



US Army Corps  
of Engineers

# 100 Year Hurricane Protection Projects Lake Pontchartrain and Vicinity

April 12, 2007 - 7:00 – 9:00 pm  
National World War II Museum  
945 Magazine Street  
New Orleans, Louisiana

# **Environmental Compliance**

**37 Environmental Laws that must be considered.**

**National Historic Preservation Act**

**Threatened and Endangered Species Act**

**Clean Water Act**

**National Environmental Policy Act**

**“NEPA”**

# National Environmental Policy Act of 1969 “NEPA”

- Required that an environmental analysis be prepared for major federal actions.
- Analysis looks at potential impacts to the human environment.
- Coordination with Federal and State Resource Agencies, Environmental Groups and the Public.

# Typical Analysis

- Purpose & Need for the Project
- Alternatives (including No-Action, Non-Structural Alternatives)
- Natural Environment  
Fish & Wildlife, Wetlands, Water Quality, Hydrology, Endangered Species, Direct, and Cumulative Impacts
- Man-made Environment  
Socio-Economic, Cultural, Recreation, Air Quality, and Hazardous Materials
- Mitigation

# NEPA Scoping Process

“There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to the proposed action.”

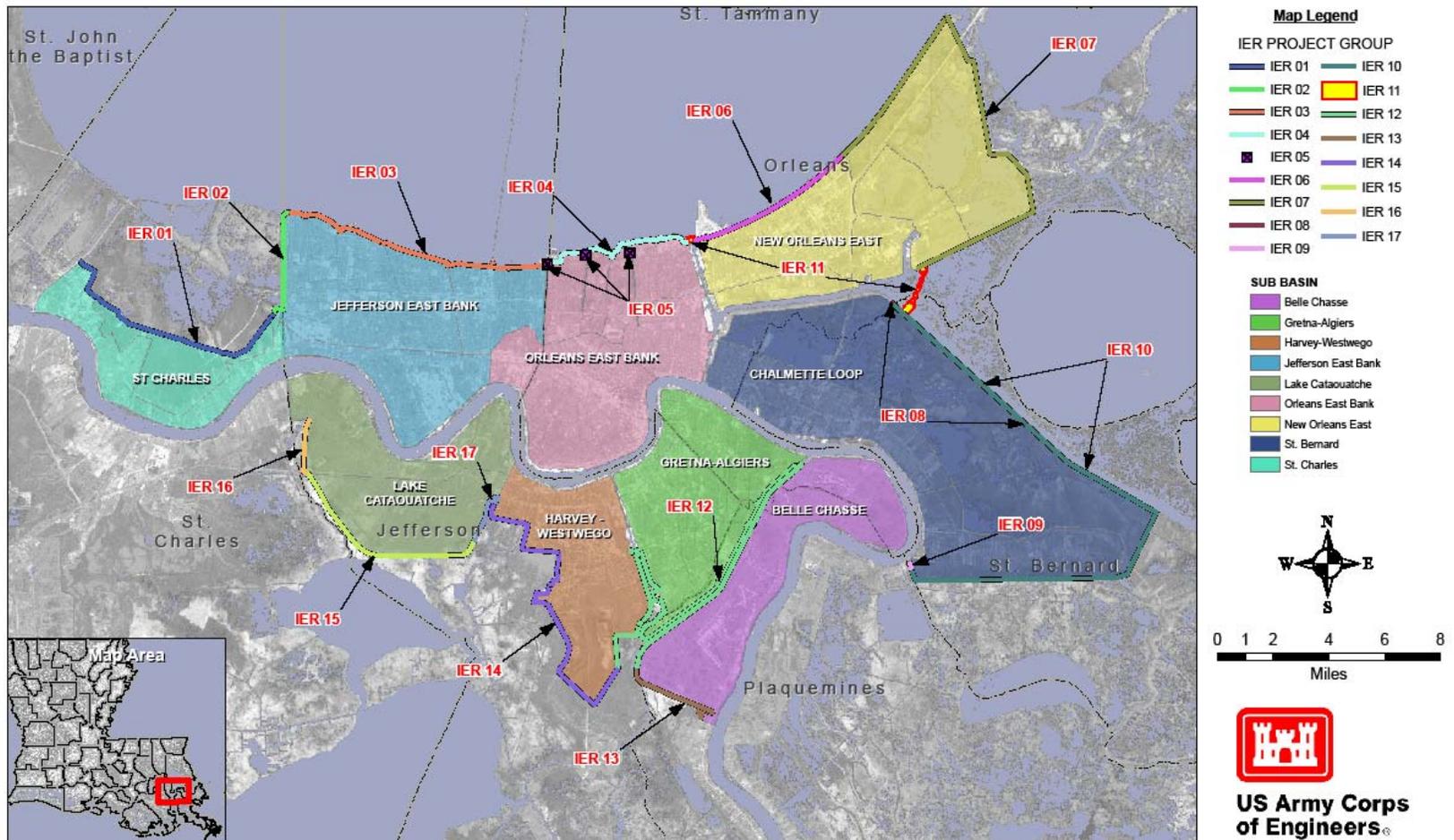


# Scoping Process

- Public meetings and written comment period.
- Opportunity for public and other interested parties to express concerns and suggest alternatives to be considered by Corps.

# Project Study Area

## Sub Basins and Representative Project Groups



# Scoping Questions



Question #1: What are the most important issues, resources, and impacts that we should consider in the IER?

## Examples:

- hurricane and flood protection
- protection of the environment (ie: wetlands, water quality, threatened and endangered species)
- protection of lives, homes, businesses, other properties
- protection of infrastructure (ie: roads, communications)

# Scoping Questions



Question #2: Are there any other alternatives or modifications to existing alternatives that we should consider in the IER?

Examples:

- Other alternatives that provide hurricane protection
- Non Structural alternatives (raise roads, homes, etc)

# Scoping Report

A Scoping Report will be written that summarizes the significant issues, alternatives and concerns of the public.

## Monthly Meetings

Monthly public meetings will be held during the duration of the project. First meetings will start in May 2007.

*Orleans Parish  
Hurricane Protection  
System*

# Overall Project Map

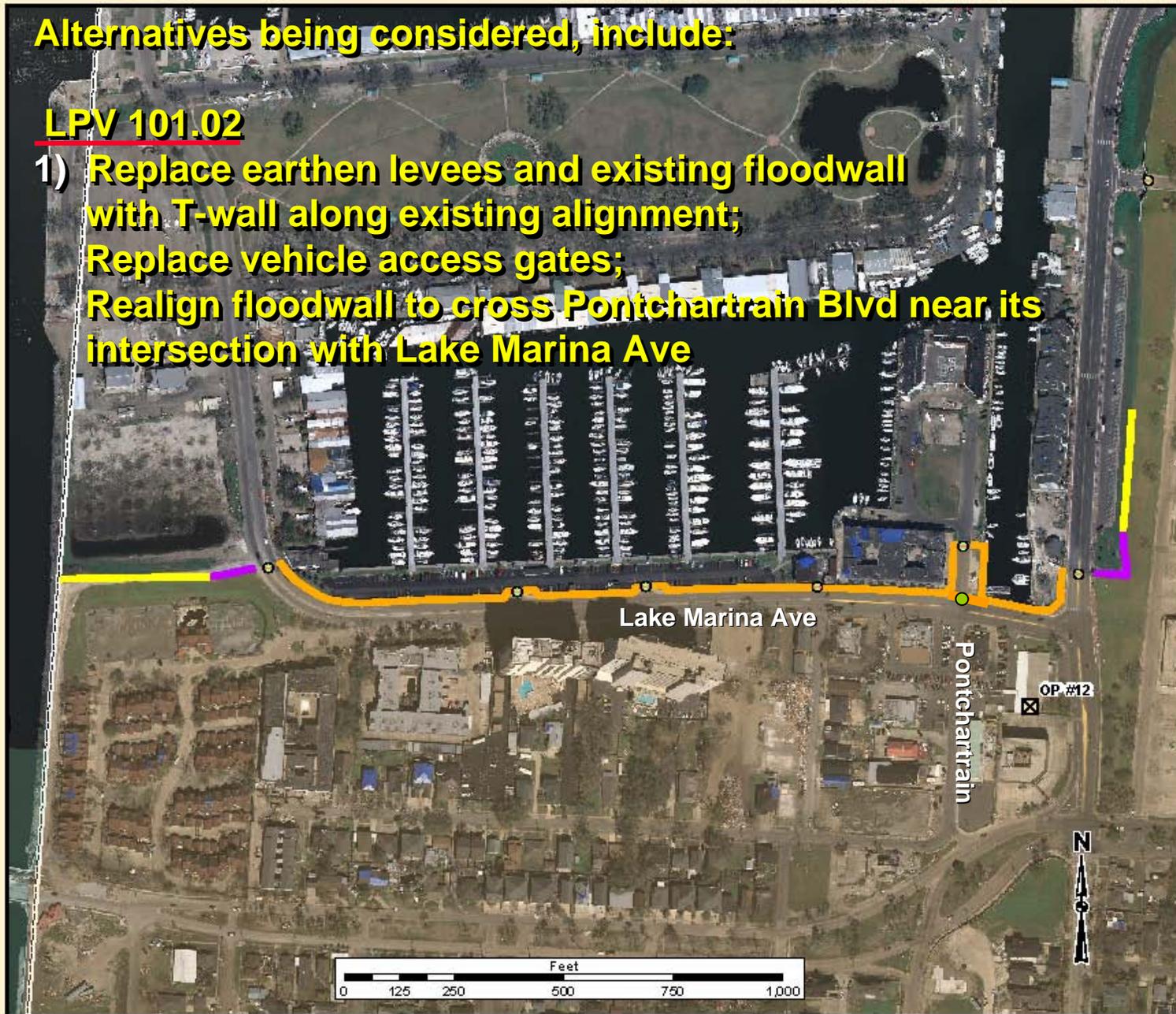
- LPV 101 – Lakefront Levee OEB - 17<sup>th</sup> St Canal to Topaz St
- LPV 102 – Lakefront Levee OEB - Topaz to Orleans Canal
- LPV 103 – Lakefront Levee OEB - Orleans Canal to London Ave
- LPV 104 – Lakefront Levee OEB - London Avenue Canal to IHNC



**Alternatives being considered, include:**

**LPV 101.02**

- 1) Replace earthen levees and existing floodwall with T-wall along existing alignment;**
- Replace vehicle access gates;**
- Realign floodwall to cross Pontchartrain Blvd near its intersection with Lake Marina Ave**



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CORPS OF ENGINEERS  
MISSISSIPPI VALLEY DIVISION

**Map Legend**

- Channel Floodgate
- Inlet Floodgate
- R/Rose Floodgate
- Rose Floodgate
- ⊗ Pump/Gate
- Orange Federal Interlake Flood-wall
- Purple Federal Interlake Flood-wall
- Yellow Federal Interlake Levee
- Magenta Federal Interlake Levee and Flood-wall
- Blue Interlock Levee
- Green Federal Interlock Levee
- Red Federal Interlock Levee and Flood-wall
- Light Blue Federal Inter Levee and Flood-wall
- Brown Federal IT Flood-wall
- Pink Local Bridge Levee; Local Interlake Levee
- Light Green Local Interlake Levee and Flood-wall
- Dark Green Local Levee Floodwall
- Red Rose St Levee
- White Partial Encasement

**PROJECT STATISTICS**

- Total Length: 3,228'
- Federal Floodwall: 2,078'
- Federal Hurricane Levee: 630'
- Federal Levee and Floodwall: 283'
- Structure Gaps (5): 236'
- Authorized Grade: 14'
- 100-Year Grade: 16'-18'
- Existing Elevation: 12.5'-13.5'
- Est. Cost (Millions): Phase 1 - \$1.0, Phase 2 - \$54.6



**Alternatives being considered, include:**

**LPV 102.02**

- 1) Raise earthen levee;**
- Replace existing I-walls with T-walls;**
- Install gate closures at existing roadway ramps**



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**Map Legend**

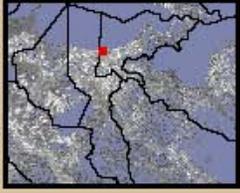
- Overall Floodgate
- Inverted Floodgate
- Ribbed Floodgate
- Flap Floodgate
- ⊗ Pump Station
- Federal Hurricane Flood-wall
- Federal Hurricane Flood-wall
- Federal Hurricane Levee
- Federal Hurricane Levee and Flood-wall
- Barrier Protection Levee
- Federal Hurricane Levee
- Federal Hurricane Levee and Flood-wall
- Federal Hurricane Levee
- Federal Hurricane Levee and Flood-wall
- Federal T Flood-wall
- Local Drainage Levee; Local Hurricane Levee
- Local Hurricane Levee and Flood-wall
- Local Levee; Federal Free
- Road to Levee
- Parked Boatway

**PROJECT STATISTICS**  
Total Length: 6022'  
Federal Hurricane Levee: 5577'  
Federal Levee and Floodwall: 151'  
Structural Gaps: 294'  
Authorized Grade: 18.5'  
100-Year Grade: 18.5'-20.5'  
Existing Elevation: 16.5'-19.0'  
Est. Cost (Millions): Phase 1 - \$4.2,  
Phase 2 - \$10.5

**AREA MAP**



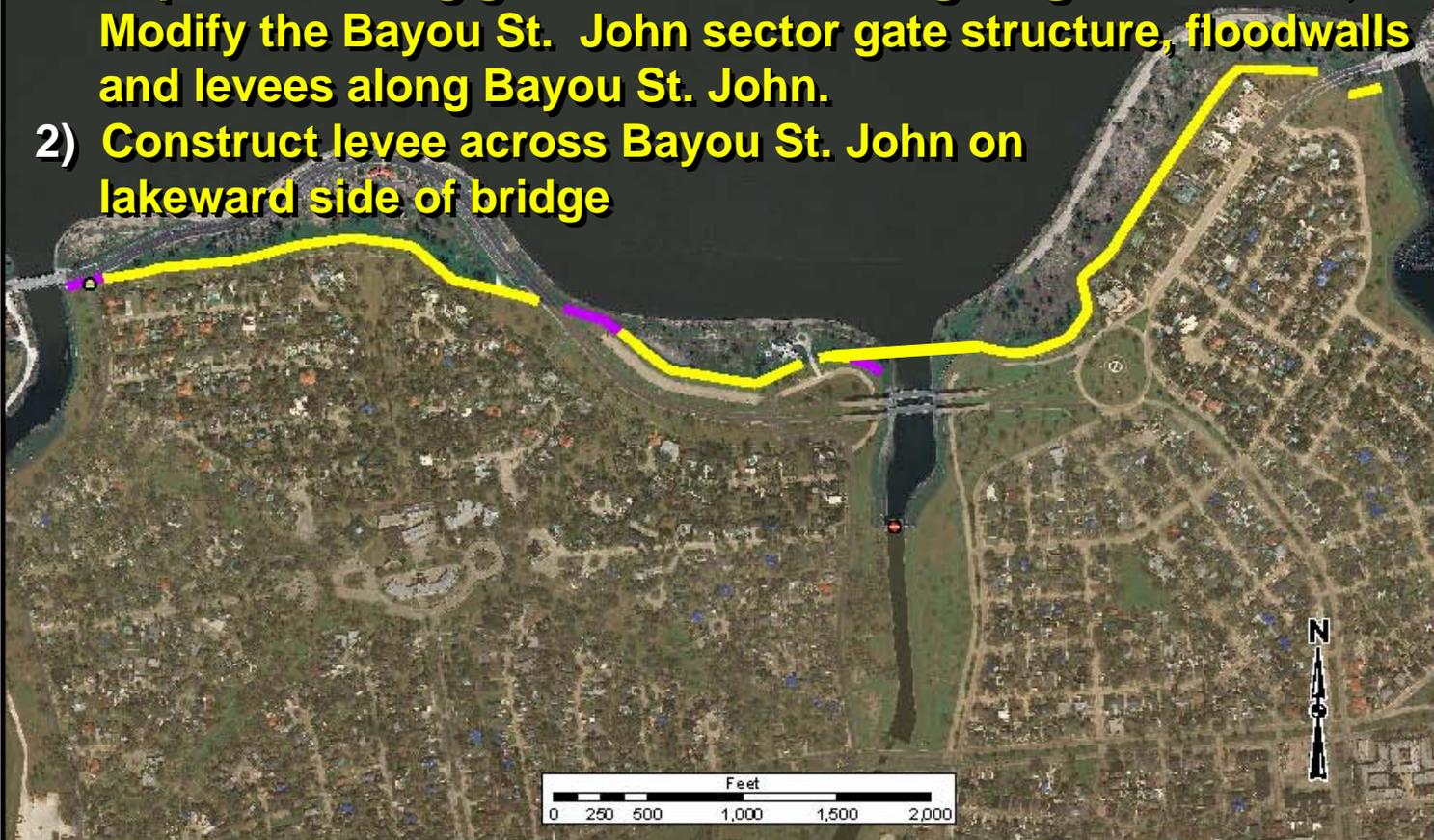
**REGION MAP**



## Alternatives being considered, include:

### LPV 103.02

- 1) Raise earthen levee;  
Replace existing I-walls with T-walls;  
Install gate closures at existing roadway ramps;  
Replace existing gate closures with higher gate closures;  
Modify the Bayou St. John sector gate structure, floodwalls and levees along Bayou St. John.
- 2) Construct levee across Bayou St. John on lakeward side of bridge



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#### Map Legend

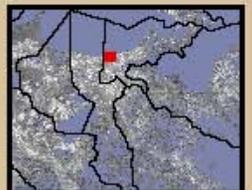
- Channel Floodgate
- Inland Floodgate
- Railroad Floodgate
- Road Floodgate
- Pump Station
- Federal Hurricane Flood-wall
- Federal Hurricane Flood-wall
- Federal Hurricane Levee and Flood-wall
- Federal Hurricane Levee and Flood-wall
- Inland Protection Levee
- Federal Hurricane Levee
- Federal Hurricane Levee and Flood-wall
- Local Drainage Levee, Local Hurricane Levee
- Local Hurricane Levee and Flood-wall
- Local Levee, Federal Levee
- Road Levee
- Parish Boundaries

PROJECT STATISTICS  
Total Length: 7121'  
Federal Hurricane Levee: 6479'  
Federal Levee and Floodwall: 668'  
Structural Gaps: 6:573'  
Authorized Grade: 18.0'  
100-Year Grade: 18.5'-20.5'  
Existing Elevation: 16.5'-20.0'  
Est. Cost (Millions): Phase 1 - \$9.1,  
Phase 2 - \$46.0

#### AREA MAP



#### REGION MAP



**Alternatives being considered, include:**

**LPV 104.02**

- 1) Raise earthen levee;  
Replace existing I-walls with T-walls;  
Raise roadway ramp crossings or install new floodgates**



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**Map Legend**

- Canal Floodgate
- Inland Floodgate
- Railroad Floodgate
- Road Floodgate
- Pump Station
- Federal Hurricane Flood-wall
- Federal Hurricane Flood-wall
- Federal Hurricane Levee and Flood-wall
- Federal Hurricane Levee and Flood-wall
- Harbor Protection Levee
- Federal Hurricane Levee
- Federal Hurricane Levee and Flood-wall
- Federal Hurricane Levee
- Federal Hurricane Levee and Flood-wall
- Federal Flood-wall
- Local Drainage Levee, Local Hurricane Levee
- Local Hurricane Levee and Flood-wall
- Local Levee, Federal Flood
- Road Levee
- Parish Boundary

**PROJECT STATISTICS**  
 Total Length: 1,369'  
 Federal Floodwall: 538'  
 Federal Hurricane Levee: 970'  
 Federal Levee and Floodwall: 2930'  
 Structural Gaps (G): 520'  
 Authorized Grade: 18.0'-20.5'  
 100-Year Grade: 18.5'-20.5'  
 Existing Elevation: 15.0'-20.0'  
 Est. Cost (Millions): Phase 1 - \$5.8,  
 Phase 2 - \$25.2

**AREA MAP**

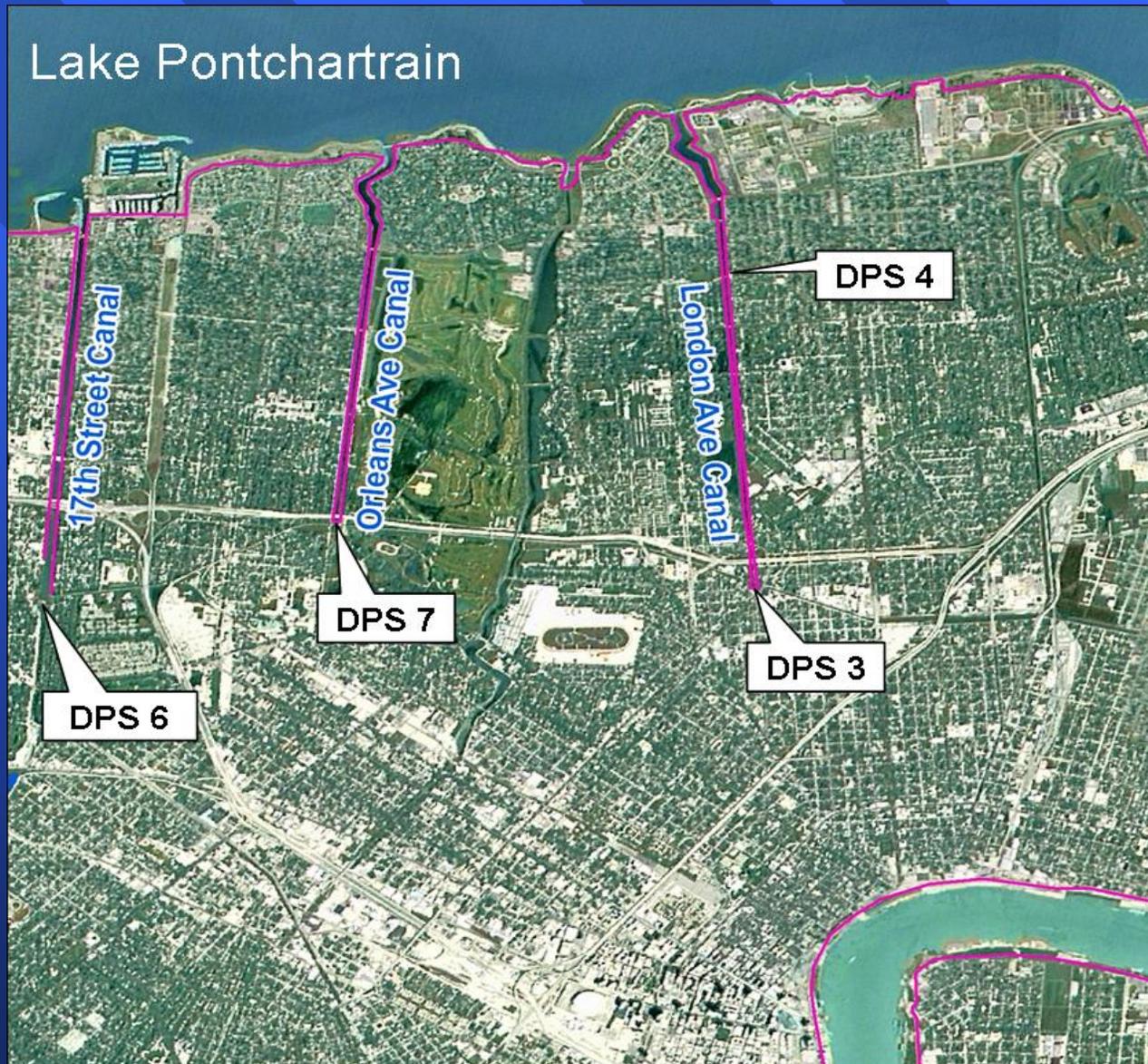


**REGION MAP**



*Permanent Canal  
Closures  
and Pump Stations*

# Existing Facilities



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# PROJECT ALTERNATIVES

- **No-Action (Without Project):**
- **Modify Internal Drainage:**
  - New storm water detention basins
  - Force mains from existing pump stations to Lake Pontchartrain
  - Re-direct flow from existing pump stations to other pump stations, other canals or bayous, Lake Pontchartrain, Mississippi River or new detention basins.
- **Pressurized Box Culvert System:** Box culverts would replace the existing canals.
- **Improve Parallel Protection:**
- **Construction of New Permanent Pump Stations:**
  - Near Temporary Pump Station location
  - Upstream location
  - Lake location
  - Gated Structure – gates would normally remain open and pump stations would run only during tropical events.
  - Non-Gated Structure – pump stations would run for all rain events with a deeper canal system to induce gravity flow to the Lake.
- **Convert Temporary Pump Stations to Permanent Pump Stations**

# H.R. 4939

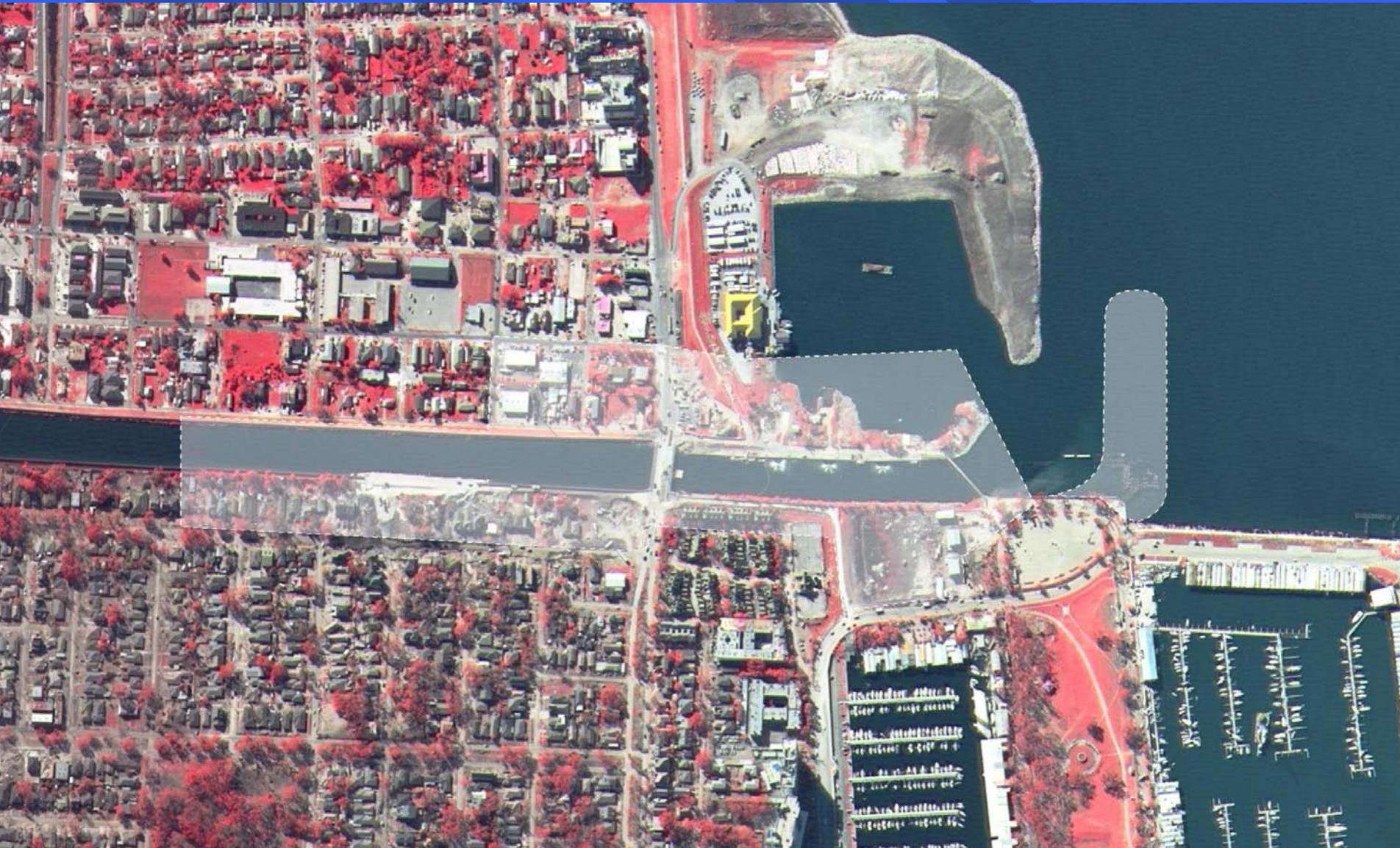
Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Enrolled as Agreed to or Passed by Both House and Senate)

Corps of Engineers--Civil

## FLOOD CONTROL AND COASTAL EMERGENCIES (INCLUDING RESCISSION OF FUNDS)

- *For an additional amount for 'Flood Control and Coastal Emergencies', as authorized by section 5 of the Act of August 18, 1941 (33 U.S.C. 701n), for necessary expenses relating to the consequences of Hurricane Katrina and other hurricanes, \$3,145,024,000, to remain available until expended: Provided, That the Secretary of the Army is directed to use the funds appropriated under this heading to modify, at full Federal expense, authorized projects in southeast Louisiana to provide hurricane and storm damage reduction and flood damage reduction in the greater New Orleans and surrounding areas; **\$530,000,000 shall be used to modify the 17th Street, Orleans Avenue, and London Avenue drainage canals and install pumps and closure structures at or near the lakefront;** \$250,000,000 shall be used for storm-proofing interior pump stations to ensure the operability of the stations during hurricanes, storms, and high water events; \$170,000,000 shall be used for armoring critical elements of the New Orleans hurricane and storm damage reduction system; \$350,000,000 shall be used to improve protection at the Inner Harbor Navigation Canal; \$215,000,000 shall be used to replace or modify certain non-Federal levees in Plaquemines Parish to incorporate the levees into the existing New Orleans to Venice hurricane protection project; \$1,584,000,000 shall be used for reinforcing or replacing flood walls, as necessary, in the existing Lake Pontchartrain and Vicinity project and the existing West Bank and Vicinity project to improve the performance of the systems; \$30,024,000 for repairs, replacements, modifications and improvements of non-Federal levees and associated protection measures in Terrebonne Parish at full Federal expense: Provided further, That \$16,000,000 is provided for the restoration of funds for hurricane-damaged projects in the State of Pennsylvania: Provided further, That any project using funds appropriated under this heading shall be initiated only after non-Federal interests have entered into binding agreements with the Secretary requiring the non-Federal interests to pay 100 percent of the operation, maintenance, repair, replacement, and rehabilitation costs of the project and to hold and save the United States free from damages due to the construction or operation and maintenance of the project, except for damages due to the fault or negligence of the United States or its contractors: Provided further, That the amount provided under this heading is designated as an emergency requirement pursuant to section 402 of H. Con. Res. 95 (109th Congress), the concurrent resolution on the budget for fiscal year 2006.*
- *Of the funds provided under this heading in chapter 3 of division B of Public Law 109-148, \$15,000,000 are rescinded.*
- <http://thomas.loc.gov/>

# 17th Street Canal



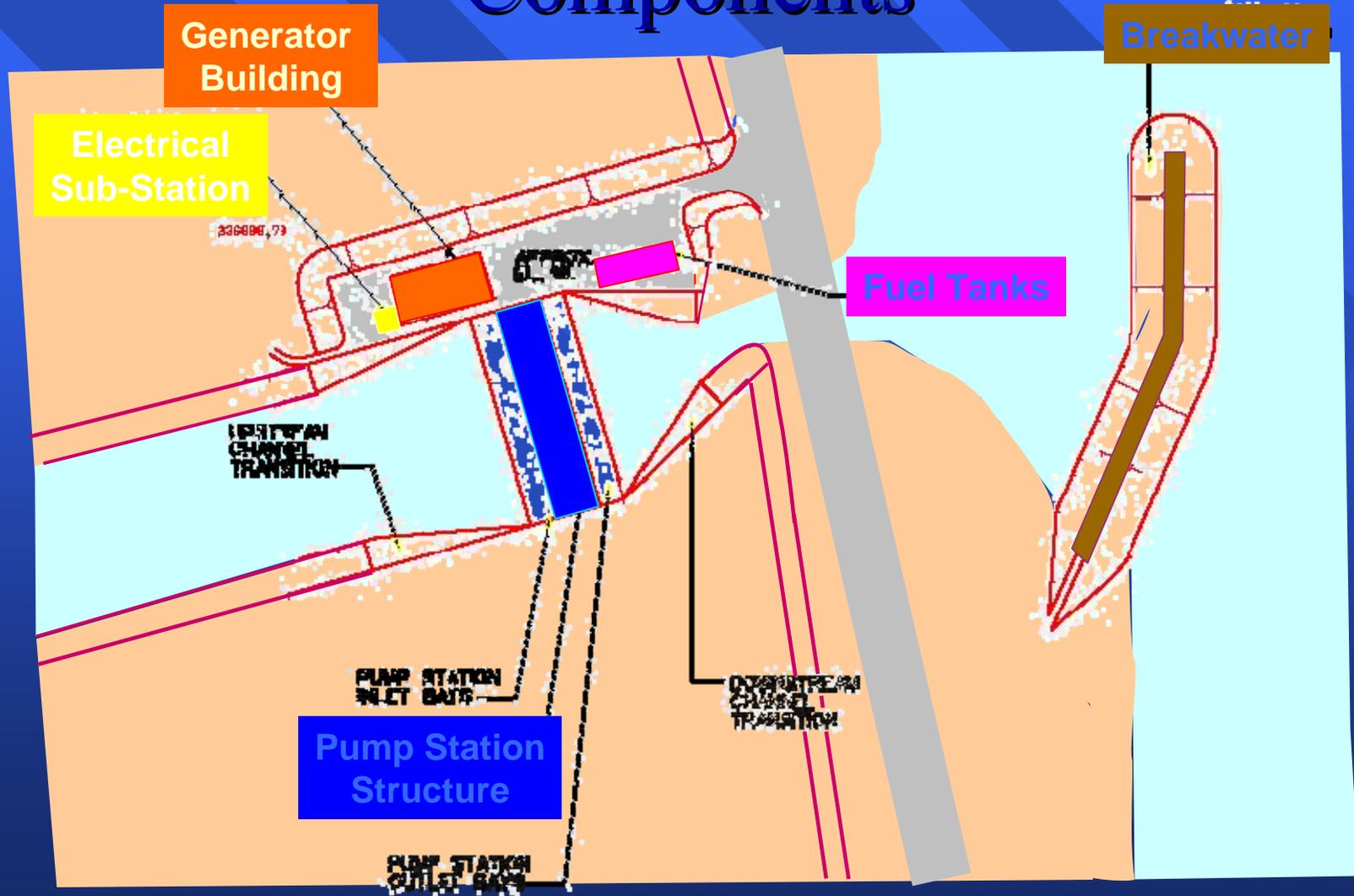
# Orleans Ave. Canal



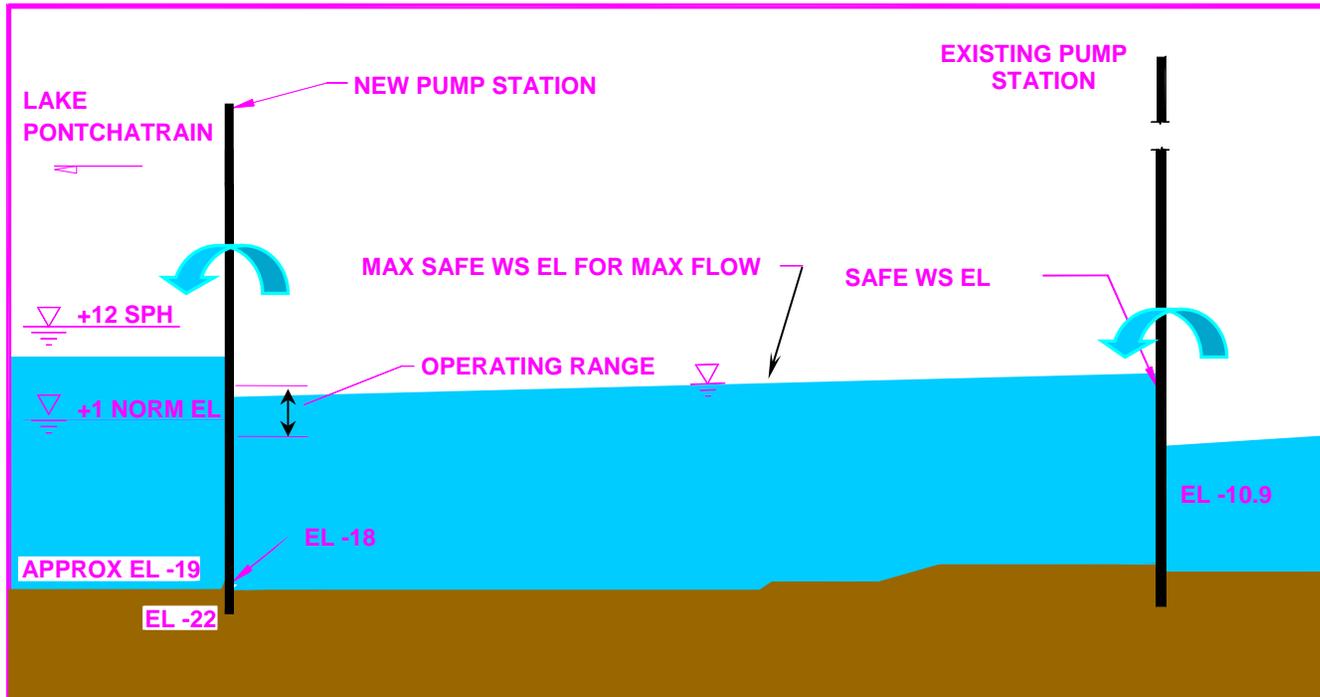
# London Ave. Canal



# Typical Pump Station Components

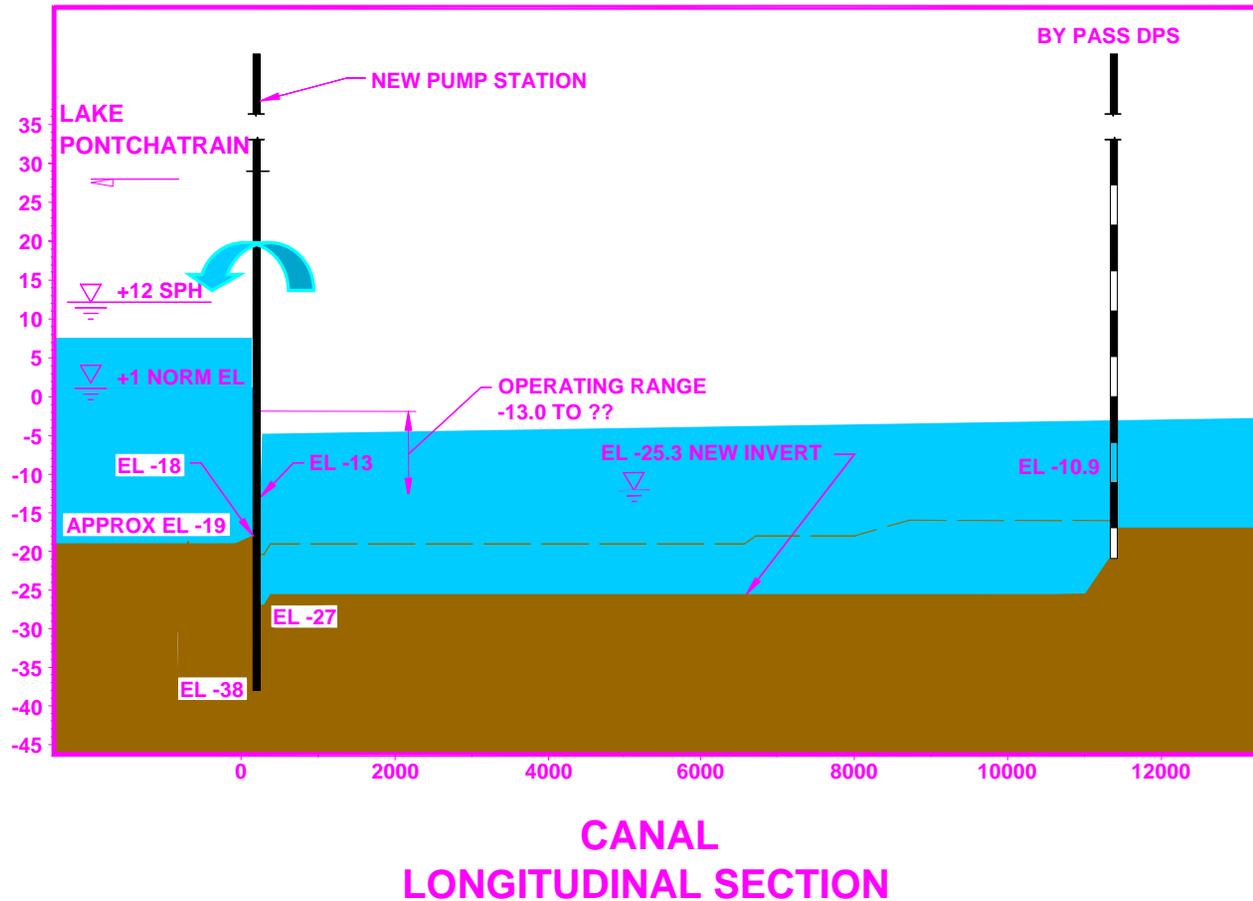


# Gated Structure Hydraulic Canal Section

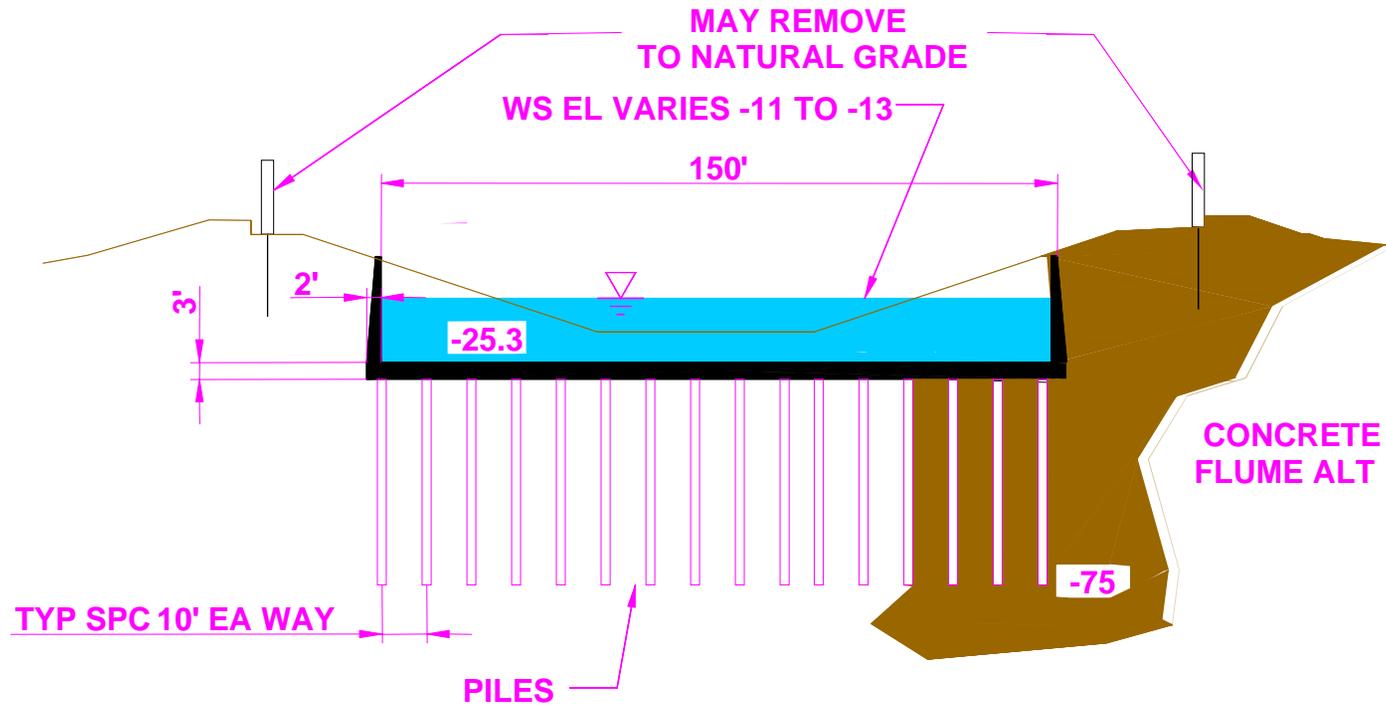


CANAL  
LONGITUDINAL SECTION

# Non-Gated Structure Hydraulic Canal Section

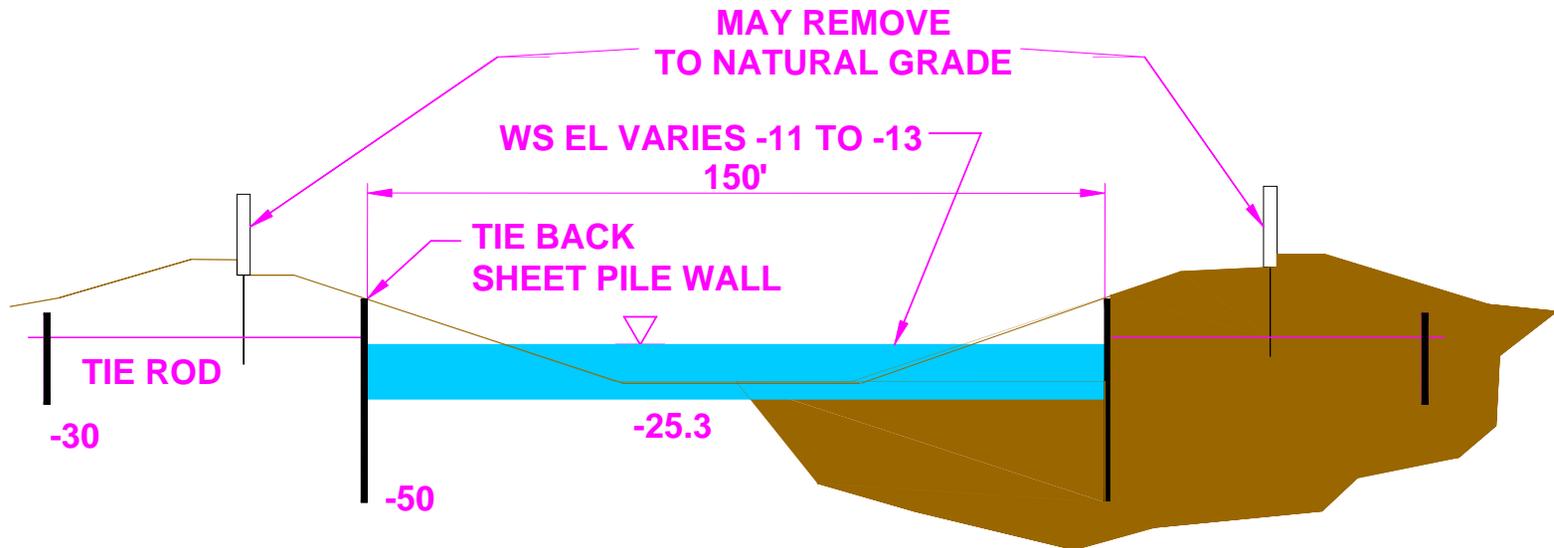


# Concrete Canal Non-Gated Structure



**CANAL  
CONCRETE FLUME ALTERNATIVE**

# Sheet Pile Canal Non-Gated Structure



**CANAL  
SHEET PILE ALTERNATIVE**

*Improved Protection for  
the Inner Harbor  
Navigation Canal  
(IHNC)*

# IHNC Alternative Concepts



US Army Corps  
of Engineers

Hurricane Protection Office



\*These renderings are preliminary and represent alternative concepts only. They do not represent the final design or placement of the proposed gates and or canals. Therefore, no one should place any reliance on, or make any decisions based upon, these preliminary renderings.

Questions regarding these projects should be addressed to:

Laura Lee Wilkinson

CEMVN-HPO

P.O. Box 60267

New Orleans, LA 70160-0267

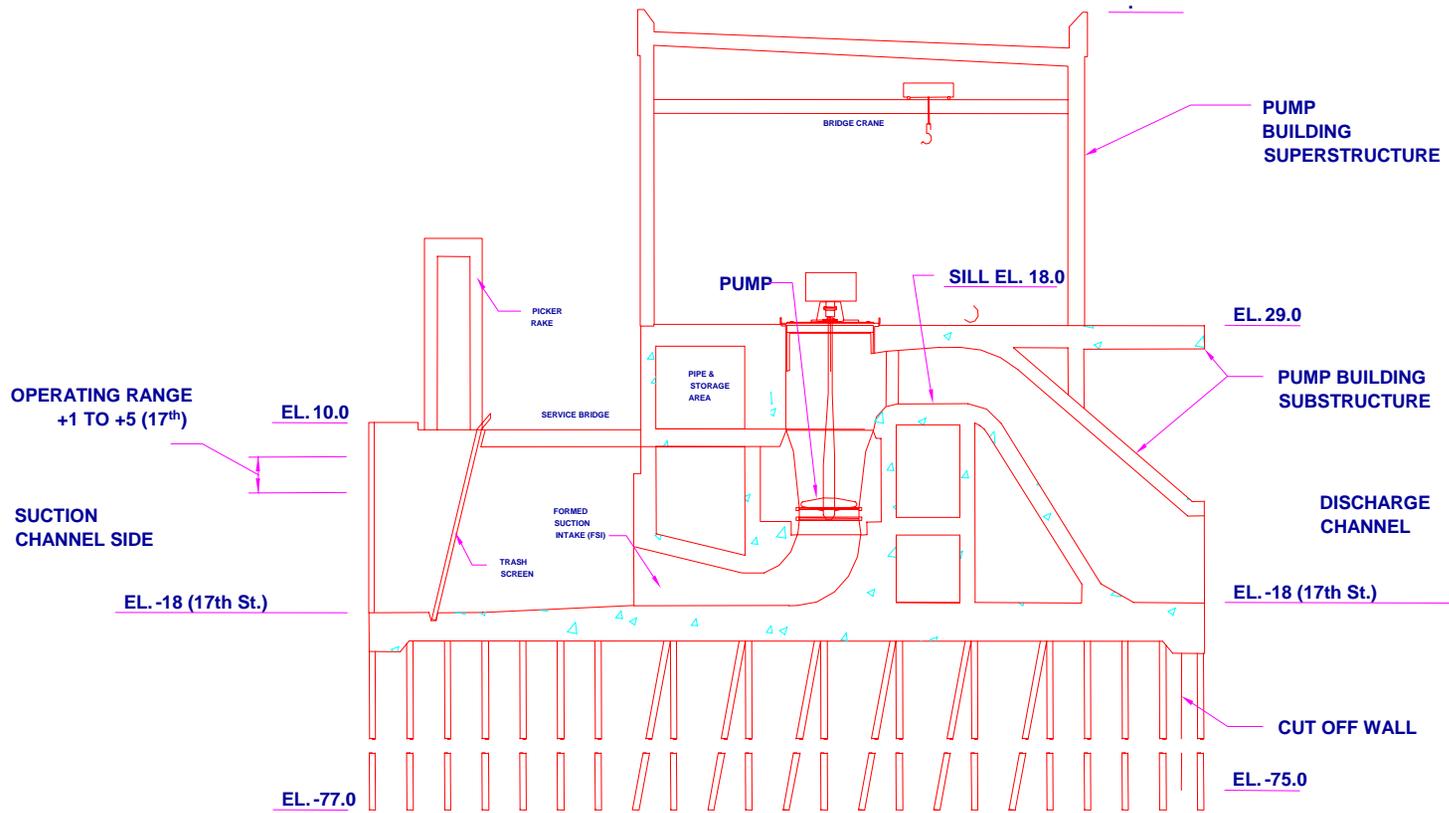
Telephone: 504-862-1212

E-mail: [Laura.L.Wilkinson@mvn02.usace.army.mil](mailto:Laura.L.Wilkinson@mvn02.usace.army.mil)

Web site:

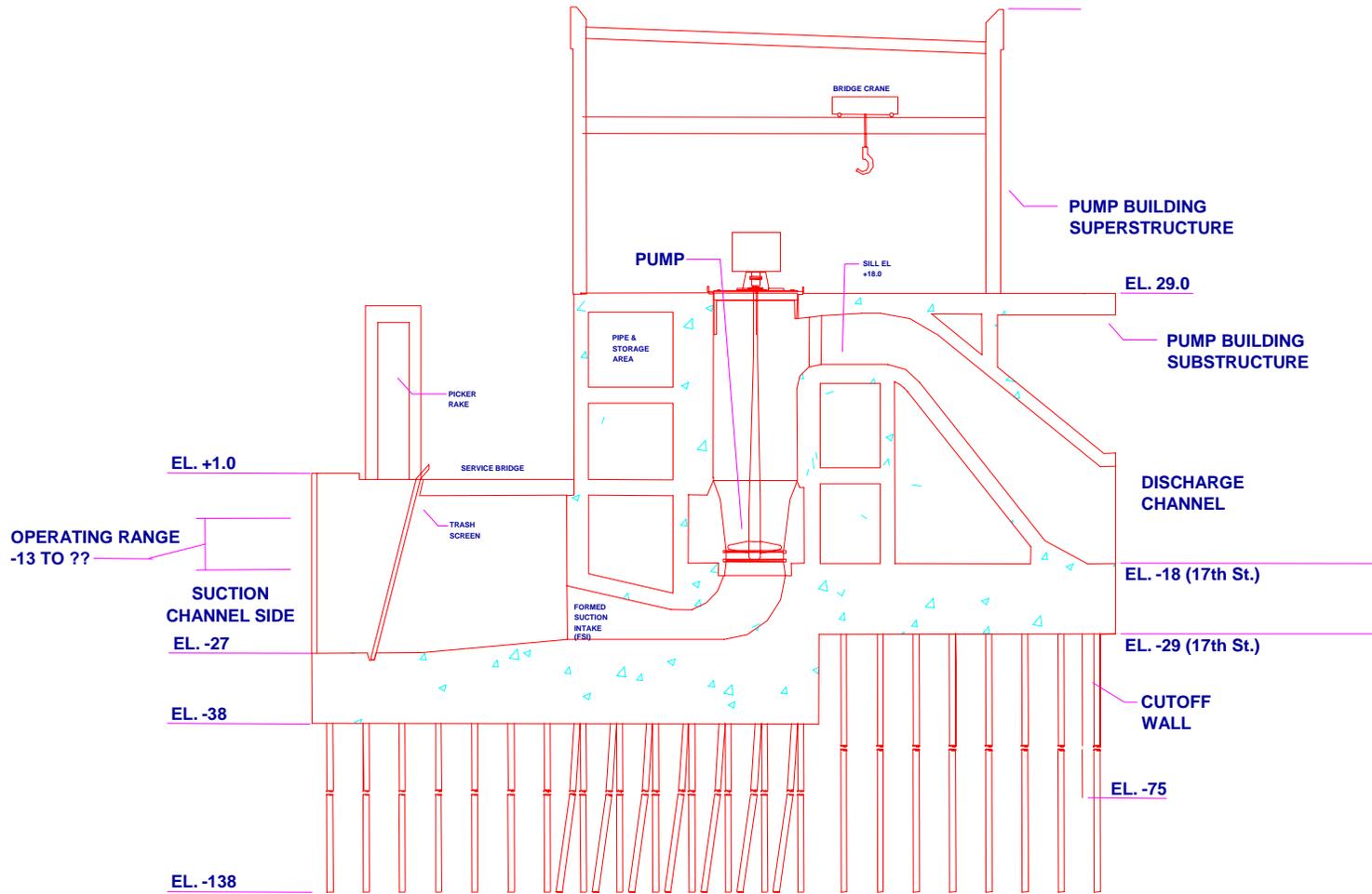
[http://www.mvn.usace.army.mil/pd/Envir\\_Processes\\_NEPA/Index.htm](http://www.mvn.usace.army.mil/pd/Envir_Processes_NEPA/Index.htm)

# BACK – UP SLIDES



# Gated Structure

## Conceptual Model of Pump Station



# Non-Gated Structure

## Conceptual Model of Pump Station

# 17<sup>th</sup> Street Canal – Alt. A



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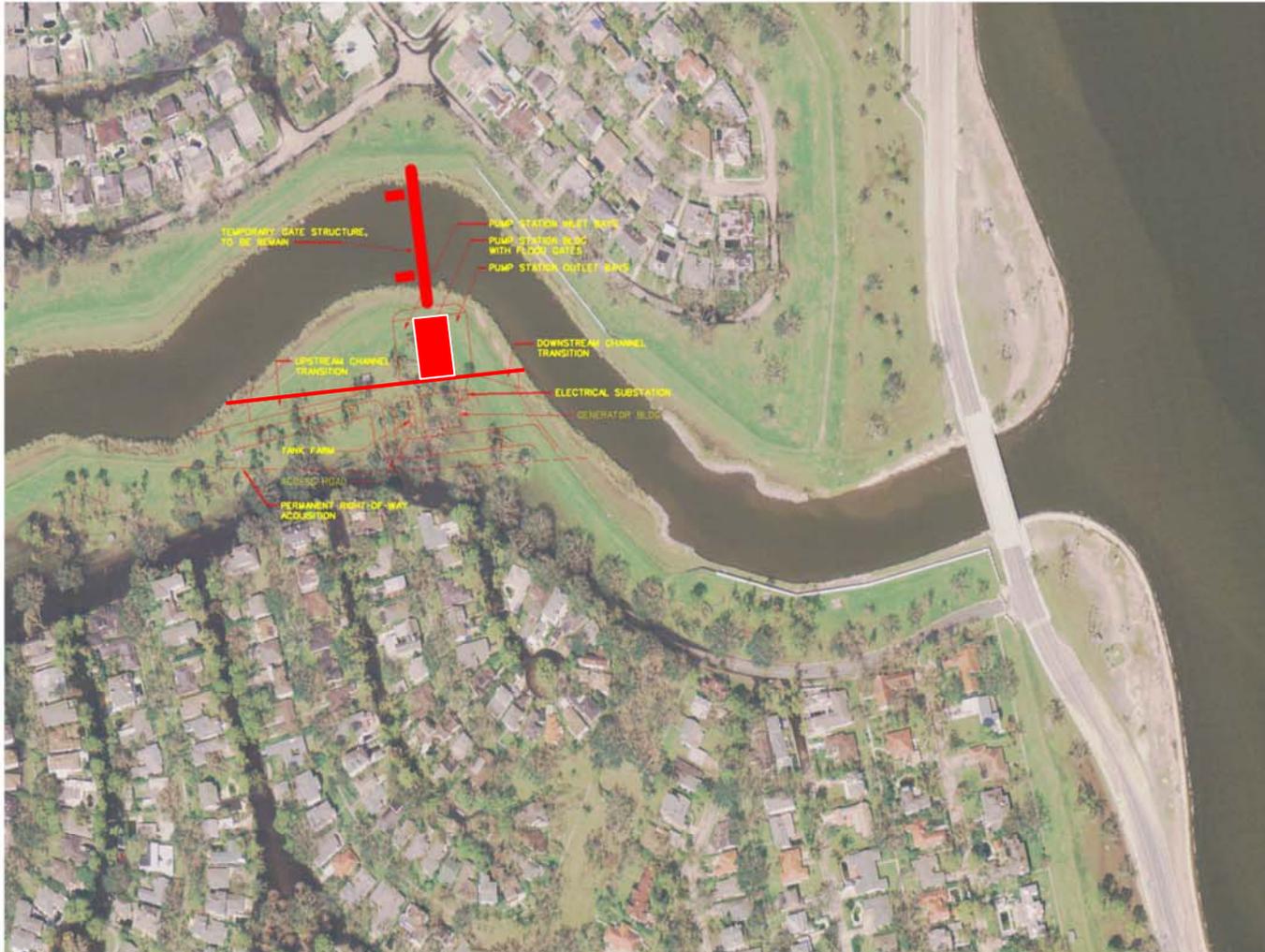
# 17<sup>th</sup> Street Canal – Alt. B



17th Street - 10/12/07  
17th Street - 10/12/07  
17th Street - 10/12/07



# Orleans Ave. Canal – Alt A

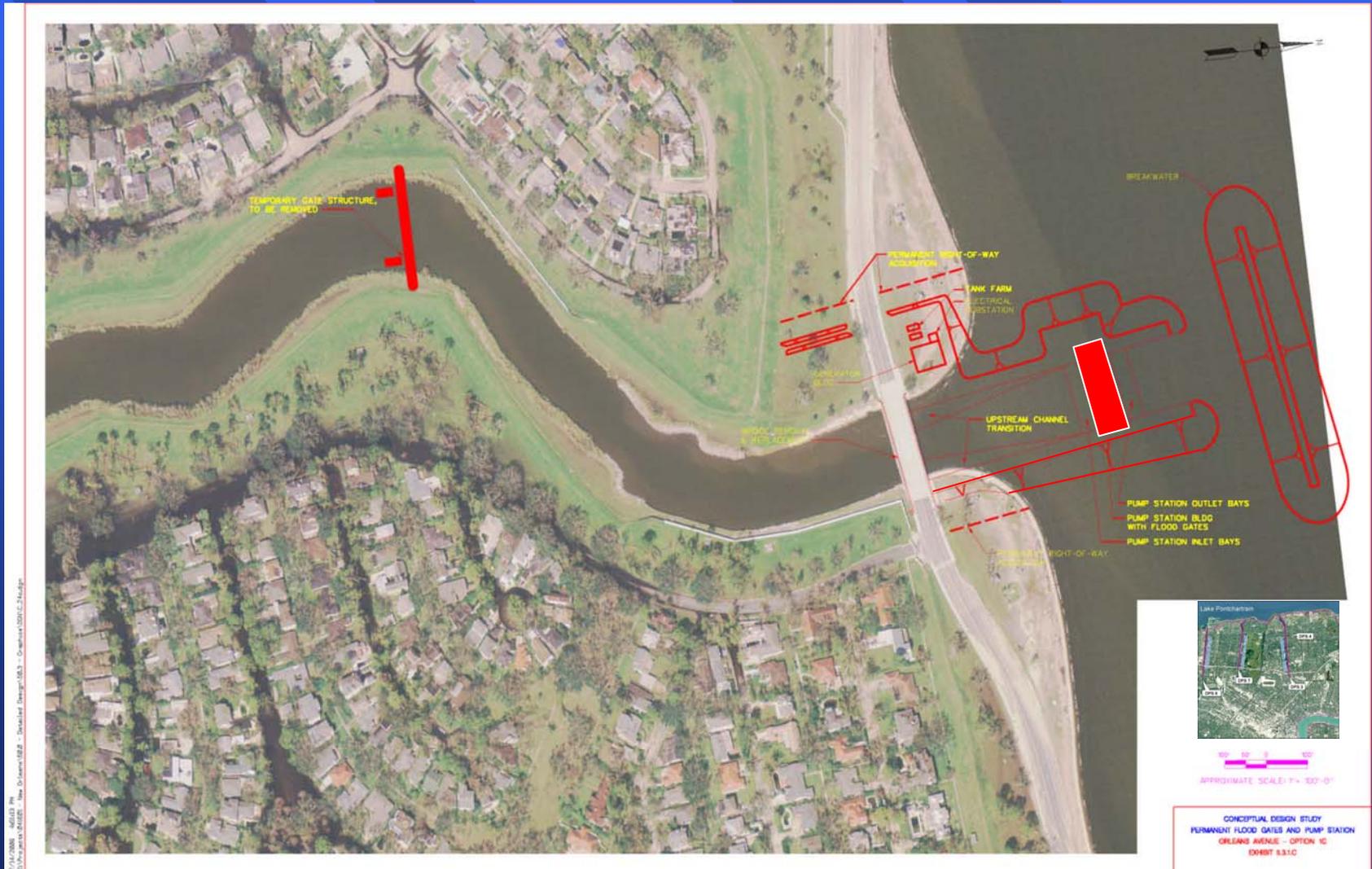


CONCEPTUAL DESIGN STUDY  
 PERMANENT FLOOD GATES AND PUMP STATION  
 ORLEANS AVENUE - OPTION 1A  
 EXHIBIT 6.3.1A

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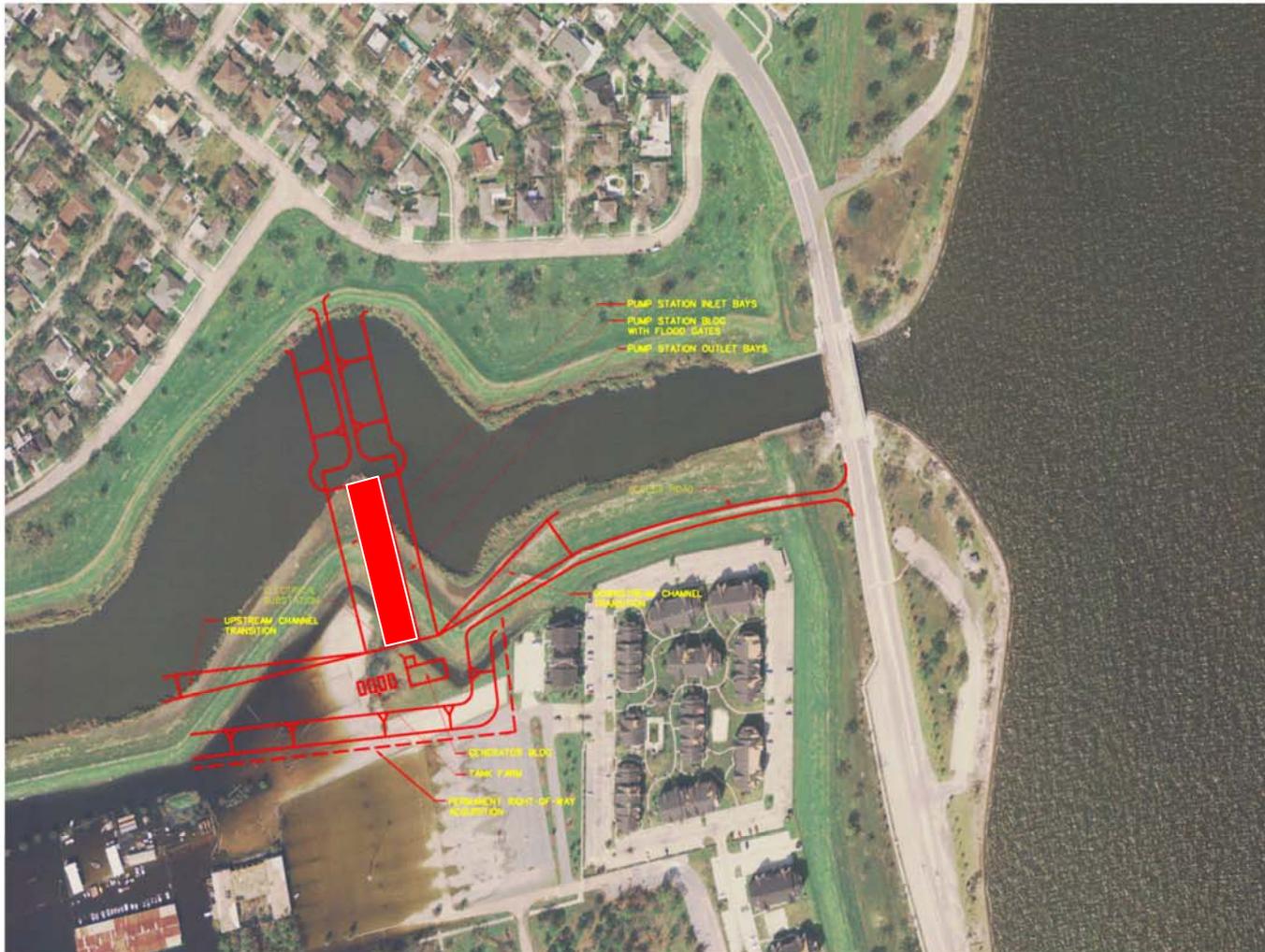


# Orleans Ave. Canal – Alt C



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# London Ave. Canal – Alt A



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# London Ave. Canal – Alt B



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# London Ave. Canal – Alt C



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