| SELECTED PLAN..... | 11 |
| SUPPLEMENTAL MODIFICATIONS..... | 11 |
| FISH AND WILDLIFE CONSERVATION MEASURES | 12 |
| COMPENSATORY MITIGATION MEASURES | 12 |
| SERVICE POSITION AND RECOMMENDATIONS | 13 |
| LITERATURE CITED | 16 |

INTRODUCTION

The proposed project was authorized by Supplemental 4 which instructed the Corps of Engineers (Corps) to proceed with engineering, design, and modification (and construction where necessary) of the Lake Pontchartrain and Vicinity (LPV) and the West Bank and Vicinity (WBV) Hurricane Protection Projects so those projects would provide 100-year hurricane protection. Procedurally, project construction has been authorized in the absence of the report of the Secretary of the Interior that is required by Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). In this case, the authorization process has prevented our agencies from following the normal procedures for fully complying with the FWCA. The FWCA requires that our Section 2(b) report be made an integral part of any report supporting further project authorization or administrative approval. Therefore, to fulfill the coordination and reporting requirements of the FWCA, the Service will be providing a 2(b) report for each IER. This report addresses Individual Environmental Report (IER) 16, and IERS 16 which are the plan and supplemental plan, respectively, for the western terminus of the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS). Our report contains a description of the existing fish and wildlife resources of the project area, discusses future with and without project habitat conditions, identifies fish and wildlife-related impacts of the proposed project, and provides recommendations to avoid, reduce, or compensate for impacts to fish and wildlife resources. This report incorporates and supplements our Fish and Wildlife Coordination Act (FWCA) Reports that addressed impacts and mitigation features for the WBV Hurricane Protection Project (November 10, 1986, August 22, 1994, November 15, 1996, and June 20, 2005) and the November 26, 2007 draft programmatic FWCA Report that addresses the hurricane protection improvements authorized in Supplemental 4.

This report constitutes the report of the Secretary of the Interior as required by Section 2(b) of the FWCA; it has been submitted to the Louisiana Department of Wildlife and Fisheries and the National Marine Fisheries Service and their comments have been incorporated into this final report.

DESCRIPTION OF THE STUDY AREA

The approximate project-area boundaries are South Kenner Road on the east (Jefferson Parish); the Davis Pond Freshwater Diversion Project Canal on the west (St. Charles Parish); South Kenner Road at the Union Pacific and Burlington Northern Santa Fe (BNSF) Railroad Lines and the Mississippi River on the north, and the Outer Cataouatche Canal and the Davis Pond Freshwater Diversion Project to the south. Communities near the project area include Avondale and Waggaman to the east and South Kenner to the north. With the exception of landfills on the eastern portion of the project area and some development between U.S. Highway 90 (U.S. 90) and the Outer Cataouatche Canal, much of the study area remains undeveloped. These undeveloped areas consist of mostly bottomland hardwood (BLH) forests, freshwater marsh, scrub shrub, and mowed pasture.

FISH AND WILDLIFE RESOURCES

The Service provided a draft programmatic FWCA report on November 26, 2007, that contains a thorough discussion of the significant fish and wildlife resources (including habitats) that occur within the entire 100 year levee protection study area. For brevity, that discussion is incorporated by reference herein.

Mammals known to occur in the project-area bottomland hardwoods and marshes include mink, raccoon, swamp rabbit, nutria, river otter, and muskrat. Those habitats also support a variety of birds including herons, egrets, ibises, least bittern, rails, gallinules and various waterfowl. Forested and scrub-shrub habitats within the study area also provide habitat for many resident passerine birds and essential resting areas for many migratory songbirds including warblers, orioles, thrushes, vireos, tanagers, grosbeaks, buntings, flycatchers, and cuckoos (Lowery 1974).

Freshwater sport fishes present in the project area include largemouth bass, crappie, bluegill, redear sunfish, warmouth, channel catfish, and blue catfish. Other fishes likely to be present include yellow bullhead, freshwater drum, bowfin, carp, buffalo, and gar.

FUTURE FISH AND WILDLIFE RESOURCES

Although the area is experiencing subsidence like most of Louisiana's deltaic plain, it is expected that for the 50 year period of analysis most of the BLH will remain, with some shift toward more water tolerant BLH species (e.g. red maple) and also some conversion to swamp habitat. Fresh marsh is expected to remain and possibly increase in area. The Davis Pond Freshwater Diversion Project provides freshwater and sediment input to this area. These areas are expected to support fish and wildlife resources for the project life and beyond. With the construction of the proposed project or either of the alternatives, fish and wildlife habitat will be impacted permanently.

THREATENED AND ENDANGERED SPECIES

The Service is unaware of any known threatened or endangered species in the proposed project area and provided recommendations to ensure fish and wildlife resources received equal consideration during the planning phase. The project area is located where colonial-nesting waterbirds and bald eagles may be present. In a November 28, 2007 letter, the Service provided recommendations to avoid potential impacts to these wildlife resources.

DESCRIPTION OF SELECTED PLAN

The purpose of the proposed plan is to provide the 100-year level of protection for the HSDRRS. The term "100-year level of risk reduction," as it is used throughout this document, refers to a level of protection which reduces the risk of hurricane surge and wave driven flooding that the New Orleans Metropolitan area has a 1 percent chance of experiencing each year.

The proposed plan resulted from a defined need to reduce flood risk and storm damage to

residences, businesses, and other infrastructure from hurricanes and other high water events (i.e., 100-year storm events). The completed HSDRRS would lower the risk of harm to citizens and damage to infrastructure during a storm event.

Various alternative alignments and structures (i.e., floodwalls and levees) were evaluated for the protection needed. Based upon a detailed analysis that included evaluating risk and reliability; construction schedule; cost; right-of-way (ROW) requirements; environmental impacts; and operations and maintenance needs, the following alignments and structures were chosen as the proposed project for IER 16.

The proposed project (Alternative 3) is the South of Outer Cataouatche Canal to Davis Pond Tie-In (Figure 1). This alternative would consist of approximately 23,600 linear feet of levee, floodwall, and closure structures constructed to elevations of +13.5 to +15.5 feet NAVD88. Originating approximately 500 feet further south than Alternatives 1 and 2 on the western end of the Lake Cataouatche Levee, the alignment would begin as an earthen closure of the Outer Cataouatche Canal. Discharge lines from the U.S. 90 Pump Station would be extended and cross over the closure so that the pump station discharge would be on the flood side of the alignment. Proceeding westward, the alignment would continue as a levee south of, and parallel to, the Outer Cataouatche Canal for approximately 2,400 feet. On the eastern side of Bayou Verret, the levee would transition to an approximately 300 feet-long floodwall before transitioning to a closure structure on Bayou Verret. The closure structure would preserve navigation and drainage through the Outer Cataouatche Canal and Bayou Verret.

On the western side of the closure structure, the alignment would transition back to a 300-foot long reach of floodwall and then transition to earthen levee continuing in a western direction for approximately 9,600 feet long to a point approximately 850 feet east of the western end of the Outer Cataouatche Canal. In that vicinity, the levee would then turn north, cross, and close the Outer Cataouatche Canal. Between the Outer Cataouatche Canal and U.S. 90 the levee would transition to a floodwall prior to crossing U.S. 90. The intersection of the highway and floodwall would be built by raising the highway approaches over the +15.5 foot NAVD88 profile of the floodwall similar to the crossings described for Alternatives 1 and 2.

Similar to Alternative 2, on the north side of U.S. 90, the floodwall would continue for approximately 400 feet in a northern direction before turning to the west and transitioning to a levee on a west northwestern direction for approximately 2,700 feet to the Davis Pond Freshwater Diversion Canal's eastern construction ROW.

An existing drainage canal that extends from the Outer Cataouatche Canal, north under U.S. 90, and further north would be widened from approximately 20 feet to approximately 100 feet and deepened to 10 feet. The existing culvert under U.S. 90 may be replaced. Where the alignment transitions from floodwall to levee and extends to the Davis Pond Freshwater Diversion Canal's eastern construction ROW, new drainage canal would be constructed parallel the 2,700 feet length of levee.



Figure 1. Proposed plan (Alternative 3) for IER 16.

At the Davis Pond Freshwater Diversion Canal's eastern construction ROW, the levee would turn north, incorporating the existing Davis Pond Diversion Project's Main East Guide Levee into the new levee while continuing to the BNSF Railroad. The levee alignment would continue to the north and terminate into high ground at the Mississippi River Levee. Between the BNSF Railroad and high ground of the Mississippi River Levee, the alignment would alternate between floodwall (to accommodate closure structures for the two railroad crossings and the River Road crossing) and levee.

ALTERNATIVES CONSIDERED

NO ACTION

Under the no action alternative, the proposed 100-year level of hurricane and storm damage reduction would not be constructed by the Corps in this portion of the WBV Project. The authorized completion of the Western Tie-in of the WBV has never been constructed. Taking no action along this reach of the WBV would result in a significant gap in the WBV project and the benefits for projects constructed to the east of the western tie-in would not be achieved if the tie-in were not completed.

ALTERNATIVE 1

The South Kenner Road Floodwall and West Railroad Tie-In Levee Alignment would be comprised of approximately 17,700 linear feet of levee, 12,050 linear feet of floodwall, and closure structures constructed to an elevation of +13.5 to +15.5 feet NAVD88 (Figure 2).

ALTERNATIVE 2

The North of Outer Cataouatche Canal to Mississippi River Levee alignment consists of approximately 23,000 linear feet of levee, floodwall, drainage control, and closure structures built to +13.5 to +15.5 feet NAVD88 (Figure 3).

DESCRIPTION OF SUPPLEMENTAL MODIFICATIONS

Additions and changes to the design of ancillary features of the Western Tie-In Levee project have been proposed since the project was originally designed. These modifications include access roads, ramps, relocations of utilities and pumps, and levee degradation (Figure 4). The following is a detailed description of the proposed modifications.

LOUISIANA HIGHWAY 18 RAMP

The initially selected swing gate and floodwall alternative for the Louisiana Highway 18 (LA 18) crossing was re-evaluated via the alternative evaluation process. A ramp was selected over the floodgate because of risk/reliability, shorter project duration and lower Operations and

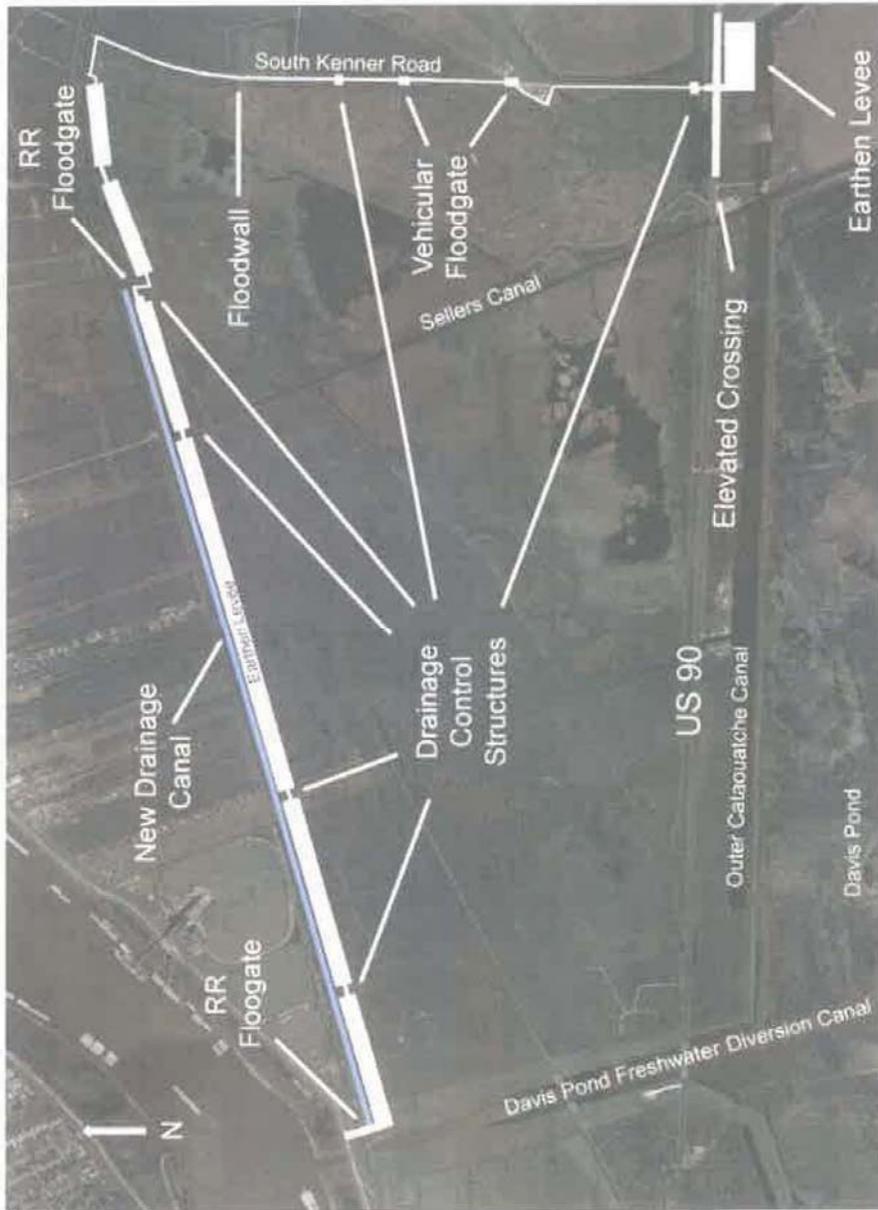


Figure 2. Alternative 1 project plan (from Corps NOD).

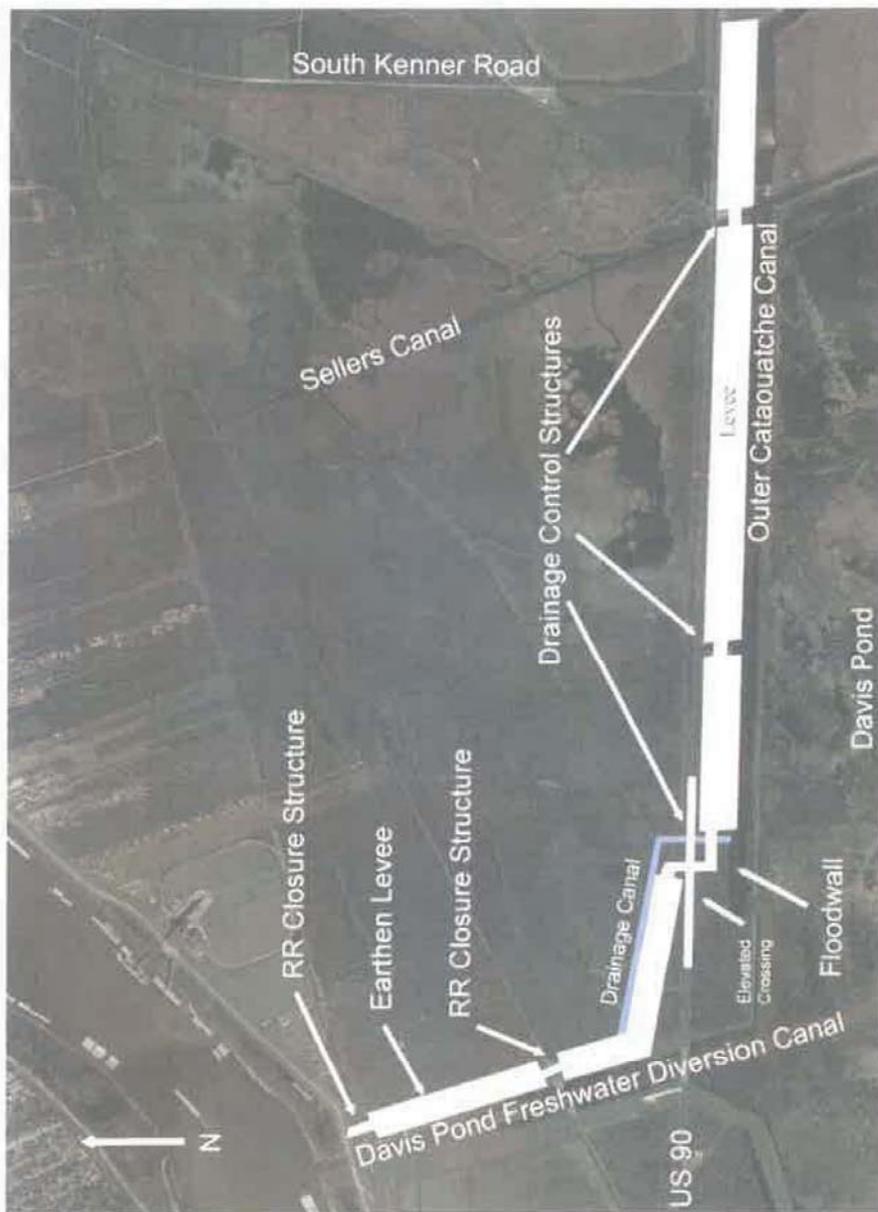


Figure 3. Alternative 2 project plan (from Corps NOD)

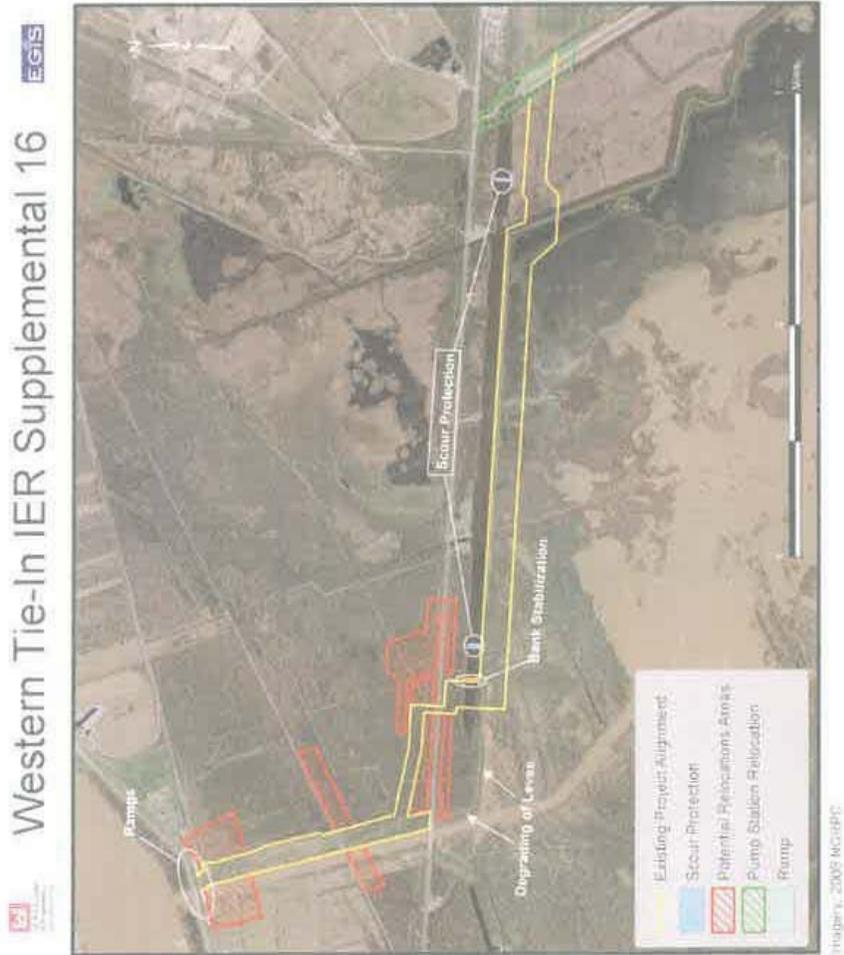


Figure 4. Proposed modifications to IER 16 design (from Corps NOD).

Maintenance requirements. A ramp would also allow traffic to continue over the levee on LA 18 during a storm event evacuation.

The ramp would span approximately 1,200 feet east to west; the initial crest elevation at the year 2011 would be +12.0 NAVD88 and a lift during the year 2027 would raise the crest elevation to +15.0 NAVD88. The one-lane emergency vehicle detour would run parallel to the ramp along the south, and would have a width of 11 feet and a 3 feet shoulder on each side. The hurricane protection levee in this area would transition to a floodwall and closure structure to cross the Union-Pacific Railroad track and then be tied into the proposed LA 18 ramp. Less than 0.25 acres would be graded, filled with earthen material, and surfaced with asphalt to construct the traffic detour on the south side of River Road.

The levee would terminate on the north side of the ramp by tying into high ground at the Mississippi River Levee in St. Charles Parish. This section would require approximately 30,000 feet square of construction ROW west of the Davis Pond Diversion Structure and approximately 40,000 feet square of additional ROW east of the structure. The impacts would be within the previously disturbed areas including Davis Pond Levee, Mississippi River Levee, Louisiana Department of Transportation and Development (LADOTD) and public and private utilities ROW. Construction of the ramp and emergency detour would require additional ROW: 2.6 acres for the east end of the ramp and detour, and 0.7 acres for the west end. To minimize erosion and runoff of exposed solids at the road construction sites a combination of sod, erosion control, and soil stabilizing mats and seeding would be utilized.

BANK STABILIZATION FOR OUTER CATAOUATCHE CANAL CLOSURES

Foreshore protection would be provided along the protected-side of the west closure levee, and along the flood-side of the east closure levee by installing an 18" layer of riprap over a layer of Geotextile Separator Fabric (Figure 4). Riprap and Geotextile Separator Fabric would also be used to provide scour protection underneath the bridges along this levee.

TEMPORARY DETOUR AS PERMANENT ACCESS FOR HWY 90

Converting the temporary detour along U.S. 90 to a permanent access would allow utility, maintenance, and other necessary vehicles to access the levee and adjacent areas, which would not otherwise be easily accessible after the U.S. 90 Bridge construction is complete. These detours were originally designed to be temporary, and would have been removed after construction of U.S. 90 Bridge was completed and traffic was restored back to the highway. By utilizing the temporary detours for permanent access, some cost savings are realized over constructing a stand-alone permanent access. Construction of the detour roads was described in IER 16. The construction activities will occur within existing LADOTD ROW that consists of both maintained road shoulder and wetlands.

RELOCATION OF UTILITIES

Utilities within the limits of the work, such as pipelines, communication lines, power lines, etc., would be required to be moved because their existing location interferes with HSDRRS construction; therefore, the government is responsible for reimbursing the utility owner for the removal, modification or relocation. These relocations are necessary for ensuring the reliability of the overall Western Tie-In hurricane protection system, the safety of the workers during project construction and to ensure uninterrupted operations of the utility companies.

Five gas lines, one waterline, one power line, three overhead communication lines and three oil and gas pipelines would require relocation. Possible relocation techniques are directional drill or sleeve through the floodwall. Both of these relocation methods would require staging and construction areas located outside of the previously cleared project ROW. Each utility owner would prepare a separate relocation plan. Because specific relocation plans have not been completed for these utilities, an area within which all the relocation activities are anticipated to occur was identified (general project area) to develop a discussion of these impacts. Previous proposals for directional drill pipeline relocations identified the need to construct temporary work pads for pushing and pulling the pipeline on either side of the directional drill under the HSDRRS project feature. In those cases, in addition to re-impacting the existing pipeline corridor, additional ROW of approximately 5 acres was needed to construct temporary work locations. Impacts for features such as overhead power lines would be less as the equipment and utility footprints are smaller.

PUMP STATION DEMOLITION AND CONSTRUCTION

The initially selected alternative for the U.S. 90 pump station (to extend the existing U.S. 90 pump station discharge lines across the new levee alignment) was re-evaluated. Construction of the Western Tie-In Levee would isolate the Pump Station within the newly constructed levee system and render the Pump Station ineffective in retaining interior drainage for Jefferson Parish could affect the wetlands located above U.S. 90. Additional design analysis conducted following preparation of IER 16 determined that modifying the existing pump stations would be inadequate and a replacement pump station of the same capacity (145 cubic feet per second) would be needed for the HSDRRS to maintain the pumping capacity for the protected area.

The existing U.S. 90 pump station is located on previously disturbed habitat adjacent to WBV - 17.b.2 levee with discharge lines over the levee crown. The exact location of the new pump station has not been identified. An approximately 2,500 feet square riprap discharge pad would be required at the out fall of the discharge lines and placed in the Outer Cataouache Canal. An access road and ramps would be constructed within the existing WBV-17.b.2 levee ROW to provide access from U.S. 90 to the new pump station.

EVALUATION METHODS FOR SELECTED PLAN AND ALTERNATIVES

The Service used the Habitat Assessment Methodology (HAM) to quantify the benefits of

anticipated mitigation measures for forested habitats. The habitat assessment models for swamps and bottomland hardwoods (BLH) within the Louisiana Coastal Zone utilized in this evaluation are modified from those developed in the Service's Habitat Evaluation Procedures (HEP). For each habitat type, those models define an assemblage of variables considered important to the suitability of an area to support a diversity of fish and wildlife species (Louisiana Department of Natural Resources 1994; U.S. Fish and Wildlife Service 1980). The HAM, however, is a community-level evaluation instead of the species-based approach used with HEP. Further explanation of how impacts/benefits are assessed with HAM and an explanation of the assumptions affecting habitat suitability (i.e., quality) index (HIS) values for each target year are available for review at Service's Lafayette, Louisiana, field office. The Fresh-Intermediate Coastal Marsh Model of the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) Wetland Value Assessment (WVA) Methodology was used to quantify the impacts to the fresh marsh habitat in the project area.

IMPACTS OF SELECTED PLAN AND SUPPLEMENTAL MODIFICATIONS

SELECTED PLAN

The selected plan (Alternative 3) would directly impact moderate quality BLH and fresh marsh south of the Outer Cataouatche Canal and north of U.S. 90. Wetlands would also be enclosed with this alternative by levees to the south and west. However, this land is already bounded by roadways, a levee and a railroad, and if drainage structures are constructed to provide at least the same drainage capacity as currently exists, then any hydrologic impacts due to enclosure could be avoided. Construction of the proposed project would also enclose a 60 acre section of wetlands that are located south of U.S. 90 and bounded on the west by the Davis Pond Freshwater Diversion Project east main guide levee and to the south by the Davis Pond Freshwater Diversion Project east guide levee. Construction of the protection levee would block the existing hydrologic connection of these wetlands to the west end of the Outer Cataouatche Canal; however, the Corps would cut an opening into the Davis Pond Freshwater Diversion Project east guide levee approximately 50 feet wide to a depth of 0 NAVD88 to allow water exchange with the Davis Pond Freshwater Diversion Project outfall canal and nearby marshes. Construction of the originally proposed project only would directly impact approximately 78.6 acres of BLH and 134.1 acres of fresh marsh, resulting in the loss of 36.2 AAHUs and 65.5 AAHUs respectively (Table 1).

SUPPLEMENTAL MODIFICATIONS

LA 18 ramp

Approximately 3.3 acres of maintained levee toe and maintained road shoulder would be impacted by construction of the ramp.

Bank stabilization for canal closures

The impacted area of this action is in unvegetated open water (drainage canal).

Temporary detour conversion to permanent U.S. 90 access

In IER 16 the impacts are described to be within the LADOTD ROW, however with more specific designs completed, it became apparent that the LADOTD ROW was not comprised entirely of maintained mowed shoulder but in some locations the full LADOTD ROW was not cleared and filled. Some of the area within this ROW is wetlands. Approximately 6 acres of wetlands within the LADOTD ROW would be impacted due to this action. These impacts were not identified as wetland impacts in IER 16.

Utility relocation

The general project area is comprised of 160 acres, not previously described in IER 16. Approximately 73.1 acres of BLH would be impacted by the relocation of utilities.

Pump station relocation

The total area of impact due to demolition of the old pump station and discharge pipes is approximately 0.2 acres. The material generated would be re-cycled and/or placed in a solid waste land fill. This area is located within an area previously environmentally cleared for the IER 15 levee alignment and impacts will be mitigated through the analysis in that report.

Table 1. Project impacts of the plan proposed in IER 16 and additional impacts of IERS 16.

| | Proposed IER 16 | Supplemental IERS 16 | Total Impacts |
|---------------------------|----------------------|----------------------|-----------------------|
| BLH (acres/AAHUs) | 78.6 / 36.2 | 79.1 / 37.26 | 157.7 / 73.46 |
| Fresh marsh (acres/AAHUs) | 134.1 / 65.5 | 14.1 / 9.0 | 148.2 / 74.5 |
| Total | 212.7 / 101.7 | 93.2 / 46.26 | 305.9 / 147.96 |

FISH AND WILDLIFE CONSERVATION MEASURES

Where practicable, the use of floodwalls instead of levees would reduce the area impacted and help conserve important fish and wildlife habitat (i.e., bottomland hardwoods, cypress swamps, fresh and estuarine marsh and associated shallow open water habitats). Clearing and grubbing should be limited to only what is necessary at the time of construction. The plans for the supplemental work have not been finalized. The Corps should coordinate with the Service regarding these final plans to avoid or minimize impacts to fish and wildlife resources. The Corps should also acquire non-development easements on those wetlands that would be on the protected side of the new levee. If bald eagle nesting locations and wading bird colonies are found in the project area before or during construction, adverse impacts may be avoided by timing of construction and further consultation with the Service.

COMPENSATORY MITIGATION MEASURES

The President’s Council on Environmental Quality defined the term “mitigation” in the National

Environmental Policy Act regulations to include:

(a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments.

The Service supports and adopts this definition of mitigation and considers its specific elements to represent the desirable sequence of steps in the mitigation planning process.

The Service's Mitigation Policy (Federal Register, Volume 46, No. 15, January 23, 1981) identifies four resource categories that are used to ensure that the level of mitigation recommended by Service biologists will be consistent with the fish and wildlife resource values involved. Considering the high value of forested and marsh wetlands for fish and wildlife and the relative scarcity of that habitat type, those wetlands are usually designated as Resource Category 2 habitats, the mitigation goal for which is no net loss of in-kind habitat value. Because the "no action" alternative was not selected, avoiding the project impacts altogether is not feasible. Therefore, remaining project impacts should be mitigated via compensatory replacement of the habitat values lost.

Based on our analysis for the proposed levee alignment, the Corps shall provide mitigation in-kind for 73.46 AAHUs of BLH and 74.5 AAHUs of fresh marsh. Impacts should be considered as "flood side" regarding designation in the separate IER that will provide for the implementation of mitigation measures for the entire 100 year protection levee system impacts.

SERVICE POSITION AND RECOMMENDATIONS

The Service recommended the selection of Alternative 1 because its direct impacts are less than the proposed project (alignment 3) in terms of AAHUs, and it does not have the potential long term indirect development impacts of Alternatives 2 and 3. However, construction of the flood protection levee even as proposed would provide flood protection to meet the Supplemental 4 authorization; therefore, the Service did not object to the construction of the proposed project provided the following fish and wildlife conservation recommendations are implemented concurrently with project implementation:

1. The Corps shall provide mitigation for impacts to BLH and fresh marsh habitat to the extent determined for the project plan ultimately selected. With construction of the proposed project and supplemental features, 157.7 acres of BLH and 148.2 acres of fresh marsh would be impacted requiring mitigation for 73.46 AAHUs of BLH and 74.5 AAHUs of fresh marsh.
2. Flood protection and ancillary features such as staging areas and access roads should be

designed and positioned so that destruction of wetlands and non-wet bottomland hardwoods are avoided or minimized to the greatest extent possible.

3. Avoid adverse impacts to wading bird colonies through careful design project features and timing of construction. Colonies that are not currently listed in the database maintained by the Louisiana Department of Wildlife and Fisheries may be present. That database is updated primarily by monitoring the colony sites that were previously surveyed during the 1980s. Until a new, comprehensive coast-wide survey is conducted to determine the location of newly-established nesting colonies, the Service recommends that a qualified biologist inspect the proposed work site for the presence of undocumented nesting colonies during the nesting season.
4. The enclosure of wetlands within new levee alignments should be minimized to the fullest extent. When enclosure of wetlands is unavoidable, non-development easements on enclosed wetlands should be acquired, and hydrologic connections with adjacent, unenclosed wetlands should be maintained. Such actions will serve to minimize secondary impacts from development and hydrologic alteration.
5. The Service recommends that the previous induced development study examine potential development over the period of analysis (i.e. 50 years) to be consistent with the Principles and Guidelines. Information about potential development of the area in question derived from this analysis would be used to determine mitigation requirements.
6. Water control structures should be designed to allow rapid opening in the absence of an offsite power source after a storm passes and water levels return to pre-storm levels.
7. Flood protection structures should include shoreline baffles and/or ramps (e.g., rock rubble, articulated concrete mat) that slope up to the structure invert to enhance organism passage. Various ramp designs should be considered, and coordination should continue with the natural resource agencies to ensure fish passage features are fully incorporated to the extent practicable.
8. Flood protection water control structures should remain fully open except during storm events, unless otherwise determined by the natural resource agencies.
9. Due to some of the proposed project features, the drainage capacity of the area between Hwy 90 and the proposed levee will be reduced. The Service is concerned about the potential for ponding in the area and subsequent impacts to wetland vegetation and to Hwy 90. The Service recommends that the Corps undertake additional hydrologic studies to determine the effects of those drainage capacity reductions.
10. Any proposed change in plan features or mitigation (i.e. supplemental modifications) should be coordinated in advance with the Service, NMFS, LDWF, EPA and OCPR.

11. If a proposed project feature is changed significantly or is not implemented within one year of the date of our Endangered Species Act consultation letter, we recommend that the Corps reinitiate coordination with this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.

LITERATURE CITED

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, Division of Biological Services, Washington, D.C. FWS/OBS-79/31. 108 pp.
- Lowery, A.H. 1974. Louisiana birds. La. State Univ. Press. 651 pp.